TODAY'S SCIENCE FICTION — TOMORROW'S FACT

FALL 25¢

# STARTLING stories


*featuring* **SPACEMEN LOST** *a novel by George O. Smith*

*and* **SIMPLE PSIMAN** *a novelet by F. L. Wallace*

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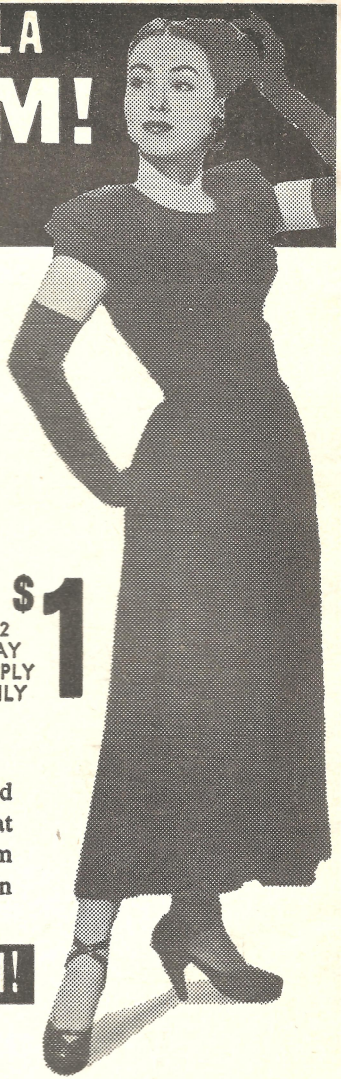

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# STARTLING stories

Vol. 32, No. 2 A THRILLING PUBLICATION FALL, 1954

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## Short Stories



## Features



N. L. PINES, *Publisher;* ED ROFHEART, *Art Director;* SAMUEL MINES, *Editor*

Cover Painting by ALEX SCHOMBURG

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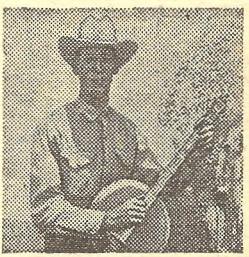
**Course Inspires Music Circle**

Shown above is Miss Mildred Cade, of Houston, Texas. She and a number of her friends are so enthusiastic about the U. S. School of Music's quick easy way of learning that they've ALL taken it up.



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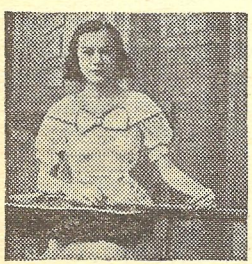

**Learns Faster Without Teacher**

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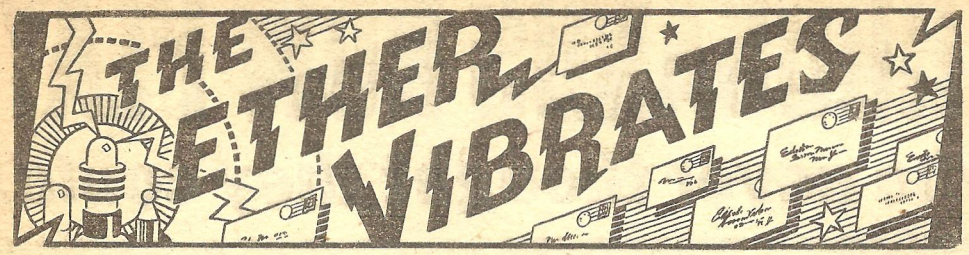


## A Science Fiction Department Featuring Letters from Readers

PREDICTING the next round of scientific marvels, in obedience to some unwritten law, has been a sport set aside for science fiction enthusiasts. Most such predictions, logically enough, have appeared in the pages of science fiction magazines. Picture out consternation, therefore, when browsing idly through some literature rarely addicted to imaginative speculation, to discover that solid businessmen have kicked caution to the winds and are buying into the future.

In a sheet called "The Report," an analysis of business trends circulated amongst top industrial executives by the York Engineering and Construction Co., it is stated bluntly that cancer is curable, space travel is within reach—that no problem is insoluble.

How much is it worth? This is the only question. "Want a one-hour plane to London? A flying saucer? Put your money on the line. The brains and know-how are there. All that's needed is a few more dollars and men."

### *Progress on Tap*

The future of America, says York, is in the laboratories. There, ready to be tapped, are progress and prosperity undreamed of in the past.

Nor is York the only one who realizes this. In the year 1925, fewer than 20,000 people worked in research labs in this country. In 1954 there were 250,000. Such giants as RCA, DuPont and General Electric state frankly that their major business is now research. And as concrete evidence of that belief, the sum of $3,200,000,000 is being spent this year on research by government and private industry for research.

From this research, believes Dr. Robert I. Sarbacher, head of the National Scientific Laboratories in Washington, will come a whole new world. And York tops that by publicly stating that from this research will come the answer to every question now troubling mankind.

Even science fiction authors have never gone quite that far. What evidence do these men and others like David Sarnoff, president of RCA, offer for such optimism? Here are a few of the new developments now in preparation or ready to go:

Ultrafax, a gadget which combines television and photography to send messages across country, including letters, documents, pictures or what have you at a high rate of speed. Sarnoff predicts that Ultrafax will shortly be able to handle 40 tons of mail a day conceivably making air mail as dead as the dodo.

### *No Time at All*

In the realm of speed, W. A. Patterson, president of United Air Lines, predicts passenger jet planes flying at 1000 miles an hour as early as 1975. That means you could fly from New York to Los Angeles in no elapsed time, arriving at the same hour you took off. It's the next thing to time travel.

Mundy Peale, president of Republic Aviation, predicts non-stop jet flights around the globe and Jimmy Doolittle expects freight and mail service via robot planes, without human pilots or crew.

Going further up, we find Hall L. Hib-

*(Continued on page 8)*

# THOUGHTS HAVE WINGS

## *You Can* Influence Others With Your Thinking!

TRY IT SOME TIME. Concentrate intently upon another person seated in a room with you, without his noticing it. Observe him gradually become restless and finally turn and look in your direction. Simple—yet it is a *positive demonstration* that thought generates a mental energy which can be projected from your mind to the consciousness of another. Do you realize how much of your success and happiness in life depend upon your influencing others? Is it not important to you to have others understand your point of view—to be receptive to your proposals?

### Demonstrable Facts

How many times have you wished there were some way you could impress another favorably—*get across to him or her your ideas?* That thoughts can be transmitted, received, and understood by others is now scientifically demonstrable. The tales of miraculous accomplishments of mind by the ancients are now known to be fact—not fable. The method whereby these things can be *intentionally*, not accidentally, accomplished has been a secret long cherished by the Rosicrucians—one of the schools of ancient wisdom existing throughout the world. To thousands everywhere, for centuries, the Rosicrucians have privately taught this nearly-lost art of the practical use of mind power.

### This *Free* Book Points Out the Way

The Rosicrucians (not a religious organization) invite you to explore the powers of your mind. Their sensible, simple suggestions have caused intelligent men and women to soar to new heights of accomplishment. *They will show* you how to use your natural forces and talents to do things you now think are beyond your ability. *Use the coupon below* and send for a copy of the fascinating sealed *free* book, "The Mastery of Life," which explains how you may receive this unique wisdom and benefit by its application to your daily affairs.

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bard of Lockheed, who has gone all out for space satellites and high speed planes and thinks they will eliminate war. There'll be no place to hide, thinks Mr. Hibbard, and wars will be impractical.

Turning to medicine, it seems that polio is already on the way out and the next two will be cancer and heart disease. A Pulitzer prize winning reporter for the New York Times, William L. Laurence, predicts their conquest within ten years—something no science fiction writer has quite dared to do.

In our sister magazine, TWS, a story called TRADE IN, by Winston Marks, uses the theme of human parts stored in "banks." That this is hardly whimsy is confirmed by the roll call of blood banks, eye banks and skin banks. Next in line seems to be tooth banks, since a successful grafting of a tooth on a cat has already been accomplished at Columbia University. And two chemists from the Jewish Hospital of Brooklyn, Drs. Sobel and Burger think they have—to all intents and purposes—made a test tube tooth. Specifically they think they have run down the ingredients which make up a tooth.

If it proves out, it will likely mean the end of metal or plastic fillings. A cavity filled with the basic material of tooth structure itself will be at least as good as the original tooth, according to Burger.

Another step—Dr. John Converse of New York University Medical School predicts heart banks, lung banks, banks of internal organs. Maybe he reads TWS?

### *Let the Sun Do Your Work*

In the matter of daily living too, new miracles are on the way. The solar battery invented by Bell Telephone scientists is already yesterday's news. Today's is the announcement by the U.S. Air Force of another type of solar generator which they visualize as providing power to run a home. Where the Bell solar battery used silicon wafers, the Air Force Generator uses cadmium sulfide, a yellow pigment used in paint, which has the property of generating, and storing, electrical energy from the sun. A strip four feet wide and fifteen feet long, easily accommodated on the average roof, should when perfected, provide enough power for all facilities.

At the General Electric labs a new cold sterilization process is being perfected which may make refrigeration obsolete. Decay microbes are wiped out by a beam of electrons and food can be shipped or stored for a year without refrigeration. The saving in costs would be tremendous.

If you are old-fashioned and prefer a refrigerator, GE has also come up with a new insulating material which is about twelve times as efficient as anything now known. Your refrigerator walls will be half an inch thick instead of three inches, which will mean the same amount of storage space in about half the size.

And if you are worried about germs, a new compound called Permachen, developed by Dr. Frank Fessler promises to make articles treated with it, germ-free for an indefinite period—usually the life of the object. Barber's shears and combs, chair head rests, subway straps, toothbrushes—the list of articles touched by one or more persons is lengthy.

It's a brave new world and it seems that it isn't all in fiction.

## ETHERGRAMS

### TO THE HIGHEST BIDDER

**by Jim Harmon**

Dear Sam: You may be dimly aware that in the last few years you have published a number of letters by me. Mind you, I'm not trying to torment you with past mistakes but there it is—lying there with a sullen expression on its face. But it may surprise you to know that there has been a madman reading these letters besides us. I mean, besides us, there's this other madman. He says there is "a great market for this type of material." (Fish market, poultry market, farmer's market, super market?) . He is allegedly a book publisher. He wants to put those letters from STARTLING and WONDER and FANTASTIC STORY in a book, with "whatever changes (I) feel necessary." I will avoid any remarks here. They would be insufficient to the occasion.

But Sam, this cannot be my book alone. No. It was *you* who guided my destiny. You selected the letters, edited them, and consistent-

ly refused to print the good ones, I feel that where money is concerned, half of the book belongs to you. No, no, I insist. According to the alleged book publisher, we can expect a first edition sale of 10,000 plus a half-million in paper-backed editions. Fortunately I mentioned a number of bosomy women who can be used on the covers.

Actually, as I understand this gentleman's ideas he wants me to write a book of philosophy, literary criticism, social commentary, et al, along the lines of the letters. I plan to devote a section of it to exposing the wild younger generation—say those of about twenty. None of them with a brain in their heads, wild, irresponsible, chasing girls instead of writing letters to science fiction magazines. As if our over-population problem wasn't enough. Have you heard my views on this? Well, I just thought I'd ask.

Yes, it should be quite a book. And as I say, money-wise and credit-wise, it's half yours.

By the way, the alleged publisher wants me to pay him fifteen hundred dollars to publish it. I'll expect your certified check for seven hundred fifty in the next mail.

Is everybody bothered with crackpots like this? Like me, I mean?—*427 East 8th St., Mt. Carmel, Ill.*

It might be worth more than seven hundred and fifty dollars to suppress, but how could we be sure Harmon would be suppressed with it? Personally, it leaves us depressed.

## LIFE BEGINS

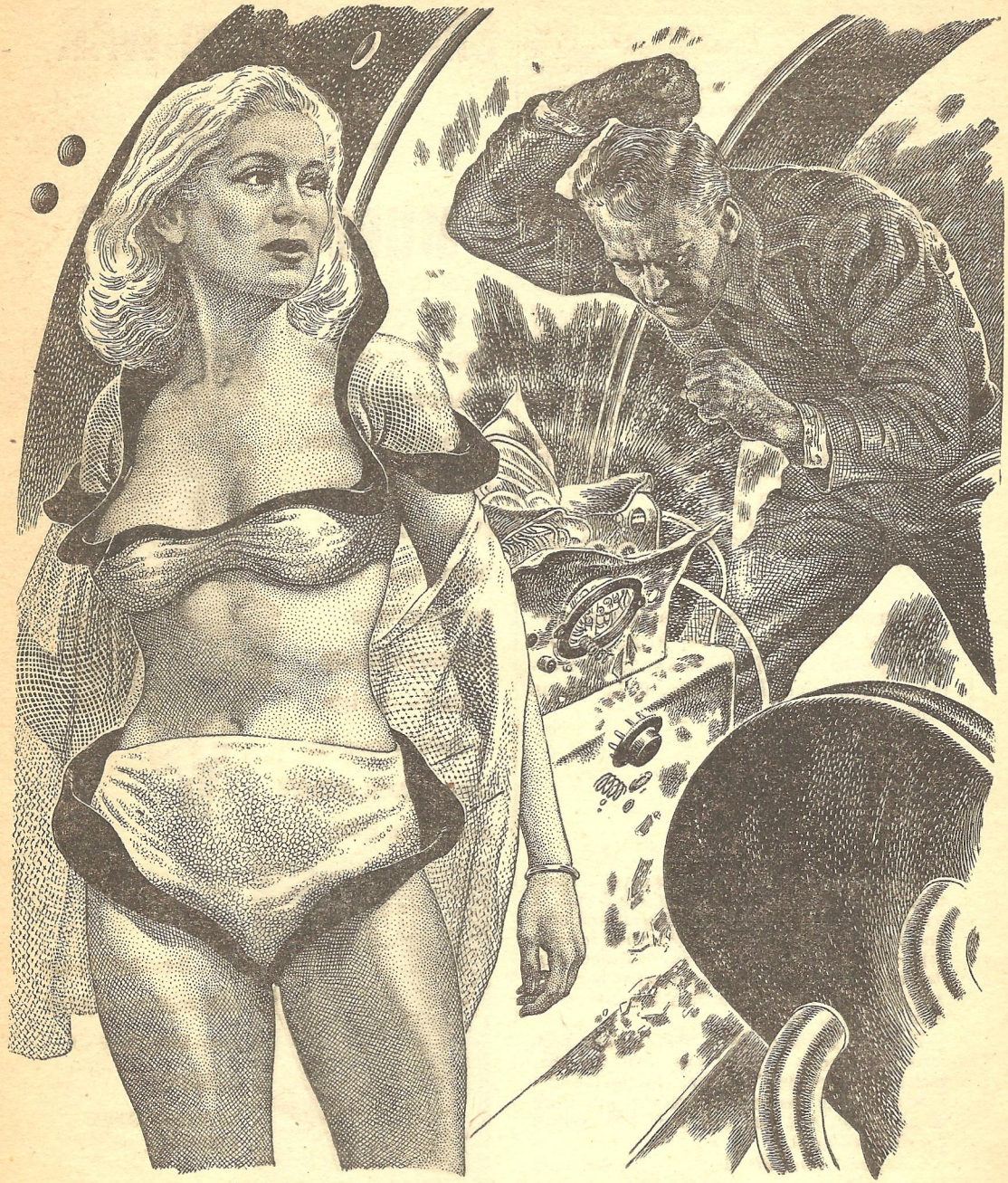
**by G. A. Milne**

Dear Editor: I recently picked up a Startling Story Magazine and started reading it. I put it down only when I'd finished it and now find myself visiting all the book-shops for any copy I can get. This was my first entrance into the realm of Science Fiction and my only regret was that I've lived all these years and never even looked at one.

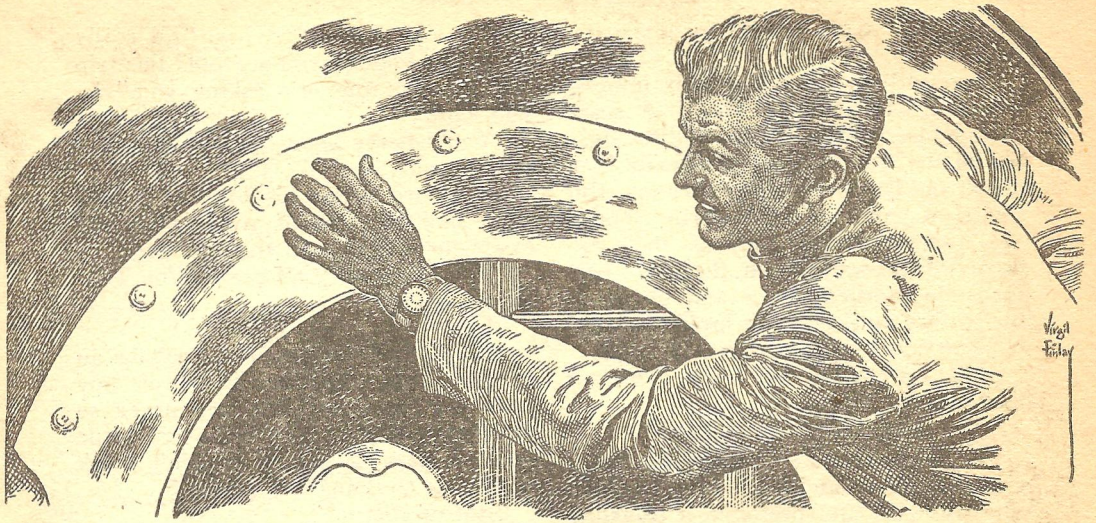
The few SS and TWS that I have been fortunate enough to get I have read and that included the readers' section. In this section I have noticed that others are also interested in obtaining back numbers and have written begging for them.

I'm afraid that this letter is no different. However, as your readers can quite possibly, and with reason too, get fed up with these begging letters especially as no exchange is indicated I would like to mention that I am more than willing to send something suitable by way of exchange. As you are well aware Africa is rather different from Europe, and we have an abundance of articles essentially

*(Continued on page 106)*



*While the frantic rescue mission went on, the alien spaceships watched . . . and waited . . . ready to pounce!*



Illustrated by VIRGIL FINLAY

# SPACEMEN LOST

## A Novel by GEORGE O. SMITH

### I

OVER the hubbub and chatter came the brief warning wail of a small siren. The noise died as the people in the vast waiting room stopped talking.

"Your attention, please!" boomed the loud-speaker. "Passengers for Spaceflight Seventy-nine, departing for Castor Three and Pollux Four, will proceed to Gate Seven for ground transportation to the take-off block. Spaceflight Seventy-nine, waiting for passengers at Gateway Seven!"

There was a moment of silence, then a loud racket burst out as everybody started talking at once. There was only a small flow of people toward Gate Seven, almost negligible, because Flight Seventy-nine was essentially a cargo hop. In fact, this morning less

than a half-dozen headed for the gateway.

Among these was a tall man, impressive in his blue-black uniform. A space commodore, no less. He carried the light bag of the woman who was beside him, proud and happy and eager-looking. But traces of some internal storm clouded the man's features, and as they approached Gateway Seven, the man's perturbation worked closer and closer to the surface until finally it broke through.

"You could still back out," he said.

"No, I couldn't," she said. Her own face clouded a bit.

"Yes, you could," he snapped.

She stopped ten or fifteen feet from Gateway Seven and turned to face him. She was pert and pretty in a traveling suit of gray; brand-new for this occasion. Her name was Alice Hemingway, but she would have swapped it in a minute to become Mrs. Theodore Wilson, even on a commodore's salary.

"Look, Ted," she said slowly. "We've been back and forth over this argument for a couple of months now. Can't you forget it?"

"No, I can't," replied Ted Wilson. "I don't like the idea of you taking to space."

"I do," she said simply. "I want to see these places you are always telling me about. I want to see 'em before I'm sixty. It's no fun listening to your stories, then having you trot off for three or four months on another jaunt while I sit home alone and wonder where you are and what's doing."

"But we—" He paused, thinking. "Alice," he said suddenly, "will you marry me?"

A welling of tears came then, but Alice blinked them back. "If you'd asked me that a month ago I would have said 'Yes,' with no stipulations, but right now I'll say 'Yes, as soon as I come back, if you still want me.' Understand?"

"Not quite."

"I want you to be dead certain that the reason you want to marry me is not to keep me from taking this spaceflight."

TED looked down at her. "I'd really like to know if you accepted this trip just to force me into asking you," he said slowly.

"You'll never know," she said with a bright smile.

He swore under his breath. "I still don't like the idea of you trotting off to Castor Three with that old goat."

"Mr. Andrews? Old goat? Why Ted! You're jealous."

"I am."

"Good. Stay jealous. But don't be an imbecile. Mr. Andrews is merely my boss, not my lover. He has never so much as watched me walk, let alone made a pass at me. I couldn't think of him as anything but a boss."

"But up there—"

Alice shook her head. "Forget it, Ted. I'm still your girl, and I intend to stay that way. Even though its smart for a girl to have a lover or two before she marries, I'm the old-fashioned one-man type. Virgin. No hits, no runs, no errors, and no one left on first base."

"Okay," he said sullenly.

She smiled up at him again. "Ted," she said seriously, "don't you see I have to go a-space? You've ducked marriage because you can't see two people living on a commodore's salary, and also with you flitting off and leaving me home alone. So you want to wait until you get your next boost. But that will get you stationed on some planetary post. I'll get one flight to Base, then be sot down for years. Well, until that time I'm going to travel and see the interstellar sights. I want to see the Dark Column on Procyon Five, I want to visit the Golden Rainbow on Castor Three, and toss a penny into the Bottomless Pit on Pollux Four, and . . . Well, I can do these things so long as Mr. Andrews wants me to travel."

"But—"

"Oh, Ted—please!" she cried.

She clutched at him and buried her face in his shoulder. He held her, then put a hand under her chin and lifted her face. He kissed her, not tenderly, but with more of a frantic striving for some-

thing beyond reach.

The siren wail lifted again and the loud-speaker boomed:

"Last call for Spaceflight Seventy-nine at Gateway Seven. Will Miss Alice Hemingway please proceed to Gateway Seven!"

Reluctantly she withdrew herself from her sweetheart's arms and turned to the gateway. Ted picked up her small bag and followed her.

As they reached the gate a smallish, nervous, wiry man with a clipped gray mustache eyed Alice crisply.

"Ah, Miss Hemingway, you're just in time," he said. He smiled thinly as he looked at Ted Wilson. "However, I presume the delay was justified. Commodore, I think the use of your handkerchief is essential."

Before Ted could reply, Mr. Andrews had walked through the gateway to the waiting spaceport bus. Alice turned back to Ted and held up her face. This time their kiss was less frantic, but also less personal. It was chaste, and brief, and proper. It promised for the future, but it did not give any part of that future warmth or passion as a down payment.

Then Alice came out of his arms and went through the gateway to climb into the bus beside her boss.

As Commodore Wilson turned away, the bus drove off along the road to the waiting spacecraft.

COMMODORE WILSON entered the base commander's office and smiled glumly. The commander, Space Admiral Leonard F. Stone, a man of about forty-five and as lithe and as hard as a man of that age could be, looked expectant. His command was exacting and just, but he was also human.

He said, "What's troubling you, Wilson?"

## Thimble, Thimble

**THE problem of locating something lost is a problem in two dimensions today—even a lost airplane. For a lost airplane is presumed to be down. And even in two dimensions, a search for something missing is a tremendous task, covering huge areas of the earth which must be combed in a definite pattern.**

**Picture this search expanded to three dimensions in space. Picture all distances extended from miles to light years. Picture the smallest degree of error and how great it becomes when run out to a distance of several light years. And try to imagine the difficulties of a search for a tiny ship lost in space. Or—read it here in this gripping, different story.**

***—The Editor***

"Admiral," Ted Wilson said, "I know it is against the unwritten rules to discuss the matter of increase in rank, but I wonder if we mightn't break them for a minute or two."

"We might if there were proper justification. Why?"

"A commodore's salary is just a bit meager for marriage," said Wilson unhappily.

Stone's face clouded a bit and he nodded seriously. "I know," he said. "But there's a reason, Ted. We do prefer to keep our commodores single so long as they're in active flight service. So long as you are well-fed, well-clothed, and well-housed yourself, the monetary payment is sufficient to take care of your personal

needs. I know it is not enough to provide for a wife on top of that. Of course, some men do. And others manage to marry well-to-do women."

"Mine is not well-to-do, but I don't want to make her do with less."

"Naturally."

"Then how about this rank business? I'm about due."

"You are."

"Then when can I expect it?" asked Wilson.

Admiral Stone looked at him determinedly. "You can hasten that process yourself, Wilson. By acting a bit more for the benefit of the Service than you have in the past."

"Why, what do you mean?"

"There's more to rank than merely following orders to the letter. Now, you've never disobeyed orders, and it has been obvious that when orders coincide with your personal ideas, you act eagerly and swiftly. But when orders are opposed to your pleasure you act at the last moment and follow them reluctantly along the thin outer edge."

"For instance?"

"For instance last November. You had front line tickets to the finish post of the Armstrong Classic, but you were ordered on a training flight around and through the Centaurus System, to last no less than ten days and no more than thirty, at your discretion. You returned in ten days and four hours, even though you couldn't see the end of the Armstrong affair. Then, last May you were ordered to Eridanus Seven, which is a remarkably interesting place as I recall from my early days. You got home barely under the wire. Twenty-nine days, twenty-three hours, forty minutes, and a few seconds. Follow?"

Ted nodded slowly. "I felt that my crew would appreciate my attitude," he said.

"Certainly. They did. Both times. They also appreciate your stalling in a stack-circle, waiting for that last half-hour to expire so they'd draw overtime flight pay. But you've got to remember, Wilson, that we are running the Space Service for the public weal, not for the benefit of the spacemen. A parent does not bring up a child knowing only the pleasant things of life. A balanced program of work and play is essential. I know that the Centaurian run is no picnic, but it is a fine training for spacemen. Now, that'll be all. I'm not criticizing you Wilson. I recall doing similar things myself years ago. It does draw a crew closer to their commander when he gives them consideration. But making them work makes them efficient, and they will also love a commander who mixes well his periods of pleasure with hours of hard work. Agree?"

"Yes. Of course."

"Fine," said Admiral Stone. "So now that you know, we'll watch you for a bit. If you come through, you'll get your increase in rank—and your girl." He smiled. "You're a good commodore, Wilson. But with a little work and application you could be brilliant. We need brilliant men. Remember that. Good-by and good luck, Commodore Wilson . . ."

HIS name translated from his native tongue, was Viggon Sarri. In medieval times he might have been called "Sarri the Conqueror" for his exploits, his conquests. But of course then it was the king, emperor, or caesar who led his own troops.

In these days the ruler sends out men of military might to fight his battles, and Viggon Sarri was not a ruler. His position was the equivalent of space admiral in the Interstellar Service, and though devoted to his own service, he was only a paid hand.

His home was far across the galaxy from Sol and the sprinkling of stellar systems colonized by human beings. Viggon Sarri had never met a human, he did not know that this section of the universe had any trace of sentient life. He was just out looking for new worlds to exploit, perhaps to conquer. A new district to colonize, perhaps, or a world of beings advanced at least to the point where the produce and manufacture of his homeland could be sold for metal.

Naturally, Viggon Sarri explored space at the head of several hundred ultra-fast and ultra-hard-boiled fighting spacecraft—fourteen big battle wagons, two fighter carriers each providing a hundred one-man space attack craft, and one hunter, a detecting craft. It was loaded to the astrodome with every device for locating evidences of anything from advanced races to enemy spacecraft.

Sarrie rode in his flagship, one position ahead of the hunter. And so, when the detecting equipment in the hunter registered that some race in this sector of the galaxy was advanced enough to be using the power of the atomic nucleus, Viggon Sarri gave orders for his fleet to spread out in a big, flat dishlike formation, flatwise toward this section of the sky.

It came to as near a halt as anything can approach in deep space, and Viggon Sarri called a conference.

He sat at the head of the table, his two second officers at his left and right. They were equal in rank, Regin Naylo and Faren Twill. This irked them both, and for a long time they had been striving to rise above one another. But only Viggon Sarri knew which was listed in the sealed orders, to be opened only in the case of the death of the supreme commander.

At the far end of the table sat Linus Brein, commander-mathematician of the hunter speacecraft.

Viggon said, "Linus, what do we know about these people?"

Brein thought, then said, "Very little, actually. They use atomic power. They have discovered interstellar flight. They seem to have some interstellar commerce. They use the infrawave bands for communication across space. I would say, off-hand, that they may have colonized no more than a dozen planets, and are exploring perhaps a dozen more. I would also guess that their exploration is done by sheer go-out-and-look techniques."

"Why do you suggest that?" asked Viggon.

"Analogy. Their use of the infrawave is not highly developed. I doubt that they have planet-finding equipment. I have not noticed any attempt to use the infrawave as a detecting and locating means. Only for communication is the infrawave employed by them."

"I see. Any more?"

"Not at present," said Linus Brein. "We will collect more as our men pick up information and our analyzers compile data."

"Keep me posted," ordered Viggon Sarri.

He sat there in silence, a tall man with a thin face that looked wolfish. His ears were flat and distorted, to the human point of view. His eyes were glittery bright, having that shiny cornea characteristic of the nocturnal animal of Terra. He had six stubby strong fingers on each hand and a long double-jointed thumb. Each hand had two palms, fore and back so that the fingers could curl either inward or outward. His elbows were double, one bent in or locked straight, the other bent out or locked straight, as he moved.

VIGGON stared at the ceiling, lost in thought. His eyes, roaming independently gave his features a bizarre look which his own race thought quite natural.

Finally he said, "Has anybody any suggestions?"

Regin Naylo said, "I say we attack as soon as we know more about them."

He felt confident. He believed that his admiral enjoyed swift and decisive action, and by suggesting it he hoped to show that his thoughts ran in the same channels as those of his commander.

Faren Twill said, "It might be better to make allies of them, rather than enemies."

Twill held the notion that Viggon Sarri's main motivation was to build and expand in the easiest, and most profitable manner. And he felt that careful negotiations might pay off better than invasion and strong conquest.

But in truth Viggon Sarri himself did not know which course to take. He was

not above the use of force, if force were needed. Nor was he against the idea of peaceful negotiation, even the formation of an alliance. Which course he would take depended entirely upon what sort of culture this was, how the people reacted, and what they favored. For such knowledge he would rely on data collected by Linus Brein and analyzed by the mathematician's vast bank of computers.

Regin Naylo grunted in a superior tone. "They sound like an inferior race. Inept and primitive. Let's not waste time."

Faren Twill shook his head. "You want to barge in there with the projectors flaming and conquer them by force. That would be easy, but would it leave enough to make the conquest economically sound?"

"Can you sell anything to mice?"

Faren Twill grinned. "Cheese," he suggested. "Besides, an angry gang of rats can do in an elephant, you know."

"Chicken," sneered Regin Naylo.

Of course none of them had ever seen a mouse, a rat, an elephant, or a chicken. But on their homeland, a planet called "Brade," there were myriad life forms, just as on any inhabitable planet. The forms of animal life mentioned were similar enough to permit a free transliteration. "Chicken" also existed in its completely alien form.

But until the native tongue of Brade becomes common to Earthmen, this loose transliteration of their speech characteristics suffices to convey their meaning. Since their grammar bears no relation to any Solarian tongue, it must be converted rather than translated, or even transliterated. So if they sound like people of Earth instead of extra-solar aliens, that is the only way to convey their meaning.

"Twill is right," said Viggon Sarri. "We must be wary. This may be a communal culture, like that of the insect, ant, in which the individual is expendable so long as the nucleus is undamaged. In such a case suicide fighters would swarm over us, and against such we could not stand. If, on the other hand, this is a completely individualistic, or anarchic culture, we must call Brade for help. We would need a horde of space fighters to control the entire group." He looked at Linus Brein. "You will, of course, have their language analyzed?"

"We are working on it now. It is not difficult to connect the sound forms with the meaning, under known conditions and situations. But it is extremely difficult to make such analysis when we have not the foggiest notion of what situation is being described by the sounds. I—"

A WINKING light on the wall called his attention. Linus Brein touched a stud on an armlet. The tiny communicator said, in a thin, tinny voice:

"Commander Brein? Analyst Hogar speaking. The space-strain detectors have just picked up a violent response. The computer-analyzer bands report the following probability to at least three nines: That a space craft has foundered due to the failure of the warp-generator. Have you any orders as to our next moves?"

"Yes, Hogar. Record everything. Analyze everything!" He let the stud snap back into place, then said to Viggon Sarri:

"An ill wind blows, Admiral Sarri. Their misfortune may be our gain."

"It might indeed." Viggon nodded.

"I suggest that we send a fleeter out to seek survivors," said Regin Naylo.

"No," said Faren Twill. "We will learn more by listening to their communications and watching how they face this problem."

"What's better than a being able to interpret his own sounds?" snapped Naylo.

"Taking a little longer by doing it ourselves, and not giving them any warning that there stands another intelligent race not far offside. Why forearm them?"

"Right," interposed Viggon Sarri. "We watch from a distance."

Linus Brein stood up. "I'd best be going back," he said. "This language analysis may get deeply involved. I'd feel better if I could supervise it myself. May I leave, Admiral Sarri?"

"We'll all leave. This conference is over until more detailed information is at hand. My orders are: Take no action, but observe closely and critically. Dismissed, gentlemen. We'll all drink to success!"

Viggon Sarri pressed the stud on his armlet and ordered a tray of refreshments. Linus Brein did not stay for his share.

## II

SPACEFLIGHT Seventy-nine took off, lifted on schedule by Pilot Jock Norton. Norton was a big man, rather on the lazy side, but a good pilot. If he had had any ambition at all, he would have owned his spacecraft, maybe a string of several, instead of being a paid space jockey.

But Jock Norton lacked the drive, or perhaps had never seen anything he actually wanted. He was a love-em-and-leave-em kind of guy who spent everything he earned on good times and luxuries. He spent no time seeking out the better pay loads as other pilots did, and so did not collect any of the fancy commissions for being a good businessman. He had gravitated to a standard contract type of job and with this he was satisfied.

His cargoes were invariably bid-basis job lots, instead of valuable merchandise with a delivery factor. He ran mail loads mostly—mail that could not, for legal reasons, be micro-microfilmed, transmitted by facsi-wave, or recomposed by infrawave at the receiving end. Legal contracts, documents, and the like, the one-and-only original of which must bear the *bona fide* signature of both parties.

Norton took the spacecraft up, fired the warp-generator, and headed for Castor Three at about forty parsecs per hour. Then, with the control room on the full automatic, he went down to the salon, because it had been a couple of months of Sundays since he had been pilot-host to anyone as young and attractive as Miss Alice Hemingway. Most of his passengers had been businessmen. The few women had been wives of such businessmen, a bit on the dowager side, and therefore more boring than interesting.

But Miss Alice Hemingway was interesting. Not that Jock Norton favored her ash-blond and dark-eyed attractiveness more than he would have admired a redhead or an olive-skinned brunette. He favored all women under thirty who were properly rounded here and there—especially there—and who had clear-skinned faces with regular features.

That Alice Hemingway, secretary, was traveling with her boss made her even more interesting. Norton had cased Mr. Charles Andrews carefully and put him down as a Napoleon type, peppery and active, and probably well-to-do, but not personally attractive to the opposite sex. It was money, decided Norton, that bought a reasonable facsimile of affection to Mr. Charles Andrews.

It would be masculine virility, thought Jock Norton, that would offset the money of Charles Andrews and really bring a proper emotional response from the girl.

"Good morning," he greeted them from the last step of the ladder that led down from the control room.

"How do you do, Pilot Norton," responded Andrews.

"My goodness!" exclaimed Alice. "Isn't that dangerous?"

"Isn't what dangerous?" asked Norton, with a wide, lazy smile.

"Your leaving the ship to run itself."

"Not at all." Norton showed his superior knowledge. "Our auto-pilot is the best that money can buy and maintain. And after all, Miss Hemingway, there is little a pilot can do while we are in transit. The auto-pilot does the job from after take-off to before landing. In between, the human pilot relaxes and enjoys his space travel. So—may I

build you a cocktail? Or maybe you'd prefer a highball."

"At this hour in the morning?"

Norton laughed and inspected his watch, "I admit that it is ten o'clock by Chicago time. But it is past midnight on Polaris Two at Minervatown. It's three A.M. in Leyport, Procyon Five. It's even three o'clock in London, Terra."

"Besides," said Charles Andrews curtly, "we're hard at work."

"Work?" exploded Norton loftily. "You're hard at work in deep space?"

"Certainly. Deep space or hard planet, work must go on. I did not get where I am by goofing off, Pilot Norton."

Jock Norton grinned. "All work and no play, you know."

"All play and no work is worse."

"It's more fun," said Jock, with a feeling that he was coming off second-best in this fool argument. "Look," he said, "everybody relaxes in deep space. It's customary. It's holiday."

"It's damn foolish." Andrews turned to Alice. "Miss Hemingway, what do you think?"

"I'm half-inclined to agree with you, Mr. Andrews. But you must know I'm thrilled to be a-space. I've never been off Earth before."

"Oh. Then I capitulate. Pilot Norton, will you give Miss Hemingway a space tourist's run of the ship, please?"

"Be happy to." Norton nodded.

HE LOOKED around the salon, from face to face. There were four others there, all of them watching with a blank sort of interest. Norton took a deep breath of inner cheer for his luck. All the rest looked as though nothing could be as boring as a tourist's run of a spacecraft. He made the gesture of asking, but all shook their heads.

Norton opened the small bar and set everyone up to cocktails. Then he said to Alice, "Now, let's start at the bottom and work our way up."

"Any way you say," she told him.

Andrews got to his feet. "I think I'll tag along."

Norton swore below his breath.

Alice walked between them as Norton explained the workings of the spacecraft. She found Norton a good talker, and his lazy manner of speech somehow managed to convey a lot of information that a more intense man would have flubbed, because of a greater preoccupation with facts.

Even Mr. Andrews seemed interested, although he had been a-space many times before, as a matter of business.

Norton explained the workings of the power pile in a much oversimplified way, showed them the various rooms of machinery for maintaining air and water and electrical circuits throughout the ship. As he had suggested, they started at the bottom, looking out through the below-hatch at the hull of the ship, where the misty blue corona flared down and back from the eight tubular drivers that thrust their blunt cylindrical noses down in a large circle, surrounding the after viewport.

Then Norton worked them aloft slowly, up through the room filled with water for the reaction mass, and hurled out from the throat of the driver tubes as a molecular-atomic gas so highly energized that it was not water, but nascent hydrogen and oxygen, completely ionized. The coronal flare below, he explained, was the recombination of the nuclei with their electrons in shells, and the partial recompositions of the gases into water.

He showed them the warp-generator that created the extra space field around the ship, nullifying every physical attribute of matter. Neither mass nor inertia remained, so that the thrust of the flare had no resistance against which to exert its force, resulting in a drive that violated the Einstein equations. Forward velocity reached terminal when the interstellar matter provided a tenuous medium against which the velocity of the ship found resistance.

He showed them the magnetic-mass detector that protected them against meteors, and explained that while the thing was primitive, it was the best that Mankind had. The infrawave was hope-


The dome became a riot of flaming green

less because it had an instantaneous velocity of propagation and was also nondirectional, and therefore neither direction-finding nor ranging could be accomplished with the infrawave.

But the magnetic-mass detector was not as hopeless as it looked.

He said casually, "There were a lot of tall stories back in the Early Twentieth Century about spacecraft filled with course-computing gear that measured the course of meteorites, then directed the spacecraft. A more practical study of any such device shows that any extraneous object that does not change its aspect angle is necessarily on a collision course. Ergo, any target that does not move causes the alarm to ring, and the autopilot to swerve aside." He grinned and added in a low voice, "We're as safe as if we were all in bed."

As his arm touched Alice's she realized that Jock Norton had been entertaining the idea of bed ever since this tourist's run had started. She smiled because it amused her. Jock Norton had made a snap judgment, probably because he had seen a lot of such shenanegins as man and woman playing employer and secretary before. She almost laughed at Norton, realizing that he was displaying all of his knowledge and his virility in the hope of convincing her that he was probably more fun in bed than the elderly Napoleon type with whom she was traveling.

She stole a look at Andrews, comparing the two men. She wondered whether Andrews had cottoned onto Norton's play and if he had, whether her boss found it funny or irritating.

AS THEY walked along a curved corridor, she saw with some surprise that twice Mr. Andrews had lagged back a bit, then had come forward behind them to walk by her side instead of on the far side of Jock Norton. And both times Norton had quietly lagged back to circle her and step forward between them, explaining quietly that Mr. Andrews could hear his explanation better if he, Norton, walked between.

Alice was still wondering whether Charles Andrews actually held any off-trail notions about his traveling secretary when all hell broke loose.

First came the wild clangor of an alarm, and the automatic cry of a recorded order:

"Your undivided attention, please! This is urgent! You have eleven minutes from the end of this announcement to follow these directions. There has been a partial failure of the warp-generator. If this failure becomes complete, and the space field collapses, the effect will be that of precipitating intrinsic mass into the real Universe while traveling at some high multiple of the velocity of light. The spacecraft then will drop instantly below the speed of light but in doing so will radiate all the energy-mass equivalent to those multi-light speeds, according to the Einstein equation of mass and energy. It is therefore expedient that you repair to the lifeship locks and prepare to debark. The partial failure may or may not continue. If not, there will be no more danger. But in case of continued breakdown—"

The recorded announcement stopped abruptly as a louder alarm bell rang briefly. Then another voice from the squawk-box shouted:

"The warp-generator is failing! You have—

"A third voice came in automatically saying, "Eleven minutes," after which the second voice continued neatly, "to make your way to a lifeship and debark. Please do not panic. You have plenty of time."

"It's this way," Norton said anxiously.

"We'll find it," said Andrews. "I know this spacecraft type. Hadn't you better take care of your other passengers?"

Norton wanted to swear. It would have been so neat if Andrews hadn't insisted upon coming along on this tourist's run of the spacecraft. As it was, Norton couldn't quite bring himself to suggest that Andrews take care of the other customers while Norton himself

took care of the girl. On the other hand, Norton had no intention of rushing off to take care of the others when they were probably being taken care of right now by the engineer-technician. He said that, and repeated it to give it force.

"This way," he said.

The announcer bawled, "You now have ten minutes!"

"Couldn't I get my bag?" pleaded Alice.

"Anything of real value in it?" asked Norton.

"Not really."

"Then we'd best leave it." Norton breathed a sigh of relief. Now she wouldn't find it more expedient to travel with the bunch upstairs.

He led them up a flight of curved stairs and around another curved corridor as the announcement howled:

"Nine minutes!"

The squawk-box said, in a more natural voice, "Jock? Look, I've got this section under control. How're you doing?"

"I'm doing fine, Limey. We're almost at the below-station lock."

"Be seein' you. Luck."

The announcement yelled:

"Eight minutes! You all have plenty of time. Remember, safety is more important that blind speed! Listen!"

The tremolo of an organ filled the spacecraft—vibrant, thrilling, brilliant music rising over the *throb, throb, throb* of heavy bass, beating time just fast enough to keep feet moving briskly, but nowhere fast enough to cause panic or fumbled steps.

"Seven minutes!" came the cry.

NORTON'S hands closed on the space lock and he twisted the emergency handles. The inner door swung open ponderously and they walked past the portal. The lock swung behind them and the dogs went home.

"Six minutes!" came a less resonant call from a smaller loud-speaker in the lock.

Jock Norton handed Alice through the small space lock of the lifeship, boosted Andrews in after her, then climbed in himself.

"Five minutes!" was almost cut off as the lifeship space lock swung shut.

"Four minutes!" came as the big outer space lock was cracked.

Norton's hands on the lifeship controls moved and the little spacer leaped out of the doorway.

On the infrawave they heard the call of "Three minutes!" then "Two!" and finally the announcement, "You are now all debarked and are in places of safety. The distress call has been sent constantly from the moment of danger. Sit tight and make no foolish moves until help comes. Do not look to the rear, as the explosion of a collapsed field generator is brilliant enough to sear the eyes—"

The voice stopped abruptly as there came a wave of sheer heat. The ports on the side of the lifeship flared blue-white, and the spacecraft bucked as though it were being driven into a heavy gas cloud.

"What was that?" blurted Andrews, picking himself up off the heaving deck.

Norton shrugged. "That was Space-flight Seventy-nine going to hell in a wicker basket," he said.

"But why? We weren't hit by anything."

"You can bet not," Norton said cheerfully. "Don't you know about space-flight factors? The Einstein equation?"

Andrews eyed the pilot coldly. For several hours the younger man had been explaining all sorts of things in a condescending manner, showing off his knowledge in a field that he knew far better than any one else present. This was galling to the financier, who was used to paying mathematicians and physicists small change.

"I don't have time to clutter up my mind with equations," he told Norton coldly. "I usually pay people to have them explain these things to me. So go right ahead."

Norton's thick hide sloughed off the insult because he was still the bright one.

He said, "The original Einstein equation of mass and energy shows that as

the speed of light is reached, the mass reaches infinite mass. This is an obvious impossibility, since even the total mass of the Universe is not an infinite mass. So when a body traveling at faster-than-light is hurled into the real Universe by the collapse of the warp-generator, for the barest instant it is actually traveling beyond light. This causes it to assume some unknown factor of mass that no physicist has been able to theorize yet, but must be the impossible infinity-plus. At any rate, the fabric of space is twisted, as if by a gravitational field so powerful that the field wraps up around itself and forces the mass into a Universe of its own."

"You're talking gibberish."

"Sure I am. But you find me someone who can explain this effect without talking like an imbecile and I'll buy you a good cigar."

"All right—go on. What is supposed to happen?"

Norton shrugged. "If a volume of space is removed from the structure of space—this is more gibberish, Andrews, believe me—then there must be an instantaneous flow of space back to fill the gap. Now, for God's sake don't ask me why empty space has got to flow into a place where some empty space has been removed. I've always been taught that nothing from nothing leaves nothing. Maybe nothing from nothing leaves less nothing than before, but that sounds as silly as the rest of the whole fool argument. At any rate, every time a warp-generator collapses, the same twist occurs in the structure of space. There have been billions of bucks' worth of equipment shot into nothingness by the White Sands Space Academy in the last hundred years, just to see if someone can come up with a logical answer."

ANDREWS said coldly, "All right. So now what do we do?"

"We sit it out," Norton said cheerfully.

"Doing what?"

"Decelerating to a velocity below light. We still have our ship's intrinsic to get rid of, you know."

"Why don't we keep on?"

"Because this is a lifeship and not a spacecraft. We have only enough space power to pull ourselves down safely, with some reserve, and then we use the reserve to emit our distress call. Cheer up. We got off safely. This will be a breeze."

"It will? And why are you so happy about it?"

Jock Norton smiled, then said the one thing that removed all and any chance of Alice Hemingway ever looking upon him as a desirable character, virile or not.

"Spaceman's insurance," he said. "For spacewreck, one thousand cold clams. For debarking with every passenger within a reasonable distance of my position at the time of distress, an award of one thousand more frogskins each. This is not so much an insurance award as it is a reward incentive for a spaceman to do the right and proper thing. Then, for every lonely hour adrift in deep space, from the time of distress until we are collected safely, one hundred fish. This should add up to a neat sum by the time we are picked up. Tommy Walton and Joe Lake drifted for eight hours and collected. Sure, we're sitting pretty and we'll be rescued in due time. So let's settle down and take it easy."

Andrews said, "I suppose you've spent half of your time a-space hoping for some disaster so you could collect a neat pile."

"Not quite that bad. This is likely to be sure rough before we're collected. But it does pay off. So let's relax, huh?"

Alice was breathing a silent prayer to Commodore Wilson that he make it a quick run. She was sick and tired of spacing already. . . .

Admiral Stone said, "These are your orders, Wilson. You are to take your squadron out to Cube X-Z-Fifty-nineteen, District Forty-seven. You'll have to comb it inch by inch."

"I'll comb it millimeter by millimeter," asserted Wilson. "Miss Hemingway was on that spacer."

"Don't do anything foolish," warned the space admiral. "Just remember that you're a flight commodore and not a full squadron commander yet. You have your orders."

"I have. And I'll bring them back. Both lifeship loads."

"Then get going. Remember that every hour decreases their chances of a safe rescue. Luck, Wilson. Spaceman's luck!"

"Correct, Admiral Stone."

Less than a quarter-hour later, Ted Wilson's flight of twenty-five swift light spacecraft went barreling up out of Chicago Spaceport and into that region of the sky called Gemini. . . .

Viggon Sarri sat in the main control cabin of the hunter spacecraft, quietly waiting for Linus Brein to finish some involved equations in logic symbols. When the long string of symbols had come to what looked like a satisfactory conclusion, Brein looked up.

"Any success?"

"Oh, yes indeed." Brein nodded. "Of course our interpretations of their speech is only symbolic at this point. But this much we know. This series of sounds—" he snapped a switch on the side of his desk and a wall speaker delivered a series of what sounded to them like sheer gibberish — "connotates as follows: Voice A has called for contact with any receiving station. Voice B has responded, informing A that he is ready to receive. Voice A then delivers a running account of the disaster, delivering his computed position, vector of travel, and space coordinates. I've untangled some of their tongue." Brein replayed the recording and stopped it after the first passage. He parroted the gibberish, " 'Spaceflight Seventy-nine calling Distress.' That, Viggon, is interpreted in our tongue as 'Identification Number So-and-so calling to announce disaster.' "

HE LET the recording run a bit then said, again parroting the gibberish, " 'Chicago Spaceport, Interstellar Service to Spaceflight Seventy-nine. We read you five by five, go ahead. What is your distress?' We interpret the reply as, 'Base of Operations has received your distress call. Please elucidate.' What follows defies identification, Admiral Sarri. Until we can meet one of these people and learn more of their physiogomy, we cannot hope to unravel their numerical system. Damn it, we don't even know how many fingers they have."

"Or," suggested Sarri drily, "whether they might have stopped counting on their hands."

"Indeed." Linus Brein nodded thoughtfully. "However, not long after the reception of this distress signal, the entire infrawave band seemed to fill up with all sorts of signals, all of them repeating the sounds that we assume are the space coordinates of this foundered spacecraft."

"Indicating that this is not a completely anarchistic or communal, insect-type culture. The individual is important."

"I would say so."

Regin Naylo smiled. It would have been an odd-looking facial grimace to an Earthman, for it turned the corners of his pencil-thin lips down and furrowed the skin of his head between the gleaming eyes and the low, ragged hairline.

Viggor Sarri said, "What do you find so amusing?"

Regin replied, "If they are individually important, then the culture finds the individual important, as opposed to the insect-type which wouldn't mind losing a few billions so long as the inner hive is intact, or the anarchistic culture where the loss of a unit is not even noticed, because every one of them is so preoccupied with his own affairs that he can take no time to consider the next man."

"Right. So what?"

"I say let's hit 'em while they're all occupied in tracking down the survivors of this wreck."

Faren Twill grunted sourly, "Ever try to interfere with a dog and her pups? You get bitten whether you mean good or ill. If you care for my opinion you'll . . . Or do you give a damn?"

"Go ahead."

"I say we just slide in there quietly

and collect the lifeships. Then, later, we can go in boldly and establish our superior position."

Regin Naylo shook his head superciliously. "I say we should hit 'em with all we've got and establish our physical superiority. Look, Faren, either way this gang of subhumans is going to end up in some form of servitude to us. Let's make it the quick and dirty way and save manpower. Besides, what can they possibly have that we want?"

Twill shrugged. "Any subject race is a good market."

Naylo laughed. "I'd rather shove it down their throats by taxation. Then we'd collect without having to give them a string of uranium beads for exchange."

Faren Twill asked Viggon Sarri for his opinion.

Viggon said, without changing expression, "There are races that will not abide the idea of collaboration, and there are races that either revolt or die under any superior government. It has been my lifework to expand the Bradian culture, one way and another, across the galaxy. When we finish with this problem here, another world—in this case another series of colonized worlds—will enter one of the forms of economic relationships with Brade. Whether we blast in and smash them, or ooze in and coerce them quietly; take them over, or hail them as an ally."

"Ally?" roared Regin Naylo scornfully. "This bunch of primitives who haven't even got an infrawave detector?"

"Ally?" snarled Faren Twill disgustedly. "This people who cannot protect their spacecraft from warp failure?"

Viggon Sarri held up his doubly-prehensible hand. "Either of you may be right," he said. "But remember that we do have time. So we'll wait until we know more about their basic character before we take any course. Go consult Linus Brein. Watch his computations and his evalutations. Come back when you have more complete data for your own evaluation."

Naylo and Twill left together.

Viggon Sarri called Brein on the ultra-infrawave.

"Linus? My headstrong youths are coming over to look at your data. Like any other kids they know everything, but dammit, like a lot of kids one of them may be right. Maybe I'm overcautious. So give them all the data you have, and let them evaluate it. I'll happily pin a medal on one of them if he's right and I'm wrong. Okay?"

Linus Brein agreed.

## III

UNDER the temporary command of Commodore Theodore Wilson the space squadron sped out into the uncharted wastes of the sky on the true line toward Castor. Slowly, as the squadron flew, its component spacecraft diverged in a narrow cone so that the volume of space to be covered would fall within the scope of the detection equipment aboard each ship. Computers flicked complex functions in variables of the laws of probability, and came up with a long series of "and-or-if" results.

Toby Manning, Master Computer for the squadron, sympathized when Wilson showed the latest sheaf.

Wilson grunted, "This is no damn good at all. It sort of says that the lifeships will be wherever we find them."

Manning nodded. "Like the problem of catching a lion on the Sahara Desert. You get a lion cage with an open door, electronically triggered to close at the press of a distant button. Then the laws of probability state that at any instant there exists a mathematical probability the lion is in the region of the cage. At this instant you shut the door. The lion lies within the cage, trapped."

"Stop goofing off. This is no picnic. Have you any idea of how many square light years we have to comb?"

"Cubic light years, Commodore Wilson."

"Cubic. So I'm sloppy in my speech, too? Look, Manning, all we really want from you is the overall conic volume in which the lifeships must lie. You know

the course of Flight Seventy-nine. You know the standard take-off velocity of a lifeship. The forward motion plus the sidewise, escape velocity, produces a vector angle which falls in the volume of a cone because we don't know which escape angle they may have used. We can pinpoint the place of escape fairly close."

"Yeah, within a light year. Maybe two."

"And we know that the lifeship will reduce its velocity below light as soon as possible."

"Naturally."

"So somewhere on that vector cone, or within it, is a lifeship—two lifeships—traveling on some unknown course at some velocity considerably lower than the speed of light."

"We've located 'em before. We'll locate 'em again."

Wilson shook his head worriedly. "That's a lot of vacant space out there. Even admitting that we have the place pinpointed, the pinpoint is a couple of light years in diameter, and will grow larger as time and the lifeship course continues. Or," he added crisply, "shall we take a certain volume of space and assert that a definite mathematical probability exists that the survivors lie within that volume?"

"Sorry, Commodore. I didn't mean to be scornful."

"Well, then, you'd better set up your space grid in the coordinate tank and we'll start combing it cube by cube."

"Correct," said Toby Manning.

The "tank" was not really a tank. It was a stereo projection against a flat glass wall at one end of the big Information Center. Room below the bridge section of the flagship. Wilson went there some time later to watch the bustle as the tank was set up to cover the segment of space they intended to comb.

Even looking at the thing required some training. The plotters and watchers wore polaroid glasses to provide the stereo effect. Through the special glasses, the tank looked like a small scale model of this section of the sky. Castor and Pollux and other nearby stars were no longer pinpoints on a flat black surface, but tiny points of light that seemed to hang in space, some in front of and some behind the position of the screen itself.

Behind the glass screen, a technician was carefully laying a curve down on a drawing table with a pantagraph instrument. As he moved the pencil point along the curve, a thin green line appeared in stereo, starting close by and abruptly, and leading towards the dot labeled Castor.

The loudspeaker said, "This green line is the computed course of Spaceflight Seventy-nine."

A RED KNOT was placed on the line. "This is the approximate point of explosion."

Wilson asked, "Is that nominal or is that placed on the minus side?"

"The spot is placed to give the maximum factor of safety."

"Good."

"Now, after considering the probable velocity of escape from Seventy-nine, which would be a lifeship leaving the mother vessel at a ninety-degree relative course at full lifeship speed, we find a vector combination of velocities and courses that diverge from the main course."

From the red knot another line went out at a small angle to the original course, thin and red.

But because we have no way of knowing what the axial attitude of Seventy-nine was at the moment of escape, the volume of probability now becomes a cone."

The angled red line revolved about a green course line describing a thin cone, its base pointed toward the star, Castor. As the line revolved about the axis of the cone, it left a faint residue behind it, which became a thin, transparent cone.

Manning said, "Our field of operations lies within this cone."

Someone running the projector went to work. The scene expanded until the thin red cone filled the screen and seemed to project deep into the room, its apex

almost at the eyes of the watchers. Then a polar pattern appeared across the cone near the apex, a circular grid marked off in thin white lines, each line numbered, each area or segment, marked with a letter.

Down the room where the cone was larger, another grid appeared similarly marked.

Manning went on, "We cannot tell, of course, at what point in the collapse the survivors made their escape. We know that the automatic circuits begin deceleration as soon as the warp-generator shows signs of failure, the hope being that the spacecraft will fall to a safe velocity before the field collapses completely. Therefore escape could be made at any velocity between forty parsecs per hour, if they escaped before the deceleration began, or at normal underlight velocity, which might take place if the spacecraft had succeeded in dropping to safety before the field collapsed. However, in that case, there would have been no explosion and our space wreck victims would have remained in the spacecraft, or returned to it as soon as they saw it was safe. Therefore, integrating the probabilities outlines here, the survivors must lie between the planes of maxima and minima, representing escape at maximum forward velocity and minimum forward velocity. Here, gentlemen, is your search grid."

The rest of the stereo field went out, leaving the white lines of the grids. Lateral lines now appeared to connect intersections of the fore grip with the corresponding intersection of the aft grid.

"We are here."

Tiny discs of purple dotted space before the small end grid. The discs were flat-on to the grid and represented the maximum distance for space detection of matter.

Wilson felt something touch him on the arm. He turned. A tech-operator standing there had a bewildered look on his face.

"Yes?" said Wilson.

"I'm puzzled, Commodore. Suppose we don't find them in a long time. Won't that far grid have to be pushed back?"

"No," Wilson explained wearily. "The function of a lifeship is to get its occupants down below the velocity of light and then coast. Since that grid represents a total distance of about ten light years, they'd have to be floating for ten years at the velocity of light to make it. Any normal speed, over a period of weeks, would hardly appear long enough to cover the thickness of one of the grid lines."

"Ten light years!"

Wilson nodded and repeated. "This is no picnic." He turned from the tech-operator to the planning table. "Unless someone has a better suggestion, we'll set up a hexagonal flight pattern with a safe detector overlap and start by cutting a hole down through this grid volume along the prime axis. Anybody got any other suggestions?"

Space Captain Frank Edwards shook his head. "Not unless someone has improved on the *Manual of Flight Procedures,*" he said.

"Okay then. Here we go."

COMMODORE WILSON leaned back and watched the grid as Edwards got on the ship-to-ship and gave the operational orders. The little discs rearranged themselves slowly into a hexagonal lattice with their edges overlapping, then the flight began to move forward into the grid, running down the line of axis.

Somewhere inside of the cage made by the white lines a lifeship was drifting, a sub-sub-microscopic mote alone in a volume of space so large that light would take ten years to traverse the volume from top to bottom.

Wilson shook his head and took off his polaroids to brush his eyes. The stereo-field collapsed flat against the glass screen and became a meaningless jumble of lines. Wilson put his glasses back on hastily.

Captain Edwards said softly, "Take it easy, Ted. We'll find her."

Wilson nodded. "I know. But I can't

help thinking how rough it must be."

"Why?"

"To take her first space flight and get involved in a blowup."

"It will be an experience she'll never forget, but it shouldn't be too hard on her. It isn't as though she were completely alone, you know."

"No, I suppose not. She probably got out with anywhere from two to eight others. A lot of those were—well, not real spacemen, but at least they were regular space trippers. I—"

A detector alarm rang and everybody jumped to the alert. Edwards barked an order and one of the flight-techs darted off toward the launching deck. There was no point in stopping the whole flight, for any detection of matter would be investigated by one-man scooters. If a lifeship should be found, an infrawave call would bring the search flight hurrying back.

This was not it. The flight-tech reported a small clutter of pebbles and frozen gas. Probably a comet on its long, cold, dead swing near aphelion.

And the search went on....

Charles Andrews snorted angrily and growled, "It's damned inefficient, that's all I have to say."

Pilot Jock Norton shrugged. "We're alive."

"But why can't we pack on some power and get going somewhere?"

"Because this is a lifeship and not an interstellar spacecraft. I told you that before. D'ye expect a lifeship to be as big as the carrier?"

"Don't be an imbecile."

Norton towered over Andrews. "Don't be too bright, Andrews. Ships don't founder once in a green-striped moon. The function of a lifeship is to protect the customers until help can arrive. Our storage bank held enough quick-power to counteract the speed of the lifeship, with a safety factor. We've a small accumulator cell for temporary storage. It ain't pheasant under glass and brandy, but we'll neither starve nor die of asphyxiation. We're alive and healthy. So just wait it out. I told you that, too."

"I don't like it."

"Do I sound as though I did?"

"You seem to," Alice said reproachfully.

Norton gave her a bland smile. "I didn't intend to imply that I was in love with this clambake. Sure, it's a rough situation, but there's little point in looking at the black side."

"How long will this take?" she asked.

"Maybe a couple of days," he said easily. "Maybe as long as a week. Maybe even more. But we'll be all right."

"At a hundred dollars per hour," sneered Andrews.

"It ain't hay."

Andrews pulled a long pale cigar out and lit it with a flourish. "Norton, tell you what *I* think of a hundred dollars per hour. I'll take that week you mentioned as an outside limit and if you can do something to get us home before that

[*Turn page*]

date, I'll pay you one thousand dollars for every hour under that week."

"Nuts!"

ANDREWS said firmly, "Miss Hemingway, witness this, please. Do something brilliant right this moment, Norton, and you'll collect seven times twenty-four times one thousand dollars. Now that's what I call not-hay."

Norton growled angrily, "If there was anything I could do, I'd take you up on that."

"There probably is, if you'd only try to think."

"I'm the space pilot," Norton pointed out. "And I'm telling you there is nothing we can do about it."

"All right. Forget it. Le's have something to eat."

"We don't eat for an hour, Andrews."

Charles Andrews puffed on his cigar. "Why not?" he asked softly.

"Because we've got to conserve. It's in the book of rules."

"Rules are made to be broken."

"Not space rules. And I'm still skipper, you know."

"No matter how—" Andrews was going to say "incompetent" but he stopped short as Norton got lazily up out of his chair and came forward. Andrews realized he could push Norton just so far, then the pilot would lose his laziness and began getting violent. Andrews could not stand up to violence. He was not big enough. He was not young enough.

Alice said calmly, "Stop it, both of you! You'll just make trouble for all of us."

Norton sat down again. Doggedly he said, "We'll eat in an hour."

Andrews turned to Alice. "Miss Hemingway, are you, perhaps, a bit hungry?"

She shook her head quickly. "Frankly, I couldn't get it down and keep it."

"Then perhaps in an hour," said Andrews. "I was only thinking of your comfort."

Alice squirmed. Both of them were, in their own way, fighting to control the situation. Andrews had just oozed out of the indignity of having an order or request countermanded. Norton had just ignored an implied insult.

So long as they struggled, quietly, nothing would result but well-rubbed nerves. But if open conflict broke out it might get rough indeed.

## IV

FAREN TWILL looked across the table at Regin Naylo. They were alone, and finally Twill voiced the thought uppermost in both of their minds:

"This waiting is ridiculous, Regin."

"I agree. In fact, the only point upon which we disagree is the method. I say hit them hard, and with finality. You want to make an equal-to-equal alliance with them."

Faren shook his head. "Not really," he said. "No real alliance can ever be possible between stellar races. The alliance I had in mind would be patterned on the relationship between mother state and protectorate. We supervise their laws, control their commerce, and apply a small but adequate taxation to pay us for our service to them. Tariffs and duties to be set up for a beneficial economy in our favor, and yet low enough so that they can continue operating, only mildly limited. That sound sensible to you?"

"I think it can be carried out more efficiently than that," Regin Naylo objected thoughtfully. "First we collect the lifeship nearest us, maybe both of them. We sweep down along the line of search and wait in battle pattern. Why, we can probably collect their entire fleet without firing more than a couple of batteries. Then we have the survivors broadcast on the blanketing infrawave that we are applying the rules of space salvage and that redemption of their fleet is to cost some nominal fee—er—say ten metric tons of uranium, nine-nines pure. After which we take their captured fleet to the seat of their government and take over. Then we are in a real positon to make demands. None of this simple taxation and commerce control. None of this

mother state and protectorate. This will be conqueror and vanquished."

"Suppose they fight back?"

"With what?" asked Naylo sarcastically. "Guided torpedoes and A-heads? Faugh!"

"They may have—"

"Bet you a hat. If they have been able to use the infrawave bands for space locating and detecting, they wouldn't get to first base discovering the magnus forces."

"You realize," said Twill, "that you're setting up a pattern of violence that may never be resolved?"

"No matter how you set up the meeting of cultures, you've started a pattern of violence that can never be resolved. I say make 'em realize right now that they are clobbered. And if they want fight, we'll give it to 'em."

Twill growled, "Not too long ago you were cautiously admitting that elephants can be beaten by a pack of determined rats."

"Until they put out more than that squadron of twenty-five spacecraft, they're no real pack, compared to our task force."

"You may be . . . Hush!"

The door opened. Viggon Sarri looking refreshed and alert, greeted, "Good morning. You've heard the latest?"

"What latest?"

"We've probably located the destination-star. From one of the large stars along the flight path of the original spacecraft there has formed a second search squadron of twenty-five spacecraft. The infrawaves are filled with calls back and forth, coordinating the search pattern."

"How are they doing?"

"Depends," replied Viggon Sarri, with a grin. "Poorly, if you mean that their success looks imminent. But excellently, if you mean their technique. They're really covering space like a blanket, slice by slice. But they started on the wrong slice."

Viggon's armlet buzzed tinnily and he said, "Yes? Go ahead."

"This is Linus Brein. We have more of their language analogued."

"I'll be right over." To his second officers Viggon said, "Want to come along? This may be interesting."

Nalyo shook his head. "We've a bit of a problem to haggle over. We'll be over to Brein's bailiwick later."

"You might be missing something, but it's your decision."

AS SOON as the door was closed behind Viggon, Naylo said, "I wonder if he is getting chicken."

"Don't let him hear you say that."

"I won't. But haven't you wondered?"

"Maybe," said Twill. "But it figures. Viggon Sarri has had a long and successful career. He has expanded our realm more than any other one man in history. He will go down in history as a valiant hero. He does not care to spoil a good record."

"Hah! You agree, then."

Twill nodded soberly. He sneered, "Valiant! Hero! Sarri, the Victorious! Eyewash. What's so glorious about conquering races that fight back with slings and spears? What's so heroic about mowing down a flight of airplanes or turning A-heads back on the senders? But now that we have come upon a race that really has space travel developed to a fine art—even though they have not exploited it much—Viggon wants to wait. He's been pushing over children. Now that he's come up against a half-baked adolescent, he's afraid."

"What do you suggest?"

Twill eyed Naylo soberly. "One of us is due to succeed the great Viggon Sarri," he said flatly. "It may be you and it may be me. It will, however, be the one who decides properly how to handle this race."

"All right, then," Naylo grunted. "But it may be neither of us." He scowled. "Unless you or I can talk the venerable gentleman into action at once."

"Right. Let's get started."

Naylo grinned. "I hope you won't mind working as my second officer, Faren."

"You should see the day, Regin. I'll

have you reporting to me before we get home."

But beneath the banter was an undertone of dead seriousness. . . .

Commodore Ted Wilson eyed the search grid unhappily. Out of the center one thin hexagonal hole had been taken. It left such a lot of space to be combed.

The infrawave receiver in the Information Center was alive, and chattering with data and information and orders. Finally came a call for Wilson, from Flight Commander Hugh Weston from Castor.

"Weston here, Ted. How's it coming?"

"We've completed our first crossing. Nothing but a comet and a rather insignificant gas cloud."

"We're approaching you. Any suggestions?"

"Let's make contact and carry this out together instead of running at cross-purposes."

"Meaning?"

"No independent searching."

"I think you're wrong," said Weston. "But we can do a better job of coverage if we combine all forces into one big comb."

"We could," replied Weston. "But do you realize that you'll probably leave huge holes in your search grid?"

"That's the point. I know we will. After about the fourth pass, we'll not be too sure of where we are. God, how I wish we had some method of pinpointing this absolute nothing! I wish the infrawave could be used as detecting and ranging."

"Make that double. But since we haven't got it, I suggest that we form behind you. There'll be a third quadron from Pollux as soon as Wally Wainright can get into space with his gang. I expect there'll be more, too. We'll need 'em all. Out in this featureless void, we don't really know where we are to any degree of accuracy. At least not the kind of accuracy needed to find a thing as small as a spacecraft."

"Lifeship."

"Lifeship, spacecraft, both Godawful minute when lost in a few cubic light years of space."

"I still say we should combine."

"I still think you should clean out one channel and let us take the next."

"Can't see it, Weston."

"Okay, Ted. You're running this exercise. You're the boss. We combine. We'll meet you where you are and reform before we make the return pass. Right?"

"Right, Hugh. I don't want to argue, but our master computer feels we've a better chance at the laws of probability if we all comb along the same line than if each takes a different course and we try to correlate our positions by sheer stellar astrogation."

POISED in space, Wilson and his squadron waited. While they waited, the astro-techs made star sightings and the computer mulled over their readings and delivered opinions of several probable enclosures of position. These volumes were horribly vast compared with the mote of a spacecraft. They were spherical, indicating the margin of error in precision-pinpointing their position in deep space. And as the astro-techs delivered more and more angle sightings on the known stars, the computer delivered smaller and smaller enclosures as their true position.

The problem was a matter of parallax, a matter of angular measurement against the more distant, or "fixed" stars. Now, it may seem an easy job to measure the angle of a star with respect to another star. But it must be remembered that the parallax of the nearer stars, as measured across the orbit of the earth, is a matter of seconds of arc.

Parallax is not measured directly with a protractor. It is measured by comparing the position of the star on a plate against a similar photograph taken six months ago, using the fixed stars as the frame of reference.

In deep space, position is pinpointed by solid triangulation. This can be represented by a pyramid suspended in space, the corners of which end at the

fixed stars. Take a pyramid of certain solid angles, depended by points in space, and the apex can be satisfied for only one spacial position. Repeat these solid-angle measurements and there are several pyramids pointing their apexes toward the true position.

But if the orbit of the Earth produces only a second or so of parallax-arc, any error in angular measurement of such magnitude produces an error of a thousand light seconds. And the greater the error in measurement, the larger is the volume of uncertain position.

This, then, was their problem. To cover, like a blanket, a volume of space so vast as completely to defy description. All that can be said of it is in comparison with a number of cubic light years. And who can grasp the fathomless distance of a light year? It is just a meaningless statement.

Eventually the second squadron came up and the ships milled around until a larger space pattern was formed. Then the two squadrons began to return along the search grid, on a line overlapping that area covered in the first pass along the computed line of flight. . . .

Alice Hemingway woke up from a fitful doze at the noise of the infrawave receiver. Charles Andrews was listening to the rapid chatter back and forth from one squadron to the next. He looked around, and when he caught her eyes, he said cheerfully, "They're really out looking for us."

"I heard," she murmured.

"Three squadrons, now. And a fourth is just heading out from Procyon. We'll be picked up—"

Jock Norton came awake with a cry. "Shut that damned thing off!" he roared.

"Why?" demanded Andrews belligerently.

"It's a waste of power."

"This thing?" sneered Andrews.

"That thing. It draws one point three kilowatts. That's plenty important for a lifeship."

"Look," suggested Andrews, "why don't we call back and have 'em pick us up?"

"Because nobody has ever found any directional quality about the infrawaves. That's why we can't use 'em for detecting, ranging, and locating. If they echoed, we might be able to use 'em somehow. But they're not even directional, let alone echoing. Not only that, but they are instantaneous in transmission, so even if they did echo they couldn't be used for ranging. So we'll not waste power howling for more help. We spend a bit every hour, because we want to let 'em know we're still alive. But let's not waste any more than we have to."

Andrews shut off the infrawave receiver. "It was interesting," he said. "But I suppose we can always assume that they are on the search." He shivered. "Is it getting cold in here, or am I getting exhausted?"

NORTON smiled thinly. "Probably both. This space can isn't collecting any heat. We're too far from any sun. And there aren't enough people in it to keep it hot."

"Huh?"

"The average human puts out an average of about a thousand B.T.U. per hour over a twenty-four hour day. It rises in activity and falls with relaxing. But this can needs about five people to keep up the heat against the black body radiation from the hull."

"What do we do? Freeze?"

"One thing we can do. We can use the pedal generator."

"For what?"

"Two things. One is to charge up the energy cells. The other is that a human body in vigorous work can deliver as high as two thousand B.T.U. per hour. Although I doubt if any human body can keep up that kind of vigor for a full hour. If you're cold, you can easily warm up, Andrews."

"Why doesn't this tin can have a small pile?"

"Why doesn't a steamship lifeboat have a turbine?"

"I've seen some very small piles and generating gear."

Norton shook his head. "A lifeship is aimed at providing the maximum protection for a maximum number of people, under a minimum of luxury. Stop whining. We're still alive, I keep telling you."

"At," sneered Andrews, "a hundred bucks an hour."

"Are you going to argue, or do you want to try some vigor for that bad temper of yours?"

"We've got some power left over from the bank," suggested Andrews. "Let's use that."

"Not on your life. That's reserve. Sooner or later we're going to use it for radio pulses."

"Radio pulses?"

"For fine control direction-finding and locating."

Andrews snorted. "How are they going to pick up radio pulses when they're going thirty or forty parsecs an hour?"

"They use gravitic mass detectors. As soon as someone gets a register, they send one of the scouts out to drop below light and listen for radio pulses. If he hears any, then the whole search squadron stops and starts really to comb the neighborhood with radar."

Andrews shivered again. "I'll try that generator," he said. "Could we pedal enough juice to run the drivers?"

Norton laughed. "Sure. Like you could row a battleship with a rusty broom handle. Have you got the remotest idea of how far we are from anything?"

"No."

"Neither have I."

"All right. Where's your damned exercising machine?"

"Below. I'll show you. I want to cut the paragrav generator by half, anyway."

"Paragrav?"

"Pseudo-gravity," said Norton crisply. "You've noticed there's still an up and down? That's it. But the damned thing radiates heat like mad, along with producing its gravitic field. I want to conserve all the heat we can. With a full complement of survivors, this space can stay more than comfortably warm. But with only three, it radiates more than is comfortable. Come on, Andrews. I'll show you this crate, too."

Alice felt the gravitic pull diminish, and then Norton was back in the main room of the lifeship. He came over and sat down beside her.

"Cold, kid?"

Alice shivered. "Just a little. Is this going to get worse?"

"Probably, but not too much. If we all exercise heavily, keep the pedal generator going, and eat heartily, we'll not fight too losing a battle against radiation."

She shivered again. Jock put a large but gentle hand on her shoulder. "Let me warm you a bit," he said softly.

ALICE looked at him cynically. "I'm not that cold," she told him. She did not move, but the tone of her voice made him remove his hand from her shoulder.

He smiled at her. "You're likely to be eventually."

"Maybe. But there are blankets, and I'm not above taking a turn on that pedal generator myself, you know."

"It's no job for a woman, Alice."

She sniffed contemptuously. "This is no place for woman or man," she said. "But I can pull my own weight, Mr. Norton."

"You're a solid character," he said.

"I've always thought so."

"This is going to get rougher, Alice. Can't we be a little more friendly?"

"Meaning what?" she snapped icily.

"Meaning only that you deserve better than that Napoleon type down there."

Alice laughed in a brittle tone. "And you're it?"

"I'll be a lot more fun."

"No doubt. And nothing but fun. What do you expect to do when the fun becomes hollow?"

"It hasn't yet."

"It will some day. You can't go on being a slightly irresponsible loafer all your life."

"Who is?"

"You are."

"Look," said Jock Norton angrily, "I'm still running this lifeship the way it's supposed to be run."

"At a hundred an hour."

"Maybe so. But let me ask you, which one of us would you rather have around right now? The trained spaceman or the captain of industry?"

"That's a fool question," said Alice. "Loaded to the gills. You know the answer to that. But once we get back home, then?"

"You're not hoping to marry that dried-up little—"

Alice laughed, almost hysterically.

"This will kill you, but until you assumed that I was sleeping with him as well as taking his dictation, I hadn't really looked upon Charles Andrews as anything but an employer. Sure, he's male. So is my Uncle Ned, my brother, and my nephew. Not to mention my father and grandfather. But Mr. Andrews is not my idea of a lover."

Jock Norton nodded soberly. He took a deep breath of satisfaction. Alice underwent a swift revision in his mental classification of her. She changed from a luxury-bought mistress to be seduced by the offer of real fun and passion into a woman with no emotional connections, to be seduced for the fun of it. Both, in Norton's mind, were fair game.

"What's wrong with me?" he asked.

"Nothing much, Jock Norton, except that you're essentially lazy."

"Lazy?"

"Lazy," she repeated. "Want it both barrels, or will you take it with sugar?"

"Hard. What's wrong with me?"

"You're educated. You know a lot. You've explained things that neither Mr. Andrews nor I had ever dreamed of, let alone understood. You know your way around spacecraft, know a lot of the basic sciences. Not that you'd ever be a scientist, but you're bright enough to grasp the idea and make it work. But what do you do about it? You jockey a spacer, instead of digging in and making it pay off. You look for the easy way out instead of working for it." Alice looked up at him sharply to see how he was taking it, and then she added, "You have the only brain present that has the mental right to stand up and direct operations. Instead, you argue and backstep."

Harshly he said, "What would you have me do—take a swing at Napoleon when he sits on those short hind legs of his and objects or demands?"

"I don't know. I'm not a spaceman, responsible for the lives of three people —at a hundred clams an hour."

"Some day I'm going to shove those hundred fish down your throat."

"Do. And I'll spit 'em back at you!"

Norton roughly took her shoulders in his hands. He twisted her to face him, clamped down on her soft shoulders until she turned her face up to complain with welling eyes. He put his lips on hers and tried to force some warmth into them. She submitted calmly, and when he found no response and opened his eyes, she was staring at him vacantly.

Abruptly he let her go. She relaxed in the seat.

"I'm not afraid to work," he said in a hollow voice.

"Prove it," she replied flatly.

He got up, left her there, and went below.

## V

WILSON sat in the Information Center and eyed the search grid glumly. It stretched stereoscopically out in the room, a lot of its vacant network of gleaming white lines frosted over with white shading, to mark where the search had covered.

There were a lot of untouched spaces —a horde, a myriad. On the side wall was a chart, showing that nine squadrons of twenty-five spacecraft each were patrolling back and forth through the uncharted wastes, seeking the space-wrecked lifeships.

The maddening part was the hourly report from both lifeships. It was like someone hiding in the dark and calling for aid, invisible and alone. And not

really calling for aid, but only making whimpering noises. For the signaling equipment on the lifeships was not equipped with the complicated infrawave phone, but only with the simple signal-emitter, coded to transmit the identification call of the unit.

On the hour they came in, calling three times, "Lifeship Seventy-nine, Seventy-nine, Number Three." Number Two had not been heard from. Presumably it was not in use, or hadn't made the grade.

Wilson chewed his fingernails and fretted. Was Alice on Number One or Number Three, or was she on Number Two and it had foundered?

If she were still alive, what kind of fellow survivors were with her?

He hoped she was with a group. If she had blown out in a lifeship with only one other—well, Ted Wilson did not like the idea. Of course, it was more customary than not for a young woman to love lightly before she mated permanently. There was a lot less chance of wading into matrimony wide-eyed and ignorant of what it was all about.

But Wilson, if willing to face such transient loving at all, would have preferred that Alice have her chance to pick and choose, rather than have the matter thrust upon her in the middle of a threatening situation. The passion that comes with the shadow of death is only the instinct of racial preservation, and it mates men and women unsuited to one another during subsequent peace and quiet.

Above all, he did not want Alice to emerge from this moment of personal danger morally bound to some unsuitable mate because of a child conceived under the shadow of the sword!

Hourly, after the coded signals came in, Ted Wilson took the microphone himself and called out into space in the infrawave. He called messages of hope, and explained how many spacecraft were scouring the deep black void. He could only pray that he would be heard, that his voice would give Alice some firm foundation for hope.

He could not be sure the passengers from the wrecked spaceship, even had their receivers turned on, because infrawave receivers drink up a lot of power and lifeships are not equipped with any vast reserve. There just was not the room in a lifeship for anything more than the bare necessities of living.

The search grid was a truncated cone, and the whitened areas of finished search had finally filled the smaller end of the cone. There was the flared skirt of the cone yet to be combed, and this provided more volume than the cylinder taken out of the middle. It also provided a shorter search path as the searching spacecraft built out the volume, ring after ring around the first pass along the line of flight.

Far, far to one side a detector registered, and brought every man in the fleet to the alert. Then they relaxed unhappily again as the scooter returned with another report of a small gas cloud. Wilson thought glumly that they had discovered enough space meteors, gas clouds, and unawakened comets to make up a small sun.

Then his attention was taken from his own personal troubles by the arrival of another squadron from Centauri. He found himself busy readjusting the search pattern to accommodate this new contingent.

He eyed the pattern in the stereo and hoped it was good enough.

THERE was the basic aggregate of nine full squadrons spread out flat in a space lattice that ran back and forth from narrow end to wide end of the cone of probability. There was one full squadron of roving ships that went aimlessly back and forth across the pattern, just to cope with the happenstance factor.

One squadron was parked at either end of the search grid as space markers, with a computer ship at either end to maintain a constant check on their space coordinates. The big search pattern shuttled from one end to the other, and

if they came back to miss the marker ships, they retraced their path so that no space went uncombed.

The infrawave chattered and Space Admiral Stone was calling for Commodore Theodore Wilson.

"How're you coming?"

Wilson replied, "We're still at it, Admiral. So far we haven't seen her."

"Don't forget, Wilson, there's more lost out there than the woman you want."

Ted wanted to snap back angrily, but all he said was, "You don't mind if I take this search personally, do you, Admiral Stone? I'm not overlooking any bets, but I do admit that Miss Hemingway is a bit more important to me than any of the rest."

"No, I suppose no one could blame you for that. Just keep it up, Wilson."

"Sure," Ted said wearily. "After all, this is a black and white job I'm on. Either we'll be successful—or we won't."

"Luck."

"Spaceman's luck, Admiral."

Wilson went back to his brooding. . . .

Charles Andrews came back into the salon with a brisk air. He flexed his arms, took a deep breath, and mopped his forehead with a handkerchief. He sat down beside Alice and smiled at her warmly.

"That thing is a wonder worker," he said, breathing deeply. "Nothing like exercise to make a man feel fine and fit."

Alice looked up at him with some amusement. "Mr. Andrews, tell me. Are you the kind of man who opens the window on a winter morning about six o'clock, and takes deep lungsful of icy air?"

"Not quite that bad, my dear. Not quite. But brisk living does keep a man sharp and hard. I daresay I acquitted myself well on that pedal generator despite my fifty years."

"No doubt."

Andrews chuckled. "I'll do better than our young pilot friend. The man is big, and should be muscular, but he is soft from lack of exercise. Yet he'll attempt to stay there longer than I did, I guess."

"No doubt."

He eyed her sharply, not missing her repetitious dry reply.

"Which, incidentally," he said, "gives me my first chance to speak with you alone since we took off from Earth."

"That's so. But—"

"Miss Hemingway, you are an exceedingly brisk young woman, attractive and intelligent. May I ask if you have ever taken a lover?"

"Why, no."

"Never considered it?"

She smiled thinly. "Naturally. All women think about it. Most do. I—er—"

Alice let her voice trail away uncertainly. The direct, frontal attack had put her off-balance, but she realized that this was Andrews' direct way.

He had smiled at her uncertainty, and said swiftly, "Then may I be the first—" when he noted the fading amusement in her face and glibly ad libbed—"to congratulate you on your choice of young men? The space commodore to whom you bade farewell in Chicago was an up and coming man, I'd assume."

"I rather imagine he's out here somewhere in the search group," she said.

"He may even be directing it," Andrews said carefully.

One thing he knew well—never run down a rival. It always brought on a defensive attitude. Build the rival up, and the return might be sympathetic. A clever course could be traveled between build-up and tear-down.

LOOKING at Alice thoughtfully, Andrews got up and began to rummage through a few lockers. Eventually he found a blanket and brought it to her.

"I'm not too familiar with these life cans," he told her, with a disarming smile. "I hope I remain in ignorance of them. But I found what I was after. Now, Miss Hemingway, if you'll stretch out, I'll tuck you in, and you can get

some shut-eye."

"That I can use," she said honestly.

The blanket felt good. So did his hands, smoothing out the blanket, but being carefully tender and proper. Andrews was a smooth operator of many years' experience.

Eventually she slept.

Andrews found another cigar, and smoked it languidly, his eyes roaming around the metal walls of the cabin. He was thinking that he disliked Jack Norton immensely, although he knew that chances of survival were better with Norton's boorish, interfering presence than without. He was bored, he was angry, he was above all resentful of the time wasted in this spacewreck business. . . .

An orderly tapped Commodore Wilson on the shoulder. "Message from Terra," he said.

Wilson groaned and reached for the telephone beside his bunk. "Wilson here," he said. "Go ahead!"

"Admiral Stone. Wilson, a new ship is on the way. I want you to get into this thing fully, so I'm briefing you now."

"New type of ship?"

"Well, not a new ship, but some new equipment. The Infrawave Section of the Space Department Radiation Laboratory has some experimental gear they want to try in actual service."

"Experimental gear?"

"Sheer experiment, Wilson. It's supposed to be an infrawave detecting and ranging device. It's shown low grade response so far, and it may be entirely useless to you. But Radiation feels that even something incomplete and erratic may be better than going it blind."

Wilson sat up, interested. "How does it work?"

"Darned if I know. It took a whole cruiser class to carry the junk that makes it tick. It's piled in with twine and baling wire, and when the crate took off the advanced techs were still connecting cables and adjusting the guts. Er—how're you feeling?"

"Tired and frustrated."

"Mind a bad joke?"

"Well—"

"Go on and have a laugh, Wilson. This gizmo reminded me of the new machine that made shoes so fast that it put twelve shoemakers out of work—and it took only eighteen men to run it."

A silence ensued. Then Stone said: "Well, Wilson, I thought you'd like to know we're pouring the best we've got into space for you. Ship should be along in another hour or two."

"Yeah—thanks, Admiral Stone. And the joke was funny, at least the first time I heard it, it was. I'll get on the cubes and wait for the ship."

Wearily Commodore Ted Wilson climbed out of his bunk and began to dress. . . .

VIGGON SARRI said, "now we know more about this race. They definitely are of the class where the individual is of extreme importance to the whole. This belies both the commual, or insect type and the anarchistic, or individualistic type. The quantity of men and machinery they are pouring into this search is amazing."

"They aren't much closer to success," offered Regin Naylo. "And we're wasting time."

"You think so?"

"We both think so," Faren Twill said firmly.

"Oh?" Viggon Sarri looked at them in surprise. "Then maybe I have the wrong idea. Let me hear your suggestions."

Twill and Naylo looked at one another, fencing with their eyes. Finally Twill nodded and said, "You say it, Regin."

"It's already been said." Regin Naylo looked pointedly at Linus Brein. "A day or so ago you claimed that you'd picked up some primitive infrawave emission that looked as though someone might be trying to develop a detecting and ranging device."

"Yes."

"Then it is my contention that any

moves we make against this race should be made before anybody down there gets such a detector and ranger working."

"Why?" demanded Viggon Sarri.

Regin Naylo looked at his commander. "We're losing a technical advantage. Whether we go in with a benign and peaceful-looking air and show them how big and fast we are, or whether we plunge in and hit 'em with every battery we've got and reduce 'em to submission, we've got to do it before anybody succeeds in making an infrawave space detector Understand?"

Viggon Sarri looked from one to the other, grimly. "You believe I'm wasting time? Is that it?"

The two aides answered together, "Yes!" and "Absolutely!"

Viggon Sarri said, "I am still in command of this force. We'll continue to observe until I am satisfied. You two officers have one common idea—that of moving in fast. You have differing ideas of how we are to move in. Until you can settle your difference and provide me with a good logical basis for your decision—whichever way—then we'll follow my plan. And my plan is to move in just as soon as we have enough data on the character and strength of this race to provide us with the correct way to take them."

"Then you are going to continue stalling?" demanded Naylo.

"Yes, if you wish to call it stalling. Maybe another man might call it planning."

"We'll be just wasting time, as I've already said. We have enough stuff to take 'em right now."

Viggon Sarri shrugged. "Yes. We could swoop in and take them like mowing down a wheat field. Tell me, young men, what happens when you mow down a wheat field."

They looked at him blankly.

[*Turn page*]

Viggon smiled in a superior manner. "One of two things, depending upon how you operate. If you mow it down and let it lay, you drop seeds and next year it comes up thicker. If you mow it down, remove the seeds, sow it with salt and kill the field, you have a useless plot of land, a worthless territory. Then some day up comes weed and briar—which then must be removed root and branch before the land is plantable again. Just remember, we are after a profitable exchange of economy, not another stellar system to list as a conquest for the sake of history our children will read. I want my reward now, or next week. Having my name on a monument does not have much appeal."

He was half standing with his hands closed into fists, his knuckles on the table supporting him as he leaned forward to drive his facts home.

"Or," he added scathingly, "are you two firebrands so youthful that you don't know that a man has only one single lone chance at this business of living? And that your finest reward at eventide is knowing you have lived a full and eventful life without screwing it up somewhere along the line by making a lot of idiotic moves?"

Viggon Sarri turned on a heel and walked out.

NAYLO and Twill turned to Linus Brein.

"What do you think?" Twill asked.

Linus Brein shrugged. "He is undoubtedly right. Besides, we don't know all there is to know about the strange race out there yet."

"Oh, faugh! What else—"

Linus Brein smiled. He said slowly. "We don't even know whether or not they are oxygen-breathing."

"We can assume from the stellar type of their primaries that they are."

Linus nodded. "Probably, but not positively."

Regin Naylo said, "And what's second, Linus?"

"They may be contraterrene."

"Seetee?"

Linus Brein nodded. "In which case from both sides we must watch our steps. Get involved with a settee race the wrong way and you have two cultures with absolutely nothing in common but a life-factor, busy tossing chunks of their own kind of matter at one another in a fight to exterminate. So before either of you start making half-baked plans, you'd better get your heads together and plan something that sounds reasonable to the Big Boss. Right?"

## VI

COMMODORE WILSON eyed the spacecraft full of hastily assembled instruments with a grimace. The ship was swarming with techs who were peering into oscilloscopes, watching meters, and tinkering with signal generators. A huge concave hemispherical dome above was a splatter of little flickering green pinpoints and dark patches.

"This idea is hopelessly haywire," Wilson said unhappily.

"It sure is," said Space-Tech Maury Allison. "But everything is, at first."

"You hope to make something out of it?"

"We hope," replied Allison. "We can't be sure."

"But surely this pile of junk has been tested before?"

Allison nodded.

"Any results?"

"Some. We've had as much as five minutes of constant operation out of it."

As he spoke, the hemisphere over their heads flashed a full bright green, then went black. A bell tinkled somewhere and a couple of techs dropped their tools and headed for the back room on the double. A couple of others stood up from their work and lit cigarettes because their instruments had gone dead. Some of the rest continued to nurse their particular circuits because that section was still running.

After scanning the operation to see which section had gone blooey, Allison went on. "We've never tested this outfit under anything but ideal conditions.

We've had spacecraft sent out to specified distances, fired up the gizmo and found fragments of response right where there should be a response."

"That's hardly fair, is it?" commented Wilson.

"It's a start. You have to start somewhere. Radio—know its start? The first message was sent across the ocean a few hundred years ago from one man to the other after they had made a complete plan as to time, date, location and frequency, and also the transmitted message. Sure enough, they got through. That, too, was under the ideal test conditions. So when we finally assembled the half-a-hundred separate circuits and devices that made it look as though we might have a space detector, we put up targets, aimed our equipment, and looked for a response where there should be one."

"We don't know where our target is," objected Wilson.

"And we haven't yet fired up this equipment to seek a target of unknown position and range," admitted Allison. "But this gear is better than nothing."

Again the green spots flickered in the dome over their heads.

"What do all those spots mean?" asked Wilson.

"Those are false targets, probably caused by background noise. Although the infrawave is noiseless, we still seem to be getting it. Dr. Friedrich disagrees. He claims this is not noise, but interferences. However, the good doctor is not at all certain that the so-called interferences come from localized conditions within the equipment or from external sources."

Wilson shrugged. "I don't see how it's done with a radiation type that has neither a directional quality nor a velocity of propagation."

"Do you understand Accum?"

"I stopped shortly before Matrix. Accumulative Math is so much pothooks on a sheet of paper to me."

"Um. Then I'd find it hard to explain. The theory seems to be demonstrable, and the accumulative mathematics upholds the experimental evidence. But there hasn't yet been an acceptable verbal description of what happens."

"I've often wondered, leaving the nondirectional quality out of it, why we couldn't cut our emitting power and somehow compute range by observing the incoming power from a distant infrawave transmitter."

Allison shook his head. "Oddly enough, the matrix mathematics that deal with radiation shows that for any hypothetical radiation with an infinite velocity of propagation, there can be no attenuation with distance."

"Meaning that we should be able to transmit all the way from here to hell and back."

"Not exactly. Infrawave radiation comes in quanta, you know. A kilowatt covers two point one, seven nine three six plus parsecs. Two kilowatts covers twice that distance minus the ninth root of two point, seven nine three six plus. Three kilowatts covers three times two point et cetera, minus two times the ninth root." Allison shrugged and spread his hands.

"AND so on it goes," he said, "indicating that at some devilish distance—I've forgotten the figure but we had the master computer chew it out on the big machine at Radiation once—an additional kilowatt just shoves the signal coverage distance out by a micron. But if you don't put in your honest kilowatt, you don't excite the infraspace that carries infrawaves. And if you put in a kilowatt and a half, you have to dissipate the half."

Wilson grunted. "Nice to have things come out even. Who'd have thunk that the Creator wanted the Terran kilowatt to equal one quanta of infrawave distance?"

Allison laughed. "Poor argument, Commodore Wilson. Actually, the figure is point nine, eight three four plus. Close, but no cigar. We've just come to accept the figure as a kilowatt, just as for everyday calculation we accept the less refined figure of two point, one eight par-

secs, or even two point, two. At any rate—"

There was a puff of something, and a sound like the puncture of a tire. The green spreckles on the dome merged with one another and became a riot of flaming green. There were shouts and cries and a lot of haphazard orders and several techs scrambled to snap toggle switches.

Down the room one of the techs went head-first into a rack with a pair of pliers and a soldering iron. He backed out carrying a smoking little shapeless thing that had lost any character it once possessed. The tech picked up a nice, shiny new doodad from a small box and went into the rack again. When he came out this time he gave a hoarse cheer. Toggles were snapped back and the spreckles reappeared.

One of the techs came up to Allison and said, "See that spot up there, sir? The one just this side of the eighty-one degree longitude circle, and a little below the forty-five latitude ring?"

"Yes."

It was a small round disc no more than an inch in diameter.

"We think that may be a response."

Wilson said, "You mean a target? Possibly one of the lifeships?"

"Yes."

"I'll have a scooter go out and see. What's its spacial position?"

The tech took another look. "I'd say eighty-one plus longitude and forty-three latitude."

"From what?" demanded Wilson.

"From ship's axis, sir."

"Distance?"

"Oh, about half a parsec."

Wilson groaned. "Haven't you determined any spacial attitude?"

"Attitude, sir?"

"The angle of the ship's axis with respect to the stellar positions. So you've a blotch out there at half a parsec. It's an inch or so in diameter. Have one of your juniors run off some trig on the calculator and then tell me how much probable space volume that so-called response represents."

The tech thought a minute. "We've never run this gear anywhere but at Radiation, right at Mojave labs, on Earth. Our spacial coordinates—well, I'm afraid we—" His voice trailed away unhappily.

Wilson picked up the interphone and barked a call.

"Weston? Look, Hugh, can you get over here quick with a couple of your top astrogators? We've got a bunch of longhairs with a fancy infrawave detector and ranger, but the damned coordinates are set axially with the ship."

He listened to Hugh Weston's reply.

"Yeah," he said then. "We know where the target is with respect to the ship, but we don't know the spacial attitude of the ship with respect to the galactic check points. Right over? Good."

AS WILSON hung up the dome flickered, then went into a regular *flash-flash-flash* until something else came unglued and the dome went blank. There was shouting and rather heartfelt cussing, and some running around again before the dome light came back.

A tech—not the one that had come up before—moved into place alongside the commodore.

"Mr. Wilson, sir," he said, "I wonder if—er— That is, sir—er—"

"Take it easy," said Wilson, half-smiling.

"Well, sir, we've been getting a lot of interference."

Wilson looked up at the flickering dome. He merely nodded.

"Well, sir—er—I was wondering if you could issue some—er—order to have the other ships move away? I'm sure we could find those lifeships if the rest of space were clear. But you've got three hundred—"

Wilson stared the youngster down coldly. "Somewhere out there," he said sourly, "are two lifeships in which men, and a woman, are waiting for us to come and collect 'em. I'm combing space almost inch by inch. I can hardly give up my squadron for a half-finished flash in the dome like this, can I?"

"No sir—ah—I suppose not."

"Then you live with the responses tossed back by my squadron. It'll be good training for you. Er—get the hell out of my way!"

The junior tech melted out of sight and went back to his control panel.

Weston came over within the hour. Ted Wilson explained the situation and told Hugh to set up and measure the coordinates with respect to the stellar centers. Then he told him to send a space scooter out to investigate that spot.

Wilson went back to his own flagship wondering whether that fancy infrawave detector would turn out to be anything. An untried doodad. But now and then—

Wearily again, Commodore Wilson called Commander Hatch, who skippered one of the scout carriers. He told Hatch to make himself available either to Hugh Weston or Maury Allison, to investigate infrawave response targets as they saw fit.

Then Wilson hit the sack to finish his off-duty.

He dozed fitfully, but he did not sleep worth a damn. He would have been better off if he could have taken the controls of one of the spacers and gone out himself. Then, at least, he would have something to fill his mind and idle hands. . . .

Alice Hemingway awoke from a rather pleasant dream that had something to do with either ice skating or skiing, or it might have been tobogganing —the dream had faded so fast she could not be sure—to face the fact that she was feeling on the chill side.

Her blanket had slipped. She caught it around her, and in minutes felt fairly warm again. It was not so much, she thought, the actual temperature in the lifeship, but the whole damned attitude of people, and everything else that was so chilling.

The lights were running all right, and from deep below she could hear the ragged throb of the pedal generator. She wondered which of the two men was pumping it this time.

When Jock Norton came in, she knew. He was mopping his face with a towel. He looked clean and bright, freshly shaved.

She looked at him and wished she could have a hot shower herself, and a change of clothing. She wanted a ten-hour sleep in a nice soft bed with clean sheets, too, and wearing a silk-soft nightgown.

"Awake, Alice?" Norton asked brightly.

"Awake again," she said unhappily. "For . . . What is it? The ninth day?"

"Eighth," he said. "Can't go on much longer."

"I hope not."

"You look all in," he said softly. He sat down on the edge of the divan, beside her, and put a gentle hand on her shoulder. "Take it easy, m'lady. They're really scouring space for us. We'll be all right. You'll see."

UNEXPECTEDLY he bent and kissed her chastely on the forehead. Alice tensed at first, but relaxed almost immediately because the warmth of that honest affection made her feel less alone and cold, in the depths of uncharted space. Some of the worry and concern was erased, at least. She stretched warmly as he rubbed her forehead with his cheek.

Then he sat up and looked down at her. He put his hand on her cheek gently and said, "We'll be all right, kid."

"Eight days," she said in a hoarse whisper.

He nodded solemnly. "Every hour means they must be coming closer and closer. Every lonely hour means that it can't be many more, because they've covered all the places where we weren't. Follow me, Alice?"

She shook her head unhappily.

Doggedly he tried to explain. "They know that we must lie within a certain truncated conical volume of space. They comb this space bit by bit and chart it. Since the volume is known, and since it takes so many hours of work to comb a given volume, that means that at the

end of a given time all the predicted volume of space has been covered. Since we must lie within that, we are bound to be picked up before they cover the last cubic mile."

"But how long?" she breathed.

"I wouldn't know," he told her honestly. "I have no possible way of computing it. They've got the best of computers and plotters, and they've got the law of probabilities on their side. But its dead certain we'll be found."

"I hope."

"I know," he said.

"You've changed, Jock Norton."

"Changed?"

"You looked on this as a lark, before."

"Not exactly," he objected.

"But you did."

Slowly he shook his head. "Not exactly," he repeated. "I don't think I've changed at all. I still think that when you're faced with something inevitable you might as well look at it from the more cheerful side. After all, there was the chance that we might not have made it this far, you know. Now, tell me honestly, does it make sense getting all worried-up by thinking of how horrible it would have been if we'd been caught back there when Seventy-nine blew up?"

"I suppose not."

"Well, then," he said in a semi-cheerful tone, "since we did make it out safely, and are still waiting after eight days, we might as well expect to be collected soon."

Charles Andrews said, from behind him, "At a hundred dollars an hour, Norton?"

Norton turned around angrily. "So it's the hundred clams per," he snapped back. "That's damned poor payment for having to live with the likes of you in a space can this cramped."

Andrews eyed the pilot with distaste. "Tell me," he said smoothly, "did my last effort on the pedal generator go for power storage, or for a couple of gallons of hot water for that shave and shower you've enjoyed?"

Norton stretched and stood up. "I figured that having a clean face might help morale," he said pointedly.

"You're a cheap, chiseling—"

"Easy, Andrews! Easy. There's a lady present. Besides, I might forget my easy-going nature and take a swing at you."

Andrews said scornfully, "Without a doubt, a man of your age and build could wipe up the lifeship with me."

Norton chuckled. "Don't count on your age being good protection, Andrews. You may push me far enough to make me forget that you're a decrepit old man who has to buy what your physique can't get you."

"Now see here!" roared Andrews.

HE WAS stopped short by Norton who took one long step forward to grasp him by the coat lapels. Andrews' face went white, because he was looking into the face of dark anger. Norton's other hand was clenched in a large, tight fist. He eyed the older man sourly for a minute, then shoved him backward to collapse in a chair.

"What are you trying to do?" sneered Norton. "Make me mad enough to clip you so you can yell 'Foul!'? I know as well as you do that the law doesn't even recognize taunts and tongue-lashings as contributory to assault."

Alice got up from her couch and stood between them. "Stop it, both of you!" she cried. "Stop it!"

Norton's anger subsided. "All right," he said to Andrews. "Now that we've all had our lungs exercised, I'll go below and pedal that generator. Alice, you can have the bathroom first. Andrews, you take it with what she leaves. Is that okay?"

"Aren't you the hard-working little Boy Scout?"

"Sure." Norton grinned. "I am that." He disappeared down the ladder towards the generator room.

Andrews turned to Alice. "You're not going to go for that fancy routine, are you?" he demanded crossly.

"What routine?"

"First he uses power for hot water,

power that I was storing up. Now he's going to pedal that thing to waste more power."

Alice shrugged. "He's the spaceman," she said simply. "If he thinks we can spare the power for a bath, I could certainly use one."

"How can you trust the likes of him?"

"We've got to," she said. "We've got to."

"I wouldn't," said Andrews. "I can't."

She looked at her employer seriously. "We've both got to trust him," she said quietly. "Because, right or wrong, he is the only one who knows anything about space and what's likely to happen next."

"At a hundred an hour," Andrews said for the ninetieth time or so, scathingly.

Alice nodded soberly. "But you mustn't forget that isn't going to do him any good unless he gets us all home so that he can use it."

Reluctantly, Andrews nodded. "I suppose you're right."

Then Alice added, "And even if it weren't for the hundred per, he isn't the kind to kill himself."

Andrews grunted, "No, he isn't. But Alice, I'm not at all sure that Norton knows whether he's doing the right thing or not."

She shook her head. There was no answer to that argument. Furthermore, it was the kind of unresolvable argument that could go on and on until the answer was supplied from the outside. There could be no end to it until they were either picked up safely or died in lonely space.

She decided to drop the discussion as pointless, so headed for the bathroom. A hot shower and a quick tubbing of her underclothing were on her mind. Her garments, of course, would dry instantly. She had to smile a little. To think that a hundred years ago women thought something they called nylon was wonderful because it was fairly quick-drying! Not instantaneous, of course, as was the material of which her lingerie was made.

Anyhow, getting it clean now, and having a bath herself would make her feel better. And she would be better equipped to face the nerve-gruelling business of just sitting there watching the clock go around and around, with nothing to do but wait.

## VII

REGIN NAYLO faced his superior with a scowl. "That rips it wide open," he said.

Viggon Sarri smiled confidently. He glanced at Linus Brein and asked, "Just how competent do you think this new thing is?"

Linus shrugged. "We've analyzed the infrawave pattern they've developed. It is obvious that this is their first prototype of an infrawave space detector. The pattern is of the primitive absorptive type, which is both inefficient as a detector and is also inclined to produce spurious responses. From our observations, their equipment must be extremely complex too. It must be loaded to the scuppers with fragile circuits and components, because the search pattern keeps breaking down, or becoming irregular. An efficient detector cannot be made of the infrawave bands until the third order of reflective response is discovered. I doubt that any research team, no matter how big, can start with the primitive absorption phrase of the infrawaves and leap to the higher orders of infrawave radiation in less than a lifetime of study."

"So, gentlemen?" asked Viggon of his two aides. "Can you predict whether or not their new detector will deliver the goods?"

All looked expectantly at Linus Brein.

"We've been recalculating our probabilities at the introduction of each new phase of their behaviour," Linus Brein said seriously. "From their actions, I would say that they do not know, grasp, or perhaps even guess that space has flaws and warps in the continuum. They have been going at their search in a pat-

tern of solid geometrical precision, but have been paying no attention to those rifts, small as they are, that actually make a straight course bend aside for a distance. So due to the fact that their search pattern has already passed over one of these rifts in which the one lifeship lies, and passed beyond in their line of search, we have produced a nine-nines probability that they will not locate this lifeship."

"And the other?" prompted Viggon Sarri, with interest.

"I'm not done with the first yet," Linus Brein said quietly. "There remains the random search group. Therein lies the eight-oughts-one positive probability."

Viggon snorted. "I call ten to the minus ten chances rather hopeless. But go on, Linus."

"The other has a sixty-forty chance," he said. "If the infrawave detector locates the space rift that lies along our coordinate three seventy-six, when the ship is near seven sixty-seven, then the scout craft will pass within magnetic detection range of the lifeship. That's a lot of 'ifs', I know, but they add up to a sixty-forty chance. I say this because space rifts tend to produce strong responses in any of the primitive detecting gear. They've certainly been busy running down space warps, which indicates that they've been getting a lot of spurious responses." He smiled. "If space were entirely clear of foreign matter and space rifts, they'd find their new detector vaguely inefficient. I—"

Viggon waved a hand to indicate he had heard enough.

"Gentlemen," he said quietly, "I've been criticized for waiting, but what one man calls study the other man calls timidity. We'll continue to wait for the final factor. Then we'll know. . . ."

THE stereo pattern in the Information Center of Commodore Ted Wilson's flagship was slowly being filled with the hazy white that indicated that these volumes had been combed carefully. As he watched, he could see how the search was progressing, and it was painfully obvious that the search was not going good at all.

The flights of spacecraft in set patterns back and forth through the stereo had covered nearly all of the truncated space cone. The random search ships were slowly cutting secondary lines through the regions already covered. There was a green sphere combing the stereo pattern now, indicating the new infrawave detector ship and its expected volume of detector coverage.

Space was filled to overflowing with the fast patter of the communications officers, using infrawave for talks between flights, and ordinary radio for talks between ships of the same flight.

Wilson had appointed Chief Communications Officer Haggerty to police the bands. Haggerty had done a fine job, removing the howling confusion and interference caused from too many calls on the same channel. But the result was still a high degree of constant call and reply and cross talk. Most of the chatter came from the infrawave detector ship, sending the scout craft flitting hither and thither on the trail of spurious responses.

It was almost impossible to grasp the extent of the operation. Only in the stereo pattern could anybody begin to follow the complex operation, and those who watched the stereo knew that their pattern was only an idealized space map of what they hoped was going on.

It was worse than combing the area of an ocean from maps that contained a neat grid of cross rules. Much worse. For the uncharted ocean is gridded with radio location finders so accurate that the position of two ships a hundred yards apart shows a hundred yards of difference in absolute position in the loran.

Some day in the distant future space would be solid-gridded with infrawave navigation signals. Then the space coordinates of any spacecraft could be found to a fine degree of precision. But now all that Wilson and his nav-techs

could do was to keep sighting the fixed stars, and from them compute their position.

This sort of space navigation was good enough to keep a ship on course, but far from precise enough to pinprick a true position. But, after all, a crude positioning in the middle of interstellar space is good enough. One literally has cubic light years to float around in. Once the spacecraft begins to approach a destination, the space positioning can be made.

Again, few spacecraft pause in midflight between stars long enough to care about their interstellar position. After all, space flight does provide a mode of travel where the destination lies within eyesight. Or rather, it has lain within eyesight ever since it became commonly accepted that these ultimate destinations were places, instead of holes poked in an inverted ceramic bowl.

Then, in the middle of the communications confusion, came a call from one of Commander Hatch's scout flights.

"Pilot Logan, Flight Eighteen, to Commander Hatch. Report."

"Hatch to Logan. Go ahead. Find something, Will?"

Will Logan said, "Solid target detected on radar. Commander. Approached and found. I am now within five thousand yards of what appears to be Lifeship One."

The entire fleet went silent, except for the detector ship, the scout craft, and Wilson's flagship.

Allison asked, "Was that our target, Logan?"

Logan replied laconically, "Nope. I was on my way back from a gas cloud—I think—when the radar got a blip."

In the background, they could hear Allison saying, "There's a real target out there where Logan went. Haven't you got an infrawave response out there somewhere—" The mike clicked off. Allison probably had remembered that he had his thumb on the "Talk" button and removed it.

CAPTAIN WARREN said to Wilson, "That's a hell of a fine space detector, isn't it?"

Wilson nodded absently, picked up his own handset and called, "Logan from Wilson. How close are you now?"

"Thousand yards, Commodore. And no doubt about it. Lifeship Number One."

"You stay on, Logan, and give us a rundown."

"Yes, sir. Not much to tell, you know. But I'm closing in."

The scout craft pilot went on and on, mostly filling in with inconsequential details of how he was closing in, jockeying to parallel the lifeship's course and speed, and finally making a space approach.

At last he said, "They're on radio, Commodore Wilson. I'll relay as I get it. Too bad these crates aren't fixed to patch-cord the short range radio to the infrawave. I—" Pilot Logan went on to rattle off the names of the men aboard the lifeship, stopping once to reconfirm a pronounciation.

"Where's the pilot, and the other two? Miss Hemingway and Mr. Andrews?"

"They must be in Lifeship Three," said Logan. "That's a guess. Er—Commodore Wilson, I'm within a couple of hundred yards of them now and they're waving out through the astrodome at me. I'm about to toss out a light bomb. Or has anybody got a radar fix on me?"

"Better toss out the light-bomb. Also radiate radio on the finding frequency. Hatch!"

"Hatch here."

"Hatch, send out a cruiser class thataway and pick 'em up."

Hatch laughed in a brittle tone. "It's been on its way for six minutes, Commodore. Half of our job is done!"

Wilson said, "Good!" and closed his mike. Half of the job was done, but it was, as far as Ted Wilson was concerned, the lesser half. He wanted the lifeship that sheltered Alice Hemingway.

Three hundred ships combing the spaceways with magnetic detectors and radar and eyesight. One ship combing God-knows-what with a half-cooked infrawave gizmo in which nobody had any confidence. One-half of the job done on what was as much a fluke of luck as good management.

And out there in the awful dark Alice was trapped in a space can with a happy-go-lucky hulk of a pilot who lacked the drive and ambition to buck for his own command, no matter how deeply mortgaged, and a small, wiry ruler of industry who bought what he could not command, and knew no more about spacing than Aunt Agatha's pet Siamese tomcat.

Wilson laughed bitterly. A-spacing she had wanted. Now she had it.

Pictures went through Wilson's mind. A picture of Charles Andrews comforting Alice by the force of his personal drive, confident that money could buy anything, including rescue from space. Andrews calming her fears and—it must be chill in the lifeship by now—bringing her the animal comfort of warmth, and offering to take care of her. His wispy arms about her, his bony hands caressing her as he held her head on his shoulder, his—

This picture was replaced by the vision of big indolent collar-ad Pilot Jock Norton. He would be taking over because he alone in that lifeship knew what spacing was all about. Mentally, Wilson could see Andrews a little hysterical because the financier was out of his element, and Norton taking over completely. Maybe Andrews had succumbed to some nervous affliction because of the strain.

Norton would be calming Alice's fears and confidently predicting rescue, and proposing that they combine the interrelated factors of the conservation of heat and the passage of time by indulging in exploratory dalliance. Wilson could even envision Alice, not entirely convinced that they would ever be rescued, agreeing because she would be unwilling to die without having reached the pinnacle of emotion.

That picture was even more distasteful, but it was replaced by another in which Charles Andrews was making the gesture. Where Norton had youth and masculine appeal, Andrews had the suave manner and the smooth experience of his years. Some fast talk and a few vague promises, to say nothing of some well-calculated suggestions, and Alice would—

WILSON tried to shut that notion out of his mind, but it went on and on and on.

And on.

Only one thing made this series of pictures bearable at all. Thank God Alice was aboard that lifeship with two men instead of one. Especially two men who could not help but find one another deficient in something or other.

Then the third or fourth vision came. Norton and Andrews might possibly, due to their precarious position, settle their differences in basic nature and come to an agreement.

They might be taking turns!

Ted Wilson gritted his teeth and tried to get deeply interested in the search grid.

It was nine days old. . . .

Alice looked up with a startled expression as Jock Norton came through the ladder hatch into the central cabin of the lifeship.

"But isn't—ah—aren't you—" She let her voice trail away because she didn't quite know how to finish.

He laughed. "I put enough reserve in the tank to take care of the elderly Napoleon. Look, Alice, I want to talk to you without his guff on the side."

"About what?" she asked. "Or shouldn't I ask?" The recent shower and tubbing of her underclothing had given the girl a feeling of confidence.

"About me. You. You and I. Us, you know."

"What can I say?"

He blurted, "What the hell's wrong with me?"

"Why, I—"

"Nuts," he snapped. "I'm not asking you for an explanation."

"Then why put it that way?"

"That's the point," he said. "I don't know. Something's all wrong inside."

"How?"

"Napoleon. Andrews. Frankly, I hate his damn guts. I've always hated the guts of that kind of moneybags. He walks all over everybody, buying what he can't control. Darned near theft, if you ask me."

"So?"

"Aw, hell! The little character has got something. I want to know what."

"Now it's him?"

Norton nodded. "Something about Andrews. I don't know. I don't know how or what or why, but there's something about him."

Alice eyed the pilot strangely. "Good or bad?" she asked cautiously.

"Both."

"Jock Norton," she asked quietly, "you've never had to work hard to get what you wanted, have you?"

He stared down at his fingernails. "Maybe that's because I never wanted anything of real value."

"Maybe," she agreed. "But what have you wanted?"

"Damned little out of life," he answered her truthfully. "Fun and games, mostly."

"And I suppose they came easy?"

He nodded. "Being a space pilot has—well, a certain egoboo. You find yourself invited here and there by people who have never been any farther out of new York than Hackensack, or maybe no farther out of Chicago than Evanston." He looked down at his fingernails again. "There's always women happy to claim they've slept with a man who has been to Castor, or Pollux, or Polaris, or even Centauri. A man gets his bed and breakfast and his fun. But—" Abashed, he let it trail off.

"So what about Mr. Andrews?" she prompted.

"He's been there, too. But his—well, somehow I think—"

Alice smiled quietly. "In other words, Mr. Andrews' spacing is only a means to his own advantage instead of being the end itself?"

"I guess that's what I mean. Andrews doesn't use spacing as his business. He uses it to get to his business."

"That's right."

"So where do I go from here?"

"That's your decision."

"I know. And I wish I knew how to make it."

SHE smiled at him sympathetically. "I wish I could help."

"Maybe you could."

She looked at him cryptically. "Not Alice Hemingway. I've got me a man out there who is combing space for all three of us. You'll have to make your own life and find your own girl."

"Suppose he doesn't find us?" he asked bluntly.

"Then," said Alice soberly, "we have no future to concern us, no decision to make, and no failure to measure up to or to account for to anybody."

"And we'll have died without having really lived?"

"Most everybody does. Few are content to lie down and get it over with. One lifetime is not long enough to content one's self. No alert, willing, intelligent human being can be content with *Thanatopsis.*"

"I don't know it."

"I don't know it too well, either. Something about, 'When thy summons comes to join the innumerable caravan that moves, et cetera, like one who wraps the draperies of his couch about him and lies down to pleasant dreams.' Or something like that."

Bluntly he said, "It's nine days."

From the top of the ladder, Charles Andrews repeated his familiar refrain, "Nine days at a hundred per hour."

Norton turned swiftly. "Yeah," he drawled. "But we'll have that argument later, Andrews. Right now it's time to blast out with a distress signal again. They've got to know we're still alive, no matter what else."

"Okay—okay."

"So you fire up the infrawave transmitter and I'll pedal the generator, as before."

Norton disappeared below. Andrews went to the small panel and sat there watching the one meter, his hand resting on the one switch.

"Hell of a note," he grumbled.

Alice asked, "Why?"

"Can't send a damned message on this. Only make an identification call."

Considering the size of this lifeship, and the fact that an identification call is all that is really necessary, I can't complain too much," she told him seriously. "What could you tell them that they don't know already? Could you urge them to greater haste by the power of your voice?"

Andrews actually had been thinking exactly that. Between the checkbook in his wallet and the pen in his pocket, Andrews had always been able to wield a lot of power. Men had jumped when he spoke, corporations had stopped their own programs at his signature.

His personal account would have covered the purchase of a spacecraft of the type in which they had cracked up. That he did not own his own interstellar runabout was a matter of a different economy. It was cheaper to buy passage as he needed it than it was to own his private spacer and keep it parked at some space port for his convenience.

But as Alice taunted him, Andrews could not say, aloud, that he believed his personal demand would bring help faster then the mere knowledge that human beings were adrift in space. It would sound as though he thought himself more important to the Universe than Alice or Jock Norton. He did think so, of course. But this was no time to insult his lifeship companions by saying so.

He eyed the switch distastefully. The meter was climbing up to the red line that meant that the infrawave transmitter was about ready to be turned on. Then it would hurl out its coded message.

In the back of his mind was a hazy recollection of radio code. He remembered that 'a' was a dot-dash, and that 'n' was a dash-dot. He did not recall whether 'd' was a dash-dot-dot or a dash-dash-dot. 'r' was dot-dash-dot and everybody knew that 'e' was a single dot. The letter 'w' baffled him completely but he was sure that 's' was dot-dot-dot. So the worst he could do would be to flub two of the letters in his name, making it come out A-N-D?-R-E- something-S

THAT, he felt, would let the Universe know that he was still out there, drifting. The ragged codes might even cause them to hasten because they might believe him to be alone, or without the help of the pilot who probably knew code well.

The meter hit the red line.

Charles Andrews snapped the goggle switch up and down, then up-pause-down. He waited a second, then made it up-pause-down, then up-down. He started the 'D' but his faltering hand flipped the second dot in a jittery fashion.

Down in the guts of the infrawave transmitter was a code wheel, supposed to turn completely around for one revolution. Along the periphery of the wheel was a series of serrations, which in passing a fast-action switch keyed the output of the simple transmitter, sending the stylized code. The jittery flipping of the main switch coincided with one of the serrations on the code wheel so that Andrews turned off the whole gear just as the transmitter was keyed on. The power normally used for the energizing section, stored in local capacitor banks, discharged through the output section.

It was not spectacular. The meter just flopped back to zero, a fuse blew, and the cabin was filled with the pungent odor of burned insulation.

Below, in the pedal generator saddle, Jock Norton felt the load bucking, then it went off completely and reflex almost threw the pilot out of his seat. The

pedals pumped with no resistance. He went aloft.

"What happened?" he asked.

He sniffed at the air as Andrews pointed to the meter.

"It shouldn't happen," said Norton. "What made the thing buck, Andrews?"

Andrews was not the kind of man who hides his errors, at least. He faced Norton and said, "I was keying the transmitter."

Norton growled, "Did it ever occur to you that if this gizmo could be keyed, it would have been made that way in the first place?"

"No. I assumed that the thing was made to be handled by people not familiar with code, and that if one knew code one could key it."

Norton growled again, "Ever think that I know code, and that if it could have been keyed, I'd have done it before this?"

"Now that you say it, I suppose you would have. But what do we do now?"

"We try to repair it," snapped Norton. "Do you want to try it all by yourself, or will you permit me to help?"

Alice got between them once more. "Get it fixed first," she said sensibly. "Then argue about it afterwards."

Norton nodded, but he was not happy about it.

## VIII

IT WAS finished.

Commodore Theodore Wilson eyed the stereo grid with distaste. The filmy white haze, marking off the volumes already combed, filled the grid completely and overlapped the enclosing lines.

The pattern search had been most thorough. The random search teams had cut curlicues and looping curves back and forth through the grid. Their coverage had not been perfect, by far, but it was good enough for a random search. The volume covered by the infrawave detector spacer was spotty, but adequate.

The equipment was still breaking down every five or ten minutes, still delivering a horde of spurious responses. Scoutships still were being sent scurrying back and forth to investigate.

He faced the grid unhappily. He was gaunt from lack of sleep, from hastily snatched meals, or meals missed completely, from chain smoking, from watching what had started as a chance to make a good mark turn into drab failure. Worse, a failure that in no man's mind could be blamed upon Ted Wilson. For he had found one lifeship, and the fluke would be forgotten.

So would his failure. By every man but Wilson.

Somewhere back in that vast black volume of nothing, outlined by imperfect mathematical concepts in a larger field of nothing, was a lifeship, lost. A tiny cold mote of iron twenty-odd feet tall and nine feet in diameter across its widest point.

Wilson tried to draw his mind from it, but could not. Hysteria crept in but was quickly subdued.

In his mind he saw her as he had last seen her, pert and happy, with her light spacebag on the floor of the waiting room beside her slender ankles. He saw her before him, taut with thrill and excitement, vibrant and alive. He remembered her parting kiss, and the warmth of her body pressed against him.

Alice had been filled with anticipation, wanting to share her excitement with him, but unable to share what was a brand-new experience to her of going to space with a man who had been a-spacing for years. A man who knew all too well how space could be boring, lonely, and incredibly monotonous.

Not like travel across land, where there is scenery to watch, and although a tree is a tree, no two trees are are ever alike, just as no one mountain ever looks the same at two o'clock in the morning as it had four hours earlier at ten in the evening.

Not even like travel on water, across the broad ocean where the scenery is

water, whipped into waves of some similarity. For no two waves are ever the same exactly, and there is always the chance of a whitecap or a surfacing fish. The motion of the waves is incessant, at some times as soothing to the nerves as a lullaby.

But space was always the same. Across the galactic reaches covered by Man so far, there is little change in the aspect of the sky. A nearby star here or there is misplaced, but by and large the sky looks the same from Terra as it does from any planet or any star within fifty light years.

Move a man from Sol to Sirius, and Canis Major loses a bright star and changes shape to a degree not noticed by any but a trained uranographer. Ophiuchus gains another unimportant star that no one would care much about.

But then, Alice had been thrilled from the center of her heart to the flush on her skin with the idea of taking to space at last, so that she could at least begin to grasp the immensity and the mystery that he had failed to bring to her through talk.

Well, Alice Hemingway was getting her young tummy full of space!

He was still swearing under his breath when the men came in to ask him what they should do next.

He eyed them sourly. Manning, Edwards and Wainwright of his own ship. Hatch, Weston, Allison; then others Wilson knew only by reputation and name — Morganstern, Cunningham, Wilkes, Thordarson, Moore, Silkowski, Themes, and Calcaterra.

THEY watched him quietly, knowing what he must be feeling. They wanted orders, either to continue this fruitless search or to abandon it. But not one of them wanted to be the first to speak.

Finally Wilson singled out Toby Manning, the computer.

"Well?" he snapped.

Manning shrugged. "Tell me what to do next and I'll do it," he said defensively.

Wilson exploded, "You know your job! Suppose you tell us all how three hundred ships could comb space and miss anything bigger than a hard-boiled egg."

Toby Manning started to open his mouth to say something. He was not at all sure what he should say, not at all sure what was wise to say, but he knew he was expected to say something. It was as well for Manning that he felt indecision, for if he had uttered a syllable it would have been blasted back down his throat.

"Space search!" roared Wilson angrily. "Integrated maneuvers! We might as well be a bunch of crying children, lost, and scrambling all over a department store trying to get ourselves located. Sure I know there are indeterminates. I know there's always trouble with space coordinates. Sure, it ain't like plowing a farm where you can follow the edge of where you've been last. But you, Manning, are supposed to be a computer, capable of plowing with the Law of Probabilities which, my math prof once told me, should include the probability that human beings will make errors and be generally sloppy. You set up the search grid and proposed the search pattern with what you called a factor of overlap-saftey."

Wilson turned on Hugh Weston. "And you are supposed to have a bunch of the finest astrogators in the Universe! You and your collection of schoolboys, confidently walking behind the stereo and drawing pinpoints and hairlines to show where we've been! Nuts. You should have used a ten-inch kalsomine brush."

He paused for breath as he scorned them with his eyes, then picked Allison.

"That fancy doodad of yours, Allison —the famous infrawave detector and ranger! Did you ever get more than ten minutes of constant operation out of it?"

"Once," Allison snapped angrily, his face red and his hands opening and closing.

"Fine," sneered Wilson. "Oh, fine. Oh, hell!"

He looked at them all again. He saw them, this time.

"All right," he said contritely. "I've been off base. I'm wrong. Manning, what are the probabilities for error in the grid itself?"

"Commodore, nothing can be perfect. We had to approximate their position, we had to guess their speed. But we did put our search area out beyond the region where their chances ended. If they do lie outside of the volume of space searched, their position lies under a nine-nines figure against the computation. I may sound like I'm talking gibberish, but that's it. No man can make a perfect sampling cross section unless he samples every item. I would stake my uniform on the probability that the lifeship lies within the volume outlined on our grid."

"Yes." Wilson nodded. "Weston, can you add anything? I chewed you out, too, and now I want to back down and ask your honest opinion."

Hugh Weston shrugged. "We're far from perfect ourselves," he said quietly. "I'll put it this way. I gave strict orders to the men in the marker ships that if there was any remote chance they might drift, they were to overcompensate. In other words, running a channel through space back and forth leaves a man lost himself, as to his exact position. I had men marking the courses. Each run through the grid covered a cylindrical volume. If there were a chance for any cylindrical coverage to miss its neighbor, leaving a hole in the grid, my men were to move in and see to it that these errata were closed. But I repeat, we're not perfect."

WILSON said contritely, "Allison, I owe you the most. You snapped me out of it. Maybe I owe you the least for bringing that damned gizmo out here and tying up Hatch's entire fleet of scout craft? But Hatch would have been sitting quiet anyway, as it turned out. Anything to add?"

"Nope," said Allison, with a shake of his head. "We know the infrawave detector is no polished instrument. We're fumbling in the dark. But there was that possible chance that the detector might have worked in deep space where it hadn't worked in the interference field of a planetary system. We hardly know what makes the infrawaves radiate, let alone how they propagate. But we tried. Just as you tried. We failed."

"Just as I failed," said Wilson bitterly.

"Not completely," said Commander Hatch. "We did catch one of them."

"Batting fifty per cent. One hit and one miss."

"Stop beating yourself, Wilson."

"Beating myself? I—" He stopped, then spoke to Manning. "What are their chances of being in the same general region as that other lifeship?"

Manning said to Weston, "You answer that."

Weston shook his head. "We have no way of knowing whether the rescued ship left the foundered spacecraft before or after the lost one. Nor at what celestial angle. Nor at what speed. Okay?"

Manning nodded, then added to Wilson, "The answer to that, Commodore, is that the position of the rescued lifeship has no bearing on the lost one. Just as the turn of heads in a toss has any effect upon the turn of the next toss."

Wilson nodded unhappily. "And so we sit here and talk it to death."

"What more can we do?"

"We can start over again."

"Is that an order?" asked Hatch.

Manning shook his head almost imperceptably. Wilson caught the faint objection and said, "Wait a moment. Toby, what have you got in mind?"

"If we start over again," Manning said soberly, "I'll have to reconstruct the grid. Because by the time we've covered the grid, they'll have had time to pass outside of the present realm."

Wilson thought this over. "Why," he asked generally, "don't we start on the outside and close in?"

Manning answered, "Because in starting on the inside we have the best mathematical chance of finding them.

By starting on the outside, we must cover a vast cylinder, element by element, working in the direction opposite to theirs. No, that's not the right way to do it, Commodore."

"All right. Reconstruct your new grid, Toby. Hugh, get your gang together and compute the center line of the pattern within a half-inch. Morganstern, you've got a good crew of advanced techs. Turn 'em all over to Allison. Allison, pack enough men aboard that cranky crate of yours so that any part that blows can be replaced within ten seconds. I want uninterrupted operation, even though the thing only hands us spurious responses.

"Hatch, put half of your gang in with the random search team. No use using all of you to run down gas clouds and meteorites and places where there should be something the size of a planet but isn't. Yes, we'll start all over. And this time, Hugh, give us fifty per cent overlap, and get busy with Toby to compute the new grid on that basis. Can we do it?"

They looked at him. Some wearily, who saw him more weary than they. Some angrily, but Wilson was beyond honest anger himself. Some anxiously, who knew that Ted Wilson had lost more out in that black nothingness than a reputation, or a mark on his record. Some looked at him willingly. They were all with him, tired, angry, expectant, but all willing.

Weston growled, "We'll find 'em, damn it."

THE room rumbled with growls. They were not schoolboys, thrilled with the adventure or given to demonstration, nor youths driven to the job of combing the unknown for their commodore's lost love. But they felt it inside and stifled it in low-voiced growls because they were not much given to bragging, either.

And Ted Wilson knew that if the lost lifeship was to be found, his command would find it.

Wilson's communications officer came in quietly. He caught his commodore's eye and motioned Wilson aside.

"Commodore," he said, "something I'm not quite sure about."

"Yes?"

"The hourly infrawave distress call?"

"Yes, of course. It's time for it." Wilson looked at the man's face and knew that something was wrong. "It came in, didn't it?" When the communications officer didn't speak, Wilson cried hoarsely, "It came in?"

The com-tech nodded slowly. "It started, but it was sputtering badly. Then it conked out cold, Commodore. Nothing like I've ever heard before."

"Like what?"

"Well, you know the code wheel runs in standard communications code, giving the spacecraft license, the lifeship number, and the general distress call, repeated over and over for three minutes. Well, sir, the license identification came through all right, but after that the code got awful garbled and spotty, and then the whole damned transmission just crapped out, sir. After about a half-minute."

"Fade?" asked Wilson in a strained voice.

"Went out like a blown fuse. Bit blast, then silence. Nothing."

Wilson thought for a moment, then looked around. "Anybody have an idea?"

Allison scratched his head. "You say the code was all right, but then got spotty?"

"Yes, sir."

Allison looked at Manning. Both were involved in science to a high degree, Allison as an infrawave researcher; Manning as a computer. Both had studied the mathematics of communication. Manning nodded soberly.

"You don't suppose they foolishly tried to key the automatic transmitter?" he asked. "Superimposing a code upon another code would result in a spotty transmission, since the intermingled transmission bits would obtain only where both codings delivered a positive configuration. It might—"

The communications tech broke in scornfully, "The pilot of the Seventy-nine was aboard. He'd know. Nobody but a complete imbecile would try to key an automatic distress transmitter."

Allison nodded positively. "Can't be it."

Commander Hatch looked down at his feet. "I was in a space can once," he said. "They don't last forever. I—" He let his voice trail away.

Wilson looked into their faces. The cold, bleak fact was so clear in their faces that he could not ignore it. He was forced to recognize the fact that a lifeship is no spacecraft. A lifeship is a flimsy tin can, as spaceworthy as an open raft on the broad ocean, as spaceworthy as an umbrella in a windstorm. A lifeship was not intended for comfort, or for travel, or for use. It was aimed at a hope and a prayer that if the mother spacecraft came a cropper that human lives could be protected for a time, long enough to give hope of rescue.

In the faces of the men had been determination. Now the determination had faded. Left was only sorrow and resignation.

Wilson had lost.

Doggedly he said, "We'll loaf it out for the next hour. We'll go on as though this hadn't happened. We'll prepare for a recoverage of the grid."

They all nodded and left, but the step of each had lost its spring, and voices had lowered to funeral rumbles. Some even whispered.

COMMODORE WILSON swore at the closed door.

The hour passed with the slow interminable drag of eternity itself. It was the complete uncertainty of the result, the angering fact that not a single thing could be done until that hour had passed, and even then there was a high possibility that nothing could be done at all. So long as the hourly signal came in, there had been solid knowledge of the survival of the lost party.

This had been a sort of haphazard thing. There had been times before when a lifeship party had missed sending the signal because of fatigue, and had finally sent their signal late. Suggestions were always cropping up that the signal be entirely automatic, clock-timed. These ideas were claimed to be impractical since a timed, automatic signal only meant that the lifeship itself was still lost in space, and not that any aboard it were alive.

A full, two-way infrawave system would have been the answer; if a full two-way system could have been installed in a lifeship, still leaving room in the little space can for things essential to the sustenance of human life.

Ocean lifecraft are equipped with hooks and lines for catching fish, with gizmos for making water from the salt ocean drinkable. Air is free. Waste products are cast overboard.

In space there are no fish to catch, no salt ocean to purify, no air but that within the tiny can and its high-pressure air flasks. There is a supply of water and a small refining plant to distill waste products, not at all efficient, but adequate for a few days. But the bulk of the food and water and all of the air necessary to maintain life filled up a large percentage of the small volume of a lifeship.

Slowly, that nerve-grinding hour passed, and then it became an hour and a half. Then it was two hours, then two and a half. Then three hours.

No signal. . . .

Andrews looked askance at Norton. "Nothing we can do?" he asked quietly.

Norton shook his head. "Nothing I can do," he said helplessly.

"But there must be something."

"There probably is," Norton said simply. "If I were a trained com-tech, I could probably fake something together and make some fudged-up repair that would at least radiate. But I'm a pilot, so I don't know all the angles of infrawave equipment. Not even basic theory. I know enough—with the aid of this repair manual—to replace any part that might have failed. But beyond that—"

Andrews shook his head and scratched his nose. "I can't see it," he said.

"See what?"

"I can't see how a man can claim the ability to make a repair on a complicated thing like this without knowing more than you say you know."

Norton smiled thinly. "I can replace the plumbing under a sink, too," he said flatly, "without knowing enough to make me a licensed plumber. This manual gives full directions, but no reasons. If the voltage at this terminal is less than thirty-six hundred, then check the voltages on terminals so-and-so, measure the resistance between terminals this-and-that with the equipment off, connect terminal A to terminal B, and check the alternating voltage across Component Two-nineteen. Depending upon what we find that does not follow the book, we locate the busted doodad and replace it. But the damned book doesn't bother to tell you why the voltage across such-and-such terminals should be thirty-six hundred, or what happens when it isn't. The book was not written for infrawave engineers. It was written for guys like me who care more to get a signal on the infrawave bands than we care for the theory of operation."

"All right, then. So we blew something. Can't we run it down?"

"Trouble is that we blew too many things at the same time."

"Don't understand."

"Naturally," snapped the pilot. "You know less about this stuff than I do. This is supposed to be more than thirty-six hundred, providing that is functioning. But the voltage will go above seven thousand if the other has come unglued. If you blow both items, together, the voltage downed by one and upped by the other comes out to about four thousand. The reading may be all right, but when everything in the damned set reads wrong, I have to give up."

"So what do we do now?"

Norton shrugged. "We hope they don't give up. We keep on working on this thing. We—Hell, we might as well turn on the receiver and listen."

"Can we spare the power?"

Norton looked at the financier. "Might as well," he said. "We might as well. If they abandon this search because we aren't transmitting, we might as well waste the power anyway. . . ."

VIGGON SARRI faced his lieutenants. "From Brein's report" he announced, "they finished their grid search some three hours ago, and have been milling around in stacked pattern ever since. Linus predicts that they have been waiting for a recurrence of the regularly transmitted signal that should have kept coming but which blew out from some sort of overload. Within the half-hour, they have reformed their search pattern and seem inclined to continue, even though it should appear obvious to them that their friends have lost their ability to transmit."

Regin Naylo looked puzzled. "Could it be that they've discovered how to tell when an infrawave receiver is being used?"

Faren Twill shook his head. "If they knew that they'd have developed a more efficient infrawave detector."

Linus Brein agreed vigorously.

Viggon Sarri seated himself self-confidently. "Gentlemen, you have before you a race with dogged determination, the grit and will to go on, even though they have tasted failure."

"Right," said Faren Twill.

"So now I know," said Viggon. "And now we go in!"

Regin Naylo looked hopeful. "To let 'em have it?" His face fell. "Or to make friends of them?"

Faren Twill started to speak, but Viggon silenced him with a wave of his multiflexed hand as he went on. "We go in prepared for anything. Naylo, you will, as usual, set up our forces for battle. That means an all-man alert at all stations. Complete alert, Naylo."

Naylo nodded.

"With one exception. No attempt to clear the space charge in the projectors with a preliminary blast."

"But look, sir—"

"You'll issue instructions to your beam officers to set their beams for the

trial blast, but not to clear them."

"Mightn't that be dangerous?"

"It might. But the clearing blast can come before we strike—if we have to strike. I doubt that the wait will be disastrous, Regin. After all, they seem to have no armaments worthy of the name. And firing a few thousand megnoid beams, even at test power, cuts up some awful didoes in space."

"So?" sneered Naylo.

"Aside from scaring the armor off of them, it also kills a certain element I demand. At any rate, those are your orders. You, Faren Twill, will take charge of the maneuvers, setting up the fleet in battle formation and instructing each ship captain to be prepared for any maneuver, however unorthodox. Both of you are to maintain constant personal contact with me, for my orders may change by the minute. Linus, you had better clear your logic computer of all problems, but retain the information we have stored regarding this race. Be prepared to accept any information that may come from our next act. Understand?"

They all nodded.

"All right. Then as soon as each of you is ready for further orders, report. At that time we are going in!"

## X

EYES on the speaker grille as if they could force it into life by the power of their minds and attention, they sat in the little lifeship cabin in deathly silence. Their utter helplessness was apparent to all three of them, but their grasp of that fact took different trends.

Charles Andrews was angry and frightened. Had he been able to transmit his blocked-off communication he would have roared in anger, cajoled, threatened, accused the rest of the Universe of incompetency, then offered large rewards. But perhaps for the first time in his life Charles Andrews was in the awkard position of having no channel of communication with those who might do his bidding. Therefore he was as frightened as a musician who is told he must lose his hands, the use of which give him his only opportunity to pour out his inner feelings.

Jock Norton was stunned. Because he had looked upon this affair as a sort of lark. Others had come through space-wreck safely and he should, too. Because now he had been forced to realize that this incredible thing was happening to him. Juggernaut was about to roll over him, and there was nothing he could do about it.

A couple of the others who had come through safely had gained some fame and fortune by writing their memoirs, and taking their short strut upon the stage of Public Curiosity. But the game had turned bitter, and now Jock Norton was wondering if it might not be better to get it over with as quickly and painlessly as possible—except that Jock Norton was afraid to face death with the same calm, casual attitude with which he had always faced life. But life had been fun, while death . . . Who knew?

Alice Hemingway was frightened almost into shock. She was holding fast to a blind hope, the same hope to which many a shipwrecked and space-wrecked victim has clung when the searching party passes at a distance and goes on, and the mind keeps crying that surely someone will turn and see. And screams become hoarse because all reason and logic have fled, and there is no way for the mind to realize that no voice could be heard across the thunder of waves or across the gulf of space.

Alice also had blind faith in her lover. He could not fail; he would not permit himself to fail. She would not face the possibility that though Ted Wilson would do his best, that his fine crew, and the equally fine crews of the other commanders would do their best, that best was not enough.

So far, no one had mentioned the fact that Charles Andrews had wrecked their code transmitter. One does not kick a dog for ignorance, nor lay blame for technical incompetence upon a financier. An error is an error, and the other two victims knew that Andrews felt the

weight of the error he had made as heavily as they did. But there it was, and sooner or later it would probably break through, and come out stark and vital.

Then the infrawave receiver chattered into life.

"All right," said the voice of Commodore Wilson. "We have our plans. We'll assume that they've had a technical breakdown and cannot transmit. But until we find that lost lifeship, and the three of them in it, dead or alive, we'll keep on combing space! Are you with me?"

The infrawave yammered with a chorus of affirmatives.

Andrews took a deep breath.

Norton relaxed and lit a cigarette.

Alice looked around the cabin wildly and cried, "Ted—Ted! You can't fail us now!"

They sat there in their little lifeship cabin, cold and frightened, and they listened to the chatter going on across space from ship to ship and an occasional call to Base. Hope waxed and waned; they were as lost as any human being has ever been lost.

Yet somewhere out there men were searching for them. They could be light years distant; they might even be going in the other direction. But it could be just the minute after the next when a wild happy yell would burst from the infrawave receiver to inform the known Universe that the lost had been found!

And so they waited—and hoped. . . .

COMMANDER HATCH, tired of inactivity, was loafing along out deep in space on the trail of a clustered group of the infrawave detector's improbable findings. But this time it was not a spurious response he got.

He flicked past Viggon Sarri's flagship at no more than a half-mile distance and blinked at what he saw, hoping to scan it more closely on the image that his eye retained. The big flagship had come out of the black in a flash, and a fluid line of sparkling lights, had blasted into size, and had been behind him in another flick. It left only that flowing image on Hatch's retina, but that was enough.

"That," he said aloud in his one-man ship, "was a spacecraft! And *big!*"

Hatch flipped his flitter end for end and set the blast. It brought him to a slowdown by the time he came abreast of the second wave of Viggon Sarri's space force.

To one side was a monster, sleek and dangerous-looking, its turrets flat and ugly-snouted. Above him was another, more distant, but no less angry-looking. Before him was a fighter carrier, its skeleton deckworks crammed with fleet hornets of space, their stinger fixed forward, looking out of the carrier at every angle.

Small, ineffective drive flares indicated that their crews were alert, though idling, and that their working guts were hot and ready to arrow into space. Before was another of the vast battle wagons, its projector snouts uncovered. One of the turrets made a swift turn, a lift of the projectors, a lowering and complete swivel. Then another started the warm-up maneuver.

Hatch's scoutcraft passed on. On through the front line of ultra-heavies to the lighter, faster classes of spacecraft behind the front array. Jaw slack, he pressed his eyes against the binocular scope, straining to see the flat-extent of each formation. But they faded off into the depths of space and he could not see the end of them.

He passed another carrier and watched the first flight of fighters whip out from the skeleton deck in a flat circle, to turn upward along the axis of the carrier and disappear forward toward the spearhead of the force. They looped around after awhile and came back to the carrier after their test flight.

Everywhere Hatch saw the ugly snouts of projectors lifting and turning in their turrets.

He broke out in a cold sweat. Hatch was as frightened a man as ever existed.

He was a commander in the Space Force, a body trained for combat. But

the Space Force, for obvious reasons, was not trained in combat. Aside from having to contend with an attempt at space piracy, some more frequent attempts at barratry, theft, and other forms of skullduggery, and very frequent smuggling, the Space Force was not armed against opposition.

They had their arms, and their ships were efficient. But for the lack of an active enemy, the Space Force was not a pampered service, handed money for the development of heavy space ordnance. There had always been the unexpected "Maybe, some day," but to date no one had ever come up with any proof that Humankind did not represent the only sentient animal in the aggregation of Galaxies.

So Hatch, trained to run down fragmentary piracies and an occasional run-in with some spaceman whose operations exuded an odor into space, was no more trained to space combat than any of his fellows. He had exercises, but had never heard a shot fired in wartime anger.

So Hatch sweated it out.

He flipped off his drive so that he would not be seen. His hand trembled, halfway to the microphone of his infra-wave. He stopped it, lest he be heard.

Flipping off his drive was good for another reason too, he told his quaking mind. It also kept up his speed instead of decelerating to a dead stop in the middle of this incomprehensible, magnificent, dangerous-looking fleet of space battlecraft.

Personal safety, and the hope of—

HATCH laughed at himself sourly. He was in space, not hiding behind a tree on a battlefield-to-be. He was floating out there in the openest open that had ever been opened, where it was definitely true that if he could see them, they could see him. Trying to hide in the mid-

[*Turn page*]

dle of that task force was like a man as masculine as he was, trying to troll unnoticed through a mass meeting of the Gamma Upsilon Mu—better known as the "Get Your Man" sorority.

Besides, other men were back there in space that must be warned. Probably he had already been noticed, and zeroed-in from a few of the smaller projectors in that task force. They would hardly let him pass through the fleet and go free. They might not blow him out of space until the last moment, to preserve their element of surprise. But the men back there—

He reached for the microphone, took a deep breath, and offered up a brief prayer to get his lines through before the blast came. And that the blast be a quick and merciful blackout instead of a slow and painful matter of dying all alone, deep in space. . . .

Wilson was striding up and down the stereo room when the loud-speaker on the wall bellowed into a strained roar:

"Commander Hatch to Commodore Wilson on emergency priority!"

The entire personnel of the plotting room froze solid.

"Wilson! I've just contacted a fleet of warcraft, big ships with nasty-looking projector sort of things looking out of mobile turrets. There are big ones! Bigger than anything we've ever built, and skeletonlike things that have open decks loaded with one-man fighters. They're—" . . . .

Viggon Sarri said crisply, "Get him! Alive!"

Regin Naylo barked crisp orders, and some of the ships took off to surround the small Earth scout craft. One of the big cruiser class swerved over and hurled out a blanketing infrawave that quietly clamped down on space and shut off Hatch's transmission as abruptly as cutting the wires on a telephone line. Except that there was not even a click. . . .

Wilson grabbed a phone and barked, "Froman! You're Hatch's second. Scout that! And report constantly!"

"Affirm, Commodore!"

Wilson called Admiral Stone. "Trouble, Admiral," he snapped curtly. "We've contacted what appears to be a war fleet in space."

Admiral Stone was dumbfounded. Like many others, he realized that the mathematical probabilities of there being another sentient race in the Galaxy was almost a certainty, that considering the billions of stars, the figures read to the tune of probably some twenty thousand such planetary races, even taking the probabilities in a pessimistic quantity.

But twenty thousand sentient races sprinkled across a volume of space with the infinity of the Galaxy gave each and every one of them a lot of room. Their making contact with one another was slightly less probable than the close passage of two stars.

Then the men of Earth waited again.

They realized that nothing is ever done right in a hurry. Light leagues of space separated the human forces from the alien. Light years had to be crossed. As time passed, everybody sat tense, each with his own personal thoughts.

An alien race? Certainly everybody expected that Humankind would some day meet up with some stellar race distant and remote and probably as exotic-looking as anything that the most lurid magazines had ever used on their covers. Or possibly they would be human-looking. Each man had his own ideas, and no two were exactly alike. The aliens would come as friends. They would be met as friends. They would come as superiors to help them to reach Utopia, or come as masters to make them slaves. They were humaniverous—or they were good to eat themselves. And what might happen to an intelligent filet mignon?

And so the time passed slowly until Hatch's second, Major Spaceman Froman, and his scouts made contact.

THEY were wide spread as they came against that space lattice of Viggon Sarri's first wave. Their reports were sketchy and incomplete, because they had been ordered to make contact, to observe, and to swoop back. In snatches they described the fleet:

"Thousand feet long—"

"Five hundred in diameter—"

"Twelve turrets—"

"With four projectors each."

"Two forward and—"

"Two at spread behind."

"Carriers—"

"Why haven't we got carriers?"

"Fighters with fixed—"

"Hundreds of them!"

Stone heard, and digested the ramble of information. He heard things described that he could not believe, and things that he had to accept.

"Wilson!" he barked. "Retreat! Retire."

"But look, Admiral—"

Admiral Stone took a deep breath and fought his dazzled mind into a semblance of order.

"Commodore Wilson," he snapped crisply, "official orders. You are to abandon this search. At once."

"But do you realize—"

"Stop it, Commodore Wilson!! I am well aware of the fact that there are three human lives at stake. But under these circumstances I cannot permit three thousand lives to remain in jeopardy on the scant chance that three may be saved. You are ordered to abandon the search and return to base."

"Admiral, I—"

"I sit here arguing with you, Wilson, because I don't want to take punitive measures. But please understand that you are facing a battle fleet of unknown strength and unknown fire power, both factors of which must certainly be greater than any power or number we can put in the field. You cannot face them, Wilson! Your space rifles are stowed and your ammunition holds are empty. Your torpedo bays are stocked with a few scattered practice missiles with smoke-flare warheads. Your fire-control equipment needs overhaul and adjustment, and your lockers are not checked out for battle maneuver. For the safety of your men, Wilson, and for the safety of your home, you must stop this senseless argument and obey your orders!"

"Sorry, Admiral, I—"

"This is mutiny!"

"I guess it is, but I am going to find—"

"You will transfer your command to Mr. Manning, who will take the temporary rank of Commodore Executive. You will consider yourself under arrest without confinement to quarters, and you will present yourself to my office upon your return."

"I will do nothing of the sort!"

"Then I must take punitive measures . . . Attention, all squadron commanders and officers above the technical grade! Commodore Theodore Wilson is relieved of command, and you are to proceed on your own flight plans to your individual bases. This is by order of my office. I am Admiral Stone."

Toby Manning came in, and behind him were Edwards and Wainright. Wilson faced them angrily. "Well?" he snapped.

Manning looked uncomfortable, but said nothing.

"By Regs," said Wilson slowly, "I am still in the command of this squadron."

Toby Manning nodded slowly.

"I am refusing to obey orders. I am *not* placing my squadron in your command, Mr. Manning. Understand?"

Toby smiled crookedly. "I understand. You are accepting all responsibility, and you are telling me that if I do not follow your orders, I am disobeying a senior officer."

"Precisely."

Wainright said, "But look here, Ted, isn't that—"

Wilson's laugh was brittle. In it was no humor at all. "That is precisely right. Even though I am disobeying my senior officer, Mr. Manning will be disobeying his senior officer if he does not follow my orders."

"But isn't Admiral Stone senior to all of us?"

"Yes. But he is a distant senior to you. I am your immediate superior. And now, damn it, stop making like a space lawyer and let's start hunting!"

Wainright nodded, but as he turned

to leave he was muttering:

"Wish we had more than the steak knives in the wardroom to fight with!"

## X

VACANTLY the three survivors of spacewreck, in the lost lifeship, stared at the grille of the infrawave receiver in the deadly silence that followed Admiral Stone's last transmission. This was the end of message, end of hope, end of them.

Jock Norton' toneless voice gritted, "That about rips it wide, doesn't it?"

Alice Hemingway's voice came out, weak and thin. "Ted—you tried. Now you'll—"

Andrews stood up quickly, and strode across the floor shakily. He faced the infrawave receiver with a mad glitter in his eye, and he roared:

"Damn you, come back! Damn you, come back!"

Over and over he roared the inane words, and as he roared, his anger and madness increased until he was beating a fist on the cabinet in a violent rage.

The infrawave said crisply, "Flight Squadron Nineteen in flight pattern for Procyon Four."

"No!" screamed Andrews.

"—time," continued the infrawave.

"No!" screamed Andrews again, beating the cabinet with both fists now.

"Ten!" said the infrawave, and Andrews came down on the cabinet with all of his wiry strength.

"Nine!" The beat became a rhythm with the call.

"Eight!" Another hard slam left blood marks on the metal.

"Seven!" The cabinet bent inward. A shower of glass fell from the tuning indicator.

"Six!" Almost lost in a solid thunk.

"Five!" And after the blow something spluttered in the speaker's throat.

"Four!" Knobs bent, and Andrews' blood drooled along the cabinet front toward the deck.

"Three—" With a fizzling sound the infrawave died, and said no more.

Insanely the man beat upon the bent cabinet in the same rhythm although the sound had died. He beat and he beat until the stun and shock had been wiped out of Jock Norton's face. He came over and hauled Andrews from the cabnet. The financier struggled, but it was futile against Jock's size and strength and youth and stamina.

The pilot trapped Andrews flailing arms and held him immobile until rage, madness and hysteria had passed. Andrews lay silent, his face blank, his breathing shallow.

Norton looked at Alice. "Stroke?" he asked worriedly. "Has he got a bad heart?"

Alice looked up, the semi-blankness fading from her face. "I—don't know. Is he—"

"He's passed out or burned out, or worked himself into a faint."

Alice brought a blanket as Norton lifted Andrews to one of the bunks. "Jock?" she asked.

"Yes?"

"What does this mean? Enemy ships and all that?"

"It ain't good, baby. From somewhere has come the inevitable transgalactic culture, only with guns instead of gifts."

"But it isn't like us to run."

He nodded soberly. "Yes, it is," he told her positively. "The first man lived to start the human race by knowing when to run like hell. He ran until he could pick up a handy rock to throw. That's what our men have done. Run home to get our rocks."

Alice looked wistful. "And Ted?"

Jock shrugged. "I wouldn't know," he said. "He'll probably get busted a few grades for insubordination. They took his command away. That's one way of preventing full insubordination from an officer who might have a lot of public sentiment on his side, or good high-rank material in him. They take away his command *before* he disobeys, slap him down a few steps for trying, and let him sweat it out."

"I'm glad," she said simply and her voice was calm.

NORTON looked at her strangely. She caught his look and smiled, almost serenely.

"It would be a shame," she said, "for Ted to have to lose his rank and his prestige and his honor, and maybe his life and the lives of all his men, by doggedly staying out here in the face of an enemy fleet, against orders."

Norton nodded dubiously. "I suppose so," he said. "But do you know where that leaves *us*?"

"Yes," she said, "I know."

Tears welled up in her eyes, and she leaned forward to find strength in his arms, and a rest for her weary head on his shoulder. He held her, gently stroking her hair with one hand and pressing her against him.

She stopped sobbing after awhile, and looked up at him. Murmuring softly, he leaned down and kissed her eyes. She clutched at him and swayed in his arms. He found her lips then, but there was no fire in them.

Nor was he surprised. For there was no fire in his own, either. . . .

Viggon Sarri gloated, "Ver-ry interesting. Ver-ry."

Faren Twill shrugged. "Just what else did you expect?"

Regin Naylo scowled. "We had 'em in your lap," he complained. "And nobody gave the order to fire. We could have chased 'em inch by inch, but all we did was to hang here in space and scare the hull plates off of them and let 'em run like rabbits."

Viggon smiled. "Exactly. I expected one of two things. They could have swarmed into us senselessly, suicidially, to take whatever toll they could take before they lost. That's why we had the projectors alerted and the fighters hot. I don't even open an ant hill without protection, gentlemen. So they did the other thing."

"Sure," growled Regin Naylo. "They could either stay or run. Since they didn't stay, they—"

"Stop being smart," snapped Viggon Sarri. "Or weren't you listening?"

"Yes, I was."

"Then you should realize that what they were doing was behaving sensibly. Just what would you do, Naylo, if you were wandering through a woods unarmed and a large, unknown, and completely unexpected beast leaped out on your path?"

Naylo sneered. "I'd run."

"Then what?"

Naylo's eyes widened. He said at last, "I'd run until I got where I could get armed, then I'd probably go back hunting the beast."

"Exactly. But not too good an analogy, which is my fault. They did not run in abject terror. They sent scouts to spy us and report our strength as best they could. Then they retreated. There's a difference. They *reported* home, but *retreated* to their base or bases, because they knew that they could do no good by hurling themselves on us."

"They want to arm themselves?"

"Precisely."

"And what do we do now?"

"I think we had best question the one we picked up."

Linus Brein shook his head. "Not that one," he said.

"Why not?"

"When we pried open his scoutcraft, he came out a-fighting and he fought until we had to take him over. He clipped several of our boys, and I'm afraid we got a little rough. Our fighting men can get hard, you know."

"Dead?" demanded Viggon.

"No. But he'll be in no condition for an extensive questioning for some time."

"Damn! Well, the next best thing to do is to collect the lifeship. We know what we wanted to know about their mass reaction. Now we must learn about their individual reaction to an awkward and dangerous situation."

Faren Twill picked up the microphone and ordered a flight of light destroyers into action. . . .

WILSON sat in the dome room of the detector ship and cursed. The lights flickering were still across the presentation surface, flecks and streaks

of spurious response. But with space cleared of the horde of searching spacecraft, the flickings and the streakings had diminished, although that cluster of spots still held its position.

Wilson said to Allison, "Seems to me we could have volunteered to stay out here and keep watch."

Allison was shaking his head when the dome went black again. "They wouldn't believe you," he said.

One of the techs readjusted something and the presentation returned.

"It's a damned funny business, this Space Service," said Wilson. "Any service, I guess."

"How so?" asked Manning.

"If I give a wrong order and you disobey, to keep from piling up, you get clipped for it. If you don't refuse to carry out the order and we pile up, I get busted—if any of us come back whole."

"I wonder if *they* have that trouble, too," Wainright said musingly, looking up at the cluster of dots that represented the enemy fleet.

"Probably. I hope so."

Edwards shook his head. "I'd rather fight an enemy that had no iron-bound discipline. Let 'em run wild, taking their own ideas as they come. Let 'em argue with the skipper. Let 'em quit if their commander doesn't play their way. That's the difference between a mob and a service, Ted."

Wilson grinned. "Call it confusion then!" he said, with a wave at the dome. "And I hope they have it!"

As they watched, a group of dots moved from the group and started away, slowly, at an angle. They watched until the dots had progressed a few feet from the main cluster.

Ted Wilson eyed them intently. "There must be some reason . . . Allison!"

"Yes?"

"See if you can project an imaginary line across that damn dome! I'll bet that our lifecraft lies somewhere along the course!"

Allison yelled, "Jones! Halligan!"

The dome blacked out with a puff of smoke from one bay. A tech groped deep in one of the open panels and went to work with long-handled tools. Someone called above the hubbub that they'd have it back in shape in a minute.

Wilson mumbled, "Sixteen thousand delicate infrawave parts, and a half-million electronics components, all balanced on the pinpoint of a page of equations rolled into a dunce's cap! And I have to live with it!"

Allison grumbled, "Hell, nothing is perfect the first time."

"All right, forget it." Wilson shrugged, as the dome flickered on again.

It made a flowing, over-and-over turn. Then the presentation spun around some one of its personal axes of no particular coordinate, like a planetarium being operated by a putterer who wants to see what happens when he pushes any button at random.

It settled down.

Jones and Halligan set up their sighting devices in the center of the big floor and began to project their line across the dome.

One of the techs came running up to Allison. "If we change the driver response threshold by seven ultrachronic levels—"

"Go away, Magill. Maybe tomorrow."

"But look—"

"You look. I said—"

A white-yellow circle appeared on the dome with a red line cross on it like a telescope reticule. Halligan was aiming a flashlight pointer at the dome and talking into the floor mike at the same time.

"Hey, Allison! Maybe that's it?"

IN THE circle was a pinpoint that came and went. It danced now and then, and it sloughed into flowing shapes as it merged with the rest of the flickering on the dome. It would have been lost in the ever-changing light pattern of the dome if there had been no reason to suspect it. The spot lay on a dead line

across the dome from the course of the other spots.

"All right," Wilson said grimly. "We've got no more scouts to go look. Turn this crate head-on for that trace and we'll barrel!"

Slowly the presentation in the dome shifted. The almost lost spot rose until it was dead above.

"Pour on the coal!" yelled Wilson. "We've got to get there first!" He grabbed for the infrawave phone and cried, "Hello, out there! Lifeship Three, we've sighted you! We'll be with you in—" He glanced at Allison. "How far are they?"

Allison shook his head. "That's one of the limitations. We can detect, and display in solid angle azimuth, but we haven't got to the ranging yet."

Wilson said a few words that should naver have gone out over the infrawave. Then he said into the phone, "Well, we've sighted you, anyway, and we'll be with you soon." And to Manning he said, "I hope to God they've got their receiver on. . . ."

Linus Brein said, "I didn't catch part of that. New words for the files, I guess."

Viggon Sarri said, "Probably a few words of condemnation over the fact that their detector doesn't range."

"I'll catalogue them so."

"Do that. Maybe we can ask their specific meaning at some later date. But I'd not be inclined to bark those words at one of them to see what happens. It might happen. Linus, how do we stand with them?"

Linus consulted a chart. "They're a little closer to the life ship than we are. But we're faster."

"Faren, can't we get any more speed?"

Faren Twill shrugged. "We've a destroyer escort," he said. "If we don't mind leaving the destroyers behind."

"Pour it on," said Viggon Sarri sharply. "Then have the destroyers fan out in an intercept pattern just in case. . . ."

"Cold," said Alice in a thin voice.

But it was not really cold; it was the giving up of all hope, the turning off of all will to live, that made her cold.

Norton cradled her in his arms and thought of how this would have been if they had been snug and warm a-planet, instead of lost and alone in space. Her slender body against him did not bring passion, but compassion. He stroked her head and tried to warm her shivering body.

Andrews still lay in a coma.

Jock Norton looked over Alice's shoulder at a wall cabinet. In that cabinet were some capsules that would bring a merciful end before the real suffering began. Andrews probably wouldn't need one. But maybe—maybe—

Slowly, as if doing something against his will, Norton disentangled Alice's arms. Gently, lest she stir and cry out in fear, he broke her hold on him and stroked her arms for a moment. He slipped his own arm out from beneath her neck and held her with his other arm for a second or two.

She was moaning faintly, staring at the ceiling and not really aware of what he was doing. He slipped off the bunk and walked across the room unsteadily.

Slowly he went, for the idea in his mind was against his determination. He cursed the ruined transmitter, and snarled under his breath at the broken receiver. Then he fiddled with the catch of the cabinet, his fingers obeying his subconscious, instead of his not too firm will.

HE TOOK two capsules from the bottle and went back to Alice with them in his hand. He had reached, was standing beside her, when he looked at his closed fist and decided to wait it out one more minute before he popped one into her mouth and took the other one himself.

For life, as poor and precarious as it was at this moment, and as likely as it was to get worse, was still better than taking that long, unknown and unpredictable step into the Long Dark.

His minute passed all too quickly.

Alice shuddered and pressed against him. "Ted," she pleaded weakly. "Ted—hold me."

"Yes, darling," he said softly. There was no point in hurting her any more. Let her think he was Ted, if that was the way she wanted it.

Andrews stirred, and groaned.

Norton looked at him, frowning thoughtfully. Maybe Andrews should have his easy out, too. It would be tough on the guy to come to, and find himself the only live one in the ship, and of course not know where to find the remedy.

The pilot decided to stall for another minute. He'd get another capsule and slip it to Andrews. Then he would hold Alice once more and keep her happy, thinking he was Ted.

"One moment more, honey," he breathed into her ear, then kissed it gently. "I've got to get you something."

"Hurry," she murmured.

Hurry? Yeah! Get it over with!

The trip across to the cabinet was longer this time, for the idea was still rubbing him the wrong way.

"Aw, hell!" he grunted, as he reached for the bottle again.

## XI

AS COMMODORE THEODORE Wilson eyed the infrawave detector presentation on the dome of the detector ship, he groaned. The presentation of targets was stronger now. At the apex of the dome was the lifeship, its response waxing and waning, but always strong enough to stay visible even at its lowest ebb.

Some forty or fifty degrees down the hemisphere was the stronger response of the enemy warcraft, hanging motionless in the dome. The group of space craft that had come with it were dispersed in some complicated pattern. Most of these were lost in the tricky shift of the spurious lighting of the dome. Others had disappeared completely because they were out of range.

"Pilot!" cried Wilson. "Can't we pour on more power?"

The pilot rapped his levers with the heel of his hand and shook his head slowly. "Sorry, sir. We've been at the top of the military emergency range all along." Occasionally he looked back over his shoulder at the motionless enemy response in the dome.

No man in the detector room needed a fancy ranging detector and a computer to know the worst. The infrawave would not range, but it was good enough for this. The inefficient detector and knowledge of one of the simpler facts of navigation told the whole unhappy story.

When the angular position of a distant object remains constant to the observer in a moving vehicle, they are on collision course. And so long as that observed angle does not change, they will remain on that collision course, right up to the bump. Distance, or angle of attack does not contribute or detract. The fact remains.

The object may be stationary, or the observer may be stationary and the object moving, or both may be moving, but so long as that angle remains constant, they will collide. One may be curving and the other in acceleration or deceleration, but if the observed angle does not change, it's still collision.

In fact, there are only a couple of exceptions to this. One is when the subject object is astern and moving dead away *from* a collision, or what might have been one before either ship moved onto the course. The other is when a circle is cut with the object at dead center. Make it a spiral and you have your course of danger.

Put it in space, or on the sea, or in the air, or across the land, and the same holds true.

So the fact that the enemy warcraft hung at some forty or fifty degrees and did not change its position meant that the detector ship and the enemy warcraft were going to meet! And undoubtedly at the point where the lifeship would be in the middle because the enemy was obviously heading for that spot. When they hit, the enemy warcraft

would come through the detector dome exactly where its response now registered.

"Can't we stretch something?" demanded Wilson.

Manning thought about it. "We'll bust something if we—"

"Then bust something!" barked Wilson.

Manning and Wainright took off below, while Ted watched the spot over his head. He tried to guess whether he was closer to the lifeship than the enemy, or whether it was the other way around. Not that it made any difference to the chase, but it did mean that he or the enemy was the faster of the two.

Wilson put his chips on the enemy. But until he had two sides of range to his included angle of forty-odd degees, no one could tell.

Then the spot moved down a bare trifle, faltered, and continued to flow slowly back toward the rim of the dome.

Wilson gave a howl of victory just as the infrawave detector conked out again. The crew scurried madly to repair the fault. He was still looking glumly at the blank dome when the infrawave phone rang beside him.

"Wilson!" he barked in it angrily.

"Wilson, I'm pleading with you to use some common sense."

"Admiral Stone, I've located them! We're on our way to get them and nothing anybody says will—"

"Still disobeying orders? Still mutiny?"

"My Good God, Admiral Stone! You wouldn't want me to abandon this search now that we've located them?"

"Wilson, you're out there with a crew of our top-flight infrawave engineers, physicists, and theorists, along with about eight billion dollars' worth of experimental gear. You're flying that responsibility into the teeth of an enemy."

"Admiral, I'm taking a calculated risk."

"If you manage to get back," snapped the admiral angrily, "you'll . . . Oh, hell! It'll be better for you if you don't, that's all."

The detector dome came on again, and at the same time came the first faint failing whimper of a response from the reliable magnetic mass detectors. Wilson eyed the small celestial globe, saw that its angle-attack was that of the lifeship, and shouted into the phone:

"Admiral, we've got 'em on the magnetics! I'll be seein' you later."

He hung up the telephone on the admiral's shout of dismay. . . .

VIGGON SARRI snarled something to Regin Naylo and the second officer went below to snarl something at the engineering crew. They went to work shorting out the safeties and cutting out paths of attenuation.

Viggon Sarri read the detector with a set face and said, "Linus, we're barely keeping pace. Losing, if anything."

Linus Brein said, "You've got a half dozen one-man fighters aboard."

"They're no faster than . . . Wait a minute! We can blow 'em out the forward catapult and add the catapult speed to the ship's speed."

The flagship became a flurry of action. Men hauled the fighters aloft and one by one they were hurled out of the launching tube. They kept their added velocity and slowly, yard by creeping yard, the fighters drew away from the mother space craft. But yard by crawling yard would be enough by the time the whole distance was covered. . . .

Wilson said to Maury Allison, "You've got a tender ready?"

"Yes."

"All right, then. Let's plan this operation carefully. As I see it, we're going to have a split-second advantage, and we've got to make good use of it."

Allison eyed the dials on the magnetic-mass detector, and made some calibrating adjustments.

"From what I can tell," he said, "the lifeship is in free flight along a course not more than ten to fifteen degrees angle from our own free flight course. We've been in a slight-vector thrust, you know."

Wilson nodded. "That's all to our ad-

vantage. Now unless I've miscalculated, I think I can be belted out of here in your tender. I'll make contact, then continue on until you catch up with me. Right?"

"Sounds reasonable."

Allison gave some orders to one of his techs. The tech punched his keys for a half-minute and waited another ten seconds for a strip of paper to come out of the machine in jerky sequences. He tore the paper off when it had stopped, and handed it to Wilson.

"Here," he explained, "are a group of possible time-versus-velocity courses. Follow 'em exactly and we'll make space contact on the other side."

Wilson looked at Allison. "Wish me luck," he said.

Allison nodded. "You've got it," he said quietly. "You know we're for you, or we'd not be here."

"If I don't come back—"

Allison's face drew taut. "If you flop out there," he said solemnly, "Toby Manning is next in command, and he'll be forced to follow orders from Base. So don't flop, Ted."

"I won't," promised Wilson.

He fired up the tender, waited until everything was running hot and ready, and blasted himself out of the exit port forward. He set his magnetic detector and patch-corded it to the drive so that the warp-generator would close down and the drive would cease at the proper instant for deceleration in close proximity of the lifeship.

Although the long-range search radar was completely useless at velocities even approaching the speed of light, Wilson turned it on and checked it out in readiness. He patch-ordered it also to the basic space drive, to take over after the velocity of his ship fell below the speed at which radar became useful.

Then he waited, with one eye on the timer. The detector ship faded behind him and was lost as his lighter spacecraft responded to the drive.

He wished helplessly for an auto-timer drive, because he knew that his hand and eye were not accurate enough to do the job as smoothly as he'd have liked. He wanted a bigger ship with a monster-sized drive. One of those spaceport luggers that can hump spacers from berth to berth would have been fine, even though they carried insufficient storage power for anything more than close to Base operations. He wondered whether such a ship would be too massive for fast maneuverability, and decided to ask about that, some day.

THE hundredth-second sweep hand of his watch came around and up, and he began matching its motion with a rythmic beat of his hand on the reversal lever as the hand crossed the tenth-second marks. By the time the hand was swinging close to the zero-second, his beat was close to perfect.

The hand crossed the top and Wilson beat down on the lever hard!

The ship swung around in space and the drive flared out on the forecourse as the tender began to beat its terrific velocity down. Wilson felt that peculiar prickling of the skin that comes with a swiftly closing warp-generator, but he knew that it was deliberate, and not a failure.

He tried to force it down faster; tried to make the driver harder. His hand rapped the power lever again and again, ramming it against its hard stop as if he could force the setting higher than maximum.

There would be particular hell to pay when he got back home, but he would have the personal satisfaction of having accomplished his mission. He put the future out of his mind because he had no idea of what kind of special hell would be given to a man who was successful, because of disobeying orders.

He watched the meter crawl down to the red mark and below. Then the warp-generator collapsed with a jar. It was a little too soon. The speed of the tender was still high—not above light, of course, but high enough so that its Einstein Mass created quite a warp in space.

He felt the heat leap high and knew

that the tender had slowed with the same sort of deceleration as a bullet hitting a patch of thin wool. He did not lurch in the ship for he, himself, had the same Einstein Mass effect. He felt a hot-sweat fever fill him as the excess mass reconverted into energy.

He shook it off, but knew that eventually he would pay for that sudden fever, with its biological effects. Then the long-range search radar produced a distant response and Ted Wilson put everything out of his mind except the problem of matching velocities with the free-flying lifeship.

He called on the close-range radio, frantically pleading for those in the lifeship to alert and be ready. He got no answer, which made him break out in a cold sweat.

The radar picked up the flight of Viggin Sarri's one-man fighters, and Wilson looked out of the dome to see if they were within sight.

They were, of course, too distant to be visible, but in the radar they were closing fast, converging upon the lifeship from a fairly tight solid angle. He clenched his fists and made a fast calculation. So far, he was ahead.

One of the course plots gave him a full twenty seconds at the lifeship. Anxiously Wilson tried to urge his ship on, even though he knew very well that the equations of time and velocity and distance provided only a single solution that could be considered at all practical.

When he caught visual sight of the lifeship, he estimated it to be no more than three or four miles ahead. His radar confirmed that. It was nerve-killing to wait as he closed down the separation, knowing that the enemy fighter craft were also closing down.

The infrawave chattered, "Wilson? How are we doing?"

Wilson told him what was going on, and Allison urged Wilson to brace himself. Allison talked steadily in a calm voice, knowing just how hard it was for Wilson to sit there, a helpless victim of a pre-set, mechanical program that promised a pre-calculated victory of time and space and velocity.

Wilson's human mind would not really be trusting calculations and split-time electronic measurements. It would demand that he leave his ship and run, that he take the levers and drive, that he do something—anything—except sit there calmly and dog it through.

Wilson saw the drive flares of the enemy, bright and dangerous, closing in from a distance of a good many miles. It was mere miles, out here in deep space where a mile was a meaningless, insignificant quantity. He could almost feel the immensity of space around him in comparison to the awful closeness of danger.

WILSON had expected that at least those aboard the lifeship would be peering out of the observation port. He put himself in their place and knew he would have been scanning the dead and merciless sky for the first sight of a flare. But as his tender crept up alongside the lifeship with maddening slowness, there was no sign of life aboard.

It took whole seconds to match the final few yards per second per second of declaration against the free-flight velocity of the lifeship. Then it took more dragging seconds to urge the tender in an alongside course that brought lifeship and tender port to port.

They matched, and Wilson hit the lever that powered the annular magnet that snapped the two space-locks together hard enough to compress the bellows into an air-seal.

He was at the space-lock before the two ships had really settled together. He was spinning the hand wheel, then clutching at the fast-escape lever of the lifeship.

"Hike!" he bellowed, as the lifeship lock opened. "Hike! We've got twenty seconds before—"

His voice stopped dead, his heart faltered a beat, and his mind rebelled at the shock of what he saw.

Charles Andrews was lying on one bunk, his bleeding hands staining the blanket. His breath was shallow and

regular, but he was wheezing with every breath. It was the sound made by someone who has lain far too long in a semi-coma, until nervous system and automatic reactions have become so dulled that phlegm in the throat does not produce a cough.

Jock Norton lay on his back with his eyes not quite closed, but all that was visible was the whites below the iris because his eyes were turned up. His right hand dangled to the floor beside the bunk, his left arm lay limply around the shoulders of the girl.

Alice's face was buried on Norton's shoulder, her left arm flopped loose across Norton's chest. Her right was trapped beneath her.

As Wilson looked, Norton's shallow breath clogged and he began what would have been a wallop of a cough, but his breath did not waver. His clogged windpipe kept making little soggy noises as the wind-stream changed in and out and in and out.

On the floor a few inches away from Jock Norton's hands was a bottle of capsules.

"Hadamite!" breathed Ted Wilson helplessly.

Hadamite, the synthetic drug, at once a curse and a blessing. A blessing to a sufferer, but a curse to one who finds the false world of self-satisfaction more pleasant than the work and worry and alternate periods of happiness and grief of reality.

Under hadamite, the slightest ambition becomes pleasantly real, desire becomes accomplishment, doubts disappear, and fears are overcome. And under hadamite life becomes so desirable that the mind refuses to return to reality. With an overdose, the mind accomplishes its aims, finds full satisfaction, then lies down to that final sleep with the complete knowledge that everything has been done, and that there are no more worlds to conquer.

Wilson rushed to the cabinet and scrabbled among the bottles and boxes there until he found the antidote. He filled the dropper on his way across the cabin and pushed the end into Norton's mouth with one hand while he levered Alice over on her back with the other. He discharged the contents of the dropper into Jock Norton's mouth, refilled it, and squirted another load between Alice's slack lips.

Brutally he pushed down and up, down and up on their chests until he heard the sogginess slurp down their throats.

Then he slugged Charles Andrews in the same way.

"Twenty damned seconds!" he snarled; in bitter realization that it would take him longer than that to carry one of them into his tender, let alone all three.

HE WAS standing there in the middle of the cabin, his mouth set hard and his mind whirling with the futility of it, when Viggon Sarri's one-man fighter group closed down and clamped onto the hull. Wilson was cursing fervently when he felt those forces close down.

The cabin floor surged gently as a sideward vector of acceleration of Viggon Sarri's task force was applied.

Ted Wilson picked up the fallen bottle of hadamite capsules and contemplated them sourly. He might have done better by not bothering with the anti-dote.

He had failed completely.

He had come aboard, only to find his girl in the arms of the pilot, all of them doped and heading for a painless death. He had prevented them from dying, but had kept them alive only to meet some unknown future at the hands of an unknown enemy.

Wilson hurled the bottle of hadamite capsules against the wall where the first searing circle of a cutter was beginning to come through.

He was shaking his fist defiantly at the wall when Viggon Sarri and his two lieutenants came through to meet their first Earthman face to face. . . .

In the commander's quarters aboard the flagship of the alien task force to

which Ted Wilson and the three unconscious occupants of the lifeship had been removed, Viggon Sarri faced the Earthman. He spoke to Wilson directly, but his voice was picked up by a microphone. Each word he spoke went into the moster logic computer in Linus Brein's ship, and returned to a loudspeaker that reduced Viggon Sarri's inflections and tones to a tinny mechanical reproduction in the Terran tongue.

"Please relax," he said, "and understand that we want only information."

Wilson was alone now. The others had been placed under a doctor's care.

"After which we get what?" Wilson demanded beligerently.

Viggon Sarri's voice was harsh, but it came through the loud-speaker in a flat monotone. "Whatever course your race prefers to take!"

"How's that?" asked Wilson.

"Your future is up to you."

"Seems to me you've been calling all the tricks."

Viggon Sarri nodded. "We hold every trump but one," he said. "We could conquer you by force, or we could annex you as a subject race. We could infiltrate you by various economic means. Or we could possibly reduce you by attrition to a chaotic condition. But we probably could never muster enough numerical strength to subdue you completely and make it last."

"Huh?"

Viggon Sarri nodded. "Regin Naylo, here, proposed that we attack and conquer by force, not being experienced enough to realize that such a course breeds everlasting resentment and eternal revolt. You'd fight to the last, and those of you who were not exterminated would hide and plot revolt until one day you'd rise to displace our rule. Faren Twill, over there, suggested a form of benevolent protectorate which would only breed contempt. You'd quietly learn everything you could learn from us, then coldly turn on us and carry battle to us."

"Probably."

Viggon Sarri nodded. "On the other hand, progress across the Galaxy would be halted because we'd both be so busy fighting one another that there would be little effort left over for the vast and endless program of expanding across the countless stars."

"Well?" Wilson shrugged. "It seems to me you're still calling the cards."

"We've called our last card, Commodore Wilson. From here on, as I said, what happens in the future is up to you, and yours. Resent us, and progress will stop. Join us as equals, and we can work together as we spread from star to star—and I daresay there are enough stellar systems to keep us from stepping on one another's toes." Viggon Sarri smiled at his two lieutenants. "We have much to learn from one another, Wilson. We can teach you patience and logic, and from you we can learn tenacity and determination."

A MEMBER of Viggon Sarri's crew came into the room and spoke quietly into his commander's ear in his native Bradian. He spoke in too low a voice for it to be picked up by the microphone.

Viggon said, "You'll be glad to know that your friends are all three conscious, Commodore Wilson."

"Alice is all right?" Wilson cried.

"This man will take you to see her," Viggon Sarri smiled.

Wilson headed for the door behind the orderly as fast as he could. By the time the orderly had reached the portal, Wilson was almost on the Bradian's heels.

Viggon Sarri turned to his two lieutenants and said, "We can learn much from these Earthmen. Eagerness, for instance. Eagerness—and emotional love." He looked at his hands, flexing them outward, then inward. He was thoughtful for some time before he said, "Lay a course to Sol, Naylo. We'll take them all home. And you, Twill, see if you can connect with Brade on a person-to-person private channel. I'd like to talk to Valdya. Maybe she's as lonesome as I am now." ● ● ●


Illustrated by
ALEX SCHOMBURG

# GROUNDED

## By William Sambrot

•

***They thought the Colonel was seeing things—until they saw them, too . . .***

LIEUTENANT COLONEL MARTIN sat back in his hard desk chair and looked out through the tinted window to where the slim, dartlike jets waited, poised on the sun-washed runways. A red and blue jet swooped down out of the brilliant, cloudless sky and shot along the runway, wheeled and rolled back toward the parking strip. It was the courier ship from Washington.

The colonel frowned, his sunburned face breaking into sharp, diagonal lines. The courier plane was used only in cases requiring utmost secrecy. And always, it brought trouble. Today, it brought trouble for Martin.

He waited, tapping a lean finger on the desk, his eyes distant but not seeing the harsh ridge of up-flung barren mountains, looming clear and incredibly near despite the fact they were sixty miles away—sixty miles of alkali wasteland where only gila monsters moved, scuttling from rock to rock to escape the brazen sun.

Beyond those mountains was Project Breakaway, the Air Force's top secret attempt to fling a dart up high enough and fast enough to break free of earth's clutching gravity. It was Colonel Martin's job to command one group of jets that guarded the approaches to Project Breakaway. It had been a dull job—routine, boring—up until yesterday morning.

It was twenty-eight hours ago, to be exact, that Colonel Martin, Captains Morelli, Sayers and Ryan had sighted and chased the fantastic platelike object that zoomed, wobbled and ducked in circles about them even though, with all coal poured on, they were hitting close to eight-hundred miles an hour.

Morelli, Sayers and Ryan had never come back from that chase. At eight-hundred miles an hour, with visibility limited only by the farthermost rim of the horizon, under a glaring desert sun, all three had plowed simultaneously into a sun-drenched ridge, a mere nine thousand feet above sea-level—a ridge, it appeared, they'd deliberately headed for and smashed into. How? Why had all three made the same error of judgment? Why had they dropped from thirty-thousand feet to nine thousand in a steep, zooming dive, flying formation, and not once mentioned it over their radio?

Why indeed? These were all questions asked Colonel Martin by suspicious security agents, Air Force Intelligence three-star generals, and, by direct TV hookup, the Air Secretary himself.

But the sixty-four dollar question they asked was: why hadn't Colonel Martin smashed into that ridge too? Good question. Unfortunately, his answer was so bad, it called for the services of a trained alienist. They'd flown one in. He'd listened and asked for time. He was getting it.

Martin swung and watched the occupants of the red and blue jet swing down and stride quickly across the hot concrete.

He recognized one of the approaching men as Under Secretary of Air, Saunders. The other was General Brereton, on the staff of G2. Regardless of whether or not they considered him insane, they felt that something had happened—something important enough to rate two next in rank to the top commanders.

THEY came in unescorted. He stood at attention until the burly general waved a hand rather irritably, putting him at ease, then he sank down again into his hard seat. Now it would start all over again. The questions, the careful scrutinizing of the plates he'd taken, the hard narrowed eyes, the disbelief—

"In your own words, again," the general was saying, "Will you repeat to Mr. Saunders what you told me over the TV hookup last night?" The general leaned forward and fumbled with the pile of color photographs on his desk. "Are these—the shots you took?"

Colonel Martin nodded wearily, sighed, looked briefly out the window and said in a soft even voice, "Captains Morelli, Ryan and Sayers and I took off at 0800—"

"Who gave permission for the flight?" Saunders cut in crisply. "Is it routine for your people to fly formations around here without some special alert?"

Martin stiffened slightly. "No sir. It was an unauthorized flight. My idea." He moistened his lips. "We are on twenty-four hours alert, of course—"

"A fat lot of good that would do if every group leader took off when he felt like it," the general sputtered, impaling Martin with eyes like blue icicles.

"We are allowed twelve hours a month flight time," Martin said. "I will admit I didn't file a plan or report my intention to take the group up—but that,

sirs, is important in view of what happened." He leaned forward. "I believe —I'm certain, sirs, that we caught—*them*—off guard." He chewed his lips at the sudden veiled look in Saunders eyes. It was plain they considered him mentally unhinged.

They waited, saying nothing, their faces as chill and immobile as marble. Martin spread his big, raw-knuckled hands.

"We took off. I flew lead, as usual," Martin began. "We were up to about twenty thousand and climbing when I ordered an attack pattern. We were doing about six hundred ground speed when Ryan, I believe it was, suddenly shouted over the radio, that something had just made a pass at him. We all saw it at once, after that, a round plate-like object, about thirty inches in diameter, maybe ten inches thick and the color of buffed aluminum. It moved sort of jerkily, wobbling back and forth and occasionally dancing up and down —almost as though it were attached to a string or something."

The two listeners exchanged glances. It was obvious what they were thinking, but Martin went doggedly on.

"I ordered the men to break formation but to remain at thirty thousand and keep it in sight. I put my ship on auto-pilot—I carry a camera and I wanted to get some shots. I did, about twelve color pix, aiming directly at the thing. I couldn't possibly have missed."

GENERAL BRERETON snorted and handed the developed prints to Saunders. Saunders examined each one, his brows lifting higher and higher. Finally he handed the pictures to the general and turned to Martin.

"Those pictures are utterly blank," he said quietly. "They show nothing but blue sky and a distant horizon. How do you account for that?"

"I can only say," Martin replied, "that the camera doesn't lie. I've taken too many shots with that camera not to know that it's in top condition. It couldn't—and didn't lie. *There was no flying disc in front of us.*"

"No!" The general frowned and sat up with a jerk. "First you tell us this story of an object darting and weaving about your formation—an object four men see and give chase. An object that led three good pilots to their death—and now you say there was no object!"

"It's the only explanation I can give for the way in which Morelli, Ryan and Sayers hit that peak," Martin said patiently. "As I say, my ship was on auto-pilot. I was shooting away—and at all times, *that disc was directly in front of me.*" He stopped and looked at the two to see if they caught the significance of what he'd just told them. They hadn't.

"Don't you understand—the others kept up a running commentary, each saying that the disc was directly in front of him—and all the time, unknown to me—they were in a steep dive and simultaneously, they hit that peak at nine-thousand feet."

There was another long silence, broken only by muffled sounds from the field outside—the chugging of fuel trucks, shouts of mechanics, the occasional crackling hum as a jet was fired up.

"Then it is your contention," Saunders said, "That each of you was suffering from a hallucination—a mirage, in fact. A mirage which took the form of a flying disc and which caused three trained pilots to fail to notice that they were losing altitude and heading directly into a mountain peak. Is that what you're trying to say?"

"It was not a mirage," Martin said. "It was a deliberately implanted impression."

"Explain yourself," the general said hoarsely. He exchanged a swift glance with Saunders.

"The disc suddenly wasn't there—after the others had hit, I imagine. I don't know for sure—but suddenly, the thing just sort of—turned off. It wasn't there. I looked around and saw the pillar of smoke far off to my left and rear but no following ships. I swung

around and tried to contact my men. No result. I went over the spot where the fires were and recognized them immediately as—the remains. I contacted the base. While I was hanging around up there, I had a lot of time to think. I realized then what I've already told you—that each of the men thought the disc was directly before him. Each followed it—to his death. I wasn't operating manually—my auto-pilot—" he smiled strangely—"isn't susceptible to —hypnotic suggestions—so it flew a straight course—at thirty-thousand."

"You believe that you—and the others—were hypnotized into thinking you were seeing a flying disc. Is that it?" the general said dryly.

"I believe that we caught someone —some *thing*—off guard when we took off on an unannounced flight," Martin said with firm conviction, ignoring the sudden reaction they showed. "I'm sure we were heading in a direction where some secret lay—without sufficient advance warning for whatever holds that secret to cover up. I'm positive we were hypnotized—lured away just like a mother quail pulls the broken wing stunt to get a dog away from her nest."

"Doesn't that explanation strike you as unbalanced, to say the least," Saunders said slowly. "What person could possibly have such powers—or devices, to hypnotize four men flying thirty-thousand feet above the earth at eight-hundred miles an hour?"

"No power on earth," Martin said softly. "The Panamint Indians won't go near those mountains." He gestured to the tinted window and beyond, to where the great range of jagged mountains gleamed luridly orange and purple under the slanting rays of the desert sun. "They have positive beliefs—not legends—about beings from other worlds who dig in the hills for shining metals . . . Who have great ships that fly. Beings who can make a man who comes too near die of thirst even though he carries water at his belt. Beings who can control the minds of men." He hesitated. "That's why they named those mountains—the Superstitions."

"I'm afraid you'll have to find a better explanation than that," the general said stiffly.

"You have the written reports of the radio men on duty," Martin said. "They all heard Ryan, Morelli and Sayers talking. They back up every word I've said. You asked my opinion and I've told you. Someone—something, didn't want us snooping around when they weren't prepared for it—and they simply drew us away by means of delusion or mind control of some kind."

"We've photographed every inch of this entire corner of the state," the general said. "You have stated that the camera doesn't lie. We have observed nothing unusual in any of the many excellent photographs made of the area you flew over yesterday."

MARTIN smiled briefly. "You observed nothing because they were ready for you. It wouldn't be much of a job for them to camouflage, if they're prepared in advance. I imagine they intercept every message in and out of here."

"You make it sound very plausible," the general said sourly. "But we're looking for something besides words."

Martin rose and his lean figure towered over them. "I held this out because I wanted you both to understand what line of reasoning made me go back. I sound insane because, of course, what I've said isn't pleasant for human minds to accept."

He brought out a large composite, constructed of carefully joined-together aerial photographs pasted on a board. "Yesterday, after I saw the smashed ships, and while I waited for the base to confirm, I went back over the route I'd taken while following the will-o-the wisp disc—on auto-pilot. This time, I shot downwards—at the earth." He slid the composite around so that it faced the two men. They came erect, eyes glittering, staring down at it.

"I didn't mention this over the TV hook-up last night, or to any of the

interrogators for reasons already given. I wanted to make certain only the highest echelon would see this." He handed the general a powerful magnifying glass. "Those ships must be a good thousand feet long, don't you think?" He laughed softly, a thin, triumphant sound that filled the room. "Who'd think that spiders—like those—could make such machines."

Saunders and the general stared grimly at the fantastic shapes and objects that were frozen in sharp clarity on the magnified photos. Great round-domed buildings, connected with long, dully-gleaming walks. And here and there tall needle-pointed ships rested on broad concrete-like bases, their slender snouts pointed up towards the blue sky, while about their bases swarmed creatures that were squat and broad and many-limbed.

The two men looked at him, then turned once again to their scrutiny of the composite, their faces impassive, unchanging. Martin opened the desk drawer and piled half a dozen thin negatives near the general's elbow.

"Here are the negatives," he said. "You can see—they're genuine," he said.

"Genuine," Martin echoed. "And they grounded me because they thought I was insane!" He flashed a white grin. "But I won't be grounded after this—and neither will the rest of us, because not a hundred miles away, sirs, is the answer to everything—everything we've ever wanted to know. Project Breakaway?" He laughed aloud again. "Kindergarten stuff to them!"

"Perhaps they're not interested in teaching—kindergarten," Saunders said slowly. He gave Martin a piercing glance. "A most remarkable job, Colonel. Lucid thinking. You're to be congratulated."

"Thank you," Martin said. "I'm glad it convinced you."

"So much so," the general said, "That we'll have to leave with it immediately." He stuffed the negatives and composite into a briefcase. They shook hands, exchanged a few more congratulatory words, then stepped out the door. Beyond them, he saw the alienist, Major Elliston, at the end of the hall. They shut the door quietly and Martin stared at it, a faint crease between his eyes. He licked his lips, swallowed once or twice and drew a deep, shaky breath.

THE door opened and the major came in. He looked curiously about the room. "Had the radio on?" he asked. "An awful lot of conversation in here, it seemed."

Martin sank into the chair, looking over at the sparkling pitcher of cool water on the sidetable. "Funny you should ask that," he said vaguely. "Didn't you recognize—"

"Better get ready for the big brass," the major interrupted. "And for God's sake, if you insist on that story about being hypnotized, at least make it a little more plausible than the one you told me—" He stopped and looked out the window. "Here they come now."

Martin whirled and stared out the green-tinted window overlooking the runway. A red and blue jet streaked along, wheels down, hit, bounced and braked to a stop. It wheeled about, flashing under the late sun, and rolled up to the parking strip.

"Another courier ship!" Martin murmured. "But, I don't—"

"Another—" the major looked curiously at him. "What do you mean, 'another courier ship'? That's the only one today—and one's too many, if you ask me."

Dry tongue scraping over dry lips, Martin stared at him, then back to the familiar red and blue jet. He swung and looked down the line of parked jets, straining to see the other red and blue which had landed over an hour ago. There was no red and blue jet there.

"Here they come now," the major muttered. "Holy cow! Saunders, Under-Secretary to the old man, no less. And General Brereton—G2." He turned to Martin. "Better give it to

them straight—" He broke off, seeing Martin's burning eyes in his drawn gray face, hearing the sudden strange rattling breath as he pawed weakly through the empty desk drawer.

"Negatives. Composite," Martin croaked. "Gone. *They* took them, and I never guessed!" His hands trailed limply and he fell across the desk, bounced and rolled onto the floor.

With a single bound the major was at his side.

"Good God! It's unbelievable!" he gasped.

He stared in horror at the dry lips, the swollen black tongue. In the space of seconds the hard young man was a limp scarecrow whose lips cracked and moved in a dry-as-dust whisper. The major bent his ear close to the withered mouth, listening.

"Water." The words were faint in his ear. "For heaven's sake—water."

The major reached up and lifted the big pitcher of cool water off the side-table. "Here, colonel, drink. Here's all the water you could want."

But already, it was too late.

## DO YOU KNOW YOUR SCIENCES?

**LISTED below in jumbled fashion are 22 "sciences," together with the technical names by which they are known. Can you match up at least 15 of them correctly for a passing score? 16 to 20 is good; 21 or 22, excellent.**

| | |
|---|---|
| 1. the science of light | (a) HYPSOGRAPHY |
| 2. earthquake phenomena | (b) HELIOLOGY |
| 3. heavenly bodies | (c) GENEALOGY |
| 4. the earth and its formation | (d) PHARMACOLOGY |
| 5. gravity | (e) COSMOLOGY |
| 6. life or living organisms | (f) IDEOLOGY |
| 7. the universe | (g) HYETOLOGY |
| 8. climate | (h) PHOTICS |
| 9. handwriting analysis | (i) GEOLOGY |
| 10. inorganic substances | (j) HEMATOLOGY |
| 11. medicines | (k) MYCOLOGY |
| 12. deciphering ancient writings | (l) SEISMOLOGY |
| 13. the ancient life of the globe or fossils | (m) BAROLOGY |
| 14. extracting metals from ores | (n) PALEOGRAPHY |
| 15. weights and measures | (o) CLIMATOLOGY |
| 16. fungi | (p) ASTRONOMY |
| 17. ancestry; pedigrees | (q) METROLOGY |
| 18. the sun's energy and action | (r) MINERALOGY |
| 19. the blood | (s) BIOLOGY |
| 20. rain | (t) METALLURGY |
| 21. the earth's surface | (u) GRAPHOLOGY |
| 22. the evolution of human ideas | (v) PALEONTOLOGY |

*(Answers on Page 111)*

They fell into half a foot of water, while overhead, troops were marching

*When Simple Psiman met a dyeman in India, he was hunting a teleport to use as a bomb base—but the local telepaths gave him one H of a job*

**a novelet**

# SIMPLE

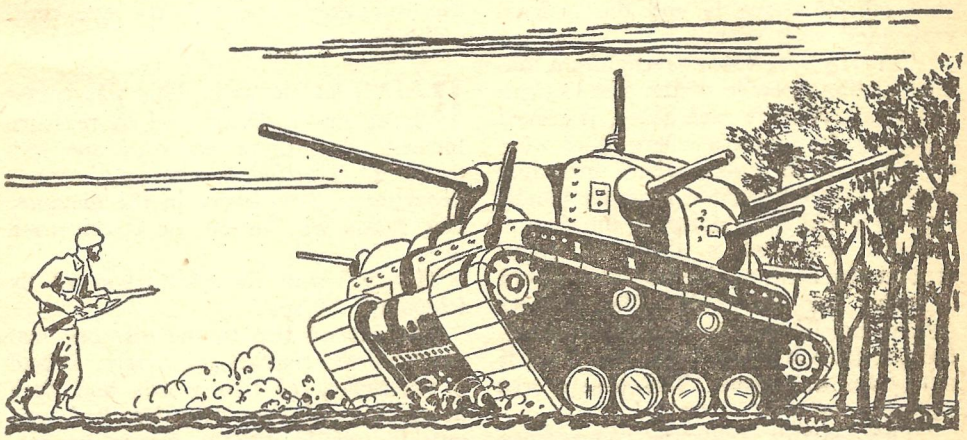


Illustration by EMSH

# PSIMAN

By F. L. WALLACE

## I

HE SLIPPED on the jacket and scanned around the corner of the hall outside before he got to the door.

"I psi," whispered the pin in his lapel.

Egan Rains let go of the knob and felt for the emblem. It was inconspicuous, smaller than his thumbnail, the disc of the moon against a dark blue background. The markings delineated a face on the moon, and two radiating antennae.

Rains frowned and rolled it in his fingers. He thought he'd stripped himself of unnecessary identification. No harm done since no one in India had seen it on him, or heard it—yet. He looked at the emblem regretfully, turned it over. The back was inscribed: American Association of Psi Astronomers. It had sentimental value but he'd have to get rid of it.

He went to the disposer slot and dropped it into the wall. The insignia came whizzing back and struck the opposite wall. Muttering that foreign devices never worked the way they should, he dug it out. He examined it cursorily and noticed a tiny nick in the surface. That was all. The material was harder than the tough blades of the disposer. His respect for the techniques which made the pin mounted.

Someone walked by in the hall. Had the noise it made when it struck been heard? He let his mind reach out delicately.

"I pthi," grumbled the pin.

Now it was lisping—and it was louder. The blow must have damaged the speech crystals inside. Hurriedly he shut off his thoughts and the insignia responded with silence.

Primarily, it was a recognition device enabling people of the same talent, psimen, to identify each other. It served a purpose in America where there were so few, but in India, where mentalist activity was far greater, it was a handicap. It would be gabbling all the time.

Rains crumpled a sheet of paper around the little mechanism and tossed it gently into the chute. The disposer ground noisily and, as he half expected, the pin came hurtling back. He pried it out of the wall again. This time it was slightly bent.

"The disposer is for the convenience of guests. It's set to return all jewelry accidentally dropped into it."

Rains jumped and looked around wildly. He was certain there wasn't anyone in the room, and he hadn't observed a service screen. He still couldn't see either. But there was an eye staring at him from the wall.

"Shortages," explained the eye somberly, noting his bewilderment. "Our country doesn't yet produce all the material we need. Lacking full size tubes, the management of the hotel ordered smaller ones. They serve the purpose."

Only slightly larger than life, the eye blinked at him. It filled the entire screen. "If you must get rid of jewelry I suggest a pawnshop. It's more economical."

Rains glanced back with casual cageyness. How much had the other seen, or overheard? Probably nothing. He'd have noticed the eye. "Sorry. I was throwing an odd cuff link away."

"It was odd," conceded the eye. "A little harder and it wouldn't have come back." The eye blurred. "Can't have the disposer damaged, so we draw the line. If it's as hard as a diamond it passes through."

It was a convenient line and a profitable one, Rains noted absently as he went closer to observe the inconspicuous screen. Was it so tiny that it could have been on without his noticing?

"People don't throw away diamonds the way they used to," the eye complained.

RAINS let him talk. This was something on which he had to reassure himself. And there was only one way to do it. The fellow was in a service department, somewhere in the distance. But Rains was certain he could reach him.

"I spy," said the pin, triggered by telepathy. "I spy."

The second trip to the disposer had damaged the crystals grievously. It had a vocabulary of two words and they never changed—but now they had. An outsider would get the wrong impression if he heard the distorted message. Rains clamped his fingers tighter on the emblem. But even that relatively slight pressure forced the speech crystals closer. "I spy," cried the pin. It seemed thunderous.

It took prolonged mental effort for Rains to remember that what he had to do was stop probing. The voice of the insignia was obligingly silent when he disengaged his mind.

The eye glared at him suspiciously. "You say something?"

"Not a thing."

"Didn't think so, unless you can talk without moving your lips." The eye disappeared and was followed on the screen by an unidentified lump of flesh, possibly a nose. Then the eye reappeared. Perhaps it was the other eye. "May have been tourist kids outside my window playing your favorite American game."

Rains nodded in relief. The voice had seemed loud to him but not to the other. His hands had smothered the reverberation. His nerves were merely on edge. "They love baseball," he said politely.

"Not baseball," said the eye. "I believe it had another name once, Hide and Seek. Now it's called I Spy." The eye blinked rapidly. "Well, so long."

When he was alone, Rains thought swiftly. His brief mental contact with the eye's mind convinced him he hadn't been observed in any suspicious act. That went to the credit side.

He felt the emblem. It was definitely not an asset. He thrust it determinedly into his pocket. He couldn't endanger his chances of finding the one man in India who meant so much to civilization and astronomy.

## Comet Comedy

**THERE have been many campaigns to save the earth, but none, we venture to suggest, have ever taken the slightly riotous turn of prestidigitation among the sacred cows of India. Strange methods sometimes have to be employed. And when it comes to convincing human beings, magic has ever been more potent than logic.**

**You may even find a bit of a moral buried under the spoofing, but at any rate you'll find it good fun.**

***—The Editor***

He rode down and went out of the hotel and onto the street. Momentarily, he wished he could go back. But the pin drove him past the long AFUA line.

In 1976 India was contradictory. In the last few decades it had achieved industrialization not much below Western standards. But it was densely populated and living patterns were not always equal to those of Europe and America. Rapid technical advances created new jobs and wiped them out again over night. A highly trained craftsman in the morning was often an unemployed vagabond by noon. Until he was taught new skills and could be reabsorbed back into the labor force he was an Applicant For Unofficial Aid. His dignity was such that he was never a beggar. Anyway, begging was forbidden by law.

Rains had no way of turning off his hearing. The best he could do was to walk swiftly and try to ignore the pleas. A few left their position in the AFUA line and trailed after him, but eventually they gave up and returned to the hotel to await other tourists.

It wasn't difficult for Rains to adopt the mannerisms of a sightseer. This was the vast motherland from which European languages and nations themselves had come in the remote past; complex, bewildering, containing the old while striving for the new. Cows in the streets imperiled jet cars and pedestrians. On the pinacles of skyscrapers, holy men lay down on beds of nails while television cameras carried the picture to faithful followers in remote villages. Beside hydroponic gardens, fakirs mystified the curious with the ancient rope trick.

If his mission hadn't interfered, Rains would have liked to study these mentalists for his own satisfaction. He was a psiman himself, a powerful one, though of an elementary variety. He was a telepath, a man of one talent with no other ability—a simple psiman.

THE EMBLEM weighed as heavily in his pocket as it did in his mind. So far he hadn't found a quiet street on which to drop it. With so many people thronging the city, every city in India, it wasn't going to be easy. Nevertheless he wandered on, turning and twisting through boulevards and alleys until he came to the ideal place.

He slipped his hand in his pocket, jingling coins, and came out with the little talisman. He angled toward the curb and let it fall from his fingers. He relaxed mentally as soon as he was rid of it. Sweepers would brush it up and though it might attract another telepath's attention it couldn't be traced back to him.

He swerved to miss a cow that ambled down the street and smiled amiably.

India was a romantic place, but it didn't conform to the highest standards of civilization.

A hand plucked at his elbow. "Pardon"

Rains turned. He recognized one of the men from the AFUA line. He'd been wrong; not all of them had become discouraged and gone back. Rains appraised him quickly, a squat fellow, not very tall, but he made up in width what he lacked in height. He wore a loin or ghandi cloth and a remarkably ugly turban. It was the usual attire for this part of India. His limbs, though not long, were of enormous muscular girth.

"I don't give alms," said Rains, tearing his gaze from the fascinatingly horrible turban. Passers by were staring at the man too.

The native's eyes held the impervious look of the unemployed. "I didn't ask, sir. You lost something." He held out his hand and the emblem was in it.

Rains snatched it in dismay. The native's face seemed innocent enough. Hesitating for only an instant, Rains made a quick mental stab, feigning a coughing spasm while he did so. "I psi, pthi, spy," bleated the pin. He jangled coins loudly and coughed harder.

Quickly he withdrew his mind. The Hindu didn't suspect a thing, though his eyes widened at Rains' impromptu performance. It didn't matter; he'd ascertained the other wasn't a telepath. Rains flipped a few coins toward him, said thanks and walked away.

He glanced back. The native was still trailing behind, evidently not satisfied with the reward. As long as the fellow was behind him, Rains didn't want to drop the emblem again. And he couldn't keep it.

Another idea came up. From the hotel he'd seen a stream winding through the city. It was yellow and muddy, an even better place for the disposal of the tricky little item. He angled off until he saw the river ahead, and noted that the native was still behind. He didn't want to go through that again!

His mind whirred smoothly as he stopped and bought gum. Chewing was not to his taste, but surmounting his dislike he peeled back the wrapper and thrust the stick in his mouth. He saved the wrapper and folded it over the emblem. As he crossed the bridge he tossed it, foil and all, into the river. Let it yammer away, sinking deeper in the mud or encysted in a crocodile's belly. Now it couldn't betray him.

But, in a way, it had. In his effort to get rid of the incriminating article he'd overlooked other things. There was a mind laying heavily against his. He struggled away, but for every retreat the intruder advanced.

It wasn't actually entering his thoughts. It stayed outside, gradually surrounding him. When had the invasion begun? He couldn't say with precision, but it couldn't have been long ago. It was a heavy mind, penetrating, not too acute. But it was endowed with brute strength and it was suggesting thoughts he didn't want to have.

For instance, he felt an intense desire to seek a shady spot beside a cool stream and lie down. Pleasantly textured grass would ease his skin and flies would buzz harmoniously near, tickling sensuously as they stung. Warm and moist. Fluid.

Rains was sweating. He had to shake off this insidious attack.

FIRST, he had to locate the source. Not the AFUA beggar. He was near, but Rains had already ascertained he wasn't a telepath. The street was now crowded with men and beasts. That was the trouble; there was no easy way to pick out his assailant.

Which one? Rains glanced around. The white bearded ascetic next to him? He was the holy hermit, telepathic type. But so were dozens of others, most of them with luxuriant white beards. Rains probed, but got no results.

In America he'd fenced off combined telepathic assaults of the best of his fellows. He'd expected more competition in India, but this was beyond his expectation. The defense he'd prepared

seemed weak for what it had to ward off.

An olive-skinned, dark-eyed girl went by with a gliding graceful walk. With a little help from his imagination he could conjecture every curve. It was sufficiently distracting. Me plus thee equals whee, he thought swiftly. But this is hardly a Euclidean proposition, though I would like our parallel paths to meet.

Was he too hopeful, or did the surrounding thoughts retreat somewhat? The girl turned and retraced her steps. Me plus thee equals three, her reply came back firmly. What do you have in mind?

She wasn't thinking along the right lines. There was a mental wedding scene uncomfortably close. He went on, ignoring her opportunistic suggestion.

I should have known, she thought frozenly when he didn't respond. You're looking for another kind of girl. She took herself out of the picture.

It was dangerous to spread his thoughts around. Something less personal was in order. Nonsense was reputed to work. He searched and found some, repeating it silently. I was thinking of a plan to dye my whiskers green, and always wear so large a fan they never could be seen.

An ascetic, there seemed to be hundreds around, walked by. I was thinking of a plan—continued Rains, his effort intense—to dye my whiskers green.

. . .

The ascetic bellowed as a cow butted his side and began munching his beard. A green beard! The Hindu squirmed and twisted loose, backing away from the cow. The cow lollopped out her tongue and tucked a whisp of beard into her mouth, chewing away as if on grass, which it resembled. Purposefully she advanced.

The old Hindu scrambled away, clutching the remains of his beard. It was now green, but it had been white. Rains could swear he had been looking at it during the instant of change. The cow lurched after the old man. She broke into a trot and the trot stretched into a gallop and the two of them disappeared down the street.

All around there were men with green beards. It wasn't natural. They stared at each other and then their eyes glided down. Muttering in foreign tongues they stalked away. Rains could understand their consternation. What had caused their beards to change? Did it have anything to do with the rhyme?

But there was something more important. The mind that had been trying to invade his had gone away. He thought back. The mental influence had vanished with the cow.

An animal telepath? In India it wasn't totally unexpected. It was the reason he was here. And the thoughts were those a cow would have—internal evidence couldn't be ignored. It was frightening that the cow was a stronger telepath than he, but it was also a source of relief. At least the animal hadn't filched any secrets from him.

He had another conclusion to allay his anxiety. The girl he'd mentally whistled at had been able to intercept his thoughts. Learning that he wasn't interested in what she wanted, she had politely if frigidly withdrawn. Mental courtesy? Well, why not?

Even in India there weren't many telepaths, say one in five or ten thousand. But considering the density of population, that was a lot. They had to evolve a code of mental conduct or life would be intolerable. No one violated another's thoughts except for good reason. If he watched himself, Rains thought, he'd have no cause for alarm. No one would snatch his plans from his mind.

Rains walked on, wondering who or what had changed the white beards to green. A powerful mind at work, but not the cow; he was certain of this. Nor the girl.

RAINS fished discreetly about. Not the least hint. But the nonsense rhyme had influenced someone, and that person was now lost to him.

If he'd had the time, Rains would

have liked to find and study the unusual man who'd saved him with that green beard trick. An unorthodox talent, limited but interesting. After the menace that hung far out in space was ended, he would come back and search out his unseen benefactor.

Regretfully Rains cancelled these interesting thoughts, and looked around for his indefatigable AFUA follower. The man was gone, despairing at last of wheedling more alms. Or perhaps he'd been frightened by the strange occurence on the street.

Rains wandered back to the hotel. Upon approaching it he stopped. The AFUA line had grown longer, curling around the block, ending almost where it began. It wouldn't help to go to the back entrance, because the line was there too.

Rains lowered his head and plunged on toward the front entrance. A hand touched his elbow. "Guide?" inquired a voice. Someone asking for work, not money, was unusual.

The voice was faintly familiar. Rains swung around. It was the man who'd handed back the emblem. For this Rains owed him nothing. And yet he did. Because of this he'd been forced to find a better means of disposing of it.

He did need a guide, but he hadn't intended to hire one until he got to Benares, far to the north, where he hoped his search would end. The man he had to find was completely unknown, and Rains had only faint clues to go on, so he'd have to rely on his telepathic power to uncover more information.

Rains beckoned and the man stepped out of the AFUA line, no recognition in his eyes. "Let's see your license," Rains said. The man fumbled in his turban and produced it.

Rains read silently, "Experience one year." Too bad. His mission couldn't be trusted to a beginner. "I'll think about it," he said, handing back the card. "If you don't find anything else, be here tomorrow. I may come out." Tomorrow he'd be on his way to Benares.

The native folded the license into his turban and went back. He was now at the very end of the line because he'd left his place to follow Rains. He'd get little tossed to him today, and the coins Rains had given him wouldn't buy much. Rains could sense despair.

Rains beckoned him back. "Do you have any other skills that might be useful?" he asked. "What did you do before you became a guide?"

The eyes brightened, then faded in quick defeat. "Nothing you'd want," he mumbled. "For ten years I was a dyeman."

Rains thought back to the scene of the mental ambush. Beards. Green beards. The dyeman had been near at the time.

"Dyeman?" he repeated, trying to keep the excitement out of his voice. Even if it actually had taken place as he thought, it was only a minor talent. But there was always empathy between psipeople, even though their abilities might be unrelated. He could expect closer cooperation from this man than from any other guide he might hire.

"I may be able to use you," he said. "Come in. We'll talk." He'd discovered a new field for Rhine investigation. They'd mention it in history books, after they described how he saved the world.

GOWRU CHANDIT accepted the drink gratefully. Rains leaned back and said, "Is this what you're trying to say? You first noticed your ability when the dye didn't arrive at the textile factory. You had a quota to meet. In panic you ran the cloth through anyway, and it came out the color you wanted."

Gowru nodded.

"Can you tell me how you do it?"

The Hindu looped his hand near his head and shrugged.

Rains nodded. Any other answer would have been surprising. "What did they say at the factory when you told them?"

Gowru grinned slyly. "Alas, I'm a poor man. I didn't tell them."

Rains could follow the man's thoughts as long as they were composed in En-

glish. Alloted chemicals, Gowru smuggled everything out of the plant that wasn't used and sold it to other firms. It should have been profitable. "Why aren't you still with them?" Actually he knew the answer. A new process had displaced the dyeman.

"I soon became foreman of the entire plant. I alone had charge of all coloring. I was wildly prosperous, what with one thing and another. It was my downfall."

"I don't understand." He did, but it was best to lead the man on, to explore all possibilities.

"I drank," said Gowru. "I had money for it and I drank too much."

"And lost your ability?"

"It was not so simple," said Gowru. "No, my ability became stronger than ever." He meditated briefly. "Picture me, the master dyeman who alone colors all the material that passes through the plant. So skillful am I, so beautiful the colors that the poorest cloth becomes transfigured and commands premium prices.

"I arrive at work one morning and I am sick. I go into my secret mixing room and loose my breakfast there. My head throbs. I raise it and look at the chart. So much green, so much red and yellow, so much everything.

"The chemicals are there and I put them into the suitcase which the management graciously allows me to take in and out of the factory. The pipes which fill the various vats flow through this room. As I have always done, I concentrate on the wanted colors, associating them with the proper vats. But my head hurts, you understand. Alternately, it grows large and small in defiance of the laws of physics."

Gowru Chandit paused to shake his head sorrowfully in remembrance of that day. "I concentrate until all the vats are filled and then, as usual, go to sleep. All day the automatic machinery hums. Yards pass through the vats, bolt after bolt is dyed, dried and wound, and nobody looks because this operation is automatic.

"Then, the manager comes to inspect production and rub his hands at the profits that will accrue to him. He unwinds a sample, looks at it and screams." Gowru stared mournfully at Rains. "Retroactive to that scream I am fired."

"But why?"

Gowru loosened a fold of his turban and spread it out so the pattern was visible. "I was projecting. Did you ever see such a headache reproduced in full color? Not merely a headache, but also a hangover."

Rains moved the drink hastily away. He wanted to speak, but it might be dangerous to open his mouth. The crisis passed. "Put it away! "But Gowru had already refolded it so that the pattern was no longer discernible. The cloth was an unpleasant souvenir.

EGAN RAINS was silent, studying the Hindu. The man was honest and loyal, that much he could tell. But though he spoke English well, he didn't think extensively in it and most of his thoughts were hidden in a language Rains couldn't translate, mentally or otherwise. "Can you teleport?" he asked.

"A mind carrier?" said Gowru. "No, I'm only a dyeman. I can do nothing else."

He expected that; there weren't many who had multiple powers. "Do you know anyone who can?"

"I have a friend who plays ping pong with it."

That was telekinetics, not teleportation, but it might be what he was after. So far as the Rhine Institute knew, people with either ability existed only in India. "How good is your friend?" he asked.

"At ping pong, very good. At tennis, poor. The ball is too heavy; he can't move it fast enough."

Then that was a false lead. The person he wanted [illegible] to be much more adept and powerful. Rains would have to look farther and Gowru would have to help him. "Gowru, I'm an astronomer," he began.

The Hindu raised his eyebrows to express interest. "I've always had a soft spot in my head for astronomy," he declared.

Evidently the idiom did change from country to country. "My colleagues and I at Palomar have discovered a new comet," he went on. "It is a strange comet, bigger than most, almost a tiny planet. The composition is stranger still, mostly oxygen and water."

Gowru nodded sagely. "And you want me to color the water. That I can do, any hue you want. But if there is much air and you want me to color that too, you will have to be satisfied with a light tint, a pale blue or green or pink."

"The color doesn't matter," said Rains gravely, and poured himself another drink. "In seventeen years that comet is due to strike Earth."

The Hindu bowed his head. "I've had a feeling of doom since you mentioned the comet," he said simply.

"Wrong," said Rains. "No doom. In seventeen years we'll have rockets that can meet it out in space. We'll load hydrogen bombs into rockets and blow the comet into fine crystals. But the orbit of the particles will still intersect that of Earth, and it will fall as rain."

Gowru searched his memory for a foreign concept. "Forty days and forty nights?"

"I don't know how long," said Rains wearily. "But whatever happens, the water level of the oceans will rise—from fifty to three hundred feet is the present estimate. After we study it longer we'll know exactly. The land area will shrink, but that alone isn't disastrous. Forewarned, not many lives would be lost. Most people will have time to move to higher ground.

"However, there's another aspect. Air is also present in the comet and will be added to our atmosphere. The earth will grow warmer and the higher latitudes will become habitable. Perhaps we'll gain almost as much living space as we lose."

"Then let's rejoice," said Gowru, reaching for the bottle. "It's not every comet which is so considerate."

Rains replenished his own glass. "It's not an occasion for rejoicing. We've calculated that, with the additional atmosphere and moisture, astronomy will become extinct. Cloud covered, the planet will be much like Venus. No one will be able to see the stars." He didn't mention that a few of the highest mountains would still rise above the clouds. He didn't because those mountains were in India and that country would then have a monopoly on the science.

Gowru wrinkled his face in pleasure at the whisky and then assumed a properly doleful expression. "I see. In seventeen years you'll be unemployed." He added consolingly. "Maybe they'll give you a pension."

Rains' vision was growing a little fuzzy, but his intellectual goals had not changed. "It's not the pension," he said irritably. "I intend to save astronomy."

"It's not reasonable to be so obstinate when the heavens decree otherwise," declared Gowru. "You should cultivate an interest in other things. Girls are a nice hobby."

Rains muttered something about girls and Gowru interrupted.

"Good. We can start with girls and there's no telling where we'll end. I'm a guide and I can help in such matters. How many do you want?"

"I've only a normal—"

AGAIN Gowru interrupted. "I was afraid of that—only a normal interest in girls. You should moderate your desires. I can't help you with so many." He shook his head sadly. "Let's get back to astronomy."

"I expect to," said Rains coldly. "As I was saying, at Palomar we have the giant telescope—"

"The big inch," said Gowru fondly.

"You're thinking of something else," said Rains. "In addition to the big telescope we have a secret instrument not duplicated nor imagined elsewhere—a psiscope." Thoughtfully he poured the remaining whisky into his glass.

"Don't ask me how it works. It's de-

signed for use by people of psi powers, of which I'm one. It's incredibly powerful and accurate. With it we've learned things that other astronomers won't know for several years. The data on the comet is one example."

He raised the glass and let the liquid trickle down his throat. "We've also learned things that astronomers with conventional instruments will never find out—that there are teleports in India."

Gowru struggled with himself, and decided to hoard the whisky in his glass. He sipped delicately at it. "I could have told you that and I don't have a psicope. But how did you find out?"

"Imagine the comet swinging nearer the sun. Under the terrific radiation, the frozen ball of water melts and the atmosphere expands. In our psicope, clearly illuminated, is an object no one else can see at that distance. It is a peculiar object, man made, and found only in one place on Earth." He paused. "At present we don't have a rocket capable of going to the moon. And yet this object was transported much farther. Therefore, it had to be teleported there."

"Logical," agreed Gowru. "What was this object?"

"I can tell you the city from which it came; you'll have to know anyway—Benares. But my colleagues and I have decided we can't tell anyone what it was we saw on the comet."

"Benares," mused the Hindu. "I know the city well. I was there last year looking for work."

"With your help," said Rains, "we intend to contact this teleport."

"Who's we?"

"My colleagues and I at Palomar."

"And also your government?"

"Our government doesn't enter into this. We couldn't convince them if we tried since they don't believe in psi powers. No, this is solely our problem. We're financed in part by the Rhine Institute and we have other funds which were diverted for the purpose."

Gowru sighed. No matter which way he tilted it, there wasn't another drop in his glass. "What are you going to do with this teleport after you find him?"

"Persuade him to come to the United States. We'll get him out of India some way." The country wouldn't take kindly to an attempt to smuggle out one of their mentalists, but it could be done.

"What good will that do?" questioned Gowru. "Even the most experienced teleport can't change the path of the comet. It's too big to move."

"He won't have to move it," said Rains. "We've positive proof that he did transport a —uh—large object to the comet. He did it once and he can do it again, except this time it will be a hydrogen bomb."

"I thought so," said the Hindu disgustedly. "I don't want any part of it. Where will you get that hydrogen bomb except from your government? Let them develop their own teleports, or approach our country through proper diplomatic channels."

"You're not thinking," said Rains. "With a teleport working for us we don't ask the army for a hydrogen bomb. One minute they have it safely hidden, and the next instant it's inside the comet. Let the military boys worry about how it got away and where it went.

"You see, the comet's been captured by the sun and moves in a very eccentric orbit just inside Jupiter. If we vaporize it now, it will lose most of its mass to those two bodies. There'll be little left to fall on Earth." He nodded approvingly to himself. The plan would be effective, if he found the teleport.

GOWRU'S eyes expanded, enlarged by his own inner fires. "Let's drink to it," he said, extending his glass.

Rains sighed. As a secret agent he needed an analytically clear mind at all times. But he also had to have someone who understood India better than any American could, someone who would work with him wholeheartedly. It wouldn't pay to offend such a person. He opened a bottle, and later, still another. . . .

The train wound through the prov-

inces and cities en route—Bangalore, Jubbulpore, Jetadore, finally arriving at Benares. They could have gone more conveniently by air, every sensible Indian did, but presumably it was worth something to maintain the pose of tourist and guide.

From the window of his hotel Rains could see the Ganges, a muddy, sluggish river still, but an improvement over what it had been thirty years before. More sanitary too; burial customs could not be completely changed in a generation, but the three phoenix barges anchored off shore automatically disposed of the bodies to the satisfaction of all but the most fanatic.

Southward were the spires of a rather shabby building he could identify from photographs, the Rhine Institute of the Ganges. Its value was dubious, of missionary rather than research caliber. In the heart of the mentalist country, it had little prestige and not much more patronage. It was questionable who spied most on the other, the American staff or the supposed native converts. Each side took precautions, but there were startlingly few devices which were effective against an accomplished telepath.

Still, mechanical devices partly reduced the advantages of the Indians. Chewing gum parked in the right places often concealed ingeniouus mechanisms, and even the birds which were regularly fed at the Institute sometimes swallowed grain-sized instruments which were carried impartially to all the public buildings of the city.

This didn't concern Rains. The Rhine Institute of the Ganges could solve its own problems or fail to do so. But somewhere in Benares there was a teleport. Where?

The regular reports—coded, scrambled, shielded, unshielded, unscrambled, decoded—had mentioned great mentalist activity, but hadn't been able to pin it down. Fakirs and holy men abounded; there were at least a dozen telepaths in the city better than Rains, not to mention clairvoyants.

Communication from the Institute had always been erratic, understandable in view of the hazards. Rains had not seen a report from this branch in three months. Perhaps in the interim they had uncovered more information. He would have to find out. "Gowru," he asked, "are there many fogs in Benares?"

The Hindu wrinkled his face in thought. "I've been here when there were. Not now though; wrong time of the year."

That was not good. Rains didn't want to expose himself, but he had to get in touch with the director of the Institute.

"If you want a fog, I'll get you one," said Gowru.

Rains glanced up. The Hindu was a queer fellow. Rains had dismissed the talk of coloring the comet's atmosphere as drunken boasting, but what if it wasn't?

"Can you actually create fog?" he asked doubtfully.

"Sure. Want a sample?"

PERHAPS he should, but too many fogs at this time would be suspicious. He shook his head. "If you say you can deliver, I believe you. The only question is, can you cover most of the city?"

"The whole northern part of India," Gowru assured him.

"That much won't be necessary. How long can you hold it?"

"Depends on the wind," said his guide, extending his thumb and forefinger and rubbing them together delicately. "Air's slippery stuff. It fades. I'll have to concentrate."

Rains sighed. He'd learned that when Gowru concentrated he had to be diluted. He set out a bottle. . . .

Rains walked along the bank of the Ganges and glanced at his watch. An hour to sunset. The fog was due at any moment. The Institute was a few blocks away, but he had memorized a map of the area and would be able to get there no matter what happened.

He adjusted his tie in a mirror. No one behind him, but he didn't think they'd be that crude about it here. He

practised shutting off his thoughts. His defense was adequate in America, but he wasn't sure how effective it would be against a first rate Indian mentalist.

He went into a curio shop and picked up a small bronze statue of a four-armed god. He was about to pay for it when the woman behind the counter shrieked. He glanced up at her. She was merely a few feet away, but he could scarcely see her through the thick black smoke that curled through the room.

"Fire!" screamed the woman and ran out.

He hurried to the door and then thought of the statue in his hands. It wouldn't do to get involved in a petty theft charge. He ran back to the counter and laid the money down. On second thought he left the statue there too and stumbled out of the shop.

The street was jammed. Storekeepers stood on the curb and shouted, and out of the buildings thick smoke came pouring. Rains sniffed. It looked like smoke but had no smell. He thought he knew what it was. This was the fog Gowru had said he would create.

It was a good fog but it was placed wrong—inside buildings instead of filling the free air overhead. It had the opposite effect from what he wanted. He had expected to approach the Institute through dim and shrouded streets. As it was, he had to elbow people into the gutter in order to move. Fire sirens wailed in a dozen directions and spotting copters took to the air and started circling around.

"Gowru!" he thought sharply, but either the distance was too great or his thoughts were swallowed up by the multitude around him. Contact was impossible.

He'd have to do the best he could; confusion might cover him. A fire truck skidded to a stop beside him and frantic firemen coupled the hoses and went to work. Drenched and swearing Rains fought his way down the street.

As abruptly as it began, the smoke stopped. At least the drunken Gowru had had enough sense to look out the window. Or maybe the sirens had brought him around. Rains shuddered; he could almost see the contents of the bottle diminishing as Gowru apprised himself of the mistake.

He was a block or so from the Institute and the streets were still crowded. Some people had re-entered the stores as soon as the smoke-like stuff stopped pouring out. Others, more fearful, remained outside.

They didn't remain outside long. Overhead, in the sunset sky, an ominous cloud formed. It descended rapidly upon the city. Apprehensively, Rains watched the copters disappear into the dense cloud, and then decided against worrying about them. Radar equipped, they could trace their way through anything.

SHOPKEEPERS gazed at the sky, shuddered, and hurried inside. They closed windows and doors and bolted them. The reason escaped him until he observed firemen clambering into trucks which roared away as fast as they had come. They wore masks, all of them. It was gas they feared.

The fool was compounding the mistake. A quiet, ordinary fog which gathered inconspicuously in the hollows and low places and gradually engulfed the city was what he wanted. This sort of thing was hardly what he had specified.

There was no help for it, and as long as he had the streets to himself he might as well go ahead. Before he reached the Institute the fog fell on him with an almost physical impact. Streetlights winked on briefly and were snuffed out as the fog descended lower, still burning but not discernible at street level.

He shuffled slowly along, touching buildings. This kept him from getting completely lost. There was no one following him physically, he was sure of that. They could still keep track of him mentally and he wouldn't be aware of it, but he doubted that anyone was interested in him at a time like this. They'd be too concerned with the fog.

The dyeman was good—too good.

He stopped at a doorway, pressing his face close to the glass to read the sign on it. It was the Institute, but he didn't intend to enter.

He stepped back from the door and squeezed behind a statue. He was as close to the director as he could expect to get without being observed by the spies on the staff. Telepathically he located the director's office and whispered, also telephathically. There was no reply.

It took him a minute to determine why—the director was asleep. It was better that way. The man wouldn't know he had come, taken the information and left. He stirred around in the sleeping mind, delicately so as not to awaken him. Then he had the information.

Gommaf was the man he wanted. Rains grinned to himself. Gommaf was the teleport, or knew who the teleport was—he couldn't be sure which. That was all he needed.

He wriggled out from behind the statue and walked quickly away. The fog wasn't as intense as it had been, though it slowed him considerably. Gowru must be getting tired. Streetlights were burning faintly overhead.

The fog changed color as he went along, an indiscreet slip. There was a slight brown tinge to it that wasn't altogether pleasant. He walked faster and his stomach felt upset.

Gowru was playing with the fog; that was the only interpretation Rains could place on it. Colors shifted through the spectrum. He wished the Hindu would stop it. A queasy, dirty violet didn't inspire confidence in his own digestive system.

In the midst of all that violet, a low-flying biliously pink cloud came toward him. He turned his head and gulped, but it didn't help appreciably. In the direction he now faced there was a vile green fog shape. It looked something like an appendix, but it was much larger.

He was wrong. Gowru Chandit was not playing—this was for keeps. A valuable man, no doubt of it, but he drank too fast and couldn't control his reactions.

As he looked, the appendix shape writhed slowly and glowed. Other fog forms began materializing convulsively around him, not all of them bearing morphological resemblance to human organs, but not necessarily of more pleasing appearance because of that. And the colors— Rains closed his eyes but the damnable fluorescence seemed to penetrate.

The river was nearby, for which he was thankful. He staggered to it, lay down on the embankment, and retched feebly. The Ganges below became less sanitary for a time. There were certain disadvantages to psi powers, he reflected. This was the first time he had reacted to another's nauseau.

Later, he made it back to his quarters.

THE BOAT slid swiftly and smoothly past the cremation barges anchored in the river. The design of the barges was distinctive, two long cylindrical pontoons connected fore and aft by beams which curved above the surface of the water. In the middle of each pontoon was a squat affair resembling a searchlight, each of which was focused inward toward the open space at the center of the barge. Upstream was a long line of small wooden rafts. One at a time they were allowed to float between the pontoons. The searchlights flashed and the beams crossed in the center. The raft burst into flame, water boiled for an instant, and the corpse was utterly consumed. The barge was ready for the next body.

Rains glanced at the mechanism. No matter where he saw it, he'd always be able to identify it. One of them was much newer than the others. This was significant.

Gowru was scowling, so Rains refrained from mentioning the barges. There were many religions in India, now more than ever, and each had its own burial customs. Some rituals were offensve to other sects and he saw no need

to antagonize his guide over such a trivial matter.

They were both silent as the boat pulled up to the civic center pier. Government offices and allied functions were situated together in an annex outside the city proper; a sensible solution in a city as ancient as Benares, but one which Rains did not particularly like. There were just too many policemen and security officers around. He shrugged. That was probably the least of his problems.

They mingled with the crowd, sightseers and officeworkers, that rushed off the ship. In a few minutes they were in the center of the government city. Police everywhere, but Rains didn't let that bother him. Presently they came to an impressive building and he stood on the sidewalk and pretended to admire it.

There were heavily barred windows and guards at the entrance. "Here it is," he said softly. "We could walk in."

"This is just Gojmaf," grunted Gowru. "Mere journeymen. You want the Guild of Master Mystics Mentalists and Fakirs—Gommaf."

Rains sighed; he'd not been as fortunate as he'd thought in contacting the sleeping director's mind. He'd not gotten the name of the teleport, but the organization to which that person probably belonged.

The Gommaf building was on another street and wasn't easily located, but they found it. They sat at a sidewalk cafe and inspected it from a distance. It was not a pretentious structure and there were neither bars nor guards.

The absence of visible security measures was disturbing. It suggested several possibilities: that there was nothing of value inside, that Gommaf had complete confidence in the ordinary police patrol, or that they relied on other means of protection. The last seemed likely.

It was a local organization and Rains had never heard of it. That was not strange. There was much about India that had never reached the Western world. There were records inside, the records of a teleport, and he had to get to them.

He couldn't just walk in; somewhere there was a master telepath on duty. Rains had confidence in his own ability, but he saw no point in overmatching himself. "What do you know about Gommaf?" he asked.

His guide looked at the tea with less than delight. "It's fairly new," he said slowly, searching his memory. "Organized about ten years ago, I believe. There was competition at first. Some of the mystics, mentalists and fakirs thought they were outside the orbit of ordinary trade unionism. They formed a rival organization and tried to eliminate Gommaf's chief organizer, a man called Handas Bvandeghat. They found him one morning while he was practising yogi, and of course he refused to interrupt his spiritual contemplation. They riddled him with machine gun bullets."

Rains nodded. "But they couldn't kill the idea. Handas Bvandeghat became a martyr and the organization went on in spite of, or because of, his death." It was a familiar story.

"Who said he died? Handas Bvandehat is president of Gommaf."

"But they machine gunned him!"

"Sure, they shot him. But he's a fakir, still makes a living letting people drive spikes through his body. What's a few bullets to him?" Gowru swallowed the tea and made a face. "Of course, there were some physical consequences. Even today Bvandeghat has trouble keeping food on his stomach." Gowru wiped his mouth with the back of his hand. "Holes," he added.

IT WAS not such a familiar story after all, but it did emphasize the difficulties. An organization headed by such a character would be tough. The telepath to spot intruders, which had previously been merely a possibility, became a certainty. An approach to the front entrance was inadvisable.

But the comet was still hurtling through space and the only man who

could avert the collision was the teleport. Rains had to contact him. He produced a map and consulted with his guide. After some discussion they evolved a plan.

"If we come through the rear it's your opinion the telepath won't detect us?" Gowru murmured, obviously doubtful.

"It's worth trying," said Rains, folding the map. "Behind the Gommaf building is an electric fence and behind that is open country, mostly swamp. Normally the swamp is considered impassable, but there is a way through it. The telepath has to concentrate mentally just as you do visually. He'll be expecting trouble from the front. I sneak in from the rear, examine the records, and get out again before it occurs to him that I've been there. After that I still have to contact the teleport, but once I know who he is, that's easy."

"Why not rent a copter and set it down in the middle of the swamp? It will save a lot of walking."

"It would, but it would also inform Gommaf that we're up to something. No, we'll just have to walk." Rains stuffed the map into his pocket. "Are there any shrines on the road to the city?"

Gowru Chandit shrugged. "There are shrines anywhere in India except straight up."

Rains nodded with great satisfaction. There'd be one there too when the hydrogen bomb exploded inside the comet. A bright flaring shrine to astronomy.

The road was paved but dusty. There were other tourists walking toward the city so Egan Rains and Gowru were by no means conspicuous. At some distance from the civic center they stopped at a wayside temple. They entered and examined the strange but not notable architecture, the intricate but not always esthetically pleasing carved walls. When they were not observed they slipped through a side door and hurried to the rear where they plunged into the light underbrush. In half an hour they were at the edge of an open plain. No one followed them.

After some discussion they decided to skirt the plain, and started out, keeping well within the shadow of the trees which separated plain from adjacent swampland. They circled back toward the civic center, toward the narrow spot of firm ground that reached nearly to the electric fence behind Gommaf. In the middle of the afternoon they rested and ate some of the food they had brought with them.

"Psst!" said Gowru, waving his great hand.

Rains swallowed. "I don't hear anything."

Again the Hindu flapped his hand for silence. After listening intently, he crawled away into the underbrush. Presently he came back. "Soldiers," he whispered.

Rains was worried. Did that mean Gommaf knew what he was up to? And if so, why did they send out soldiers? He could swear no one had tapped his mind. "How many?" he asked in a low voice.

"Thousands."

Allowing for exaggeration, there were still too many. He picked up the sandwiches, shoving one in his mouth and the rest into his pocket. "Let's go," he said.

"Where?"

He pointed in the direction they'd been heading.

Gowru shook his head. "They're coming from there too."

That made it difficult. He looked questioningly at the swamp, but his guide frowned. "Snakes," he said laconically. "Tigers, crocodiles."

That left the plain, but out there they'd be spotted instantly, and picked up soon after. He couldn't afford to be questioned by anyone. He could hear the soldiers. They were getting closer.

THE PLAIN. They had to cross it and yet they couldn't. Unless— He turned to Gowru. "A fog," he said triumphantly. "All we need is another fog."

His guide smiled with sorrowful dignity. "It takes whisky to make a good

fog. If you had listened to me you would have brought a supply along. But alas, you are the reformer type, and because of that we are now caught." His head sunk forward in defeat.

His chin touched his chest and at that his head snapped back and it was easy to see that he was not defeated. "Without whisky I can't make a fog," he admitted. "Do you know how many molecules are involved in even a medium-sized fog?"

Rains didn't, but thought he ought to look impressed.

"A surface now, even a relatively large surface, contains a comprehensible number of molecules," said Gowru. "My mind isn't sharp when I'm sober, but I can handle that many."

"I don't see how—" But darkness interrupted his thoughts. "What is that?" asked Rains.

"I put a surface around us. It has the shape of a tank."

It was surprisingly sensible. There were two groups of soldiers approaching along the edge of the swamp, and they were in the middle. It was logical to assume that one group of soldiers would consider the so-called tank as belonging to the other.

His eyes were adjusting to the changed light; he could see dimly through the outline that surrounded them. A hundred yards away a soldier appeared through the trees, saw the tank and stopped. Rains didn't like the way he fingered the rifle.

"Can you move this thing?" he asked nervously.

"Why not?"

"Good. Let's get away from here."

It weighed little more than nothing —as insubstantial as air. It was air, bound together on a molecular level by forces originating in the Hindu's mind. It moved out on the plain as fast as they could walk.

"Halt!" a voice rang out from the edge of the swamp.

"Let them try to stop us," whispered Gowru cheerfully.

Again the voice commanded, but Gowru paid no attention. A rifle shot sounded behind them and a bullet whizzed uncomfortably close. "Maybe we'd better stop," suggested Rains.

"A Chandit never surrenders," said his guide stubbornly. Abruptly the darkness around them deepened. Another rifle shot rang out. The bullet struck the tank shape, and glanced away.

Air did that, or more correctly, the psi forces of his guide's mind. He had grossly underestimated the man. "How did you do that?"

"Increased the thickness of the surface by a few molecules," said Gowru cheerfully. "Handy, if you know how."

It was handy, but there were also disadvantages. No light at all entered and they couldn't see where they were going.

Rains thought swiftly. Perhaps he could use the soldiers to guide him. His mind reached out, and was bent backward. Ten inches of steel couldn't stop his thoughts, but a few molecules of air did. The man had limited ability, but was exceedingly powerful within those limitations. He explained the difficulty to Gowru, who stopped and scratched his head.

"If I made a tiny hole—"

"That's all I need," said Rains, and his mind was through it as it formed. He skipped from thought to thought, lightly so as not to leave an awareness of his mental presence. The two groups of soldiers had joined and started after them, cautiously and at a safe distance.

Unwittingly he and Gowru had stumbled into army maneuvers. And it wasn't going to be easy to get out of them. Naturally, the soldiers were curious. And the tank— He looked into the lieutenant's mind.

He shivered. There weren't supposed to be tanks in this area. And Gowru was not an army man; his idea of a tank was different from that of Indian designers. He had created a fearsome image, the more frightening because it didn't correspond to any known make, friendly or foreign. This was something the Army was going to investigate, with

everything they had.

He explained it briefly to his guide.

"Hmmm," said Gowru. "Maybe I should change the shape to something they're familiar with?"

He'd thought of that. "It's too late. They'd know something mental was involved and would call in Gommaf. Could you hold them off?"

GOWRU shrugged. Rains thought he probably could, though he might not be aware of it yet. But though they'd be safe from the mental onslaught of Gommaf, there was a catch. Sooner or later they'd have to have food and water, the screen would come down and then they'd be at the mercy of the Indian mentalists.

There had to be another way and he thought he saw it. "How long can you keep this up"

"For days," said Gowru. "Once it's in existence I merely have to touch it now and then to keep it up."

"Good. Make a small hole so you can see where you're going and start out across the plain." It was late afternoon and would soon be dark. . . .

"There's an army camp ahead," said Gowru.

"National guard?"

"Multi-national guard. This is India."

Rains sighed. There was no use asking what was on either side and behind them—more troops. Planes droned overhead. Mobile searchlights were trained on them. Fortunately, there were no big guns in this area. Perhaps Gowru could build up the image to withstand even the direct hit of a large caliber shell, but the concussion wouldn't be pleasant. "If there's an army camp there must be a trench," Rains said. "Do you see any?"

Gowru Chandit looked. "There's a trench."

"Angle the tank so we'll pass directly over it." He paused. "Can you project this image?"

"Keep it in existence and control where it goes though we're no longer inside? Yes, I can do that."

"Fine. And can you make a hole in the bottom as the tank shape passes over the trench?"

"I can."

"That's what I thought. My idea is that we drop into the trench and the tank continues on. It goes into the forest beyond the camp and as soon as all the troops have followed, you destroy the image."

"Instantly?"

"If you can."

Gowru breathed gustily. "I can create it instantly, but the reverse is not true. It has to fade away, and that takes time."

Rains didn't want that, since it would reveal the nature of the tank. "Is there any other way to dispose of it?"

"I think so," said Gowru. "I can project it into the forest and let it rise later with a trail of fire. I can imitate a rocket."

A rocket tank would give them something to think about. "Excellent. But remember to drop out of sight in the trench. The troops on foot will be concerned with the tank. They won't notice us in the darkness."

Gowru nodded and they went on. Presently he spoke. "Here we are."

They dropped. The trench was deep and it was near a swamp. They fell into half a foot of water. Overhead, the troops marched away.

Gowru straightened and looked out. He climbed up and extended his hand, pulling Rains to the top.

As they stood there, a trail of fire rose over the forest, the tank image bursting upward and disappearing. It was too soon. The troops wouldn't find anything though they'd scour around. They'd have to return. Rains was aching to empty his shoes of cold water.

Together they started out, slinking through the deserted camp. They hurried, but they didn't have much leeway. Soldiers began straggling back. There was no time to look for a trail through the swamp, if there was a trail.

They crashed through a dense fringe of vines and fell into the swamp. They had been wet, now they became

drenched. Mud clung to them, sticky, foul-smelling slime. Rains could imagine snakes and unspeakable vermin crawling away from them or toward them as they crashed onward. Branches slashed at them, mud sucked them down. Gasping, they floundered away.

Anyone could follow their trail. But no one was likely to associate such bedraggled men with the phenomenon that had lately puzzled the best minds of the Indian army. . . .

RAINS was awakened by a rhythmical thud nearby. He jumped up and looked around and then relaxed. It was Gowru pounding clothing on a flat rock in a pool of brackish water. He had pulverized a native plant and added it to the water, producing a reasonable imitation of soap.

Rains wrinkled his nose in disgust. The stench still clung to his body in spite of attempts to wash it off last night before falling asleep. Silently, Gowru gave him some of the soap plant, and he found another pool to bathe in. He emerged feeling much cleaner.

The Hindu had spread the clothing to dry in the clearing. Rains lay down and let the warm sun soak into his bones, pondering. They had no food and couldn't expect to find much in the swamp. And after last night there'd be soldiers around, combing the area, looking for an explanation of the mysterious tank. Now he couldn't expect to enter the Gommaf building undetected from the rear. They'd have to get back to the road that led to the city and from there return to the hotel. Afterwards, they'd have to plan anew. But for the moment, raw survival was paramount.

The clothing soon dried. Dressed, the Hindu looked presentable, but that was because his garments were exceedingly simple. The Western synthetic fabric didn't launder well. Sadly, Rains looked at his reflection in the water. He was rumpled.

They started in the direction they imagined the road lay, staying within the cover at the edge of the swamp. On the plain there were light tanks and armored vehicles, battalions of soldiers, planes circling overhead.

Weary and hungry they struggled for hours through the swamp. At last the wilderness ended. They crouched in the underbrush where the trees stopped and gazed at a building, the front of which faced the road they sought. It was a queer structure, a small-scale skyscraper with chrome plated carvings.

If they could get to the building and then to the highway, they should be safe. To get to the building was hardest. A few hundred yards away platoons of soldiers wheeled in formation. They'd be spotted if they tried to cross the open space.

He sighed. The soldiers might go away, but he couldn't plan on it. What would work—another tank on the plain? It would attract them, all right, but it would also be a signal to mobilize the entire army and put it on guard duty in this area. A sovereign nation didn't want strange tanks inside its borders.

He located the officer in charge of the drill. The sun was hot and the soldiers were perspiring. The lieutentant was not a full-fledged sadist, but he was studying to be one and didn't need much urging. The cadence of command rose sharply. The men turned and began marching out on the open plain.

Rains jabbed Gowru and, crouching low, they began to run toward the building. The distance was greater than he had estimated; he was hungry and short of breath and his mind wandered. He couldn't concentrate and his control of the officer slipped away.

"About face!" screeched the lieutenant, and a half-hundred men were staring at the fugitives.

It was too late to reach the road, but in the building lay temporary safety. Rains dived over the low wall and Gowru followed. He ran across the garden and, reaching a window, tore it open and climbed inside, pulling the Hindu up after him.

As he turned to help, he stared in amazement at the soldiers. The officer

was blowing his whistle and shouting into the field radio, but his men, who had darted after the fugitives, had stopped at the wall. Gowru nodded and grinned. "Temple," he grunted.

OF COURSE. With so many nationalities and divergent beliefs, the government had granted immunity from search to those religions, sects and cults that demanded it. The place was safer than he thought. He grabbed the Hindu's arm. "Down," he said.

Gowru grabbed his arm. "Up," he said. "We've got to see what they're doing." It was logical. Rains reversed his direction.

On his way up the dimly lit tower, Rains collided with someone. From the quality of her robe and jewels and the paint on her face, he placed her as a high priestess of some sort. She smirked at him and beckoned mysteriously; then swayed down the hall, apparently expecting him to follow. Strange behaviour in a temple sanctuary. He shook his head and went on after Gowru.

The Hindu had settled in a luxurious room at the top of the tower and was looking out the window. The temple was surrounded. Not a soldier had entered the grounds, but a solid cordon of armed men hemmed them in. And dust in the distance down the road foretold of more to come. The army wanted them for questioning. How they proposed to get them out of the temple Rains didn't know, but the situation seemed as hopeless as it could get.

With an effort he made his mind slippery and broke contact. A master mentalist was at work. He resisted the impulse to leave the temple and surrender. Tentatively he let his thoughts reach out. No, this was merely a journeyman—the masters were on their way.

He turned in panic to Gowru, who was opening cabinets. Row after row of expensive liquor glittered within. There was little resemblance to a monk's bare cell; the place was more nearly a sybarite's palace. It was a peculiar religion.

Gowru tilted back his head and gurgled. "Want a fog? he asked. "I've got the raw materials."

A fog wasn't satisfactory. They could elude the soldiers and slip away in the confusion, but they couldn't hope to escape the mentalists. On the other hand, yesterday the tank surface had repelled his own thoughts. It should work.

"Can you put an impenetrable surface around us?"

"Won't work," said Gowru, wiping his lips. "It has to be a closed surface, and if it's strong enough to stop anything it's also strong enough to shear through any material in the way. Up here we'd topple to the ground as soon as a gust of wind came along."

That was an aspect of the shield he hadn't guessed at. He fought frantically for control of his mind. "Then put it around the whole temple, grounds and all. Exclude the soldiers."

Gowru nodded. "I can do that. Within reasonable limits size doesn't mean much, it's the principle that counts. I'll make it a big spherical shield."

Instantly the room became gray, as light from the outside diminished; but most important, the mental tension lessened. Rains looked out. It was difficult to see through the shield, but he could make out dim shapes. The journeyman mentalist tried to get through.

The shield was good, but a new force arrived; the masters were here and added their mental force to that of the journeyman. Rains reeled under the impact. "Make it more intense!" he shouted. "Give it all you've got!"

Gowru grabbed at another bottle and gave it everything. The grayness became blackness and the intruding thoughts of the mentalists, masters and journeyman, disappeared altogether.

He relaxed. Temporarily, they were safe. He felt giddy and his stomach squirmed around. There was no reason for this last effect—none that he could think of. . . .

Rains counted the bottles. It was not an accurate way to determine the passage of time, but there was no electricity and none of the clocks were running. He

snapped on the flashlight. How many bottles equalled one day?

He was getting hungry. He'd managed to scrounge some food in the darkness, aided by the flashlight, but it hadn't been enough. On his forays his contacts with the other humans in the temple had been disconcerting. Giggles in the distance and then squeals, but he'd never been able to come upon the source. He didn't blame them for being so wary; the darkness and isolation must seem like something supernatural.

WATER was getting low too; only trickles came from the faucet. The shield had severed all contact with the outside world, including plumbing connections, and only a tank and a pressure system inside the temple had kept them going this long.

He'd have to risk a look, perhaps the vigilance outside had been relaxed. He shook the guide. Gowru grunted and stretched out his hand. Rains shoved a half empty bottle in it; he had to conserve. The supply of liquor was getting low, at least in this room. "Can you put a hole in the shield, a small one?"

Gowru raised the bottle and later set it down. "Nope. Takes too much thinking. How about a transparent area?"

"That will do."

Gowru staggered to the window, leaned on the sill and stared out. He stared longer than Rains expected him to. "So that's what happened to it," he muttered. He groped for a chair and sat down, shaking with laughter.

It couldn't be that funny, decided Rains, going to the window. He peered out and it was dark. Gowru had neglected to clear an area to see through. No, there were dots of light outside—it was night, that's all.

That was not all. Very near, as astronomical distances go, and headed toward them, was a comet. Not a comet, *the* comet.

Rains sat down before he grew dizzy. What was the comet doing so close, unless they were out in space? He opened his eyes and looked again. That's where they were. Unless he was mistaken, that was Mars over there.

He tried to fit the facts together. It made sense, but offered no hope. He had proof that the shield was adjustable—stronger or weaker. As it was made progressively stronger, it shut out light, bullets, and thoughts. Could it be made strong enough to shut out gravity?

He looked outside. It could.

Gowru had exerted himself and the shield had sliced through earth, water and sewer connections. Centrifugal force and the motion of the solar system through space accounted for their present position. The temple had whizzed away from the face of Earth before the astonished eyes of the Indian Army.

Gowru was still laughing. He clapped Rains heartily on the back. "So that's where it went," he said.

"Where what went?" asked Rains. They were doomed to be flung into outer space and nothing could save them.

"The Benares cremation barge. It floated to the comet."

Float was hardly the word for the intricate process that had taken place. Rains could see the comet, and he had known all along that the barge was on it.

"What do you know about the cremation barge?" he asked.

Gowru fondled the bottle. "One day I was swimming in the Ganges and an alligator—"

"There are no alligators in India."

Gowru Chandit gestured in defeat. "If you must know, I didn't have a job and each night I swam out to the barge to sleep. I slept late one morning and the crew found me and tossed me off. I had to swim in."

"But you always swam in anyway."

"Makes no difference," said Gowru. "So, when they left that night, I projected a shield around the barge. Come to think of it, it was probably like the one I've got around the temple. Anyway, in the morning the barge had disappeared and no one, including me, knew where it went—until now. The city had to buy another one to replace it."

Rains looked at him dazedly. That's

what he'd seen in the psiscope—the barge—and it was for this reason he'd come to Benares. But it wasn't a teleport that was responsible; it was his own guide, Gowru Chandit. Gowru hadn't known because he hadn't told him.

THERE were other aspects. "After the shield is created it dies down?"

"It does, unless I renew it."

The barge had drifted away from Earth like the temple, and then the shield had disintegrated in such a way as to leave the barge subject to the gravitational field of the comet which had then captured it.

"Can you alter the shield at will so that one side is affected by gravity and the other not?"

Gowru Chandit, dyeman extraordinary, saw what the question was aimed at. He scratched his head. "Can I, by varying the strength of the field, take us to Mars? I think I can."

An astronomer's dream! While his colleagues were merely looking at it, Rains would be on Mars! It would take cunning work by the Hindu, but if Gowru said he could do it, Rains couldn't disbelieve. There was one drawback though, and that reflected on his face.

"There's no water and little air on Mars," said Rains. "We'll reach it, but we'll die soon after."

"Hmmm," said Gowru. Coming from anyone else it would not have been a profound comment. He got unsteadily to his feet and paced around the room, gathering bottles as he went. He squinted out the window. "The very fabric of space," he muttered. He seemed to be looking at the comet.

He beckoned to Rains. "Come here." He had enough liquor inside and he really didn't need what he held in his hands, except perhaps he liked the feel of bottles. "Look," he said, and pointed. Rains looked.

There was the comet, streaming away from the sun, headed in the direction of Mars, though it would miss by several million miles. He'd seen it before.

But, somewhere in space it struck something. There was nothing there, but it broke into tiny fragments and slanted toward Mars. There was no doubt that Mars was going to capture most of the mass, and would soon have an abundance of water and oxygen.

But there was nothing for the comet to strike! Except— Except what? "The very fabric of space," Gowru had muttered, and that proved merely that he was a poor semanticist. The *structure* of space. That's what he worked with, not molecules, though he didn't know it. Gowru had projected a space warp inclined chutelike toward Mars, and when the comet came along it had collided with a plane surface anchored to the entire universe.

Water, air, and a new planet to explore, with Gowru Chandit as his companion. But there was still one last defect. He groaned aloud.

"Is there something else to complain about?" asked Gowru.

Rains gestured savagely to indicate the whole temple. "I'm a man of science," he said bitterly. "I resent being marooned with religious fanatics."

"Don't worry. They're women."

That made it worse. Monks, or the Indian equivalent, he could ignore. But could he do the same with grim and dour females intent on saving his soul?

Just the same, they were going to be on Mars with him and in self-defence he'd have to learn their religion, the better to refute it. "What are the fine points of their theology?" he asked.

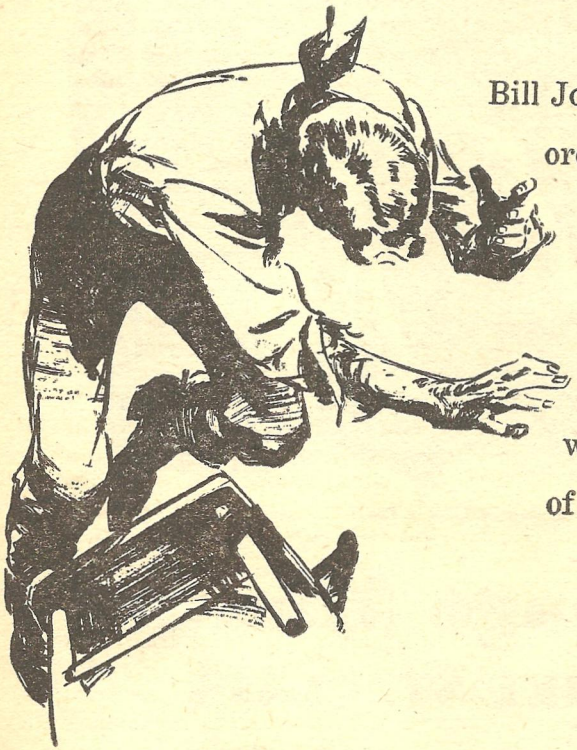
"Very old," muttered Gowru. "Priestesses are selected for temperamental qualifications. Rites are ancient Hindu, maybe older than that."

"Rites?" he queried. "Sacrifices?"

"It's no sacrifice," yawned the other. "They're a local fertility cult."

Rains' mind swung back to the priestess he had encountered on first entering the temple, the only one he'd seen. The hall had been dimly lighted, but she'd been young and very seductive. If the others were like her— Any scientist worth his salt believed in fertility, one way or another. ● ● ●

# HE KILLED TO KEEP THE TOWN CROOKED!



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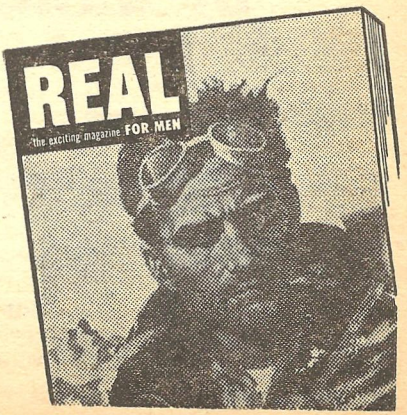

Illustration by EMSH


The dorff was bragging of his sex life

# The Marriage Manual

## By MARGARET ST. CLAIR

*In this battle of the sexes, if you can't beat the opposition, you join 'em . . . .*

YES, I have the copy of the marriage manual," the dorff said. It twitched its fat body to indicate the carrying pouch growing on its back between its furry shoulders. "Right here."

George frowned. "Why don't you give it to me then?" he demanded. "And where's Bill? Did he send you to meet me? What's happened to Bill?"

The dorff swallowed air noisily. Dorff

have no vocal chords, and they talk by regurgitating the air they have taken into their stomachs. "A gift must be given," it said in a suety rumble. "As to Bill—he's all right. I will tell you all about him if you like. But you had better sit down on the bench and make yourself comfortable. It is rather a long story."

George looked around the dark little trading hut suspiciously. "I don't like this," he said. "Where's Bill? He was supposed to meet me here today. If anything's happened to him. . . ." He glared at the dorff threateningly. Nonetheless, he sat down on the wooden bench with his long legs stretched out in front of him.

The dorff sat down also. "As you of course know," it rumbled, "Bill came to Bydea in the guise of a trader for zenlin leaves. Afterward it occurred to him that it might have been better if he had simply gone to one of the dorff elders and asked him for a copy of the marriage manual. *Dortha-Na's Golden Hours*, explaining frankly why he wanted it. He could have told the dorff that he hoped the manual would indicate a new source of power to Earth's hard-pressed technology. Who knows? The approach might have worked, if it had been coupled with sufficient flattery.

"But Bill had been in the army for a couple of years, and he had absorbed some of the passionate belief in the salutary effect of secrecy that characterizes the military mind. He arrived on Bydea in disguise.

"Almost from the first Bill hated the dorff. Earth people generally do dislike them. Bill found their fattish, hairy bodies repulsive, and their alternate swallowing and eructating in conversation sickened him. They smelled like tadpoles. But most of all he disliked their bland assumption that, as far as erotic possibilities went, he belonged to an inherently inferior race."

"I know," George put in with feeling. "Within five minutes after you've met a dorff, he's got you backed up in a corner while he brags about how wonderful his sex life is. 'Dortha-Na has favored us above all others. We dorff make an art of love.' Bah! Pah! It makes you sick."

"That's exactly the way Bill felt about it," the dorff agreed. "But he forced himself to put up with it. He listened to their coy bragging for hours on end. He even encouraged them in their contemptuous pity for him as a being of low-quality electro-sexual organization, whose circuits were inferior to theirs both in quality and quantity. His idea, you see, was that if they felt sorry enough for him they might give him a copy of the manual in an attempt to alleviate his unhappy lot.

ONE afternoon Bill looked out of the window of the hut and saw a dorff trundling up the path toward him. It held a few zenlin fronds in its hands. It is hard to trade with dorff because there are so few things they want. Their response to a new gadget is, 'I suppose beings to whom Dortha-Na has been so grudging have to employ their time some way.' But dorff do like Christmas tree ornaments. Bill got out the chest of ornaments and waited.

"The dorff traded its zenlin fronds for a striped blue, old rose and silver ellipsoid. Then it began to stand on one foot and vibrate in the way that Bill knew, from experience, meant it wanted to brag a bit.

"Today he felt too annoyed to encourage it. So, after a while, the dorff belched coyly and said, 'You know Trunp? He was here trading for zenlin fronds the day before yesterday.'

" 'I guess so,' Bill replied without interest. All dorff looked alike to him.

"The dorff was undeterred. 'Well, he won't be around for a while,' it said brightly. 'He's in the hospital now. Been mating. No serious damage, though. He'll be out in a couple of weeks.'

"Bill gritted his teeth. He should have realized that the dorff was leading up to the same old subject. 'I'm sorry he's sick,' he said sourly and reluctantly.

" 'Oh, it's all right.' The dorff rotated dizzily. Its nose turned pink. 'Wonderfully, wonderfully all right, in a way that

no Earthman can understand. With us the release of tension is so much more intense . . .' Bill's dorff halted, struck by what seemed a genuine compunction.

"'I'm sorry,' it rumbled. 'I always forget how inferior you Earth people feel about your deficiencies. We dorff make such a radiant art of love that we fail to appreciate how sensitive those to whom Dortha-Na has been ungenerous are. Forgive me. Please do forgive me.'

"Bill had listened to so much guff like this already that he didn't feel he could stand any more. He was tired of being pitied. Besides, now might be as good a time as any for a frontal attack. He said, 'Well, if you're so sorry for me because of my erotic deficiencies, why don't you give me a copy of the marriage manual, *Dortha-Na's Golden Hours?* Reading that might help me to remove a bit of my inferiority.' He waited breathlessly for the dorff to reply.

"The dorff was silent. It was silent for so long that Bill's hopes rose. Then it drew its eyelids up over its oystery eyes and nodded upward, the dorff gesture of negation.

"'No,' it said regretfully, 'I simply couldn't. Even if the book were of a less, hmmm, sacred character, I couldn't. I feel sorry for you, but it is a question of your psychic health. Reading the *Golden Hours* would only make you feel worse because it would increase your sense of inferiority. Any dorff would say the same.' It turned and trundled down the path.

FURIOUSLY Bill stared at its retreating back. He was shaking with emotion. To have listened to so much odious dorff bragging, and then to be refused like this!

"For a moment he felt a passionate wish to *show* the dorff. They had small minds and few morals, but he wanted to put them in their place. But that wasn't what he was here for, and anyhow, how could it be accomplished? He had a feeling that any description of human erotics, no matter how lusciously done, would impress a dorff about as much as a description of paramoecia conjugating would affect a man. Just not interesting. They were too smug."

"I know what he meant," George interrupted. "And I don't think it could be done. They *are* smug. But I wish you'd get to the point of your story. What's happened to Bill?"

"Many things happen that are unlikely," the dorff replied mysteriously. ". . . Bill went on with his thoughts. *Was* he jealous? That was what dorff who were in contact with human beings always implied, and of course it was a possibility. But was he really envious of a bodily process that, from the accounts, began with the flashing of red and yellow lights, went on to jets of hot and cold body fluids and the discharge of quantities of quasi-electrical energy, and ended with the appearance of comet-shaped brown spots in front of the eyes? No doubt the dorf enjoyed it. But to him it didn't sound so much like *l'amour* as it did a street carnival.

"No, it wasn't envy that was bothering him. Intellectual curiosity has always been one of Bill's outstanding traits, and he had been trying for nearly three months to get a copy of the marriage manual. By now he felt that he would explode, or turn into a dorff, if he didn't get to see one. He wanted to sit down with a copy of the *Golden Hours,* turn over the pages slowly, study the wiring diagrams, and find out for himself whether the theory he had been working on, that the dorff in their mating tapped a source of magnetic energy similar to but below the familiar electromagnetic spectrum, was justifiable.

"It was partly altruism, of course. Earth technology is slowly stifling for lack of adequate power, and Bill knew how much it would help if he could indicate a new and virtually untapped energy source to it. But mainly he wanted to find out if his theory was correct."

"The idea about the marriage manual is just as much mine as it is Bill's," George put in rather stiffly. "We both were responsible for developing the

theory. You seem to know a lot about these things."

THE dorff swallowed a great deal of air. "Bill went over to the window," it said imperturbably, "and looked out. Fog was coming in. The weather in this part of Bydea is abominable—either wind or fog. Bill, looking out into the drifting sheets of whitish mist, found himself wondering how the lights of a street carnival would look shining through it. It was then that he had his great idea.

"He didn't know where he could get one, but he could find out. Once he had the thing set up, he might be able to get a copy of the marriage manual out of the dorff, on the ground that Earth people were quite as sophisticated erotically as *they* were. And even if it didn't work out that way, it would be worth a good deal to evoke some emotion besides pity from the dorff. Bill began hunting through the catalogues of trading goods in his desk."

"What are you talking about?" George demanded. "What was the great idea about? What was he going to order from the catalogues?"

"A merry-go-round," responded the dorff.

"Bill had to wait nearly a month for it, and when it came the express charges were positively fantastic. He paid them without a murmur. He was wholly focused on the contents of the three big crates.

"The carousel went together easily. It was about twelve feet across, with six beautiful dappled horses with spun glass manes. There was a striped canopy with multi-colored flags; purple and gold lights hung in festoons about the edges; the turning mechanism was housed in a mirrored hexagon, each mirror of which was a different color. And as the merry-go-round rotated, it gave out an assortment of seven wonderful brassy tunes.

"When Bill got it set up, he was enchanted with it. It looked so good to him that it was all he could do to keep from taking a turn on it himself. He was still staring at it fascinatedly when he heard a gobbling belch at his side.

"He spun around. A dorff was standing by him. Its eyes were fixed on the merry-go-round, and it was pawing rapidly with its feet. It acted like a modest, but exceedingly ticklish girl confronted by an exceptionally interesting dirty postcard.

"For a moment there was silence. Then the dorff said, in an offhand but peremptory way, 'How much to ride on it?'

"Bill's eyes widened. Somehow, he had never thought of this possibility. His response was quick enough, though. 'A page out of the marriage manual,' he said.

"The dorff turned and trundled off at top speed. He was afraid he'd offended it. But it came back in less than twenty minutes, and it brought four other dorff with it. Each of them had a marriage manual page in its hand.

"Bill could hardly believe in his good fortune. At this rate, in a few days he'd have the whole book. He collected the pages, watched the dorff get on their horses—they giggled and rumbled a lot over the selection—and then retired to his office to examine his loot.

HIS enthusiasm was a little dashed by the inspection. All five of the dorff had picked the same page out of the manual, page one of the introduction, to give him. But as he translated the difficult syllabary, he became convinced beyond the shadow of a doubt that his thesis was right; dorff mating tapped a source of energy hitherto unknown to terrestrial science. And that energy might be made available for Earth's industrial use.

"He got up from his chair and began to pace about. He was too excited to sit still. The dorff were still rotating and tittering. It occurred to him that if he wanted to get the rest of the manual he'd better see that they didn't get too long a ride.

"He went out and pressed the shut-off switch. The carousel came to a stop.

The dorff slid down off their horses. Their grayish skin had turned a faint blue, and their eyes were more than usually oyster-like.

" 'If you want to ride any more, you'll have to bring another page from the manual. A different page,' he told them.

"One of the dorff nodded, but the others did not seem to have heard him. They went trundling off through the fog, falling down occasionally. As Bill looked after them anxiously, it occurred to him that if they had been human beings he would have thought they were dead drunk.

"Nonetheless, more dorff came the next day. Bill was greatly relieved. Each of them had a page from the marriage manual-introduction in its hands. Bill got up to page three of the introduction that day."

"I know," George interrupted. "He sent the pages back to me. They were a —a revelation. And he told me to meet him here today. He was sure he'd have the rest of the book by then. Why doesn't he show up? What's happened to him?"

"On the next day, though," the dorff continued, "Bill had a rude shock. No dorff at all came to the carousel in the morning. In the afternoon an elder of the dorff came up. It said it wanted to have a serious talk with him.

"It swallowed air for quite a long time before it began. Then it said, 'This business with the whirl machine has got to stop. It's making my people unhappy. It's breaking up too many dorff homes.' The elder's pink mouth whiskers were trembling with emotional intensity.

"Bill beamed. Before he came to Bydea he would never have thought that he'd hear words like that with pleasure, or enjoy being labelled a wrecker of homes. Now that it had happened he was delighted with it. 'Good,' he said cordially, 'fine. Splendid. I'm delighted to hear it.'

"The elder looked at him wistfully and reproachfully. 'You don't care that your strange undorffian perversions are ruining our wholesome love relationships? You don't have any feeling of responsibility? I suppose I might have been prepared for it. Those to whom Dortha-Na has been ungracious invent whirl machines and the atomic drive.'

THE dorff elder was silent for a moment. Then it continued, 'They ride on the whirl machine. They go home tired, with headaches, irritable. They drink a lot of water. Then they go to sleep. No wonder their poor husbands are ired.'

"Bill was surprised. He said, 'You mean female dorff have been riding on the merry-go-round?'

" 'Almost exclusively,' responded the dorff elder. 'Why, can't you tell? It isn't that I object to normal, wholesome enjoyment. Quite the contrary. But this thing! Decency is decency. It's got to stop.'

"Bill thought the time had come. 'Look here, sir,' he said, 'I'll be glad to dismantle the machine. I don't think there's any doubt that by now I've shown you our race is quite the equal of yours when it comes to erotic enjoyment. But in return for dismantling the machine, I want a copy of *Dortha-Na's Golden Hours,* the marriage book.'

"There was a pause. The elder's whiskers kept quivering. Then it said, 'What do you want the book for?'

"Bill told him, honestly and frankly. The elder listened. Then it shook his head. 'I don't believe you,' it answered. 'I simply don't believe you. You want our sacred book to use in some perverse, indecent way. People who would invent a thing like the whirl machine! It's nothing so innocent as power you want the manual for.'

"Bill held on to his temper. 'I don't want to coerce you, sir,' he said. 'But if I don't get a copy of the marriage manual, naturally I'll feel at liberty to continue operating the whirl machine.'

"The elder dorff stood up. Its pink whiskers had folded in like the tentacles on a sea anemone. It swallowed an enormous quantity of air. Then it said, 'Very well. I can't stop you. But I can tell you one thing. From now on, not

one dorff brings you one page out of the marriage manual. I may be getting old, but I still have some authority. I'll lock up the books. If a dorff rides on your machine henceforward, he rides for free.'

"It stood choking with emotion. Then it lumbered heavily off down the path.

"Bill looked after it. The fog was coming in dismally. He sat down on the bench with his head between his hands. He could, of course, keep running the whirl machine. He could break up a lot more dorff homes. But no matter what he did, he wasn't going to get any more pages out of the marriage manual. The situation was a stalemate, an impasse. It was, as Bill expressed it, a fair cow."

"I never heard anybody except Bill say 'fair cow'," George cut in. "You must know him intimately."

"Yes," said the dorff. "As I was saying, Bill sat there with his head between his hands. Time passed. After a while he heard a soft scratching at the door. It kept on, and he went to see what it was.

IT WAS a dorff. Not the elder who had just left; it had no pink whiskers. Outside of that, Bill had no idea which dorff it was. It was, as a matter of fact, a female dorff, and one of a rather unstable constitution. She was known to her neighbors as not being 'properly wired', which is about the same as saying, in Earth parlance, that she didn't have all her marbles.

"Bill had no idea of this. All dorff looked alike to him. This inability to distinguish was to cost him dear. Or, of course, you could say it was very much to his benefit. It all depends on the point of view.

"The female dorff said, 'I heard you talking. You want a copy of the marriage book. I can get you a copy of the marriage book.'

"'How?' Bill demanded. And she told him how.

"Now, you must try to understand Bill's psychic state. By now the need to examine a copy of the marriage manual had become an overriding passion with him. He felt he would do anything, suffer anything, attempt anything, if only

[*Turn page*]

he could end up with a copy of *Dortha-Na's Golden Hours* in his hand. And at bottom he didn't understand the magnitude of what the female dorff was proposing. If he had understood, he would have said it wouldn't work."

"What was she proposing?" George asked.

"That he become a dorff."

"I don't believe it," George declared. "No human being could become a dorff. And I don't believe he could be disguised as one, either. The natures are utterly different. We're protoplasmic. Dorff are only partly flesh. At least, half their constitution is, well, you could call it electrical, though it's located along a different electro-magnetic spectrum from ours. The transformation would be impossible.

"I think you're lying. You've killed Bill, or you've got him in hiding someplace."

"He's not exactly in hiding," responded the dorff. "No, what I have told you is true, though the transformation is certainly very difficult.

"The female dorff took Bill to a somewhat quack dorff physician of whom she had long been a patient. The physician became interested in the case. Though a quack, he was a talented man. Bill was 'rewired'. The rewiring generated a passable dorff body for him; as Freud said, the human psyche is basically electrical, and relocating Bill's personality in the new electro-magnetic spectrum did prove to be feasible.

"You will be interested to know that the process did not hurt him, though he found it intensely ticklish. And his human body provided the basis for his new dorff physique."

THERE was a slight pause. Then George said, "So you're Bill."

"Yes," replied the dorff. "The news will hardly come as a surprise to you. I believe you have surmised it all along.

"I became a dorff. The dorff elder did not want to accept me in my new role, but there was nothing he could do about it. For the last three months I have been living as a dorff. For the last two months I have been married to a dorff. The elder could not deny me a copy of *Dortha-Na's Golden Hours* when I was married. And that is why there is now in my carrying pouch a copy of the marriage manual."

"Did you marry the female dorff? The one who had you rewired?" asked George.

"No." The dorff who had been Bill sounded embarrassed. "She—ah—well, as I told you, she didn't have all her marbles. She didn't realize that there was only one direction in which the transformation could proceed, and her doctor never thought to mention it to me. I—ah—well, I became a *female* dorff. Though not a fully functioning one. I am a happy wife, but I can never be a mother. But when I look at young dorff, I find I don't regret it much."

There was a long, long silence. At last George shook himself like a dog emerging from water. "Well, there goes our last chance of getting to see the marriage manual," he observed. "Now that you've became a dorff, I suppose you'll feel about it the way a dorff would. Are you going to back me up in a corner and start telling me about your sex life? Or do female dorff ever talk about such things?"

"They can, and do," the dorff declared. "It is almost their sole topic of conversation. Sometimes their talk can be most illuminating.

"But you asked about the marriage manual. Here. It's yours." It reached into its carrying pouch, pulled out the little green book, and put it in George's astonished hand.

George riffled through it rapidly. It seemed to be all in order, every page there. "Why—why—this is wonderful!" he exclaimed. He was almost panting with excitement. "This will revolutionize . . . it's the most fascinating . . . Earth industry will . . . I—I can't thank you enough! But why are you doing this?"

"Well, of course I used to be human," the dorff who had been Bill answered. "I still retain some sympathy. But the chief reason is that, from now on, the old marriage manual is obsolete.

"You see, I'm the only entity in all history that has had the privilege of living both as a male human being and as a female dorff. I've learned a good deal in

both roles. In fact, I've become something of an authority. . . .

"Take the marriage manual, and welcome. A new marriage manual, *Goldener Hours*, will soon be off the press. It's *really* hot stuff. I wrote it myself."

# PARALLEL

by

A. KULIK

||

They consider other planets,
Even hot and distant stars,
Hunt for life on bright Polaris,
Venus, Jupiter, and Mars.
But perhaps the answer's closer
To their ever-questing nose,
Closer than the petals folded
Round a budding rose . . . .

||

What of life on the Electron?
In the Atom's tiny span?
Could a Neutron or a Proton
Imitate the world of man?
Might each be a tiny planet
Swinging round a central sun
Where much smaller speculators
Try for answers one by one?

||

Might a bee have bees upon it,
Copied in a minor rote?
What of a Miltonic sonnet
Duplicated in the mote?
What of folk down in the Atom?
Is there peace, or wartime throes?
Or would you rather ponder
On the rose within the rose?

# THE ETHER VIBRATES

*(Continued from page 9)*

African. I will promise to send off for any magazines received a native made curio to the value of the issues.

I'm endeavouring to find out if I can become a subscriber to all four of your magazines as the import control restrictions to this country also include such magazines. If you could kindly reply stating how many current and past issues you have at your disposal together with all publications for this year, work it out in S. A. currency then I will immediately send the cash.

In case you are interested in hearing what my first magazine was that I read it was "The Lovers" and I thoroughly enjoyed it.

Hoping you will print this so that I may stand a chance of receiving some back numbers of these very well written science fiction stories.—*Box 546, East London, South Africa.*

This is the best offer we've seen yet. African curios for your old mags! If that's not an incentive to buy some new mags we never saw one. Boom in trade relations with South Africa coming up.

## MARBLE DEPARTMENT
**by Russell Brown**

Dear???? Sam: Just read the spring issue of SS and I have a few choice comments to make about it.

The way I deciphered your editorial it came out something like this: Anyone who writes to Mines has lost some of his marbles. Having a letter printed in SS is almost certainly a prelude to having the boys in the white coats come after you. Well, as far as I'm concerned it wouldn't be the first time somebody told me I was off my rocker but I defy those guys in the white coats to try and catch me. As for the rest of the letter writers though, that's a different matter. I'll grant that some of them are clearly eccentric and some sound like they don't have all their marbles (Not mentioning Deeck's category because I don't want to get libelous) but most of them aren't as bad as you make it sound. How about it Sam? Was that the idea that you were trying to get through our thick little skulls or did I get it wrong?

Really liked "The Seetee Mind" by Gotthard Gunther and am looking forward to more like it.

Really a good issue. Worst story in my opinion was "Little Enos." "The Houses of Iszm," "Runaway," "Stop-Over" tied for second place with "The Sound of Willow Pipes" getting my nod as best story in the issue. Now we come to "Peeping Tom." Wow, that story is in a class all by itself. Never thought of that angle before but it really sounds interesting!

VIEVE MASTERSON: Calm down. Maybe (Although I doubt it) this guy who says a woman's place is in the kitchen merely meant that there were more *good* female cooks than good male cooks.

CAROL McKINNEY: How do you account for the fact that most rich people have relatively small families?

DEECK: Well, on the off chance that this gets printed, I'd better not say that.

By the way Sam, after reading Sandor Esterhazy's letter I have one question, is there a very drastic drop in mag sales? Might not a slump in demand for s-f mags merely be an indication of the general business slump?—*Palisade, Nebraska.*

Russell, you sound like a marble expert. It used to be "the Redcoats are coming," now it seems to be the White Coats. Don't worry, kid, they'll never catch you. If the casualty rate among letter hacks were as rough as you say the same old faithful names wouldn't appear as long as they do—bless their little ink-smudged hearts.

## A NERVE IS A NERVE IS A
**by Donald Susan**

Dear Sam: I read *Startling* as soon as it comes out; I've got every issue published. I love you like a brother . . . (hmm, considering the way most brothers quarrel, there must be a better analogy) . . . BUT this seetee brain of Dr. Gunther is just too much. First of all, this ballyhoo as if he had just proved the moon is made of green cheese is deucedly aggravating . . . especially since I can find nothing very "startling" in it except a king-size, egregious example of specious reasoning.

First of all, contra-terrane or c.t. matter (hypothetical to be sure) is equivalent to ordinary matter except the corresponding parts of the atom differ in charge. The c.t. electron, called a positron, can be easily created via gamma radiation (incidentally also producing an electron). However, while theoretically a c.t. proton or "anti-proton" might exist, it has never been detected.

In addition to the uncertainty of c.t. matter existing, the results Gunther predicts for c.t. neural tissue is without any justification. The unexcited nerve or neuron exists in a polarized state, negatively charged within and positively outside; I'm not speaking about sub-atomic particles now, but in the sense a battery is charged. Upon stimulation of a section of nerve, the tissue switches charge there (due to selective permeability or eased flow of ions) and sets up an electric field which activates a previously unaffected section. Now the nerve cell looks like a many legged blob with a long

tail; the current flows toward the end of the tail. A one-way system of electrical traffic is rather necessary and can be expected in all life forms unless a radically different system replaced it. In such a case the fact of c.t. or null-c.t. is not as important as the "gross" structural and functional changes.

Since c.t. matter is identical with ordinary matter except for charge, it can be expected that the quantum field of a positron will act precisely as does an electron . . . since the particles it will react to will parallel those the electron encounters. Also regardless of how you regard the change of charge in the neuron (getting lost in plus of minuses, and negatives of positive, etc.), there is nothing to preclude evolution of the on-off, one-way neuron and thus a nicely "humanly" functioning brain.

Consider how you go about "reversing neuronic function." (Actually that idea approaches nonsense.) If you stimulate a nerve, it either reacts or does not. If it reacts, the current goes in some direction. So long as all impulses go in the same direction in respect to the cell features, perfectly normal neural circuits are possible. If the nerve reacts when you don't stimulate it and conversely, no learning can occur. Light enters the eyes of a c.t. animal, it goes blind! It's pitch dark, it sees a glaring light. All it can see is the light by definition of how the nerves act! So it's blind, deaf, etc., so far as the outside world goes.

If one were ignorant of the scientific subject matter, still one could realize that if c.t. nervous tissue is not like terrane nervous tissue, this does not mean it operates in reverse of terrane tissue. That is, all null-alphas may constitute an infinite class which seemed to be the only meaningful part *in the article*. Actually Gunther seems to confuse the idea of negation in logic with the idea of positive and negative in physics, which have no real connection. Metaphysics, hah!

March issue, otherwise fine; and art, even better than ever. That Finlay illo for the Peacock story rather affects me.—*706 Grant St., McKeesport, Pa.*

We have a foolproof system, we act only as referee and let you and the metaphysicians slug it out. Our comment is limited to one observation only: we note that your letter was written on three different letterheads; one of the National Fantasy Fan Federation, one of Pendulum, a fanmag and one of the Pittsburgh Science Fiction Association. You get around, don't you?

## THE PSYCHOLOGY HOUR
**by Carol McKinney**

Dear Sam: The Spring SS cover really stood out from the lesser pulpzines! Best one you've had in three years, in fact. Schomburg does it again.

[*Turn page*]

In spite of Vance's efforts with "The Houses of Iszm" he has far from equaled his supreme success, "Big Planet." Stories like that come only once in decades, darn it.

By far the best story in this ish was Judith Merril's "Peeping Tom."—Um, yes. Quite an astonishing conclusion! This novelet easily rates above last time's featured novel, "The Time Masters." Evidently, you thought so, too. . . .

It's nice that J. Dean Clark has no objection how your cover girls are draped. As for Lunar landscapes boring him *also,* it's no wonder that he is so intensely interested in Deeck (the Geeck's) letters wherein said boy, aged 17, is just learning that the stork is not to blame for his troubles. He has troubles?

I'm inclined to agree with R. V. Haggard that personality can very definitely be changed at any time during an individual's lifespan. Granted that this change may take an enormous amount of a certain intangible known as will-power, a given set of circumstances may also produce the same result, if only because the individual starts to think differently than he did. Your thinking shapes your personality, no matter how you may twist it around and call it something else. When your thinking or point of view changes so does your personality to a certain degree. You don't always assume a personality to please someone else, at least when you become a rational adult.

Call it "behavior patterns" if you wish, Mr. Haggard, but they *must* suit your own unconscious way-of-regarding-yourself, or your personality changes when you leave the parental home to make your own way. Are we arguing about the same thing from different points of view?

Christoff—what gals do you run around with whose happiness depends upon abuse? And whoever said that the male world was more interesting than the female? Did you ever try to separate the two and see how far you got? Perhaps these boy-crazy girls you know (and who manage to bolster your ego because from your point of view they are just being intelligent about it), perhaps these girls are not just boy-crazy but only longing for companionship which somewhere along the way they've missed. It's normal for adolescent and pre-teen girls (and boys) to pal around with their own sex. The misfits begin when a certain young person of a given locality can't find someone to share his interests, or her interests, and walks a lonely road. Perhaps for some reason, economical, physical or personality problems—(which probably began in an unsatisfactory home life), this young person is shunned or openly laughed at by the other young people who are too afraid of showing nonconformity to show any evidence of friendliness before others of the "gang."

Children who have always had the advantages of popularity generally show streaks of savage intolerance to others less fortunate. Thus, girls who go into adolescense with their longings for companionship unfulfilled, either become seriously introverted or boy-crazy. These are the ones who can be deeply hurt emotionally by those who have no wish to understand their actual natures. It's certainly true that children can be cruel little monsters to their own companions! Fred, why don't you be nice to your little playmates after this?

Ok, Sam—I'm through spouting now . . . but before I go, may I sneak in a plug for my fanzine, DEVIANT? I can? Goody—you get the nomination for Editor-of-the-Year. DEVIANT is bimonthly, from 30-40 pages mimeod, containing some of the best articles concerning fandom and allied subjects, amusing features, cartoons, and a minimum of top fan-fiction. Everyone will find something they like in DEVIANT, the different fanzine, which comes mailed flat in an envelope, *not* rolled, folded or stapled. Single copies are 20c; subs are 3/50c.—*377 East 1st North, Provo, Utah.*

It's an interesting commentary you make, that popular children generally show streaks of savage intolerance to others less fortunate. I don't know if you can generalize this way—so much depends upon the individual. And I do not believe that conditioning is all-important. Under the same conditioning different personalities still react differently, so there must be something basic underneath after all.

But getting back to your original thought, this might be another example of it: we once knew a millionaire. No kidding, a genuine millionaire, the only one we ever knew. He hadn't always been a millionaire—he'd been very poor and he made the million himself. Stop pushing—how'd he make it? You couldn't do it. He made it in the fight game. Well, anyway, the point is that he could never act like a millionaire. He always talked poor, he was tight as a drum and he usually borrowed money for cab fares. Yes, he rode in cabs, not subways, but he didn't carry any money on him. And pleaded poverty. Maybe that's the way to keep a million after you make it. We'll never know.

## OF MEN AND GODS

**by Tom Pace**

Dear Sam: I trust your letter column is still run for "laughs" and to promote satisfactorily uproarious dissensions; because I intend to produce some. I believe that it was once decided to bury the religious issue in (or rather, out of) TEV. I agree with M. Desmond Emery (TEV, Spring '54) that religion is a legitimate subject for discussion, but I have my own reasons for agreeing with him.

The basis of our interest in science-fiction is supposed to be an interest in the possible futures of humanity; a healthy speculation as to where we are going, and the scientific, social, and personal environment we can expect to find when we get "there." Religion, as a very powerful factor in Mankind's actions, plays a large part in shaping our tomorrows.

I don't think anyone has yet stated, in terms of special interest to a science-fiction fan, just why he objects to or approves of religion as a social force. Being quite aware that my views aren't necessarily of the slightest interest to anyone other than myself, and being, I'm horribly afraid, a typical fan, I shall proceed . . .

First, I haven't the slightest idea whether or not there is any validity in any of the religions. This lack of conviction—and lack of belief in the importance of believing—comes not from ignoring religion, but from taking a great interest in it. To really be an agnostic, one should have made a life study of comparative religion! I *do* believe that religion is an extremely harmful social force, always has been, and always will be, and that it is extremely critical at this time.

My reason for that is obvious, and is expressed in the most common argument *for* religion. I readily grant that conviction, or belief, or a state of grace, or whatever, in a feeling of tremendous relief, a balm to the troubled soul, a shelter in time of need, *ad nauseum*. It is always a tremendously pleasant

[*Turn page*]

sensation to lay down a burden . . . and to be told at the same time that this laying down of the cross is its own sweet justification, is balm to the ego and to the conscience! It is always a relief to seek a shady wall when it's hot as hell and you've been walking for a long way. A crutch is a convenient thing to have when your muscles cannot support the load of your body.

But muscles atrophy when they aren't used. So, too, do the will and the intellect and the conscience lose their strength when you prop them with something. The exercise of any faculty is a self-facilitating process. Every time you seek aid, aid which doesn't help you do anything but relax, aid which removes the feeling of shame that you *are* relaxing by glorifying relaxation, you become that much less able to solve a problem, or even to consider a problem.

As for religion being one of the most fundamental of human activities; the primitive beginnings of "religion," the assigning of conscious being to natural forces, was and is *not* what is meant by religion. It was and is a primitive manifestation of the search for reasons why things are as they are; a search which on a more sophisticated level is generally called Science. The only fundamental human instinct involved in religion is the rather harmful one of laziness; of desire not to have to bother about struggling; of desire to be done with conflict.

The secondary basis for religion is the obvious one of discipline. Discipline is necessary to keep nomadic tribes welded into a tribal unit under the authority of the patriarch. Discipline is necessary to get unsophisticated peoples to accept sanitary and dietetic and agricultural and reproductive laws which will keep the tribe healthy, and increase their numbers and their wealth. And finally, in some of its more often-used perversions, the discipline which can be enforced through religion gives a firm base for power; individual or group power. It can enforce educational rules facilitating the continuance of power, justify acts furthering power, provide scapegoats to sooth the ruffled egos of the flock or tribe or party or race; over the thousands of years since quickwitted, farsighted, ambitious, or seriously concerned men first realized the potentialities of Man's lurking desire not to have to worry, every possible type of present or potential misuse of authority has been justified by religion.

One of the beauties of this type of discipline is that it does not have to be used cynically. The most earnest and devout men are as apt at using authority to further the denial of man's exercise of his own will and reason as are any despots . . . more so, usually, because ambition easily betrays itself, and conviction breeds more conviction.

Another advantage is that it does not have to to be used consciously; and it does not have to be called religion. The cycle of change from the Victorian hang-over of Pre-WW I to the moral freedom of the Twenties was planned and directed by no one; it "merely happened." And the attitude that "there is no moral law, no right or wrong" (there are, but they aren't dictated by divine revelation; like the original divine inspirations, they are common-sense survival factors!) is quite as thorough as evasion of responsibility as is any praying to God for guidance in your project of; enslaving or killing your fellow man; destroying the ecology of a nation so that you can leave wealth to your children so that they can buy the scarce products your wastefulness has caused; denying population control so that children may be conceived to grow up to a life of marginal subsistance and die early of never having had enough to eat.

It can also be called Communism, or Nazism, this battening on men's hesitation to call their own shots. And just as the different religions and the different sects are never more than polite-by-necessity, the different authoritative political schemes are born and live as deadly enemies. It is in this sense, and this sense only, of jealous rivalry, that religion is in any way the "bulwark against Communism" it has been called.

One promises hungry people bread now; food, to a starving man, is a hell of a good bait for even the ugliest hook. The other offers a pleasant sense of spiritual wellbeing, and future milk and honey after death. Italy and India, to cite two countries heavily over-religioned, and suffering badly from it, have seemed dangerously close to taking the bread-baited hook. Only, I would say, the fact that this country has poured aid into Italy, and India's excellent acquaintance with the facts of imperialism, have kept these two countries from accepting Communistic guidance.

Those countries who oppose Communism have definitely failed to offer any sound alternative to Communism. Obviously; for any alternative to authoritatism *has* to be an individual matter, and by thousands of years of

precedent, large groups of individuals aren't disposed to consider individual responsibility for individual action. It may really be too late.

Communism will fall, because it's a clumsy sort of discipline. It doesn't have the instinctive appeal of religion; it has to be enforced, and its attractiveness diminishes sharply with familiarity! Religion, too, will fail as a social force, because it does not furnish the reasonableness and responsibility required from each individual for individual and cultural survival.

And without enough reason and enough acceptance of consequences, we might as well start digging our caves right now.

No, I don't recommend Science as a cure-all. It is not. It is a system for investigating the objective *and* subjective universe in which we live, and it works very well, too. But as long as we as a people do not use the information, which we as a people gather by means of science, in order to arrange our affairs in any sane fashion, then we as a people are headed for trouble.—*4709A Gateway Terrace, Arbutus, Maryland.*

Did you say "laughs?"

## SNARLY THE SABRETOOTH

**by Edward G. Seibel**

Dear Sass: Like the faint trilling of the klaxons (140 on the sound scale for those of lesser perception) I once again return to the infamous fold of your overjoyed magazine. I knew that you'd be glad to hear from me again Sam, so I decided that I'd write. Unfortunately I've been out of contact with your fine magazine so long that I have no comment to make anent its contents such as they may be.

It seems I had the best of intentions some time ago of sending you a story, but unfortunately for you I never found the time for such a massive effort; mostly I've been studying, etc. Of course one of these fine days you'll wake up and there will be a story from myself in your mailbox. Doubtless you'll snap it up, being that it's a rare occurrence, a story from me.

I saw a photo of Fletcher Pratt the other day in an old *Esquire* magazine, as I suspected he has a beard—Van Dyckishlike. Also I came across a couple of heavy volumes concerning the Navy and which bore his name—I hadn't realized the old boy was so well-written in fields other than s-f. Goes to show how wrong one can be about a man. I rather admire that beard—think I'll cultivate some brush like

[*Turn page*]

## Answers to Quiz on Page 75

**1-h, 2-l, 3-p, 4-i, 5-m, 6-s, 7-e, 8-o, 9-u, 10-r, 11-d, 12-n, 13-v, 14-t, 15-q, 16-k, 17-c, 18-b, 19-j, 20-g, 21-a, 22-f.**

that around two years from now, when I'm back at the University for further study.

I *know* you won't like this and it spoils a good story, but it's so long ago it won't matter anyhow—the other night I found that *Flight Into Yesterday* had a flaw in it—yes, a flaw! In a story I admired greatly too . . . Pass the beer, I feel miserable . . . In the part where it said the boy's heart was beating at 1400—it couldn't, and continue to pump blood, simply because of the way the heart is constructed. I refer to you to Chapter II, *An Introduction to Human Physiology,* by Lathan A. Crandall, Jr., M.D., PH.D. I can't recall the exact page at the moment, but the facts are in that chapter.

As long as you're going to print this how about putting in the fact that I want Stephen at *Stephen's Book Service* to send me a *new* list of the books he has on science-fiction. The one I've got is as ancient as Beowulf, and I want to order some books. I reckon this way I can kill a stone with two birds.

Well, I'll close and relieve your overstrained nerves with the promise that you'll get that story from me one of these years (if I ever retrain this silly ass of a typewriter).—*P.O. Box 445, Olivehurst, Cal.*

Who has drawn Sabretooth's fangs? This is a mild, courteous missive, almost servile in its good will. Snarly, do you feel all right?

## LOVE THAT BURNICE

**by Burnice Love**

Dear Mr. Mines: I feel compelled to comment on the wonderful story in your Spring issue, "The Sound of Willow Pipes," by Wilbur S. Peacock. I think it is one of the best stories I have read in a long time. If all this ex-PS editor's stories are this good, let's have a lot more of him featured on the pages of your magazines. It seems to me (and I know I am not alone in this opinion) that of late the general quality of nearly all SF magazines is deteriorating, and it is rare and refreshing to find such a gem. Encore!

As for the other stories in the issue, they were good enough, but not, in my opinion, outstanding.

By the way, (hint) Sam old boy, it was really quite clever of you to publish my letter in the April 1953 issue of TWS, you must have known that feminine vanity would compel me to buy extra copies of said issue to send to all those friends in England I mentioned! Dot's goot bizness, boy! Oh well, I'll not hope for the same luck this time, after all 'tain't really worth printing, except for the comment on Peacock's gem. But still, business is business, and think of all those extra copies you'll sell if. . . .

Okay, I'll stop pestering you, Sammy.—*904 Boise Avenue, Boise, Idaho.*

So that's what that sudden spurt was? How many friends do you have, Burnice?



## WHO'S SERIOUS?

**by Joe Gibson**

Dzam: I like "Dzam." As an abbreviation of "Dear" and "Sam" it has enough Turkish flavor to suggest "salaam" while still being a 4-letter word. Anyway, the way I heard it, the Maharajah wasn't at all upset by his judges' indecision. He merely had the poacher dragged before him and spoke as follows:

"You have been allowed to make one statement to my council of judges. If the statement were true, you would be beheaded. If it were false, you would be burned alive. You said you would be burned alive. The judges could not decide whether that was true or false, so you were *not* burned alive. Therefore, when you made that statement, you lied. I shall now rectify your error. Guards! Take him out and burn him alive!"

Moral: never use logic on a Maharajah. And I suspect Dr. Gunther was guilty of some Sophistic juggling of logic when he replied to Messers. Brilliant and Cameron. His answer to Brilliant's N-transform system was a valid one, but applying that same answer to Cameron's arguments was a little like "The dog is your mother."

Certainly there would be non-Aristotlean factors in the make-up of a seetee world, but that doesn't mean the seetee creatures must necessarily have a non-Aristotlean mentality. They could be just as blindly Aristotlean as we are in our own world with its non-Aristotlean factors. Neither we nor the seetee boys need bother with such seeming paradoxes until we start dabbling in higher math, cybernetics, nuclear physics and suchlike. It has little likelihood of entering into our general linguistics. The chemical catalysts and molecular structure of their world would be much the same as ours. Their green wouldn't be purple or anything else; it would be just as green as our green. Their whiskey would taste the same to them as ours tastes to us—that is, if they brewed our kind of whiskey.

That "if" is where non-Aristotlean factors enter the picture. But for this, you don't need a seetee world. You can postulate another Earth exactly like our Earth in all basic aspects, and there is even a question of whether the dominant species on that other Earth would necessarily be humanoid. Certainly, we couldn't just jump out of our spaceship and start sniffing

their good, clean Earthtype air with impunity. Our knowledge of microbes is based upon our microbes. To us, their microbes would really be some lulus. And they'd feel the same way about ours. But neither we nor they would have to resort to non-Aristotlean logic until we tried to determine why, on Earths so exactly alike, such different microbes should evolve. And it might concern more than microbes. The natives there might be related closely to dinosaurs. But despite such paradoxes in evolution, said natives wouldn't necessarily have non-Aristotlean minds. If we get by without it, so can they.

In other words, I suspect that Gunther's preoccupation with a postulated non-Aristotlean seetee brain isn't something he, himself, takes seriously. I rather believe that he chose it merely as a convenient gimmick on which to hang his other postulates.

And I'm afraid it was a bad choice, especially since he needn't have gone to all that trouble. There are plenty of possible worlds on which non-Aristotlean logic would be a basic requirement for any mobile life-form. Consider a planet swinging around and between 4 or 5 suns which are also juggling their relative positions. Each sun would have a different mass, composition, and radiation, of course. The planet's configuration, given these conditions, might be that of 3 or more spheres joined together—with an ocean of liquid metal surging back and forth through the hollow core, and occasionally being pulled outward from the planet's surface in a huge teardrop and then splashing back. Aristotlean logic would hardly be applicable to such an environment.—*24 Kensington Ave., Jersey City 4, N.J.*

Did you say paradox, or paradise?

## TAKE TO THE HILLS

**by Wm. Deeck**

Dear Mr. Mines: There doesn't have to be any debate over whether or not I should come back: I AM BACK! And that settles the whole thing. I was told in a missive that the fans would be very unhappy if I didn't write any more letters (Gary Labowitz gets all the blame), and I wouldn't want to make anybody unhappy—especially the fans. I bet you're happy now that I'm back, too.

As I don't read your stories . . . Tell me something, Mr. Mines. Which magazine do you edit, FSM or SS? It must be FSM because I gave you credit for having some judgment ("'Tis an old maxim in the schools, That flattery's the food of fools . . ." Swift must have known you!) So who edits SS; and what gutter did you get him from? To continue . . . I will have to give my opinion of the letters and the editorial. Editorial: So we owe the spider a debt? So I should let them sleep in the same bed with me to pay a debt?

[*Turn page*]

Suppose there's a female spider amongst them? I, being a misogynist (misogynist: a man who likes women only when they are intelligent or when they are far away from him. The ones far away—very far away—should be nude. It adds to the effect. If you cut this letter when you print it, leave in the part about my being a misogynist. They're very rare, you know, and it will make TEV stand out. It might even make it the best letter column in SS.), could not tolerate that. So you show my appreciation for me, Mr. Mines, and don't watch out for the black widows *(Latrodectus mactans)*.

Thom Perry is right. SS should be all letters. You don't think people read it for the stories, do you? Another good idea of his was to put Pogo in SS and get rid of Crossen. Aside from his beard, Crossen has other points about him that I detest; e. g., he can't write.

I see that you want to know who doesn't like Carol McKinney. I don't! Her head is like space: it is very close to being a perfect vacuum. "Deeck the Geeck" indeed!

So some fool thinks he is handsomer than Deeck! I have a very good photograph of the aforementioned lad (Deeck) standing in front of his '41 Studebaker with a beer bottle in his hand. I shall send one to him (and maybe to you. You have so few enjoyments.) and he can tell everyone that I am better looking than he or Carol McKinney (you can tell everybody, too. That is, if your aesthetic senses are as good as I think they are.) My car is even better looking than the both of them.

How about a story from T. P. Caravan? Four letter asking for him and no results yet. How can you ignore one as popular as he? *Ecce homo.—8400 Potomac Ave., College Park, Md.*

We should comment on this letter yet? Perish forbid. Anyway there are several hundred burning missives left, every author of which is going to be deadly insulted because it wasn't printed, but no kidding, this would have looked like the phone book. So let's for the fast rundown.

Arlene Mashaw, 826 Park Ave., Syracuse 4, N.Y. wants to know if we really take the (blame—credit—omit one) for that short but agonizing editorial which precedes the letter column. Hank Moskowitz, Three Bridges, N.J. pens a passioned paen to Joe Keogh, but we forgot what the original fight was about, so—sorry Hank. Philip Walter Gifford, Hazard Bldg. Howard, R.I., would like to see the U.S. take the birth record away from the Canadian quints and urges U.S. women to try for sextuplets. (He said it, we didn't.)

Norman J. Clarke, 411 Mayfair Ave., Ottawa, Ont., Canada sends us a poem—egad, fair spoiled our lunch it did. M. Desmond Emery, 93 Hemlock St., St. Thomas, Ont. Canada, is threatening to write us a story. Wants his first rejection slip to be from us. H'm. Flattery will get you nowhere. Victor Paananen, 1148 West 8th St., Astabula, Ohio, chuckles over the blurb on the Gunther article which said you may never think in alternative values again, while Gunther himself says man can only think in Aristotelian logic. So far, Vic, so far.

Pete Vorzimer, 1311 N. Laurel Ave., W. Hollywood, 46, Cal. has flipped over the Gunther articles, promises to buy the mag forever if this kind of thing is going to be included, plus George O.'s TOPOGRAPHICALLY SPEAKING. Jim Caughran, 3110 South 44th St., Lincoln, Nebraska says Deeck is our best humorist. Pfah. Kenneth B. Sisco, Veterans' Administrations Hospital, Ward N-10, Long Beach, California wants Captain Future stories. Gary Labowitz, 7234 Baltimore, Kansas City 14, Missouri says we have a problem—Deeck. But he's got a worse one. He likes him.

A. E. Hitch, 8888 Janis St., Utica, Mich., agrees with us that there is a basic personality which changes only just so far under conditioning. Denks. Martin Brilliant, The Graduate House, M.I.T., Cambridge 39, Mass, says please don't eliminate all the mistakes from the mag, if it has no mistakes he'll stop buying. Sure, it's easy. Barry Smith R.C.A.F. Station Greenwood, Nova Scotia, Canada, took a vow never to write us again when his first letter wasn't printed, but slipped. You got to work up to these things, boy. Tom Gould and Thom Perry—is you twins? Or howcome you use the same typewriter?

Thomas O'Dell, 8230 Wisconsin, Detroit 4, Mich. thinks it is not poverty which makes Communists, but pride. No humility. Bob Jones 4706 2nd Rd., N. Arlington, Va., says maybe SS and TWS are better than they were, but we shouldn't pat ourselves on the back for it, they had reached a high point in the forties and couldn't go much higher. Samuel Johnson, 1517 Penny Dr., Edgewood, Elizabeth City, N.C. likes Sandor Esterhazy's letters. Thom Perry, 4040 Calver St., Lincoln 6, Nebraska, thinks Deeck is better than Fearless Fosdick. And there's Gregg Calkins, and James Lewis and Richard Sargent and Wally Gray and Norman G. Wansborough all the way from England and so far, far into the night. . . .

—*The Editor.*

—Continued from back cover

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