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LEFT HAND, RIGHT HAND

by James H. Schmitz

Classic Reprint:

PLANET OF THE DOUBLE SUN

by Neil Jones



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Amazing

Fact and Science Fiction Stories

NOVEMBER, 1962 Vol. 36, No. 11

REG. U. S. PAT. OFF.

"FIRST IN SCIENCE FICTION SINCE 1926"

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EDITORIAL

IT is back in the early days of the 19th century. There is Thomas Jefferson, the President, with some of his advisers. They all stand around a desk, looking down at a bit of paper. Jefferson shakes his head sadly. "Well, I thought it was a good idea," he says, "but the tape says no. Therefore tell the French minister that we will not purchase the Louisiana Territory, after all."

This little scene came unbidden into my mind recently when I read a news story to the effect that the Department of Defense appropriated \$100,000 with which to kick around the possibilities of building a computer that could lay down guidelines for national and international policy. A team of scientists—after reading up on strategy, world politics, international finance, and—I quote the team's leader—"that sort of thing," programmed a computer with 30,000 bits of information to enable it to simulate relations among the major power blocs under any given set of circumstances. Eventual object: to tell nation's leaders possible conse-

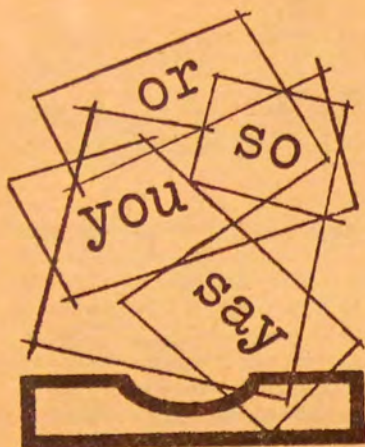
quences of particular policies.

No doubt the scientists involved are well aware that this is all experimental, that the machine will never be a predictor or purveyor of foreign policy, but rather a quick and handy second-guesser of alternative approaches. Nevertheless, it is difficult to overestimate the yearning of some men to relieve themselves of the responsibilities for decisions, to be able to fob off onto other people—or things—the decision-making function. And, though it may be heresy to say so in these pages, I, for one, grow increasingly dubious of the "theory of probability" approach to the life and death of our civilization. The strategy of games reads nicely, and it may be fun to apply it to poker, or to theoretical war. But when the lives of billions are at stake, I'd rather put my trust in the mind of man, rather than the mind of a probability machine.

The mind of man may not be as quick, nor as knowledgeable, nor as objective.

But it is powered by a heart.

N. L.



Dear Editor:

As one matures, he begins to realize that, just because somebody has said that something is true, it does not necessarily mean that this fact is true. The purpose of this letter is to point out why, in my opinion, Otis Adelbert Kline is a better adventure-story writer than Edgar Rice Burroughs.

This undoubtedly violates more than a couple taboos, and of course anyone who says a bad thing against ERB's writings is a blackguard and a scoundrel. Probably Pat Scott will start screaming about Mervyn Peake, and Billy Hulan will mumble something about how poor L. Sprague de Camp is, but I will continue, in the hope that somewhere some fan will not begin

twitching in the dust and screaming bloody murder.

For convenience, let's take an easily available ERB volume, and two recently published paperbacks of Kline's. The ERB is "Three Martian Novels," containing—supposedly—his three best Mars novels. The Klines' are "The Outlaws of Mars" and "The Swordsman of Mars."

After reading all five novels—four and a half, that is—I couldn't finish the last one in the ERB book, "Mastermind of Mars"—I can make this statement:

For the type of story which he writes, Burroughs' style is grotesquely misplaced. Using over-large words and long, complex sentences, he usually says in one page what Kline says in a paragraph. In some types of fiction, this would be all right; but in adventure stories, the object is to keep the story and the hero moving at all times. Let us take a hypothetical situation. Suppose our hero was cornered in the vaults underneath the deserts of Mars by some fierce trained beast. He has a choice between killing the beast or escaping down a side passage which he has never been in before. If he kills the beast it will raise an alarm and put the guards on the alert for him. Well, if ERB wrote it, it would probably come out something like this—

"Karter stood watching the

fearsome beast as indecision burned in his mind. He had two choices, and now, with death closing in on him by the second, he quickly turned them over in his mind, noting that the beast was of course waiting for him to finish his decision before jumping.

"He could kill the beast, but this was of course a bad idea, since it would raise an alarm, the beast being trained to hunt for dangerous-looking persons within the tunnels. Once raised, he would probably never be able to get out, and spend the rest of his life—not long, at that rate—in the catacombs. Never to see Sejah Doris again! Never . . ."

(500 words later)

"Or, he could leap into the tunnel at his right, where the beast could not follow. This seemed the best bet, so he quickly gathered his muscles and jumped. Unfortunately, his Earth-muscles responded only too gladly, and he sailed straight up, banging his head on the ceiling. . . ."

But you get the idea. All the time Burroughs is dissertating on the possible choices open, or the current situation, we are wondering if the action is frozen into still-life waiting for him to get through. Kline would probably just say, "Realizing that to kill the animal meant raising an

(Continued on page 126)

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Men were tortured . . . men were killed . . . and the Earth Scientists chatted pleasantly with the Tareeg. Were they traitors or were they waiting for The Ice Men?

LEFT HAND,

JERRY NEWLAND was sitting up on the side of his bunk, frowning at the floor, when Troy Gordon came quietly into the room and stopped at the entrance to watch him. Not too good, Troy thought after a moment, studying Newland's loose mouth, the slow blinking of the eyes and the slumped immobility of position. Not too bad either—not for a man who, in most practical respects, had been dead for the better part of three years and come awake again only the day before.

But the question was whether

Newland was going to recover quickly enough now to be of any use as an ally.

Troy moved forward a few steps into the room, stopped again as Newland raised his head in a sluggish motion to stare at him. For a few seconds, the man's face remained blank. Then he grinned. A strained, unpleasant-looking grin, but a grin.

Troy waited. Newland cleared his throat, said, "I . . . I recognized you almost immediately this time! And . . . I remembered that this same thing had happened before."

By JAMES H. SCHMITZ

Illustrated by SCHELLING

RIGHT HAND

Troy grinned, too, guardedly. "My coming into the room this way?"

Newland nodded.

"It happened yesterday," Troy said. "What's my name?"

"Troy Gordon."

"And yours?"

"Jerry Franklin Newland."

"What do you do?"

"Do? . . . Oh!" Newland drew a deep breath. "I'm courier pilot for the . . . for the . . ." He stopped, looking first surprised, then dismayed. Then his face wrinkled up slowly, like that of a child about to cry.

"That part's gone again, eh?" Troy asked, watching him.

"Yes. There's some . . . there's . . ."

"You are—or you were—courier pilot for the Cassa Expedition," Troy said. He thumped his heel on the floor. "That's Cassa One, underneath us. We've been away from Earth for three years and eight months." He paused. "Does that help?"

Newland reflected, frowned. "Not much. I . . . it seems to be true when you say it." He hesitated. "We're prisoners, aren't we?"

"Uh-huh," he answered, flatly. "I had that feeling. And you're hiding me here?"

"That's right," Troy agreed.

"Why?"

"Because nobody else knows you're still alive. It's better if they don't, right now."

Newland shook his head, indicated a sign fastened to the ceiling above the bunk in such a way that a man lying in the bunk on his back would catch sight of it as soon as he opened his eyes. "That," he said, "made sense as soon as I saw it just now! I remembered having read it before and what it meant. But otherwise everything's still badly blurred."

TROY glanced up at the sign. It read:

RELAX AND TAKE IT EASY, JERRY! YOU WERE IN A BAD SMASH-UP, AND YOU'VE JUST FINISHED A LONG STRETCH IN THE EMERGENCY TANK OF YOUR SHIP. EVERYTHING'S BOUND TO SEEM A LITTLE FOGGY, BUT YOU'RE GOING TO BE OKAY. DON'T TRY TO LEAVE THE ROOM. IT HAS TO BE KEPT LOCKED, BUT SOMEONE WILL BE ALONG TO SEE YOU IN TWO OR THREE HOURS AT THE MOST.

Troy said, "Your memory will start coming back fast enough. You've made a good start." He sat down, took his cigarette case from his pocket. "I'll go over some of the things that have

happened with you. That tends to bring them . . . and other things . . . back to mind. Care to smoke?"

"Yes, I'd like to smoke."

Troy tossed the cigarette case over to the bunk, watched the pilot reach for and miss it, then bend forward awkwardly to fumble for it on the floor. Reflexes still very bad, he thought. But when Newland had the case in his hand, he flicked it open without hesitation, took out a cigarette and closed the case, then turned it over and pressed the button which snapped on the concealed light. The day before, he had stared at the case helplessly until Troy showed him what to do. So his body had begun to recall more of its learned motion patterns.

Troy said, "I told you the main parts twice yesterday. Don't let that worry you . . . you've retained more than most would be likely to do after a quarter of the time you spent in the tank. You weren't in very good shape after the smash-up, Jerry!"

Newland said wryly, "I can imagine that." He drew on the cigarette, coughed, then tossed the case back to Troy who caught it and put it in his pocket.

"Have you got back any recollection at all of what the aliens that caught us are like?" Troy asked.

Newland shook his head.

"Well," Troy said, "they're downright cute, in a way. More like big penguins than anything else. Short little legs. The heads aren't so cute . . . a hammer-head shark would be the closest thing there, which is why we call them Hammerheads — though not when we think some of them might be listening.

"They don't belong here any more than we do. They came from another system which is a lot closer than Sol but still a long way off. Now, we aren't the first Earth people to get to Cassa. There was an Earth survey ship poking around the system about twenty years ago, and it seems that the Hammerheads also had an expedition here at the time. They spotted our survey ship but weren't spotted themselves, and the survey ship eventually went back to Earth short two of its men. Those two were supposed to have got lost in the deserts on Cassa. Actually, the Hammerheads picked them up . . . Jerry?"

The pilot's head was beginning to nod. He straightened now and took a puff on the cigarette, grinning embarrassedly. "S'all right, Troy!" he muttered. "Seemed to get . . . sort of absent-minded there for a moment."

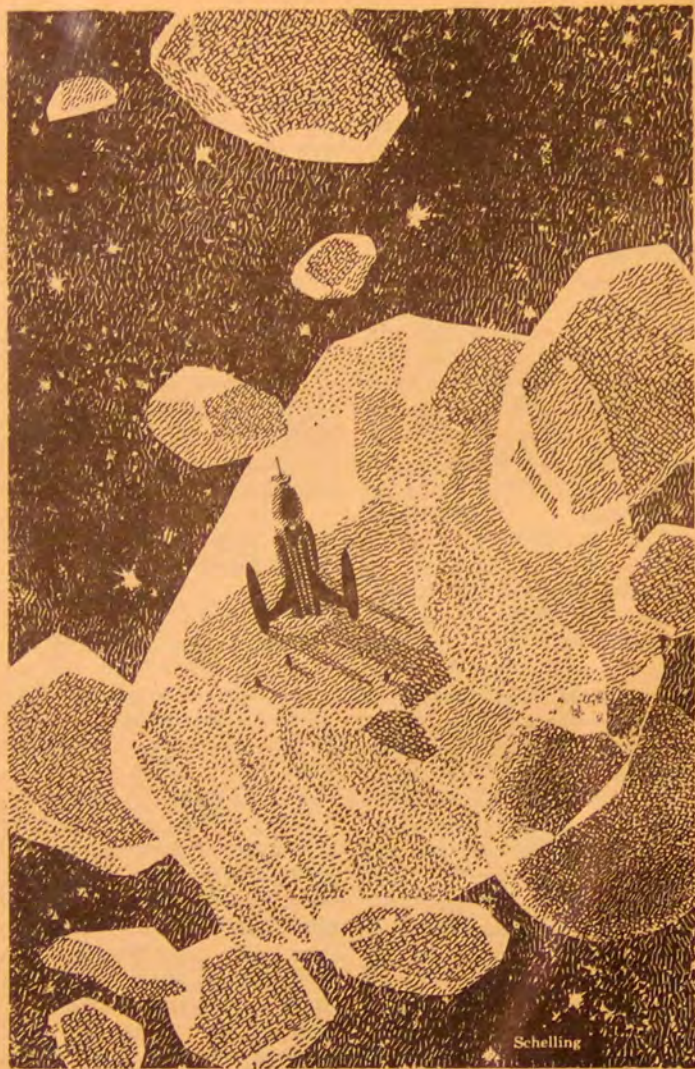
Which was, Troy knew, one of the symptoms of the re-awakening period. Newland's mind had

been shut away from reality for a long time, wrapped in soothing, vaguely pleasant dreams while the emergency tank went about the business of repairing his broken body. The habit of unconscious retreat from his surroundings could not be immediately discarded, and particularly not when the surroundings were as undesirable as those in which Newland now found himself. It would be better, Troy thought, to skip some of the uglier details . . . and yet he had to tell the man enough to make him willing to cooperate in what would be, at the very least, a desperately dangerous undertaking.

HE said, "You're still only three-quarters awake, Jerry. We have to expect that. But the closer you listen and the more information you can absorb, the faster you'll shake off the cobwebs. And that's important. These Hammerheads are a tough breed, and we're in a bad spot."

Newland nodded. "I understand that much. Go ahead."

"Well," Troy said, "whatever that first Earth survey ship had to report about the Cassa system looked good enough so that the administration put Cassa down for a major expedition some day. Twenty years later, we got here again—the interstellar exploration carrier *Atlas* with eight hundred men on board. I'm one



Schelling

of her engineers. And we found the Tareegs—that's what the Hammerheads call themselves—waiting for us. Not another bunch of scientists and assistants but a war-party. They'd learned enough from the two survey ship men they'd caught to figure out we'd be coming back and how to handle us when we got here.

"Now get straight on a few things about the Hammerheads, Jerry. Their weapons systems are as good or better than ours.

In other ways, they're behind us. They've got a fair interstellar drive but can't make the same use of it we do, because they've still a lot to learn about inertial shielding. They have a couple of robot-directed interstellar drones standing in a hangar a few hundred yards from here which can hit half the speed of your courier, but no Hammerhead or human being could ride 'em up and live. The two big carriers that brought them to Cassa One are dead-slow boats compared to the



LEFT HAND, RIGHT HAND

Atlas. And that's about the best they have at present.

"Just the same, they're out to get us. War is the best part of living as far as they're concerned, and they're plenty good at it. So far they've only been fighting among themselves but they're itching for a chance at another race, and now we're it. Capturing an Earth expedition in the Cassa System was only part of the plan to take Earth by surprise."

Newland blinked, said slowly, "How's that? You'd think that might tip their hand. We'll be missed, won't we?"

"Sure we'll be missed," Troy said. "But when? We were to stay here eight years . . . don't remember that either, eh? The Hammerheads will have all the time they need to be set for who ever comes looking for us eventually."

"But would they know that?"

Troy said bitterly, "They know everything about Earth that our top brass scientists of the Cassa Expedition were able to tell them. Pearson and Andrews—those names mean anything? They were the Expedition Chiefs when we were captured. One of the first things the Hammerheads did was to have the science staff and other department heads look on while they tortured those two men to death. As a result, they've had all the cooperation

they could ask for—more than any decent human being would think of giving them—from our present leadership, the senior scientists Dr. Chris Dexter and Dr. Victor Clingman. They're a couple of lousy traitors, Jerry, and I'm not sure they're even capable of realizing it. Clingman's in charge here at the ground base, and he acts as if he doesn't see anything wrong in helping the Hammerheads."

"Helping the . . ." Vacancy showed for a moment in the pilot's expression; he frowned uncertainly.

TRY to stay awake, Jerry! There're just a few other things you should try to get nailed down in your memory this time. The Hammerheads are water animals. They can waddle around on land as long as they keep themselves moist, but they don't like it. They've got a religion based on a universal struggle between water and land. Cassa One's nothing but hot desert and rock and big salt beds, so it's no good to them. And the other two planets in the system have no oxygen to speak of.

"Now here's the thing that's hard to swallow. There's a huge lumped-up asteroid swarm in the system. The *Atlas* stopped for a few days on the way in to look around in it. Dexter and Clingman, after we'd been captured,

volunteered the information to the Hammerheads that a lot of that stuff was solid H₂O and that if they wanted Cassa One fixed up the way they'd like it—wet—the *Atlas* could ferry enough asteroid ice over here in billion-ton loads to turn most of the surface of the planet into a sea.

"You understand it wasn't the Hammerheads who had the idea. They don't have anything resembling the ship power and equipment to handle such a job; it hadn't even occurred to them that it could be possible. But you can bet they bought it when it was handed to them. It will give them a base a third of the way between their own system and Sol. That's what's been going on since we landed and were grabbed off . . . almost three years ago now.

"And these last weeks there've been, for the first time since we got here, a few clouds in the sky. It means the boys on the *Atlas* have as many of those mountains of ice riding on orbit as are needed, and they've started shoving them down into the atmosphere to break up and melt. So we . . . Jerry, wake up!"

Troy Gordon paused, watching Newland, then shrugged, stood up and went over to take the butt of the cigarette from the pilot's slack fingers. Newland had slid back into catatonic immobility; he offered no resistance as Troy

swung his legs up on the bunk and straightened him out on his back.

How much would he remember the next time he awoke? Troy didn't know; he had no medical experience and was working on the basis of remembered scraps of information about the treatment given men recovering from an experience such as Newland's. There were people on the ground station who could have told him what to do, but he hadn't dared ask questions.

It was chiefly a matter of time now. Or of lack of time. What would happen when the giant hauling operation was concluded, when the water which had been carried in from space came creeping across the vast desert plateaus about the station, was something he didn't know. But it was almost certain that if his own plans hadn't been carried out by that time, they never would be.

JERRY," he addressed the sleeping pilot softly, "if you've wondered why I'm risking my neck to bring you back to life and keep you hidden away from the Hammerheads and Clingman, it's because you're the one man I still can trust in this lousy expeditionary group. It's because you tried to do something about the situation on your own. You don't remember it yet, but when the

Hammerheads took over the *Atlas* you made a break for it in the courier boat. You tried to get away and warn Earth. They shot you down before you could clear atmosphere; but then they couldn't find the wreck. They thought it was down in one of the salt beds and gave up looking for it.

"But I found it in the desert a couple of months later. You'd dropped through into the emergency tank and you were still more or less alive. I smuggled the tank into the station here as soon as I'd rigged up a place where I could keep it. I can use some help, and you'll be the best possible man for the job. . . ."

He stopped, surprised to see that Newland's mouth had begun to work awkwardly as if he were trying to speak. Then a few words came, slow and slurred, but indicating that the pilot's mind had not sunk nearly as far from full wakefulness as during his previous relapses.

"Wha . . . want me . . . do?"

Troy didn't answer. Not yet, he thought. Not until Newland was no longer helpless. Because, in spite of all precautions, he might be discovered here at any hour; and if that should happen, Troy's secret must still be his own. He could act without Newland's help if necessary.

He waited a few seconds longer, while the pilot's face slowly smoothed out again into coma-

tose blankness. Then Troy turned around quietly and left the room.

* * *

Troy Gordon's personal living quarters were on the lowest of the station's three underground levels, behind the central power plant and utilities section. Considerable privacy was their only attraction; and since the arrangement kept Troy, during his off-duty hours, close to his responsibilities as the station's maintenance engineer, neither Dr. Clingman nor the Hammerheads had objected to it. He was a useful man; and to the useful, minor privileges could be extended.

Troy had been able to take advantage of that circumstance. The room in which Newland was hidden lay behind his own quarters, forming an extension to them. The entrance to it was concealed, and while a careful search should have disclosed it, Troy—so far as he knew—had as yet given no one a reason to initiate such a search. The back room was not part of the station's original design; he had cut it secretly out of the rock. With the equipment at his disposal, it had been a relatively minor job.

But it involved a very ugly risk. Discovery would have meant death, and no easy one. With the exception of the cooperating chief scientists, the Ham-

merheads' attitude towards their captives was largely one of watchful indifference, so long as no one got out of line. But they had taken one measure which insured that, after a short time, there was very little inclination left among the prisoners to get out of line knowingly. At intervals of about a month, whether or not an overt offense had been committed, one more member of Earth's Cassa Expedition was methodically tortured to death by the aliens; and a group of his fellows, selected apparently at random, was obliged to witness the matter while fastened to a device which allowed them to experience the victim's sensations in modified form.

Troy had been included twice in the observing group. He hadn't known whether it implied a personal warning or not. In the Hammerheads' eyes, he was a useful servant; it might be that he was also a suspected one. Nevertheless, it had been necessary to construct the back room. One day, he was returning through the desert from one of the outlying automatic stations under his care when he caught the momentary whisper of a distress signal in his groundcar's receiver. The slight sound had put his hair on end. It was an Earth signal, on an Earth band; and with the *Atlas* off-planet it could have only one possible source. In seconds, it

wavered out and was lost, but Troy already had established the direction.

A WEEK passed before he had the opportunity to obtain a second fix; then, hours later, he was standing beside the wreck of the courier ship. It had plunged into a deep cleft in the rocks and was now half covered by sand; it began to seem less of a miracle that the Hammerhead fliers had not found it. Troy shut off the quavering signal projector, discovered next that the emergency tank had a living occupant, but left Newland where he was while he hurriedly examined the rest of the ship. The courier was hopelessly damaged, but before Troy concluded the examination, his plan against the Hammerheads had been born, at least as a possibility. It took more than two and a half years then to convert the possibility into an operation which seemed at last to have something better than a fighting chance to succeed. For, of course, Troy had told no one of the discovery. A few words might have gained him eager helpers, but might also have reached a man paralyzed by the fear of torture to the extent that he would reveal everything to safeguard himself.

Troy left his rooms, locking the outer door behind him. Moving thirty feet down the narrow

steel-floored passage behind the power plant, he entered one of the tool rooms, again closing and locking the door as he went through. It had been a much more difficult and lengthy undertaking to drill a tunnel from the station's lowest level up to the force-screened Hammerhead hangar outside than to carve an additional room out of the rock, but it had been completed months before. The tunnel's hidden station entrance was beneath the tool room floor, the other opening out of the polished rock base of the hangar twenty feet from one of the interstellar drones. The most careful human scrutiny would hardly have read any significance there into the hairline crack which formed an irregular oval on the rock; and since Troy hadn't been found out, he could assume that the Hammerheads' powers of observation were no more acute.

It had been night in the surrounding desert for some hours by now, but the hangar was brightly lit—a very unusual occurrence at such a time. Troy paused, momentarily disconcerted, studying the scene in the hangar through the vision screen installed in the tunnel just below the exit. If the Hammerheads—there were only Hammerheads—present—were initiating some major new activity in the next day or two, his plans might be,

if not ruined, at least very dangerously delayed. He counted over a hundred of the creatures, mostly assembled near the far end of the hangar in three orderly groups. A few officers stood together, somewhat closer to him.

Troy chewed his lip anxiously, the moisture-conserving suits they wore for outside duty on Cassa One, which concealed the two sets of swim flippers along their sides and left the top pair of upper limbs . . . short, sturdy brown arms with hands larger than human hands, quite as capable and rather unpleasantly human in appearance . . . free for use. The transparent, inverted-triangle helmets were clamped down. As he looked on, one of their big atmospheric personnel carriers came gliding into sight behind the immobile ranks. There were commands, and the Tareegs turned and filed into the vehicle, moving with the rapid, awkward little waddle which was their method of progress on land. A minute or two later, the loaded carrier moved out of the hangar, and the lights in the vast structure slowly faded away.

WHERE were they going? They were carrying the usual weapons, but this was not some dryland drill. Troy could not remember seeing so large a group leave the station before. The uneasy conviction returned

that the move must be connected with the fact that clouds had begun to show in Cassa One's skies, that the mile-thick boulders of ice which had been brought across space already were falling through the atmosphere of the dessicated world.

One or two more undisturbed days, Troy thought. In that time it would become clear whether Newland was going to recover sufficiently to be able to play a part in his plans. Only two sections of the shattered courier ship, the inertial shielding and the autonav, had been needed to transform the Hammerheads' interstellar drone twenty feet from the tunnel exit into a spaceship which men could ride and direct. Both those sections had been repairable, and everything else Troy had been able to steal or build in the station. Month after month passed as he brought it all together in the tunnel, familiarized himself with every necessary detail of the drones mechanisms and fitted in the new installations . . . first in theory, then in actual fact. A part of almost every night was spent in the darkened hangar, assembling, checking and testing one section or another, then disassembling everything and taking it back down into the tunnel before the moment came when the Tareg watch-beams would sweep again through the hangar.

The beam-search was repeated each three hours and twenty-seven minutes throughout the night. Within that period of time, Troy would have to carry out a final complete assembly, let the drone roar into life and send it flashing up through the force-screen and into space.

By now, he knew he could do it. And if he had calculated the drone's capacity correctly, he would then be less than six months from Earth. The Hammerheads had nothing they could send after him.

But once in space, he needed Newland's experience. Everything else would be on board to get them to Earth, but without a trained pilot the probability of arriving only on autonav was something Troy couldn't calculate. With a great deal of luck, he thought, it still should be possible. Newland's skills, on the other hand, would give them something considerably better than an even chance.

But Newland would have to be recovered first. He was still under the ministrations of the emergency tank, embedded now in the wall of the back room beyond the bunk. The tank had to stay there; no amount of planning had shown a way it could be fitted into the drone besides everything else; there simply was no room left for it. And what Troy had learned made it clear

that if he lifted into space with Newland before the pilot's behavior was very nearly normal, he would have a half-dead zombie on his hands before the trip was well begun.

That had been his reason for waiting. But the question was now whether he mightn't already have waited a little too long. . . .

TROY checked his watch. Take a chance and begin the final installation at once? It would be an hour before the search-beams came back. The interior of the ships was inspected at irregular periods; he hadn't been able to establish any pattern for that. But to leave his equipment in place in the drone for one day, or two at the most, might not be stretching his luck too far. Then, if Newland shaped up, there would be that much less delay in leaving, that much less time to spend in the Tareeg hangar finishing the job at the end. And no one could tell what new developments the next few days might bring, or how much time they would find that they had left. . . .

He twisted the direction dials on the vision screen, swinging it slowly once more about the darkened hangar. Then he unlocked and shifted the exit switch, and the irregularly carved section of rock above him moved on its lifting rods out of the hangar floor.

Troy swung up and out behind it, got to his feet and started over to the drone.

There was a thin, burring noise close to his ear.

Troy stopped in mid-stride, his face tight and wary. The noise meant that his room communicator was being called. Probably some minor technical emergency on the station, but . . . He counted off twenty seconds, then turned on the relay mike under his coat collar. Trying to make his voice thick with drowsiness, he said, "Gordon speaking. Who's it?"

"Reese," a carefully uninflected voice told him from the speaker. "Dr. Clingman wants you to come up to his office immediately, Gordon."

Troy felt a sudden sharp prickling of fear.

"At this time of night?" he demanded petulantly. "It's the middle of my sleep period! What's gone wrong now?"

"I wouldn't know," Reese said. "Our senior scientist"—he made the two words sound like a worn, habitual curse—"didn't go into details."

* * *

Dr. Victor Clingman was a large, untidy man inclined to plumpness, with stringy blond hair and protuberant pale eyes. His office adjoined that of the Tareeg station commandant—a Low Dsala, in Hammerhead

terms—and it was permeated from there with a slightly salty, vaguely perfumed moistness. Rank had its privileges; only the Low Dsala enjoyed the luxury of keeping his station work quarters damp enough to make the wearing of a suit unnecessary. The other Hammerheads waddled about the cold, dry halls completely covered, breathing through humidifiers, and were only occasionally permitted, and then after much ceremony, to enter an area in their section called the Water Room and linger there for several hours.

Troy came into Clingman's office with his tool kit through the double doors designed to prevent moisture from escaping, shivering slightly as the sudden clamminess touched his skin. Clingman, engaged as usual in pecking out something on a writer, shirt sleeves rolled up on his plump arms, ranked piles of notes on the table beside him, turned a pale, unhealthy-looking face towards the door.

"Mister Gordon," he said mildly, dragging the "mister" out a little as was his habit. He nodded at the wall to Troy's left. "Our recording mechanisms became inoperative again . . . and just as I was in the process of noting down some very interesting fresh clues as to the probable origin of the Tareeg coup system. Will you try to attend to it?"

"Right away," Troy said, his vague fears dispelled. Clingman's recorders were a standard problem; the repair parts for such items were on the *Atlas* which had not come down into atmosphere for almost a year. There probably had been no reason to feel apprehensive about a night call to the office. It had happened on such occasions before.

HE went to work, glancing over from time to time at the senior scientist who was frowning down pensively at the writer. Before the Hammerheads executed his predecessors, Dr. Victor Clingman had been head of the Biology Department on the Cass Expedition, and his interest in the subject had not changed, though it was now centered exclusively on the life habits of their captors. The Tareegs did not seem to object to his preoccupation with them. Possibly it amused them; though Clingman had told Troy once, rather complacently, that his research already had proved to be of some usefulness to the Tareegs in answering certain questions they had had about themselves. That might also be true. On several occasions, at any rate, Troy had found either the Low Dsala or another Hammerhead officer in Clingman's office, answering the scientist's questions in high-

pitched, reedy voices which always had the suggestion of a whistle in them. All of them apparently had been taught human speech, though they rarely chose to use it.

Clingman cleared his throat, asked without turning his head, "Did I tell you, Gordon, that the Tareegs' known history goes back to considerably less than a thousand years, by human time reckoning?"

"Yes, you did, doctor," Troy said. It had become almost impossible for him to do work for Clingman—and Clingman invariably called on him personally when he had some mechanical chore on hand—without listening to a lengthy, rambling discourse on the scientist's latest discoveries about the Tareegs. It was an indication, he thought, that Clingman had grown increasingly hungry for human companionship of any kind. He could hardly fail to know that the majority of the station's human component was aware he had originated the suggestion made by the leading scientific group to the Hammerheads concerning the possibility of turning Cassa One into a Tareeg water world, and that he was generally despised for it. Troy's noncommittal attitude might have led him to believe that Troy either had not been informed of the fact or happened to be a man who saw nothing

very objectionable in such an act.

Troy was, as it happened, less certain than some of the others that Clingman and the men like Dr. Chris Dexter, who had been directing the ice-hauling operations of the *Atlas*, had come to a deliberate, cold-blooded agreement among themselves to save their own skins by offering to help the Hammerheads against mankind. It was perhaps more likely that they had acted in unthinking panic, following the gruesome executions the Hammerheads had forced them to witness. That would be more forgivable, if only slightly so. It was difficult to be sure about Clingman in any way. He might be unpardonably guilty in his own mind and still no less frightened than before—for who knew, after all, what the Tareegs ultimately intended with their prisoners? On the other hand, he might actually have buried all such considerations beneath the absorbed, objective interest he appeared to take in them.

TROY had paid no more attention than he could help at first to Clingman's scholarly monologues on his favorite theme. His own thoughts avoided the Hammerheads as far as possible. But as his personal plans began to develop and the chance that he might reach Earth grew into

something more than a wildly improbable hope, he realized that the more he learned about the new enemy, the more valuable an eventual report would be. Thereafter he listened carefully, memorizing all of Clingman's speculations, and gradually developed some degree of detached interest of his own in the creatures. They had a curious history, short though it was, a history of merciless strife on twin water worlds of the same system in which any records of a common background had been long lost or destroyed. Then had come the shock of mutual discovery and renewed battling, now on an interplanetary scale, which ended in a truce of carefully guarded equality between the rival worlds.

"That situation, it seems possible," Clingman had said once, "may have led to the legend of the lost home-world of the Tareegs." It was a cautious reference to the obvious fact that neither Tareeg planet would have been willing to admit that it might be no more than an ancient colony of its twin. A remote and glorious ancestral world which had brought both colonies forth as equals was a much more acceptable theory. "And yet," Clingman went on, "the legend might well be based in fact. And it may be that we, with our skills, will enable the Tareegs to rediscover that world. . . ."

It sounded, Troy had thought, with something like amused disgust, as if the scientific brass had prudently worked out a new scheme to preserve itself after the Cassa One operation closed out.

"There also, of course," Clingman continued, blinking his pale eyes reflectively at Troy, "we have the origin of the parallel legend of the Terrible Enemy. What except the conquest of the home-world by a monstrous foe could have caused it to forget its colonies? In that light, it becomes a little easier to understand the . . . ah, well . . . the . . . cautious distrust the Tareegs have shown towards the first intelligent species they encountered in interstellar space."

And *that* sounded like an attempted apology—not so much for the Tareegs and their manner of expressing cautious distrust as for Dr. Victor Clingman's collaboration with them. But Troy said nothing. By then he was very eager to hear more.

He did. Almost week by week, something new was added to the Hammerhead data filed away in his mind. Much of it might be unimportant detail, but Earth's strategists could decide that for themselves. The Tareeg coup system Clingman was mulling over again tonight had been of significance at least to the prisoners; for it probably was the rea-

son the majority of them were still alive. The two High Dsalas who, each representing one of the twin worlds, were in joint command of the Tareeg forces here would have gained great honor merely by returning to their system at once with the captured Earth expedition. But to have stayed instead, silently to have assumed personal responsibility for the creation of a new world fit for Tareeg use—that assured them honor and power beyond belief when the giant task was over and the announcement went out. . . .

THE awareness that Clingman was speaking again broke into Troy's thoughts.

"Almost everything they do," the scientist observed musingly, "is filled with profound ceremonial meaning. It was a long while before we really understood that. You've heard, I suppose, that cloud formations have appeared on this side of the planet?"

Troy was about to answer, then checked himself, frowning down at the cleanly severed end of the lead he had been tracing. Severed? What. . . .

"Gordon?"

"Uh . . . why, yes, I've seen them myself, doctor." Troy's mind began to race. The lead had been deliberately cut, no question of that. But why? He might have spent another hour checking

over the recording equipment before discovering it—

"It means, of course," he heard Clingman saying, "that the dry sea basins of Cassa One gradually are filling with water. Now, we know the vital importance to the Tareegs of being able to immerse themselves in the—to them—sacred fluid, and how severely they have been rationed in that respect here. One might have thought that, from the High Dsalas down, all of them would have plunged eagerly into the first bodies of water to appear on the planet. But, no . . . so great a thing must not be approached in that manner! A day was set, months in advance, when it could be calculated that the water level would reach a certain point. At that hour, every Tareeg who can be spared from essential duty will be standing at the shore of the new sea. And together . . ."

Abruptly, the meaning of Clingman's words faded out of Troy's mind.

The sudden nighttime summons to Clingman's office—had it been no accident after all? Had he done something in the past few hours to arouse suspicion, and was he being detained here now while his rooms were searched? Troy felt sweat start out on his face. Should he say anything? He hesitated, then reached quietly into the tool kit.

“. . . and only then”—Clingman’s voice returned suddenly to his consciousness—“will the word be prepared to go back, and the messenger ships filled with the sacred water so that it can be blended at the same moment with the twin worlds’ oceans, to show that Cassa One has become jointly a part of each . . .”

Messenger ships—the interstellar drones, of course. And the big troop of Hammerheads which had been taken from the station in the personnel carrier less than an hour ago . . . His hands trembling a little, Troy quickly closed the recorder, picked up the toolkit.

Clingman checked himself. “Oh . . . you’ve finished, Gordon?” He sounded startled.

Troy managed to work a grin on his face. “Yes, doctor. Just a broken lead. And now, if you’ll excuse me. . . .” He started to turn away.

“Ah, one moment!” Clingman said sharply. “There was . . . I . . . now where. . .” He gazed about the table, pushing fretfully at the piles of notes. “Oh, yes! Dr. Rojas . . . Room 72 You were on your way up here when he attempted to reach you. Something that needed . . . well, I forget now what he said. Would you mind going over there immediately?”

“Not at all.” Troy’s heart was pounding. If there had been any

doubt he was being deliberately delayed, it would have vanished now. Dr. Rojas, of course, *would* have something waiting that “needed” Troy’s attention before he got to Room 72. A call from Clingman would arrange for it.

But if they were suspicious of him, why hadn’t he been placed under arrest? They don’t want to scare me off, Troy thought. They’re not sure, and if I’m up to something they don’t want to scare me off before they know just what it is. . . .

HE’D swung around to the hall, mind reaching ahead through the next few minutes, outlining quickly the immediate steps he would have to take—and so he was almost past the Hammerhead before he saw it. The door to the Low Dsala’s offices had opened quietly, and the Low Dsala stood there five feet away, the horizontally stalked eyes fixed on Troy.

Troy started involuntarily. He might be very close to death now. To approach a Hammerhead . . . let alone the station’s ranking officer . . . unbidden within a dozen steps was a dangerous thing for a prisoner to do. The Dsala’s left hand hung beside the ornament-encrusted bolt-gun all the officers carried—and those broad torturers’ hands could move with flashing speed. But the creature remained immobile.

Troy averted his eyes from it, keeping his face expressionless, walked on with carefully unhurried steps, conscious of the Dsala's stare following him.

It was one of the comparatively few times he had seen a Hammerhead without its suit. If one knew nothing about them, they would have looked almost comical—there was a decided resemblance to the penguins, the clown-birds of Earth, in the rotund, muscular bodies and the double set of swimming flippers. The odd head with its thick protruding eyelobes and the small, constantly moving crimson triangle of the mouth were less funny, as were the dark, human-shaped hands. Troy felt a chill on his back when he heard the Dsala break into sudden speech behind him: a high, quick gabble in its own language. Was it expressing anger? Drawing the door quietly shut, he heard Clingman begin to reply in the same tongue.

* * *

REESE looked briefly up from the intercom desk as Troy stopped before it. "Finished with Clingman?" he asked.

"Uh-huh," Troy said. "Any other little jobs waiting before I can get back to sleep?"

"Not so far," Reese told him sourly. "Pleasant dreams." He returned his attention to the panels before him.

So Dr. Rojas, as had seemed almost certain, had put in no call for him. But if he didn't show up at Room 72, how long before they began to wonder where he was? Perhaps four or five minutes. . . .

Troy stepped out of the elevator on the maintenance level forty seconds after leaving Reese, went quickly on into the engine room. One Hammerhead guard stood watching him from the far end. As a rule, three of them were stationed here. They were accustomed to Troy's appearances, and he had been careful to establish as irregular a pattern as was practicable in attending to routine chores, so that in an emergency his motions would draw a minimum of attention. Ignoring the guard now, he carried out a desultory inspection of a set of wall controls, paused four times to remove four minor sections of machinery and drop them into his tool kit, and was leaving the big room again a minute and a half later.

Out in the passage, he reopened the kit, quickly snapped three of the small steel parts together. The carrying of firearms naturally was not a privilege the Tareegs extended to human beings; but the newly assembled device was a quite functional gun. Troy thumbed three dozen hand-made shells out of the fourth piece removed from the

control equipment, loaded the gun and shoved it into his pocket.

The door to his quarters was locked, and there were no immediate signs inside that an inspection might have been carried out during his absence. Troy moved over to the rarely used intercom view-screen, changed some settings behind it, and switched it on. The hidden back room appeared in the screen, and—in spite of his near-certainty about Clingman's purpose in detaining him—Troy felt his face whiten slowly with shock.

Jerry Newland was no longer lying on his bunk, was nowhere in the room. A gaping opening in the wall behind the bunk showed where the emergency tank Troy had brought in from the crashed courier ship had been installed. So they not only had the pilot in their hands—they already were aware of his identity and of the condition he was in.

Troy felt a surge of physical sickness. Left to himself, Newland would have died in the desert without regaining consciousness as the tank's independent power source began to fail. Troy had saved him from that; but very probably it was the Tareeg death the pilot faced now. Troy switched off the screen, started back to the door, fighting down his nausea. Self-blame was a luxury for which he had no time. He couldn't help Newland, and

there was not an instant to lose. Within a few hours, he could still be in space and take his chances alone at getting the warning to Earth.

But first the search for him must be directed away from the Tareeg hangar. And that, very fortunately, was an action for which he had long been thoroughly prepared. . . .

THE Hammerhead guard at the station's ground-level exit also had been reduced to one soldier. And here the appearance of the maintenance engineer's groundcar on its way to one of the automatic installations out in the desert was as familiar an occurrence as Troy's irregular inspection visits in the engine room. The guard watched him roll past without moving and without indication of interest. Troy glanced at his watch as the exit closed behind him. Not quite six minutes since he'd left Clingman's office . . . they should already have begun to check on his whereabouts, and the fact that he alone of all the humans at the station had access to a groundcar would then be one of the first things to come to their minds.

He slowed the car near a tiny inspection door in the outer wall of the station, cut its lights, jumped out and watched it roll on, picking up speed as it

swerved away to the east and rushed down into the dark desert. Months before he had installed the automatic guidance devices which would keep the car hurrying steadily eastwards now, changing direction only to avoid impassable obstacles. It might be that, at a time of such importance to the Tareegs, they would not attempt to follow the car. If a flier did discover it from the air, the vehicle would be destroyed . . . and it was rigged to disintegrate with sufficient violence then to conceal the fact that it had lacked a driver.

TROY opened the inspection door, then stopped for a moment, staring back at the Tareeg hangar beyond the station. Light had been glowing through its screens again when he came out; now the hazy translucence of the screens was drawing sideways and up from the great entrance rectangle. Another of the big personnel carriers nosed slowly out, moved up into the air and vanished against the night sky. If it was loaded as close to capacity as the one he had watched from inside the tunnel, almost two thirds of the Hammerhead force at the station had gone by now to attend the rites at Cassa One's new sea.

He waited while the force screen restored itself over the entrance. Immediately afterwards,

the lights in the hangar turned dim and faded away. Troy climbed in through the inspection door, locked it and started back down to the maintenance level.

With a little luck, he thought, he might even be able to work undisturbed now inside the interstellar drone he had selected for his escape. He would have to be back in the tunnel when the search-beams came through again . . . he suspected they might be quite sensitive enough to detect the presence of a living being inside one of the ships. But the Hammerheads themselves might not show up again until he was prepared to leave. And then it wouldn't matter. If they did appear—well, he would get some warning from the fact that the hangar lights would begin to come on first. Not very much warning, but it might be enough.

The passage leading past his quarters was empty and quiet. Troy remained behind a corner for a minute or two listening. If Dr. Rojas had reported his failure to arrive at Room 72, the Tareegs must also have learned by now that he had left the station, and the last place they would think of hunting for him was here. But somebody—Hammerhead or human stooge—might be in his rooms, making a second and more thorough investigation there.

EVERYTHING remained still. Troy came quietly out into the passage, went down it to the tool room next to his quarters, opened the door, taking the gun from his pocket, and slipped inside. With the door locked, he stood still a moment, then turned on the lights.

A glance around showed that nobody was lurking for him here. He darkened the room again, crossed it, removed the floor section over the tunnel entrance and slipped down into the tunnel. Working by touch, he pulled the floor section back across the opening, snapped it into place and started up the familiar narrow passage he had cut through the desert rock.

He couldn't have said exactly what warned him. It might have been the tiny click of a black-light beam going on. But he knew suddenly that something alive and breathing stood farther up the passage waiting for him, and the gun came quickly from his pocket again.

His forehead was struck with almost paralyzing force. Stungun . . . they wanted him alive. Troy found himself on his knees, dizzy and sick, while a voice yelled at him. *Human*, he thought, with a blaze of hatred beyond anything he'd ever felt for the Tareegs, *Traitor human!* The gun, still somehow in his hand, snarled its answer.

Then the stungun found him again, in three quick, hammering blows, and consciousness was gone.

* * *

There came presently an extended period of foggy, groping thoughts interspersed with sleep and vivid nightmares. After a time, Troy was aware that he was in a section of the sick bay on the *Atlas*, and that the great carrier was in interstellar flight. So the operation on Cassa One was over.

He wondered how long he had been knocked out. Days perhaps. It was the shrill, rapid-fire voice of a Tareeg which had first jolted him back into partial awareness. For confused seconds, Troy thought the creature was addressing him; then came the click of a speaker and the sounds ended, and he realized he had heard the Tareeg's voice over the ship's intercom system. A little later, it occurred to him that it had been using its own language and therefore could not have been speaking to him.

During that first muddled period, Troy knew now and then that he was still almost completely paralyzed. Gradually, very gradually, his mind began to clear and the intervals of sleep which always ended with terrifying nightmares grew shorter. Simultaneously he found he was acquiring a limited ability to

move. And that, too, increased.

It might have been three or four hours after his first awakening before he began to plan what he might do. He had made a number of observations. There were three other men in this section with him. All seemed to be unconscious. He thought the one lying in the bed next to his own was Newland, but the room was dim and he had been careful to avoid motions which might have been observed, so he wasn't certain. There was a single human attendant in the small room beyond the open doorspace opposite his bed. Troy didn't recall the man's face. He was in the uniform of a medical corpsman; but whatever else the fellow might be, he was here primarily in the role of a guard because he had a gun fastened to his belt. It classed him as a human being whose subservience to the Hammerheads was not in question. Twice, when the man in the bed at the far end of the room had begun to groan and move about, the guard came in and did something that left the restless one quiet again. Troy couldn't see what he used, but the probability was that it had been a drug administered with a hypodermic spray.

Getting his hands on the gun, Troy decided, shouldn't be too difficult if he made no mistakes. His life was forfeit, and to lie

and wait until the Tareeg inquisitors were ready for him wasn't to his taste. Neither . . . though somewhat preferable . . . was personal suicide. A ship, even as great a ship as the *Atlas*, had certain vulnerabilities in interstellar flight—and who knew them better than one of the ship's own engineers? The prime nerve centers were the bridge and the sections immediately surrounding it. It might be, Troy thought, it just might be that the Hammerheads never would bring their prize in to the twin worlds to have its treasures of technological information pried out of it. And that in itself would be a major gain for Earth.

HE turned various possibilities over in his mind with the detachment of a man who has acknowledged the inevitable fact of his own death. And he felt his strength flowing back into him.

The guard in the other room presently heard renewed groans and the slurred muttering of a half-conscious man. As he came in through the doorspace with the drug spray he walked into Troy's fist. It didn't quite put him to sleep, but the spray did thirty seconds later, and shortly he was resting, carefully bound and gagged since Troy didn't know how long the drug would retain its effect, in the back of a large clothes locker.

The man in the next bed was Newland. He seemed uninjured but was unconscious, presumably drugged like the other two. Troy left the section in the corpsman's uniform, the gun concealed in his pocket. It was improbable that the guard's authority to carry it extended beyond the sick bay area. In another pocket—it might come in handy—was the refilled drug spray.

He was two decks closer to the bridge section when it struck him how deserted the *Atlas* seemed. Of course, he had avoided areas where he would be likely to run into sizable groups of either men or Tareegs. But he had seen only six humans so far, only two of the Hammerheads. These last had come out of a cross-passage ahead of him and vanished into another, two men following quietly behind, the high-pitched alien voices continuing to make a thin, complaining clamor in the otherwise empty hall seconds after they had disappeared. And the thought came to Troy: suppose most of the ship's complement was down in the sleepers?

It wasn't impossible. The *Atlas* must still be provisioned for years to come, but an excellent way to avoid human mutiny on the approach to the Hammerhead worlds would be to put any captives not needed for essential

duty to sleep. And the *Atlas* hadn't been built for the convenience of water-creatures. To control a human skeleton crew would require a correspondingly small number of Tareegs. Most of their force, he thought, very well might be making the return in their own vessels.

THE reflection literally stopped Troy in his tracks. Because that could change everything he'd had in mind, opened up possibilities he hadn't thought existed . . . including the one, still remote though it might be, of returning the *Atlas* to Earth. Perhaps the men now in charge of the ship would be almost as unwilling to allow that to happen as the Hammerheads; they had too much to answer for. But if the situation he had imagined did exist, his thoughts raced on . . . why then. . . .

Troy's mind swam briefly with a wild premonition of triumph. There *were* ways in which it might be done! But because of that, there was also now the sudden need for much more caution than he had intended to use. What he needed first was somebody who could tell him exactly how things stood on board—preferably somebody in a position of authority who could be persuaded or forced to fall in then with Troy's subsequent moves.

THE bridge deck was as quiet as the others. On the old *Atlas*, most of this area had been officers' country, reserved for the expedition heads and top ship personnel; and presumably that arrangement had been changed only by the addition of Tareeg commanders and guards. Troy kept to the maintenance passages, encountered no one but presently found unused crew quarters and exchanged the corpsman uniform there for less conspicuous shipboard clothes. This would make a satisfactory temporary base of operations. And now to get the information he wanted. . . .

The voice was coming out of the only door open on the dim hall. There were six staterooms on either side, and Troy remembered that the room beyond the open door had been occupied by Dr. Clingman on the trip out from Earth. The voice—preoccupied, mild, a little tired—was unmistakably Dr. Victor Clingman's.

Was he alone? Troy thought so. He couldn't make out the words, but it was a monologue, not a conversation. He had the impression of Clingman dictating another rambling dissertation on Tareeg ways into a recorder; and the conviction came to him, not for the first time, that the man was in some essential manner no longer sane, that he

had come to believe that his observations on these deadly enemies some day really could be compiled into an orderly and valuable addition to human knowledge.

Sane or not, he was a frightened man, the perfect quarry for Troy's present purpose. With a gun on him, he would talk. And once having assisted Troy to any degree, he would be too terrified of Tareeg reprisals to do anything but switch sides again and go along with Troy, hoping that thereby the worst—once more—could be avoided. The worst for Victor Clingman. It would be impossible, Troy thought, to trust Clingman, but he could make very good use of him in spite of that.

He came quietly along the passage, his attention as much on the closed doors about him as on the one which was open. The guard's gun unfortunately wasn't a noiseless type, but he had wrapped a small cushion around its muzzle and across it, which should muffle reports satisfactorily if it came to that. Words became distinguishable.

"It is not a parasite in the ordinary sense," Clingman's tired voice said. "It is a weapon. It kills and moves on. A biological weapon limited to attack one species: the enemy. It is insidious. There is no warning and no defense. Unconsciousness and

death occur painlessly within an hour after contact, and the victim has not realized he is being destroyed. The radius of infection moves out undetectably and with incredible swiftness. And yet there was a method of containing this agent. That knowledge, however, is now lost.

"As an achievement of the Tareeg genius for warfare, the weapon seems matched—in some respects surpassed—only by the one used to counteract it. And in that, obviously, there were serious faults. They . . ."

The man, Troy decided, was quite close, perhaps twelve feet to the right side of the door. He glanced back along the silent hall, slipped the cover from the gun—with Clingman, he would only need to show it—then came into the room in two quick strides, turning to the right and drawing the door shut behind him.

THERE was no one in sight. The voice continued:

". . . desperate, with no time to complete essential testing. A terrible gamble, but one which inevitably . . ." The meaning faded from Troy's mind as he discovered the wall-speaker from which the words were coming. His eyes darted across the room to a comfortable chair drawn up beside a table, to a familiar picture of untidily arrayed piles of

notes on the table, a thread of smoke still rising from a cigarette in the tray among them. Clingman had been in the room within minutes, listening to one of his previous recordings as he worked. Troy's glance shifted to a closed door on his right. Bedroom and bath of the suite lay behind it. Clingman might be there. He might also . . . Troy reached back, quietly opened the door to the hall again, moved on and slipped out of sight behind an ornamental screen on the other side of the speaker.

Clingman could have left his quarters for some reason. In any event, it was obvious that he had intended to return to the room very shortly. If he brought someone with him, the situation might be more difficult. But hardly too difficult to be handled.

Troy worked the improvised silencer back over the gun muzzle, senses straining to catch either the opening of the door on his right or the sound of an approach down the hall.

"So it was possible," he heard the wall-speaker say, "to reconstruct, in almost every essential detail, what the concluding situation must have been on the world where the Tareeg species had its origin. The attacking section was safely screened, presumably by a form of energy barrier, against the deadly agent it had released. The section un-

der attack had no defense against an agent so nearly indestructible that it subsequently survived for over a thousand years in its inert, frozen condition without losing effectiveness in the least—”

Troy thought: What . . .
WHAT HAD IT SAID?

He stepped out from behind the screen as the door on his right opened. Dr. Clingman stood in the door, mouth open, eyes bulging in surprise and alarm at the gun in Troy's hand. Then his gaze shifted to Troy's face, and his expression slowly changed.

“Mister Gordon,” he murmured, smiling very cautiously, “you are really the most difficult man to keep stopped!”

Troy pointed a shaking finger at the speaker. “That!” he cried. “That . . . it said *a thousand years in the ice!*”

Clingman nodded. “Yes.” His eyes returned, still rather warily, to the gun. “And I'm rather glad, you know, you happened to catch that particular part before I appeared.”

Troy was staring at him. “That was their lost home world—the one you've kept talking about. That great asteroid cloud here. . . .”

“No, not here.” Clingman came forward more confidently into the room, and Troy saw now that the left side of the scien-

tist's face and head was covered with medical plastic. “The Cassa system is a long way behind us, Gordon,” Clingman said. “We've been on our way back to Earth for more than two days.”

“To Earth,” Troy muttered. “And I . . .”

CLINGMAN jabbed a stubby finger down on a control switch at the table, and the wall-speaker went silent. “It will be easier to tell you directly,” he said. “You've already grasped the essential fact—our Tareeg captors, for the most part, are dead. They were killed, with some careful assistance from the men in charge of this expedition, by a weapon developed approximately twelve centuries ago on their ancestral world. A world which still circles today, though in a rather badly disintegrated condition, about the Cassa sun . . .

“But let's be seated, if you will. You gave me a very unpleasant fright just now.” Dr. Clingman touched the side of his face. “I had an ear shot off recently by a man who didn't wait to have the situation explained to him. His aim, fortunately, was imperfect. And there is still a minor war in progress on the *Atlas*. Oh, nothing to worry about now—it's almost over. I heard less than twenty minutes ago that the last of the Tareeg

guards on board had surrendered. About fifty of them have become our prisoners. Then there is a rather large group of armed men in spacesuits in one section of the ship with whom we have been unable to communicate. They regard us as traitors to the race, Dr. Dexter and myself in particular. But we have worked out a system of light signals which should tell them enough to make them willing to parley. . . ."

He settled himself carefully into the big chair, turning a white, fatigued face back to Troy. "That," he said, waving his pudgy hand at the wall-speaker, "is a talk I made up to explain what actually has happened to the main body of the mutineers. They comprised a large majority of the crew and of the expedition members, of course, but fortunately we were able to gas most of them into unconsciousness almost at once, so that no further lives have been lost. We have begun to arouse them again in small groups who are told immediately that the space ice we were bringing in to Cassa One carried a component which has resulted in the destruction of the Tareeg force, and who are then given as much additional information as is needed to answer their general questions and convince them that we are still

qualified to command the Cassa-Expedition. I believe that in a few more days normal conditions on the ship will have been restored. . . ."

Clingman glanced over at the smoldering cigarette in the tray, stubbed it out and lit another. "We had been aware for some time of your plan to escape back to Earth in one of the Tareeg drones," he said. "It was an audacious and ingenious scheme which might very well have succeeded. We decided to let you go ahead with it, since it was by no means certain until the very last day that our own plans would be an unqualified success. On the other hand, we couldn't let you leave too early because the Tareegs certainly would have taken the *Atlas* to the twin worlds then without completing the Cassa One operation. And we didn't care to let you in on our secret, for reasons I'm sure you understand."

Troy nodded. "If they'd got on to me, I might have spilled that, too."

"Exactly," Clingman said. "There was no question of your loyalty or determination but the Tareegs' methods of persuasion might cause the most stubborn man to tell more than he should. So no one who was not essential to the work was given any information whatever. Dr. Rojas applied certain medical measures

which prevented Mr. Newland from recovering prematurely . . . prematurely from our point of view, that is. It did not keep you from completing your other preparations but ensured that you would not actually leave unless we believed the move had become necessary, as a last resort."

TROY shook his head. He'd been working against some thing there had been no way of knowing about. "Was that Rojas waiting for me in the tunnel?"

"Yes. At that point, we knew we would win, and it had become safe enough to tell you. Unfortunately, you believed it was a trap."

Troy chewed his lip. "On that home world of the Tareegs when the two factions were fighting—the losing side did something which blasted the whole planet apart?"

"Not exactly," Clingman said. "The appearance of it is rather that the home world came apart in an almost gentle manner, section separating from section. How that could be done is something no one on Earth had worked out at the time we left. The original survey group brought back samples of the asteroid swarm for analysis. A good deal was learned from them."

He paused, frowning at his

cigarette, said slowly, "The twin worlds have developed a new scientific Tareeg caste which was considered—or considered itself—too valuable to be risked on the interstellar expedition to the Cassa system. I think that was a very fortunate circumstance for us. Even before we left Earth, even when it was believed they were all dead, what had been deduced of the Tareeg genius for destruction was more than a little disturbing. The apparent purpose of that last defensive action on the home world was to strip the surface oceans from the hostile sections of the planet. Obviously, the process got out of hand; the entire planet was broken up instead. But one can't really doubt that—given more time—they would have learned to master the weapon.

"The killing agent developed by the opposing side evidently had been very thoroughly mastered. And again we can't say how they did it. It can be described as a large protein molecule, but its properties can be imagined only as arising out of a very complex organization, theoretically impossible at that level of life. It is confined to water, but its method of dispersion within that medium is not understood at all. At one instant, it is here; at the next, it apparently will have moved to a point perhaps several hundred miles away.

It is life which has no existence, and cannot exist, except as a weapon. Unlike a parasite, its purpose is simply to kill, quickly and efficiently, and go on at once to another victim. Having exhausted the store of victims—a short process, obviously, even in an area of planetary dimensions—it dies of something like starvation within days.

“That, of course, was as practical a limitation to those employing it as the one that it attacks only Tareegs. They did not want to be barred indefinitely from an area which had been cleansed of their enemies, and neither did they want food animals in that area to be destroyed. They . . .”

His voice trailed off, and Troy stirred restlessly. Dr. Clingman was slumped farther down in his chair now, and the pale, protruding eyes had begun to blink drowsily. He seemed about to go to sleep. Troy said, “If the thing killed the Tareegs on Cassa One inside an hour after they’d gone into the sea, then they couldn’t have had the time to start the interstellar drones back towards the twin worlds.”

Clingman’s head turned to him again. “No,” Clingman said. “Of course not.”

“And even,” Troy went on, “if they had been able to ship a couple of loads of infected water back, it would have been harm-

less long before it reached their worlds.”

CLINGMAN nodded. “Quite harmless. As harmless as the new ocean on Cassa One would be by this time to Tareegs who entered it.” He paused. “We’d thought, Gordon . . . as you might be thinking now . . . of sending the drones back instead with a load of asteroid ice containing the inert agent. That, of course, would not have reduced its effectiveness. Nevertheless, the scheme wouldn’t have worked.”

“Why not?” Troy asked.

“Because the drones, in the Tareeg view, were sacred messengers. They could be used only to announce in a certain prescribed manner that the Tareeg interstellar expeditionary force had discovered a water planet and taken possession of it, again with the required ceremony, for the twin worlds. The transmission of lumps of interplanetary ice would never have fitted that picture, would, in fact, have been an immediate warning that something very much out of order had occurred.

“That Tareeg insistence on exact ritualistic procedure—essentially a defensive measure in their dealings with one another—also happened to delay our own plans here very badly. Except for it, we would have been ready

at least a year ago to flood Cassa One and entrap our captors."

Troy repeated, stunned, "You would have been ready . . ."

"Yes, but consider what might have resulted from that overhasty action. The Cassa system is much more readily accessible from the twin worlds than it is from Earth, and if we made some mistake with the drones, or if the Tareegs began to suspect for any other reason that their expeditionary force had met with disaster, they would be certain to establish themselves at once in a very strong manner here, leaving Earth confronted with a dangerously talented and implacable new enemy. No, we had to retain the appearance of helplessness until we had acquired an exact understanding of the manner in which the water-message must be prepared, and had discovered some substitute for the freezing effect on the lethal agent. That took an extra year.

Troy said carefully, "And during that year, as you knew would happen, another dozen or so men

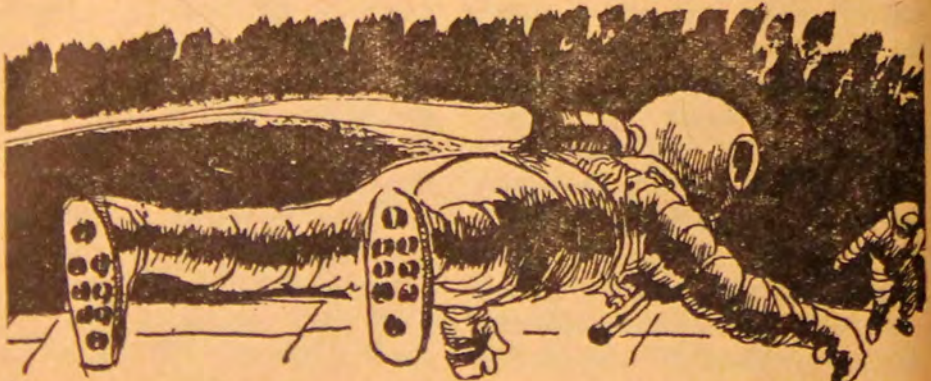
died very slow and painful deaths on the Tareeg execution benches. Any one of those men might have been you or I . . ."

"That is quite true," Clingman said. "But it was something that could not be avoided. In that time, we *did* learn the necessary ritual and we *did* find a numbing catalyst which will hold the protein agent inert until it loses its effect by being sufficiently diluted again. So now the drones have been dispatched. Long before this ship reaches Earth again, the agent will have been introduced to the twin worlds, and except for the specimens we carry on board, the Tareeg species will be extinct. It may not be a pleasant thing to have a pair of ghost worlds forever a little on our conscience—but one does not have to fight uncertain wars with ghosts."

Troy studied him in silence for some seconds.

"And I thought you were soft," he said at last. "I thought you were weak and soft. . . ."

THE END



Above him were a thousand different-colored moons.
Beside him was the girl. Across the room the dragon
glowered. And outside, not far away, was . . .

World Edge

By JACK EGAN

Illustrated by FINLAY



HARVEY CRANE was lying flat on his back, though how he had gotten there he was still trying to figure out. Above him he could see the flat pink half-sphere of the sky. Now, *that* bothered him. He squinted up at it for several more minutes before deciding it was the color that was wrong somehow. Harvey hunched up into a sitting position, yawned widely, and gazed around. Thirty yards to his left a stand of blue and yellow trees, triangular in shape, effectively blocked the horizon. In

front of him a tapered cylinder, balanced gracefully on its nose, performed the same function. To his right . . . there *was* no horizon!

"God damn," said Harvey Crane.

He crawled the ten feet or so to the Edge of the World and looked down. The all-pervading rosininess swirled below. Harvey tightened his belt to hold his stomach in place, inched far back from the Edge, and stood shakily up.

It was then that he noticed the girl.

She stood with hands on hips, critically appraising the ship.

Aha! The ship! That's what it is, Harvey thought triumphantly.

"I see you tried to land it again," the girl said dryly. *Again?* Harvey wondered, but said nothing. She walked over to the ship, lifted the gargantuan structure by a wingtip, and scowled back at him.

"Well, don't just stand there like an idiot. Come give me a hand."

He was surprised at the ease with which they handled the rocket. They soon had it righted, and the girl stood back and gazed at it worryingly.

"There," she said. It sounded final. A look of vague annoyance crossed her pretty features. She shook her long, brown hair into

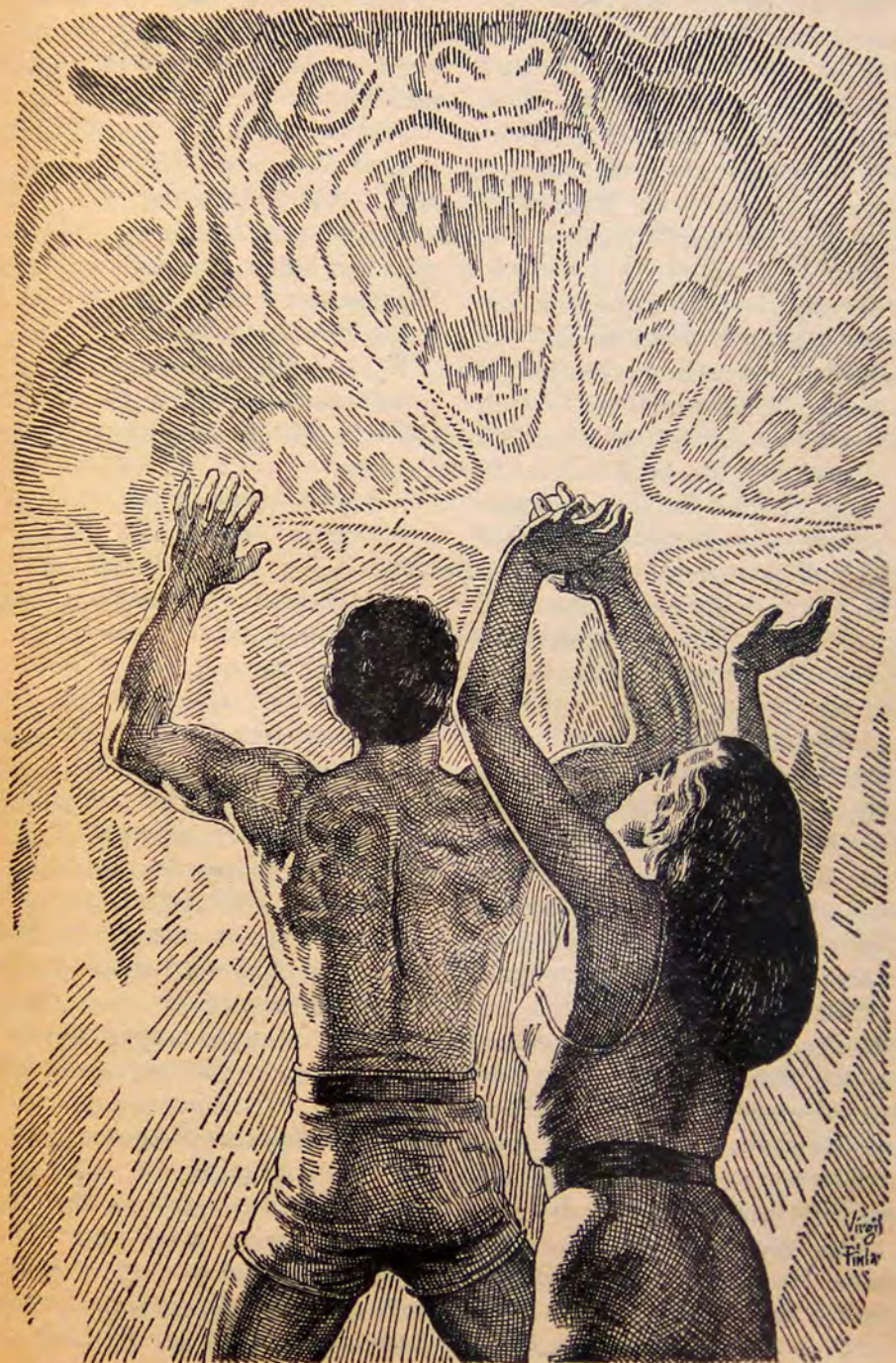
place, flicked an imaginary speck of dust off her spotless white trousers, rolled the sleeves of her blouse up, and . . . erased the ship.

"*Hey!*" shouted Harvey wildly, "You can't do that!" He stared in dumb amazement at the fading after-image of the ship. Beyond it, the long upward slope of the yellow, grassy hill was crowned by a huge Castle.

"Don't be silly, Harvey dear. Come on, it's playtime." He followed her, for some reason, up the slope to the Palace.

PLAYTIME, Harvey learned, consisted of a pleasant swim in the purple waters of the Palace moat, followed by a delicious feast of some sort of orange fruit faintly resembling wax-covered ladybugs. They—he and the girl and a pet animal with a disturbing tendency to change shape every three seconds—were seated in a rather large floral garden (there was a faunal one somewhere nearby, Harvey learned), gazing. That is to say, the girl was gazing at the garden, the animal at Harvey, and Harvey at *her*. It must have been a pleasant experience all around, for they started laughing after a few minutes.

"Say," Harvey said, standing. "I don't have the faintest idea who I am, where I am, or why, but . . . *who are you?*"



Virgil
Finlay

She bit her lip, and said with forced gaiety, "My goodness, Harvey. Don't you remember? No, I suppose you don't. Well, I'm . . . Dana. Tell me, Harvey," she walked over to him and looked into his eyes. "How much *do* you remember?"

Harvey stopped smiling, frowned, rubbed a hand through his black hair. "Not much," he admitted, staring out the Palace window. "I keep having the feeling that if I *try* hard enough . . . but, I'm not sure I want to remember," he finished, puzzled.

"Now, Harvey," Dana laughed and put her arms around him. "You're here now, and that's all that matters. You've *always* been here." Harvey looked down at her fondly.

"Tsk tsk," he pronounced. "Now you *have* aroused my curiosity." He kissed her, felt an imperious snap at his pantleg, and turned to find an amazing likeness of a dragon turning a burning gaze at his exposed calf. "Hey!" he shouted, and jumped.

"Timothy!" Dana shouted, and the dragon reverted to her pet animal. She turned back to Harvey. "I'm so sorry, Harvey. Timothy is really very fond of you."

"He has an odd way of showing it," Harvey growled.

The pinkness of the outer world suddenly changed to a deep aquamarine.

"Oh dear," sighed Dana.

"Night already, and I haven't made up the bed. I suppose we can sleep on the cot tonight," she said tentatively.

"We?"

"Oh. I forgot. You just got here today, didn't you," she said absently, a little rankled. "Well, you can have the cot tonight, Harvey. We have *so* much to do the rest of our lives."

Harvey felt so suddenly overcome with weariness he didn't think to ask her just what it was they had so much of. He followed her docilely down a blue-lighted corridor and out onto a small balcony. A low cot, lined with silk and complete with canopy, reposed in the exact center of the porch. He turned to say good-night to Dana and found her already gone. The little Changeling sat panting in her place, its multi-morphic form vibrating slightly. Harvey grinned down at its angry dwarfish stare.

"Jealous, eh?" he said.

The bathroom was off to the right side of the balcony. Harvey found he needed nothing but a drink of water—it was purple. His chin showed no signs of erupting in its usual forest of thick, dark hairs. He swore good-naturedly at this (it had been his intention to grow a beard), put his razor away, and undressed for bed. A pair of loose, soft pajamas of neutral color lay across the cot. They fit him.

THE aqua sky showed thousands of vari-shaped blobs that whirled crazily overhead; he at first mistook them for clouds. Gradually it became apparent that they were moons, each a different color. Somehow the glinting gold one seemed familiar to him. Finally he gave up trying to chase down a forgotten memory and looked past them to the stars.

Now, what were stars? Harvey stared at the powder sprinkled across the sky. He *must* know what they are; he knew what they were called, didn't he? Or had he just imagined the name—made it up himself?

"Greeeeep," the Changeling said softly. Harvey switched his gaze from the sky to the outstretched form of a bear rug lying on the floor beside the cot. "Greeeeep." Hmm. The Changeling's body was barely vibrating. It must be asleep.

Harvey watched the animal for several minutes. A faint blue breeze sighed through the parapets of the Palace mounting above him. Below, in the courtyard, he heard the stealthy rattle of chains.

Ghosts? His mind rejected the possibility at once. He had never believed in them before—why start now? His mind worked furiously as the sound halted. Bridge. Drawbridge. He recalled seeing a drawbridge across the

moat when Dana had led him swimming yesterday . . . only, *they* had entered through a small door set flush with the surface of the water. Someone must be letting the drawbridge down, and it had to be Dana. Harvey raised up on his elbow and carefully put a foot over the edge of the cot. He crept to the railing of the balcony and looked down eighty feet of blue emptiness to the yellowness of the hill. Down it, a cloaked figure followed a crooked path to the Edge of the World. *Dana.*

Something sparked an irrational fear in Harvey as the figure grew smaller with distance. He wrapped his robe about him, slipped into his flight shoes (*there* was something to examine later. Where had he gotten those words?), and dodged into a hallway. All roads led to the courtyard, Harvey knew. At least, all that *he* had covered. He cast an apprehensive glance over his shoulder to see if the Changeling had followed him, then wondered at his apprehension. His memory of existence went back less than twenty-four hours, and this bothered him. He should have thought more about what the *ship* was, rather than *where* he was, he thought self-deprecatingly. But Dana had to be going somewhere, and in this world, bounded so tightly by Infinity, there was nothing left to do but

wonder where the hell she was going. He halted in the courtyard, located the path to the drawbridge, and found the drawbridge closed.

Yeep! Harvey thought. Either Dana was already back, or she had someone or something here to draw the bridge up after her departure. He whirled, saw nothing, and ran back to the garden, retracing their steps of yesterday to the small door unhinging out onto the moat. He stripped down to his trunks and slid out into the chill purple of the water.

IT became immediately obvious that swimming was *not* a nighttime sport. The water was extremely cold (Harvey twice bumped into floating cakes of ice), and harbored a species of life that, while seemingly harmless, certainly *felt* horrible. He pulled himself out on the far side and sat chattering for several minutes, massaging his legs. Somewhere on that small plain of grass, dear old Dana was up to something. And Harvey felt it imperative that he know *what*.

He shuddered to his feet and gaped back at the Castle. In the crazy lights of the whirling moons, shadows danced and played in the deep gouges of balconies and alcoves. The ramparts themselves stabbed into the night sky like the many-pointed noses of rockets on a spacefield.

Spacefield? Rockets? What?

A dim wave of remembrance washed over Harvey. He clenched his fists and tried to think. He tore at the black veil over the past with mental fingers, and it resisted. He opened his eyes and found himself running down the esplanade toward the spot where he had regained consciousness the day before. He slowed to a walk, hoping the crazily darting, heterochromatic moons would hide his mobile shadow among the moving shadows of the fixed plants and rocks.

Near the place where he had first met her, Dana halted and looked behind her. Harvey darted into the dubious shelter of a triangle tree and stopped, waiting breathlessly for her call of discovery. Nothing happened, and a few moments later he chanced a look.

A row of three eyes stared coldly in his face.

Harvey jerked back, shuddered to fight back a yell, and ran madly down the hill toward Dana, but she was no longer in sight. For one wild second Harvey thought she had disappeared over the Edge. A look confirmed the fallacy of the notion. But behind him, the three floating red eyes stared impassively. Angrily, he wrenched them from the air and flung the glowing coals out into Infinity, and had the satisfaction of watching them dwin-

dle into nothing. He had no idea what they were; all he knew was he hadn't liked them.

Disappointed at having lost Dana, he started back up the hill toward the Castle.

Thud!

HARVEY picked himself up off the ground and explored the night air in front of him with wary hands. He encountered solid surface and felt his way around it, astonished. It was the ship! Dana had done nothing but render it invisible yesterday! He located the rocket tubes and the heavy arches of the landing fins, and looked up when he judged he should be under the airlock. A sudden, frightful flood of memory poured over him.

My God! *Earth! The Universe! Me!*

"Harvey?"

Silence. He squatted down under the rocket's firing flange, hidden from view of the airlock.

"Harvey dear, is that you?" A light sprang out of the air twenty feet above the ground. Dana stood in breath-taking silhouette in a rectangular frame of familiar white. Harvey realized it was the first time since . . . since *the crash!* . . . since the crash that he had seen *white* light. White, the symbol of truth. He straightened, still under the flange, and waited while Dana decided to come down and look

around. He would soon get the truth.

"Harvey?"

He tensed as her shapely legs appeared, carefully feeling for the rungs of an invisible ladder. When she reached the ground, Harvey stepped around the exhaust flange and flung himself on her. They landed in the yellow turf, and Harvey found without surprise he faced a formidable opponent. Whatever the force that had enabled her to lift the ship yesterday proved equally useful against flesh; but Harvey found he also possessed new strength. His eyes fell on the tiny metal case strapped to her waist.

A Matter Disorganizer!

"Harvey! Stop it, Harvey! *You don't know what you're doing!*" she screamed. He laughed harshly and finally succeeded in wrenching the little metal box away from her.

"You were going to destroy the ship," he shouted incredulously. "In God's name, *why?*"

She stepped back from him, tears glistening in her eyes. "To keep . . . this from happening," she panted. She turned and yelled something at the Castle.

In the weird moonlights, a huge flying monster dragged itself from the topmost pinnacle and came in a banshee wail toward Harvey. He put down his fear and aimed the Matter Dis-

organizer carefully. The huge yawning mouth gaped out at him as he pulled the actuator. The banshee scream stopped abruptly; the monster vanished. Dana fell to her knees sobbing. "You've killed him! You've killed Timothy," she cried.

Harvey turned back to the ridiculous rectangle of white radiance suspended in mid-air and adjusted the MD's energy span. The solid metal walls of the rocket reared into the night sky.

"All right, Dana," Harvey said coldly, turning to the kneeling woman. "Where am I, and what's going on here?"

"I—I suppose I should tell you now," she choked out, standing without his help. Harvey felt suddenly cold. The night wind had ceased, and a blue heatlessness settled over the yellow field. Even the moons lost some of their giddy fervor.

"Go on. I'm listening." He felt his voice soften, and rebelled. He had been subservient for too long in this crazy world, he realized. He felt something else was necessary. "I remember now," he stated.

DANA sucked in her breath and stared at him longingly. "Oh Harvey, darling. I've lost you so many times already. Must we go through it again?" she said sadly. Harvey said nothing.

Her shoulders sagged. "Very well. It isn't a long story. You remember Earth, Harvey? Your Earth?"

"I remember."

"You know why you came . . . here?"

"No."

"Look at your ship, Harvey. It's old. It is *very* old. I'm going to tell you something. Something you already know, but won't admit to yourself . . ."

A frightened look appeared in Harvey's eyes.

"Well, go on. Tell me," he shouted impatiently, fearfully.

"After your ship left Earth, Harvey, it jumped the Light Barrier. But you and the others hadn't counted on the forces involved; everything but the *man* was designed to take that jump. *You never came out of Overdrive, Harvey. You're still in that ship, and you'll never wake up!*" She laughed/cried at Harvey's twisted face.

"You're crazy!" he roared hoarsely. "You're crazy! I remember! I know where I am, and how to get back!"

"Take a look around you, Harvey Crane," Dana laughed at him hysterically. "Do you think a world such as this *could ever really exist?*"

"All this, Harvey," she gestured at the chunk of land, the Castle, and the moons—"They're just symbols. This island: your

mind; the world edge is the end of Reality. Out there, the moons—*they are insanity.*”

“But you *wanted* me to stay here. Why did you change your mind?” He stared at her accusingly.

“If you wish, you can ascribe motives to my actions,” Dana said tiredly. “But they are your motives, not mine. Harvey, I’m just ‘real’ in your imagination. In Reality—the only Reality—I’m back on Earth, waiting. Harvey . . . go back. *I want you so!*”

Harvey stared at her, incredulous. “But *you*. Who are *you?*” he blurted.

She bit her lip and gazed at him sadly.

“I,” she said, her voice tremulant, “Am your wife.”

HARVEY’S memory tore back to a green planet called Earth . . . forgotten faces, places. He *looked* at Dana for the first time, and in that instant of full recognition, she began to dissolve.

“Harvey,” she pleaded, “Wake up. You’ve got to face Reality before it’s too late. Please . . .” she sobbed into nonexistence.

Harvey wheeled toward the ship and fled up the ramp. “No!

No! This is Reality!” he shouted. He stared up at the insane island-moons swirling in the sky; the soft, sourceless aqua of the air; the incredible bulk of the Castle on the Edge of Infinity, and he felt on the brink of Hell. Something was going to happen. Harvey’s breathing was loud in the thundering silence.

The Castle suddenly wrenched from the island and lifted ponderously into the air, an immense ghastly shadow looming closer. . . . Harvey screamed.

He spun around, intending to use the Matter Disorganizer on the Castle as it swung faster and faster toward the ship. The MD slipped from his grasp and sailed high into the air, toward the . . .

No! No!

Up and up . . .

No! No!

Up and up . . .

No!—

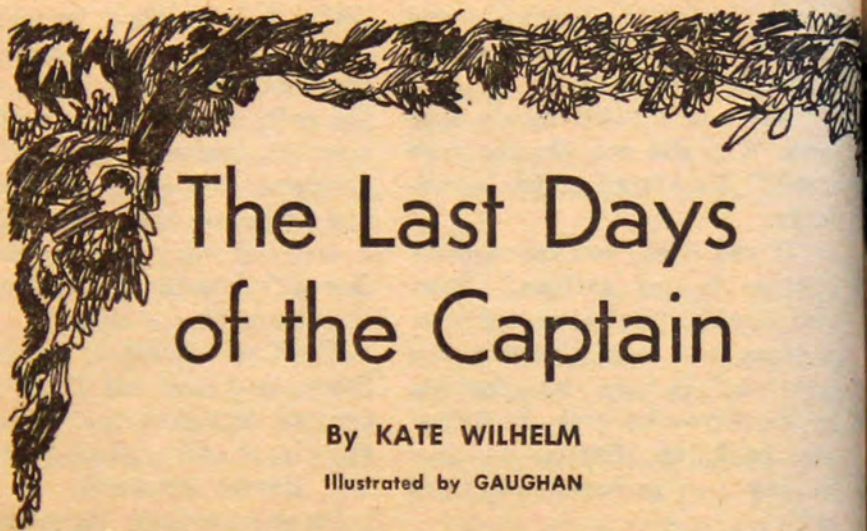
“Please, Harvey . . . you’re trapped in your—in your imagination. You’ve got to face REALITY.”

CLANK

It hit the ship.

The Universe dissolved in a vivid flash of white fire, and still Harvey could hear Dana’s whispered pleading . . .

THE END



The Last Days of the Captain

By KATE WILHELM

Illustrated by GAUGHAN

*There is much to be learned even under the worst
of circumstances. For example, about men
and women, and love and death.*

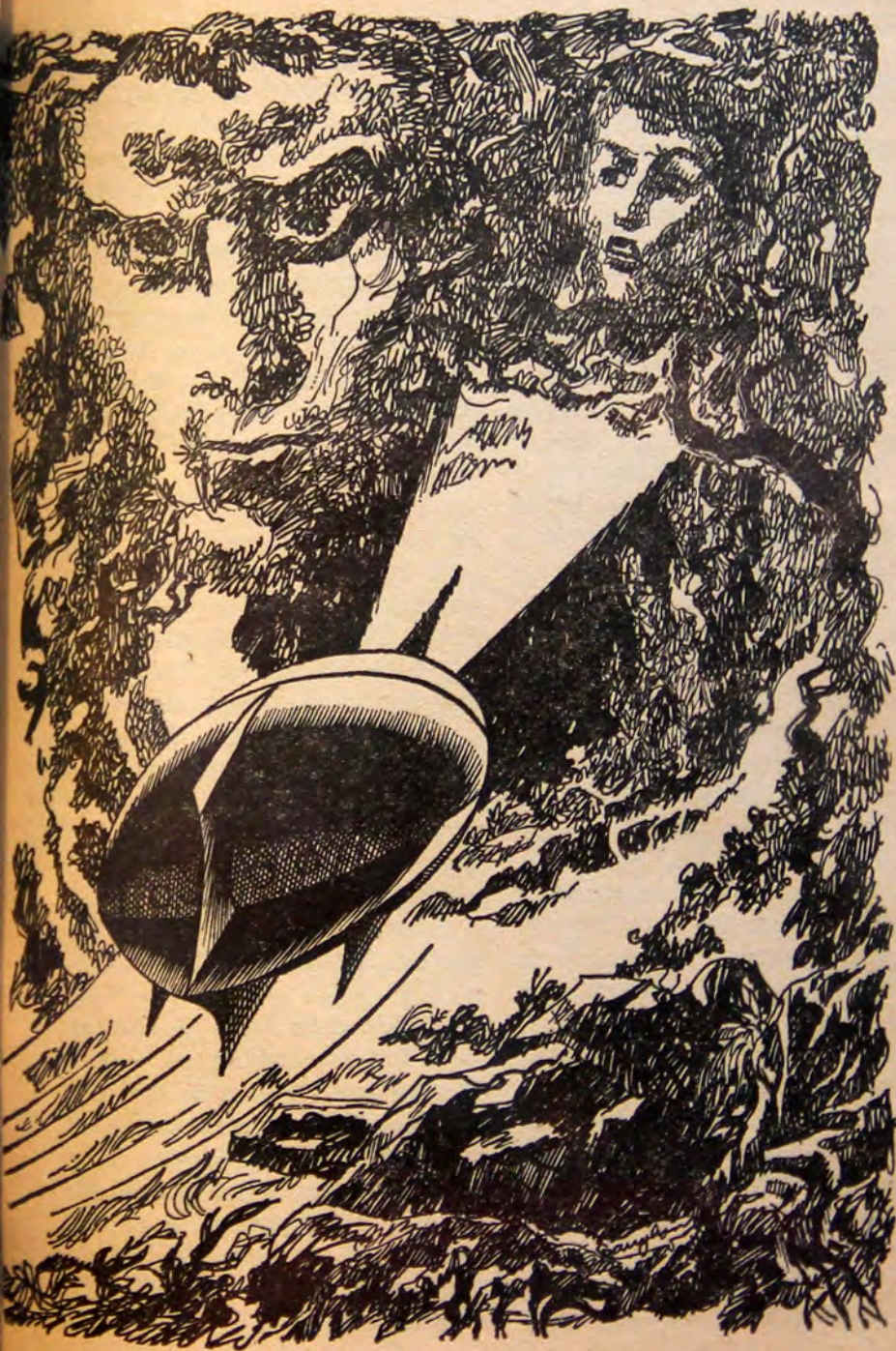
KEITH looked up scowling as the mayor entered his temporary office. "Well?" he snapped.

"Captain Winters, there are problems. Some of the people

don't wish to leave . . . Their crops, their homes . . ." Mayor Stebbins edged into the room hesitantly "If you'd talk to them . . ."

"Mayor Stebbins, don't you





have any power over these people? Won't they follow you?" Keith asked sharply.

"How can they adjust so fast, Captain? Only this morning they arose with everything normal, and now they are told they have to leave what they've worked for all their lives. How can I explain it to them?"

Keith's eyes filmed over as he stared at the little man. Slowly he said, "I'll talk to them. In an hour. And, Mayor, three loads of your people will leave tonight as Taros sets. You decide which ones. I'll want the information as soon as possible."

The meeting was held in the church. Keith studied the uneasy, pale faced congregation with an emotionless expression. They had silenced their buzzing whispers at his approach with the mayor and now waited. As Stebbins stepped forward to introduce him, he took his elbow and put him to one side, standing solidly behind the dais himself.

"Ladies and gentlemen," he started, his voice authoritative and hard, "you know who the Amorics are and that they have literally burned up three inhabited worlds. The Space Exploration Control has learned that they plan to attack Kulane in sixteen days, and for that reason the entire population is being evacuated. Following the evacuation there will be a surprise

counter attack. You will be put aboard a stellar ship at Lanning and transferred to safety." He paused and regarded them stonily, seeing not individuals but articles to be moved out. Here and there audible sobs were heard, but for the most part they were stunned and still.

Briskly he concluded, "Your mayor will sit in on a briefing shortly and he will be able to answer your questions later. I cannot stress too strongly how important it is to give the appearance of normalcy. We have located alien scanners on Taros and there's another one in orbit to coincide with the sun's motions. There may be others that we have not found. They must not report any undue activity!"

He strode through the empty street with the sound of the congregation's mass voice raised in hymns ringing in his ears. By the time he reached his make-shift office in the mayor's house, a cynical grin had replaced his earlier frown. Sheep!

* * *

SEVEN days later he climbed a hill overlooking the village. He sat watching until darkness came and one after another of the house lights flicked on. Very faintly he could make out the figures that appeared now and again in the streets, and he nodded his satisfaction. He glanced once toward the glowing disk of

a moon that hovered just above the tops of the mammoth conifers that made up the terrain of the planet Kulane. Very tiredly he pushed himself up from the ground and prepared to return to the village. This last night, and then he'd leave with the last truck load of settlers, mission accomplished. He stiffened and pivoted to face the shadowy tree trunks.

"Who's there?" He had heard of the giant cats of Kulane and his tight lips curled as his fingers became part of his smooth sonic gun.

"Oh, I didn't know you were up here. I'm sorry." It was a woman, her face a pale blank in the faint light of the moon. She stopped at the sight of the gun.

"What are you doing in the woods?" He didn't put the gun back in his tunic.

"Captain, please . . ." She advanced toward him, her hands held out so that he could see they were empty. "I'm Marilyn Roget. I came up here to wait for my husband and son. They'll come this way. Every night I come."

Stephan Roget, he remembered, was hunting the cats with his twelve year old son. He stared at the woman for a moment and then sheathed his gun. "You'd better be getting back," he said starting down the hill.

"Captain! I've tried to see you,

but they said you were busy. Please listen to me!"

"Waiting for your husband?" he said, but he stopped.

"Captain, I don't care what you think. You can't just go off and leave them. Stevie is only twelve. What will happen to them?"

"There's nothing I can do. We have to have this village emptied by tomorrow morning and if they aren't back by then, we'll have to leave them." His tone was remote and again he turned to start back.

SHE ran to his side and caught his arm. "But . . ." She let her hand fall and raised her head very high. "Of course, you have to obey orders, don't you. But I don't. I'll stay and wait. We can get out in one of the flyers." At the look on his face she rushed on, "Not flying it. We'll use it as a ground car. We do it when there's a high storm."

"And what if they don't get back in time to make Lanning?"

"I'll hide in the forest until the battle's over. Until the time comes to hide, I could stay right down there and give it a real look of authenticity. What if something goes wrong with the robots. What if the generators fail? Someone should stay and make sure everything looks real right up to the end. I'll do it, and then hide in the woods later."

Savagely Keith swung around to blaze at her, "You fool! There will be no battle! No fight! The Amories will bombard Kulane from out in space and leave it a seething mass of radioactivity down to the deepest root of the tallest tree! We don't intend to let them suspect that the Control knows anything of it!"

Marilyn stared at him, incomprehension giving away to horror and fear. "I don't believe you," she whispered. "I don't believe you! I DON'T BELIEVE YOU! She flung herself at him and beat at his face with hard, tight fists.

Keith jerked away and slapped her angrily. "Come on," he said roughly grasping her arm and forcing her ahead of him. Taros dipped behind a swaying branch of needles and left them dark shadows that stumbled down the hill.

He held her arm tightly as they walked among the robots dressed in the villagers' clothes. She was weeping quietly now, making no sound, not even shaking, just steady tears flowing down her cheeks. Keith muttered a curse and shouted for Sorenson who was giving last minute instructions to the few remaining villagers waiting for the setting of the moon. The atom powered ground car stood loaded with supplies for the journey.

"Sorenson, take care of her.

Put her to bed in the mayor's house. Change in plans. You take this group and I'll come out tomorrow with her."

Sorenson looked from the woman back to Keith. "But how will you make it out?" he blurted.

"We'll use a flyer on the ground. If her husband and son get back, they'll come with us. Otherwise, I'll bring her alone."

WHEN Taros vanished Sorenson and the last of the villagers sped out of sight toward the towering trees. Despite the cheerful lighting of the houses, the village had an air of abandonment which deepened as one by one the house lights blinked out. In the rear of the mayor's house Marilyn slept fitfully under sedation, and finally Keith stretched out on the lounge in his office and also slept.

He cooked their breakfast when he heard her moving about, and by the time she appeared, he was ready to pour the coffee. She sat down opposite him, her eyes fastened on the plate before her.

"Better eat," he said. "We have lots to do today. You'll have to help get the flyer ready."

"Yes," she answered. When he finished his eggs, she rose and cleared the table. Her food was untouched.

Keith stripped down the craft as Marilyn made up a list of supplies for the trip. He noticed

without comment that she prepared enough food for four. Toward noon the flyer was packed and ready. There was nothing more to be done until Taros set that night.

He studied his charts and calculated quickly the times for traveling during the next eight nights. It would take every minute of time they had. He frowned as he arrived at the figure one hundred ten miles per hour for the sixty four and two-thirds hours when it would be dark and Taros and its companion scanner would not be keeping watch.

The afternoon wore on and Keith put away his charts to prowl restlessly about the mayor's house. Contemptuously he fingered the stuff that covered the old fashioned lounge and glanced over the outdated books and ornaments that cluttered the room. He had been in the Space Exploration Control since his eighteenth birthday, seventeen years earlier. This assignment had come as a blow to him, baby sitting a bunch of colonists. Like most of the Control officers he had nothing but scorn for the earthbound dirt grubbers and their petty, smug lives. By God, he thought, if someone had come to him and told him he had to leave his ship, he'd tell him to go to hell, and put him there if necessary. But these people had crossed their hands and had sung

a few hymns and had moved without an argument. He shook his head angrily; their psychology was as alien to him almost as that of the Amorites. It hadn't been worth the risk of discovery. He wheeled about as Marilyn entered the room hesitantly. Like her, he thought, scared to death of him. Ready to run like a rabbit.

"Captain, you should rest now if you're going to drive all night. Lieutenant Sorenson gave me these capsules . . . If you'd like one . . ."

Keith's mouth curled in an unpleasant smile and he said coolly, "Keep them. Just call me at 1030." She turned to leave and he added icily, "And, Mrs. Roget, don't leave. I've made all the flyers inoperative and I set the lock for the one we're to use."

The woman turned sharply. "I'm not going with you, Captain!" she cried fiercely. "I demand one of the flyers to use to look for them! What harm can that do? We use the flyers all the time, and I'd be going away from Lanning, not toward it."

"Those scanners aren't to pick up a single flyer, nothing to make them look twice."

"I'll walk then," she cried. "Don't you understand? I can't just leave them here to die! I can't!"

Keith shrugged and turned from her taking a paper from the

desk and handing it to her. "Read it, Mrs. Roget. It gives specific directions for your husband to follow if he returns before take-off time. If he does get back and does follow those instructions, he'll beat us to Lanning. But flying is strickly forbidden until on the very last day; he'll wait until then for the time lock to be released. Now stop being a child." He pulled off his boots as he spoke and sat on the side of the lounge.

"You're not lying?" Marilyn asked, wanting to believe.

"Read the instructions," he said brusquely and lay down. He listened to her footsteps as she replaced the paper on the desk and left.

THE roads through the forest were merely wide, cleared thoroughfares between the giant trees, held as nearly as possible to straight lines. Since the ground cars and trucks actually never touched the ground except when at rest, the trailing vines that covered the forest floor were allowed to grow undisturbed. Skimming eighteen inches above it, it took on the appearance of smooth, oiled concrete, and would feel just as hard if they should hit an obstruction at the speed Keith held. Marilyn sat motionless beside him oblivious to the streak of trees and vines they passed at speeds that often hit

one hundred thirty. Keith's face set in lines of intense concentration as he gazed steadily into the opening among the trees and with part of his mind listened to the roar of the jet streams of air. After three hours without slowing once, he brought the flyer to a dead stop, braking in quickly and smoothly.

"What's wrong?" Marilyn asked almost disinterestedly.

"Trees are having a hypnotic effect," he said shortly. They were thinner here and he adjusted the light downward. Marilyn handed him coffee and he drank it quickly. Five minutes later they were racing along the forest road again.

They traveled for nine hours and sixteen minutes that first night, and when dawn brought the second scanner into play, Keith slumped over the wheel of the flyer letting his muscles jerk and twitch as they found relaxation. They ate wordlessly and slept encased in air mattresses.

When he awakened, he thought she had gone. He was alone by the flyer and the forest was noisy with birds. The plastic mattress cover was now too warm as the sun advanced across the sky. He got up and repacked his bed and cover in the flyer and munched on a biscuit. He didn't hear her return until she was nearly up to the flyer and then he stared. She was dressed in a green, two-

piece knit suit that covered her entirely from her wrists to her ankles. She was delicately slender and well formed. He realized he was staring at her only when she flushed slightly and turned away. With a disturbing sensation that he had made a mistake in not letting her wait for her husband he jerked his chart from the flyer and walked to the trees to sit down and mark off one night. Later in the afternoon he strapped on his sonic gun and hoped one of the cats would make an appearance that day.

* * *

THE third night they came upon the first of a series of boulders that jutted out into the clearing. By day, or even by night, at a reasonable speed, it would have been simple to avoid them. As it was he had to cut his speed in half, and then some more, to keep the flyer above them, and out of the trees. Left to itself it would try to maintain the eighteen inches he had set, but in doing so, it would veer upward and meet disaster against the branches of the trees. Four hours after starting he called a halt for coffee.

"How did they find out an attack was coming?" Marilyn asked, holding her cup in both hands to warm them.

Keith leaned back, grudgingly grateful to her, and forced his mind off the boulders he knew

lay ahead of them. He demanded obedience from his muscles and nerves, compelling himself to untense. "One of your teachers from Lanning had a group of boys on Taros for a holiday and geology trip and he came across the scanner. He had enough sense not to disturb it and reported it immediately to the Control. From his description they decided it was probably a heat-sensing device and this plan fit. There were several alternative plans already drawn up, if the opportunity ever came to use them. The fleet was dispatched to maneuver in this sector for cover and then ostensibly withdraw again. When they leave, every person on Kulane is to be aboard the ships ready to take off. That will give us two days or more to finish setting the trap; it'll take them at least that long to gather in the sector, but this time it will be different."

"But you said there'd be no battle," she said quickly, a note of hope making her voice husky.

"There won't be. They'll think they've done it again. Hit and run. But we'll have a fix on them and follow them to home base."

"I see." Her voice went flat again. "Kulane will be destroyed as the other worlds were. Why didn't you tell them the truth?"

"This was the only way," Keith said coldly. "As it is, this mass evacuation is a calculated

risk, and if there had been four thousand more inhabitants, it wouldn't have been attempted." He started the motor again, remembering the look on her face when he set the lock on the two seater flyer that was fast enough to get from the village to Lanning in a single night.

In eight and a half hours they made only five hundred fifty miles. Keith drank his coffee quickly and stalked away. He walked several miles scouting the road that lay ahead of them and returned in a vicious mood. Marilyn avoided his eyes as she handed him the rest of his breakfast.

"Do you think the others are having trouble?" she asked after a long silence.

"It'll be easier for them. Those trucks, cars, or whatever you call them, are made for skimming. The flyer isn't." He didn't add that there were also enough men to drive in shifts.

She nodded gravely and prepared her bed.

He wondered if she slept and knew she must sometime despite the growing hollows beneath her eyes and the darkness of the hollows.

THAT afternoon he unloaded some of the food and replaced it with boulders. Marilyn helped, rearranging the remaining food, straining to help lift the heavy

stones into the flyer. "Might do some good," Keith grunted wiping his face with the back of his hand.

"Do you think we'll make it to Lanning in time?" she asked quietly.

"Not if we have many nights like last night. Afraid?" He could feel the sweat trickling down his back where his tunic didn't touch and he hunched his shoulders letting the material soak it up.

"There's a stream about a quarter of a mile down there," Marilyn said pointing. She was perspiring and moist and her hair had begun to curl about her face where little stray ends worked loose from the roll high on her head.

"Are you afraid?" he repeated.

"I don't know," she answered simply as if she hadn't considered it. "I keep praying Stephan and Stevie have got the message and will be there waiting for us. Perhaps I am afraid." Her eyes met his and she added, "But not of dying."

Keith turned sharply snatching his clean uniform from the flyer. "I'll go wash first and get dried. We'll freeze when the sun goes down," he said in the same voice he used with his sergeant.

That night they drove for eight hours and fifteen minutes and covered five-hundred twenty miles.

"I can't believe one lone flyer in the sky would be disastrous," Marilyn exclaimed, breaking into his monotonous swearing. "You can't stand many more nights like that and you know it."

"We can't take that risk!" he shot back at her. "One object in the sky might draw attention that would make this whole trek stand out. We don't even know for sure what kind of scanners they are using."

"Then be sensible and stop cursing those rocks. That isn't going to move them!" She slapped the can she was holding to the ground angrily, "What's happened to that perfect Control training, Captain? Are you afraid you'll be stuck here in the forest when the Amories attack?"

"Goddam it! Shut up! I've got a squadron to lead on a battleship! That's where I belong, not out here in a wilderness leading a bunch of moon faced settlers home to safety. This shouldn't have been tried in the first place! We'll give it all away and the Amories will bypass Kulane and hit somewhere else while we're playing nursemaid. Our first chance at them and some big brass has to louse it up with a stunt like this!"

"You would have voted against us, wouldn't you?" she asked softly a look of repugnance crossing her face. "Captain Win-

ters, just what are you fighting for?"

Keith felt his hands become fists and involuntarily he took a step toward her. Abruptly he turned and stalked off, conscious of her following stare until he passed from her sight.

HE walked unthinking until his legs throbbed and only then did he turn back. She was standing before the flyer and without raising her voice she said urgently, "There's a cat to my left! It's ready to spring."

Keith faded back several steps to get a view of the rear of the flyer, but he didn't dare risk hitting the ship. He could see the great beast moving, agonizingly slow, between the ten foot tree trunks. It was cat-like only in its tawny color and its crouching, ready-to-spring stalking. Its hairless head was long with a mouth that could open a foot wide; the rest of it, covered with stubby yellowish hair, seemed to be mostly long powerful legs built for leaping.

"I'll attract it over here," Keith called and stepped in front of the flyer.

"It won't change its prey," Marilyn answered. "Walk around behind me. As soon as I start to move it will jump. It will make two leaps; one to snatch me up and the next back to the trees. You'll have to be fast. If it misses

me it will keep going and try again before you know it. I'll count three, take two steps away from the flyer and dive back under at three."

"Marilyn, stand still!" Keith shouted and was furious with himself. "I'll circle it."

"They're never alone," she said. She glanced at him then and said steadily, "one." She took a step away from the ship. "Two." Another step. "Three." She whirled and dived and the beast was in the air higher than Keith's head. It landed without stopping its forward momentum, its claws raking the spot where she had been the second before. Keith's gun fired and the creature crashed to the ground and moved no more. He ran to Marilyn and they climbed into the flyer before the cat's mate appeared at the edge of the woods. It sniffed their presence, hesitated momentarily, then seized its partner and dragged it off through the trees.

"It won't be back," Marilyn said calmly as it disappeared.

"Is that what your . . . your people hunt?" Keith asked. He knew he wouldn't choose hunting the beasts for sport.

THE boulders were left behind them that night and when they stopped they had crossed off another eight hundred fifty-one miles.

THE weather was growing steadily colder and they slept in the flyer. He was acutely aware of her breathing as his legs jerked and muscles untied. The strain of following that one bright, low light among the tree trunks, of being alert to changes in the terrain and anticipating curves and turns was telling on his nervous system.

He listened to her sigh in her sleep and he wondered vaguely what it would be like to live with her, go hunting with her, see her in his bed, feel her at his side, share the breakfast table with her day by day. He wondered if she dimpled when she laughed, what it took to make her laugh. He let the fantasies loose and drifted off into sleep.

He wakened hearing her scream. Just the one scream of terror. He slipped from his seat and groped for her.

She fell against him shaking, unable to speak and he stroked her hair until she was still. He hadn't known she took her hair down when she slept. It was long, nearly to her waist, and incredibly soft. He held her and stroked her hair and remembered the thoughts he'd had while falling asleep. He pushed her from him and asked self-consciously, "Are you all right?"

"I'm sorry," she said weakly, fighting for control again. "I must have dreamed."

He knew she was weeping although her voice didn't break. "Try to rest some more," he said. "I'll see about coffee."

Nine hundred miles and they both took the sleeping medicine and huddled under their covers. He was groggy and heavy when he woke up, his appetite dulled and a bitter taste in his mouth. Marilyn was walking back and forth beside the flyer, a heavy tunic pulled over her green suit. There was no sign of the sun high over the trees.

Let it rain, he thought viciously. That was all he needed, to drive through a rain storm. It didn't however. They talked in a desultory manner, and regularly they got out and stamped up and down along the clearing. Neither of them mentioned the dream.

Night after night their traveling time had grown shorter as Taros set later. Kulane had thirty-two hour days and by the sixth night they were using only seven and three quarters hours of it for their journey. The day dragged interminably, and after sunset they still had eight hours to wait for Taros to go down. Keith sat stoically trying to ignore the cold that numbed his fingers. "You should have gone with the others," he said. "They'll be warmer inside the trucks."

Her voice floated back from the rear seat of the ship. "I'm all

right. Why did you wait?"

"It was the least I could do."

"You were glad," she said with a note of finality. "You didn't want to be confined with them for so long."

"Why don't you try to sleep. It's going to be rough when we do get started."

"Why don't you answer me? I could sense it every time I saw you, how you hated us all. You came so cold and hard, despising us, seeing us as things that stood in your way." Her voice was low and meditative, as if she were thinking aloud. "They all knew exactly how the Amorics left the other worlds they found. What good could they have done on the ground? You'll never know how much strength it took for them to leave."

Keith turned on his side and pretended to sleep. She was a stupid, ignorant peasant, he thought. All she knew was farming and hunting in the deep forests and how to keep her son and husband fed and content. Like animals all they had was acceptance for whatever came along. Strength! Were sheep strong? He dozed fitfully and the vision of her standing beside a slightly smaller version of her, a boy version of her, smiling, kept intruding in his dreams.

THAT night he got the speed up to a hundred quickly. One

ten, fifteen, twenty, thirty. The trees were a blur as they raced by them and only the opening before him was real and straight. The small craft edged past one thirty and the gauge needle reached for the one forty mark and held there. His arms ached after the first hour, and his eyes burned as if he had a fever as he stared ahead watching for a sudden curve or dip that could send them hurtling up into the trees. The way was ruler straight and the inclines long and rolling. The needle crept past the forty mark and held the fifty indicator. The trees were a solid wall, dark and impenetrable, gleaming back at him the reflection from the stabbing light.

Suddenly a boulder loomed ahead, and before he could react to it, the flyer arced up. It missed the first branch of the tree and climbed higher as he struggled to regain control. He headed the craft upward through the branches, reducing speed, hearing the snapping of branches as the nose of the flyer cut through them. Then they were above the trees and in the sky.

Without a moment's hesitation Keith turned the light downward and hovered above the branches looking for a way back in. Finally, very cautiously, he began to lower it, maneuvering it carefully among the tree limbs, feeling pain every time he heard the

inevitable scraping. At last they were back on the ground and he turned for the first time to look at Marilyn.

"Are you all right?"

A long shudder passed over her and she nodded. She pressed both hands into her face and shook but made no sound. Keith frowned helplessly, feeling the same need for release from tension. He started to reach for the coffee, but instead found himself gathering her into his arms.

"It's all right, Marilyn. It's all right now. I'm sorry." He held her murmuring quietly, his eyes closed, until she pushed back, calmed again. He tightened his arm about her shoulders.

"Please," she whispered tightly, "leave me alone."

Abruptly he pulled away and got the coffee out. He avoided looking at her, staring into the blackness outside instead. After swallowing the hot coffee he fingered the starter again. "I'm going to see if it will go," he said. "Ready?"

"Yes," she said steadily.

There were no more of the boulders and he held the speed on one forty almost hoping they would crash into one of the trees. It would be quick and painless, but the tunnel was smooth and he followed the wide curves without slackening speed until the sky was starting to lighten in streaks barely visible through



the covering of the needles above. When he brought the flyer to a halt and felt the faint bump as it met the ground, he let his head fall forward cradled in his arms over the control panel. Wearily he noted that they had made one thousand miles. He slept.

SOMETHING awakened him. He shifted his cramped position slightly without opening his eyes and a nearly inaudible gasp brought him to complete alertness. He didn't move, but tried to hear, and there was nothing else. Very deliberately he inched his hand across the seat to his gun, and he could have cursed. It wasn't there. Then he did open his eyes, just enough to see in the edge of his field of vision that Marilyn had the gun and she was watching him. The gun was pointed at his head.

He let his eyes close and waited. Do it now, kid, he thought. Do it! Do it! Take the flyer and go look for them. You have that much coming to you. Do it!

He couldn't hold the position after several more minutes; his legs were sending cramping pains up through his hips, and his hand was asleep on the seat where his gun had been. Keeping his eyes closed he shifted again. Damn her! She was a coward after all! She couldn't do it. Gradually he untensed and fa-

tigue dulled his thoughts. Coward, the word kept parading through his mind, and it was not clear whether he meant her for not shooting, or himself for wanting her to shoot.

Marilyn's voice roused him and he had no awareness of passage of time. "Keith," she said again, "you should eat and lie down. You'll be so cramped."

He pulled himself away from the seat reluctantly. He was aching all over, from both cold and cramped muscles. The gun was once more by him. Had he dreamed it then? Quickly he looked out at her. "Did I sleep long?" he asked.

"Several hours." She had her cover draped about her and her face was pinched and very cold looking.

He ate before he went out to inspect the damage the tree had done. It was surprisingly little. The sharp nosed, wingless craft was sturdy with no protuberances to catch and break. Apparently it had slid between the woody limbs with little more than scratching to show it.

From behind him she said, "It would have been so easy once you were up there to open up and cover five or six hundred miles during that lost hour. Didn't it occur to you?"

"I thought of it," he admitted tiredly arranging his cover on the front seat.

"But you wouldn't do it, would you? Not even for yourself."

He turned to look at her and her eyes were very bright and remote, almost glassy. "Not even for you," he said distinctly.

She turned her curiously bright eyes to his and took a step toward him. "I'm so cold," she said faintly.

Her face was ashen, but her eyes burned into him. He went to her, taking her in his arms gently. She was stiff and cold in his arms. He felt nearly unendurable pain as her soft fingers that were so strong clutched at his back.

When she slept he carefully covered her and crawled into the other seat where he lay watching her for a long time until he too slept.

THE moon was shining when they awoke and it lighted them as they ate. Afterward they sat inside the flyer, she in the rear seat and he up front. The trees shadowed the flyer and the dark grew deeper until he could see nothing and their voices when they spoke came from a void and sounded briefly and left nothingness behind.

"The ships will be uncomfortable," he said. "It would have been too risky sending regular passenger cruisers, so they stripped down cargo ships. Nothing left inside but the engine rooms and

floors. You'll be crowded and uncomfortable."

"That doesn't matter," she replied after a pause. "Just so they all get out."

They were silent a very long time and finally Keith said, "I'll get coffee. We should be eating, I suppose."

They ate little, however, but sipped the hot drink slowly savoring the warmth and strength of it.

"Marilyn, I want you to take one of those pills Sorenson gave you."

In the dim light he could see her wide, luminous eyes still burning with an unnatural light. "I'm all right," she said. "I can take it as long as you can drive."

"I know you can. I don't want you to have to."

"Keith," Marilyn said in a low voice, "I understand. Sometimes a woman knows things that aren't said and mustn't be said. I'm not afraid."

"And sometime, a long time from now, can I see you?"

She ducked her head not answering and he reached for the controls.

It was a nightmare in which there was no let-up of speed, no curve to break the monotony of the abyss that drew them along. As the miles were left behind with totals changing at dizzying speeds he kept thinking of Stevie, almost as big as she. Her son. Her

husband. How could she see him again? He didn't stop for a break although his arms ached and dragged leadenly at his commands and a numbness crept upward through his legs. They were entering Lanning when dawn was still several hours away.

* * *

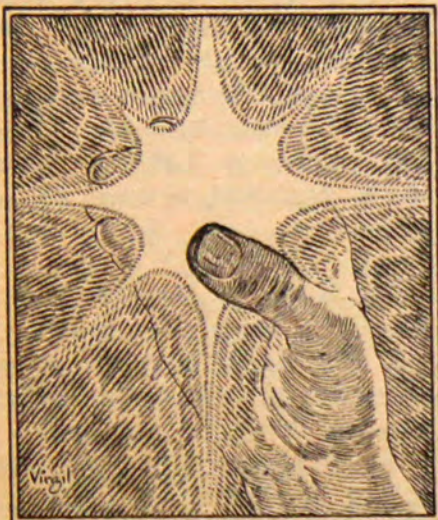
Lt. Sorenson met them jubilantly. "I knew you'd make it, sir. Mrs. Roget, you're to go to room A-3 in the administration building. They'll direct you."

Keith ignored the man and helped Marilyn from the flyer. She started to walk toward the building, but turned and said, "Make it a very long time, Captain." The fierce brightness of her eyes was gone and there was only a deep, dull hurt there.

"What's that mean?" Sorenson asked and not waiting for a reply added, "You sure can't figure these colonists, can you? Wouldn't you have thought she'd at least ask about her husband and son?"

"Sorenson, shut your mouth!" Keith's voice was ominous. "These people are the only reason we have for even existing." He wheeled about and strode away remembering to hold himself as erect and proud as she had done. The pain in his own eyes, deep where it wasn't easily discernible, very nearly matched hers.

THE END



LIFE AMONG THE STARS

By BEN BOVA

Illustrated by FINLAY

WITHIN this generation, Earthmen will explore the Moon and nearer planets, and many of our speculations about extraterrestrial life will be either confirmed or destroyed. But the solar system is only one tiny corner of the observable universe. Beyond distant Pluto lie the remote and beckoning stars. Do they possess planetary systems? If so, do those planets bear life?

Remember that we are operating under the assumption that the stars are essentially similar to the Sun. Astronomers now believe that the Sun and planets coalesced out of a primeval cloud of interstellar gas and dust. The evolution of the solar system to

its present condition—including the existence of life on one or more of the planets—is considered to be a completely natural sequence of events. Nothing unusual is necessary to explain the solar system's evolution. Granted the same conditions elsewhere (and these conditions, as we will shortly see, may be quite ordinary throughout interstellar space) a similar development would eventually lead to the formation of a star and, perhaps, a system of planets.

Looking for the Unseeable

THE best way to illustrate the frustrations of searching for planets circling other stars is to

*Previous articles appeared in June, July and September AMAZING

Imagine, for the moment, that we have been magically transported to Alpha Centauri A, the brightest component of the triple-star Alpha Centauri system, and a star that is almost identical to the Sun. Let us further suppose that we have at our disposal the best astronomers and astronomical equipment currently available on Earth.

Now we look back at the Sun, 4.3 lightyears away, and try to find the planets that we know are there. To make things easier on ourselves, we shall try to find only Jupiter, the largest and most easily-visible of Sol's nine planets.

Even through a 200-inch telescope, we can see nothing. The Sun appears to be a first-magnitude star; but Jupiter, the astronomers' computations reveal, should be a twenty-third magnitude object at this distance. That is, Jupiter should appear some *one billion* times fainter than the Sun!

A 200-inch telescope can pick up twenty-third magnitude stars—under good conditions. But Jupiter is very close to the bright Sun, and is drowned out in glare. If the planet were further away from Sol, the glare problem would be reduced, but Jupiter would become even dimmer, since its only light is that which it reflects from the Sun. Conversely, if Jupiter were closer to

the Sun it would be brighter, but the increased brightness would be more than offset by the glare effect, which becomes worse as the faint object comes closer to the bright one.

So visual detection seems to be out.

However, astronomers have been able to find several objects in the sky that at first were invisible to them. Objects such as the faint dwarf stars accompanying Sirius and Procyon were originally detected through the gravitational perturbations that they induced in the motions of their bigger, brighter partners.

Sirius, for example, was observed in 1844 to be bobbing back and forth through space for no apparent reason. A star, like any body in a frictionless vacuum, should move through space in a straight line—unless some outside force is deflecting it.

Sirius was weaving through the sky in corkscrew fashion; something was pulling at it, gravitationally. When a good-enough telescope was turned on the Dog Star, the dim dwarf Pup was visually discovered. The same tactics led to the discovery of Procyon's dwarf companion, and also to the planets Neptune and Pluto.

Can we detect the presence of Jupiter by its gravitational pull on the Sun? Every body in the



1918
Finlay

solar system exerts a gravitational pull on all the other bodies. This pull is directly proportional to the mass of the bodies concerned. The Sun, with a mass of 2.24×10^{27} American tons, keeps all the planets, comets, etc., gravitationally bound to itself.

JUPITER, the biggest body in the solar system except for the Sun, has a mass of slightly less than 0.001 times Sol's. Its gravitational influence on the Sun is minute. Jupiter deflects the Sun's forward motion through space by less than one-hundredth of a second of arc ($1/36,000$ of a degree of arc—about the size of a twenty-five cent piece, seen from 300 miles away!). This heartbreakingly-small motion is just a shade under the amount of deflection that astronomers can detect with their present instruments. So it appears that Jupiter would be undetectable by this means also from Alpha Centauri.

Obviously the same problems confront us here on Earth when we attempt to determine if there are planets near any of the three Alpha Centauri stars. We cannot see such planets, even if they are there. We cannot detect gravitational perturbations from a planet even as massive as Jupiter.

The immense distances between the stars, and the practically infinitesimal mass and

brightness of planets as compared to stars, is an almost impassable barrier.

The Mysterious Companions

Almost impassable. A few of the nearest stars have shown perturbations due to companions that are too faint to be picked out visually.

For example: of the three stars closest to the Sun, two of them—Barnard's Star, 6.1 light-years away, and Lalande 21185, 7.9 lightyears—are accompanied by invisible companions.

While we cannot see these companion objects, either because they are too dim or too close to their primary stars, we can compute their masses by measuring the perturbations they cause on their respective stars. In both cases, the masses work out to be slightly less than 0.1 times the Sun's—about 100 times larger than Jupiter. This is an immense mass for a planet, but quite a small mass for a star.

The orbital periods ("years") are 11 months for Barnard's Star's companion and 14 months for Lalande 21185's. The dark "fellow travellers" are both estimated to be less than 1 AU from their respective stars—closer than the Earth is to the Sun.

Several other stars near the Sun are known to have unseen companions. Among them are

Epsilon Eridani, Tau Ceti and the double star 61 Cygni, each of which will be significant parts of the story to follow. The suspicion is that there are myriads of stars with small, dark companions. We cannot detect any but the very closest from Earth, though, since these objects become increasingly difficult to find with distance.

Stars vs. Planets

NOW then, are these unseen companions truly planets? Or are they very small, very dim stars?

Most astronomers have accepted a rule of thumb first proposed by the American, Henry Norris Russell, in 1944. He suggested that any invisible companion of a star that is estimated to be smaller than 0.05 times the Sun's mass should be arbitrarily designated a planet. More massive companions should be classified as dwarf stars, until evidence is available to settle the question definitely.

According to this convention, the companions of Barnard's Star and Lalande 21185 are both technically labelled as stars. However, the double star 61 Cygni (a pair of small reddish stars, 11.1 lightyears away) has an invisible third component with a mass of about 0.017 times the Sun's. Thus 61 Cygni C, as it is called, can be termed a planet

even under Russell's conservative system.

What kind of a planet might 61 Cygni C be? If the estimation of its mass is accurate, it is about 170 times larger than Jupiter. A giant among giant planets; probably much like Jupiter in chemical composition—an atmosphere of hydrogen, helium, ammonia and methane; crushing gravity. Totally alien.

And yet, this is precisely the type of planet we should expect to find, considering how limited our information-gathering equipment is. A small planet orbiting close to its parent star—like Earth—would be impossible to observe or even detect. Our chances of finding a planet increase as we consider larger, heavier planets. There may be a multitude of Earth-type planets virtually next door to us, but they are totally undetectable as long as we are Earthbound.

However, there is another aspect to consider.

We have been operating under the assumption that, since the Sun is an average Main Sequence star, our planetary system represents a rather ordinary condition for most stars. Hence, there should be almost as many planetary systems as there are stars. But many astronomers have pointed out that the Sun is a single star in a galaxy that seems to show a preference for double and

multiple stars. Of the 12 stars nearest the Sun, eight of them are double or multiple. Of these eight, four have unseen companions that may well turn out to be small stars, not planets.

These astronomers go on to conjecture that stars "prefer" to exist in double or multiple groups, and that the Sun and its planetary system represents an extreme case where there was not enough building material available in the original gas cloud to create two stars. Hence, a single star and some cosmic rubble—the planets—resulted.

Of course, in the case of 61 Cygni we see a formation that clearly has at least two stars, and probably one giant planet. There might even be more planets in the system, undetectable from Earth. So we could conclude that it is not impossible for double or multiple stars to evolve with planets.

Moreover, the history of astronomy has repeatedly shown that attempts to consider the conditions closest to us as unique or extreme, are usually hopelessly incorrect. Our planet is not unique, neither is our Sun. Is it reasonable to conclude that our solar system is?

The Conditions for Life

EVEN the pessimists, though, agree that there must be lit-

erally hundreds of millions of stars that possess planetary systems. What requirements must be met to make these planets possible abodes of life?

Dr. Si-Shu Huang, of Princeton University's Institute for Advanced Study, has given this problem considerable thought. He concludes that two major conditions must be met:

1. The star around which the planets orbit must be stable in life span and luminosity;
2. The planets must have stable orbits that lie within a "thermally habitable" zone.

A Stable Star: The first condition is simply a recognition that, on the one hand, stars change and evolve (in some cases comparatively rapidly); while, on the other hand, it takes a good deal of time to develop life.

Figure 1 (page 71) illustrates this point graphically. Earth and the Sun developed, presumably, out of the same interstellar gas cloud and at the same time—some five billion years ago. It is believed that life first appeared on our planet some 2.5 billion years ago, although the earliest known fossils are less than one billion years old.

Assuming that life on Earth is 2.5 billion years old, this means that it took an additional 2.5 billion years for "chemical evolution" to build up molecules

of sufficient complexity to become living. So, in the solar system's five-billion-year history, it took 2.5 billion years for the first life to appear on Earth, and an almost equal time for intelligent life to evolve. During all this time, the Sun has been a Main Sequence star, and has beamed out a practically unvarying stream of energy.

If the Sun's output had changed as little as a few percent, our atmosphere might have been boiled away, or our seas might have been frozen. The Sun is destined to remain on the Main Sequence for another five or six billion years, so we have a long future of solar stability to look forward to. But, eventually, our star will enter its death throes of expansion, explosion and extinction.

Not all stars are as marvelously constant as the Sun. As Figure 1 shows, Sirius probably became a Main Sequence star well after the first life forms evolved on Earth. And Sirius' lifespan is so short that one-half of this double star has already gone

into white dwarfdom, the inevitable fate of all stars. The blue giant Rigel, it has been deduced, cannot be older than 10 million years! Born yesterday, on an evolutionary time scale.

MEANWHILE, small, dim dwarf stars like Tau Ceti will age so slowly, and remain on the Main Sequence for so long, that they make the Sun seem prodigal. Table 1 (page 72) shows the expected life-spans of several different types of stars.

As can be seen by comparing Table 1 with the time spans on Figure 1, planets circling the fast-living B- and A-type stars would not have enough time to develop life before their stars headed for extinction. Even FO types apparently evolve too quickly to allow life sufficient time to get started. The "break-even" point comes at about spectral class F5, which is on the Main Sequence for about six billion years—long enough to allow chemical evolution and perhaps even the evolution of intelligence.

Figure 1, opposite page, shows life span of stars contrasted to time necessary for development of life. Sun has been on Main Sequence (and hence stable) for some five billion years. During that time, chemical evolution has led to living forms and eventually to intelligent life. Fast-living stars such as Sirius and Rigel apparently are not stable long enough to allow life sufficient time for development. In contrast, smaller, fainter stars—such as Tau Ceti—will remain on Main Sequence even after Sun has expanded, exploded and become dwarf star.

FIGURE 1

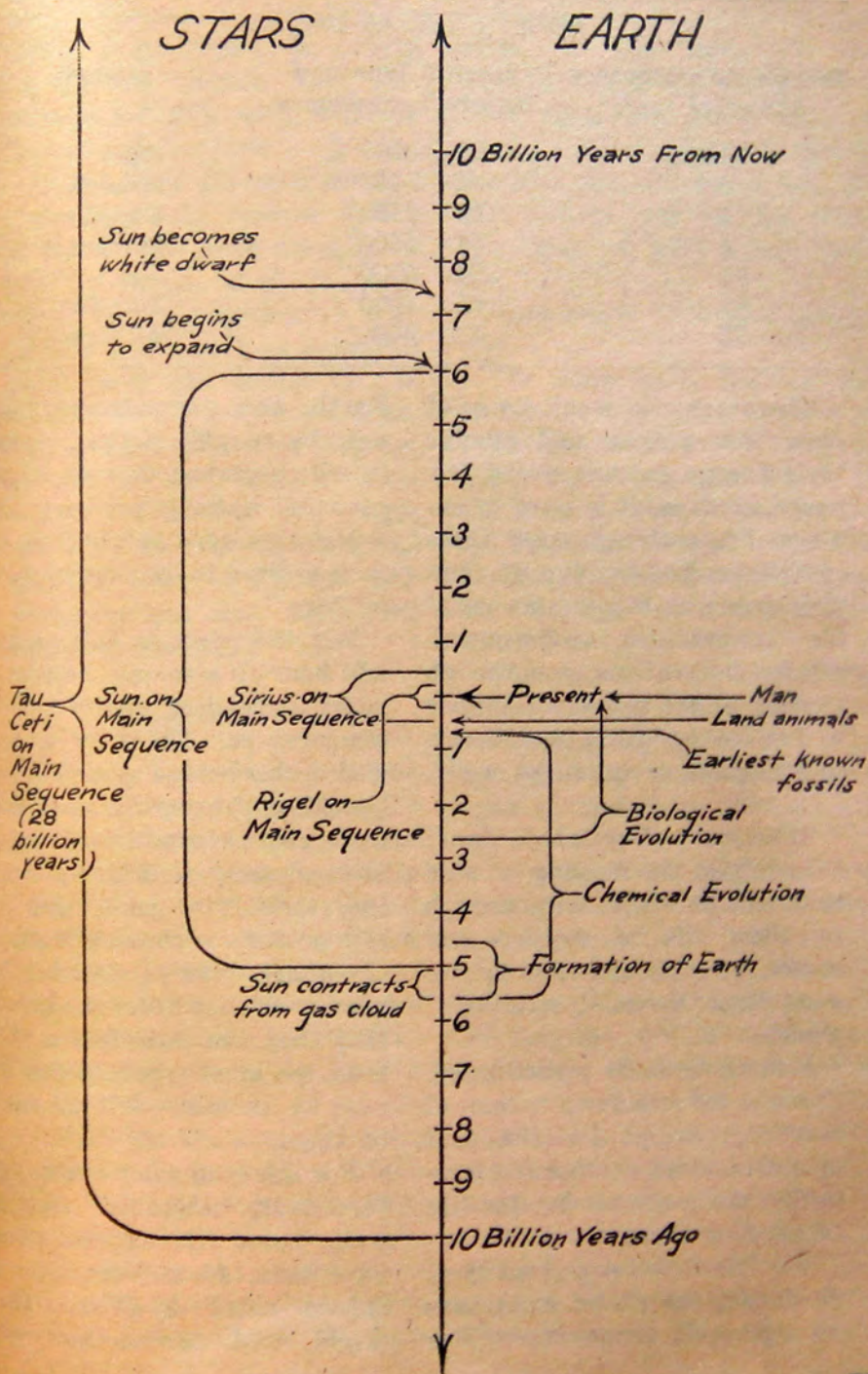


TABLE 1: STELLAR LIFESPAN

Time on Main Sequence (Billions of Years)	Spectral Type and Surface Temperature	Example
0.002	B5-20,000°C	Rigel
0.4	A0-10,000°	Sirius A
4	F0 - 7500°	Canopus
6	F5 - 6500°	Procyon A
11	G0- 6000°	Sun
28	K0 - 4900°	Tau Ceti
70	K5 - 4000°	61 Cygni

There are also many types of stars that pulsate and change their energy outputs every few hours, or days. It is hard to envision life evolving under these conditions. The buildup of complex molecules requires an equable temperature environment. Sudden fluctuations, even though regular, might well be a fatal bar to chemical evolution (and, hence, to biological evolution as well).

“Thermally Habitable” Zone: In addition to needing a star that will be stable long enough to allow life to develop and evolve, we must add the requirement for a “thermally habitable” planet.

Life seems to be planet-based. Space is too cold for biochemical reactions, except for the first primitive steps of chemical evolution; stars are too hot for life to exist on them.

For life to develop from inert chemicals, the planet must have an agreeable temperature. For

Earth, this temperature range may be roughly defined as that in which carbon dioxide is gaseous and water is predominantly liquid. Our type of life could not have evolved in ice—either water or “dry.”

But the point is this: a star will heat up a certain amount of space, depending on its surface temperature. There is a zone within this heated space that can be called “thermally habitable” for a given type of life. If one or more planets are orbiting within the star’s “t-h” zone, then life can evolve on those planets. If there are planets orbiting too near or too far from the star, so that they are outside the “t-h” zone, we must conclude that life—as we know it—will not evolve on them.

For our own solar system, the “thermally habitable” zone for water-based life extends, as we have seen, from Venus (atmosphere only) to Mars; there might well be another “t-h”

zone, for ammonia-based life, extending from Jupiter to Saturn (it appears unlikely that ammonia-based life could exist on Uranus and Neptune).

To be a good prospect for life, a planet should remain within its star's "t-h" zone permanently. This means that its orbit cannot be too eccentric. A long elliptical orbit, such as a comet's would carry the planet in and out of the zone constantly, making the development of life improbable, at best. Also, a planet bound to a double star might have a highly unusual orbit, and two "t-h" zones to contend with—complications that might well bar life-chemistry.

The Question of Spin

WE have seen that stars hotter than spectral class F5 probably evolve too quickly, and are on the Main Sequence for too short a time, for life to develop near them. Also, in considering "thermally habitable" zones, we should realize that the dim, cool dwarf stars—such as Proxima Centauri—can heat up only a very small amount of space; therefore the chances of having a planet within such a star's "t-h" zone are correspondingly small.

Apparently, the stars most likely to harbor life lie between spectral classes F5 and K5. This

rules out the brightest, largest stars; it also rules out the dwarfs, which are probably the most numerous single type of star. However, if we seriously consider ammonia-based life, the cool dwarfs may sponsor more life than we give them credit for.

Now comes a curious discovery.

The stars spin, just as the planets do. But stellar spins vary from 200 miles per second, or more, for a star like Rigel, to about three miles per second for the Sun and similar stars. The question occurs, why should some stars spin so fast and others so slowly?

The answer is intriguing. The Sun's spin has been absorbed by the wide-swinging planets. The fast-spinning stars presumably have no planets to absorb their spin.

So a star's spin might indicate whether or not the star possesses planets! And what do we find when we follow this clue? It is precisely at spectral class F5 that the spin of stars shows a strange change. Stars hotter and larger than F5 rotate rapidly. But at F5 and below, the stars' spins suddenly slow down to speeds like the Sun's. Indications are that this is precisely what would happen if planetary systems were accompanying such stars.

CONSIDER the statistics. Of the 40 stars nearest the Sun, there are seven unseen companions. All but three of them are heavier than Russell's arbitrary figure of 0.05 times the Sun's mass, so we must reject them as possible planets.

The three remaining objects are orbiting around Tau Ceti, Epsilon Eridani, and 61 Cygni. Since the orbit of a planet tied to a double star is apt to be highly eccentric, we should reject 61 Cygni C as a possible life-bearing planet. That leaves the companions of Tau Ceti and Epsilon Eridani. Both these stars are very stable, spectral classes K0 and G5, respectively.

Two possible life-bearing planets out of 40 stars. A ratio of one in 20. If one of every 20 of the Milky Way's 100 billion stars harbors a potentially life-bearing planet, that means there are five billion possible homes for life in this galaxy.

Now, statistics are not proof, and speculation is not evidence. But there is enough information available to make the questions intriguing.

Scientists have become comfortable enough with the possibilities of extra-solar-system life to begin listening for intelligent radio signals from Tau Ceti and Epsilon Eridani. This is Project

OZMA, underway at the National Radio Astronomy Observatory at Greenbank, West Virginia.

The chances of picking up intelligent signals from these two nearby stars are, frankly, astronomical. The statistics work against us here. For if the stars in fact do possess planets, they might be Earth-type planets. Even if they are, intelligent life might well not have developed on them. And even if intelligent beings are there, a cultural difference of a scant century below or beyond us could mean that they either have not yet developed radio telescopes or they are so far beyond them that they cannot conceive of intelligent creatures having to use them for interstellar communication.

Worst of all, they might be *exactly* like us, and doing precisely what we are doing—listening, but not transmitting.

But regardless of this first adventure in interstellar communication, we have established that: (1) the forces that created the solar system can, and probably do, create other stars and planetary systems just as easily; (2) the physical and chemical processes that build stars and planets also lay the groundwork for the evolution of life; (3) given the proper conditions of a stable star with sufficient heat-energy output, there is no reason

to assume that life will not develop and evolve.

Intelligent life? Humanoid life? That's another story, depending on different lines of evidence and deduction.

The important point, however, is that man is finally reaching out into the universe. The laws of statistics tell us that, for any given star, the chances are always 50-50 that life will be there; but for a large enough sampling of stars, it appears inevitable that we will find life.

Disappointments will be plentiful, of course, but since when has that stopped the human race?

No, the solar system and even the stars will be inspected by man's instruments, his rockets, and eventually by man himself. Earth is not the only abode of life and intelligence. Those of us who have the faith—scientists and science fictioners, dreamers and technicians—realize full well that *this* is the only adventure worthy of a civilized man.

THE END

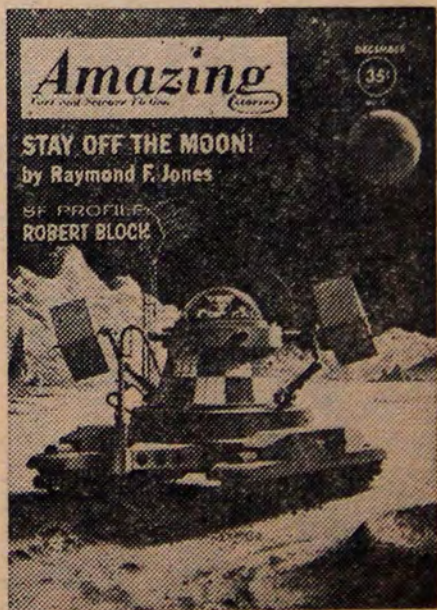
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Man draws ever closer to the day when he will set foot on the moon. In the December issue of **AMAZING**, **Raymond F. Jones** tells, in a gripping novelet, the chilling story of what our first moon explorers may find there—of the mighty thing of evil that squats deep under the craters and silently shrieks: *Stay Off the Moon!*

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BLACK & WHITE

By MARION ZIMMER BRADLEY

Illustrated by SUMMERS

When you start this story, about the last black man and the last white woman in the ruined world, you'll think: That old idea again! But you'll read on—and suddenly find yourself gripped by one of the keenest new approaches to the ancient myth.

THIS has been an old story since Cain killed Abel," the man said quietly. "Brother against brother, city against city, nation against nation. But at least it will never be old again."

"Never again," the woman repeated, "at least, not on Earth."
"Not on Earth."

In the ruin of what had been—when cities still were dignified by names—lower Harlem, a man and a woman were sitting in the only building left intact on The Day. It had once been a beer-hall. The walls were still gaudy with lascivious poses of women that no longer had mean-

ing, and the glass over the bar had been so thoroughly shattered that even now neither the man nor the woman dared cross the floor barefoot; the splintered glass from long-gone bottles was still working in fragments out of the wood floor.

They had been living there for three months—since they had found each other and realized they were the last man and woman in New York—probably, on the North American continent—almost certainly, in the world.

"All the Adam-and-Eve stories I ever read—" the woman said, with a hard little laugh. "Never thought I'd end up as the pro-

tagonist of one. It's ludicrous."

"Easy now!" The man's voice was soothing. He caught the edge of hysteria, easier to abort than to stop after it got going. "You're not."

"No," her voice brooded now; "I'm not."

"Kathy," he said gently, "have you heard the old saying, *I wouldn't marry her if she was the last woman in the world?*"

"Oh, Jeff—"

"For the love of God!" the man exploded, and stood up, the muscles running in ridges under the dark skin of his jaw. "Kathy, don't say it! For the love of God! Hand me a mirror, if you can find one in this empty rathole! But don't say it!"

THEN he spoke with a bitterness so deep that he himself did not recognize it as bitter. "Kathy, I'd leave here tomorrow—except I'd be so lonely I'd shoot myself."

"So would I."

"But you've got to use your head, Kathy. I thought this was permanently settled. I thought our ancestors settled it for us about three hundred years ago. And—we're both reasonably civilized. It's a good thing, or I'd—" he broke off, unclenched his fists and made himself lounge in a chair again.

"Is it really such a good thing?" Kathy asked softly. The

garish red lights over the bar—somehow unbroken, the power plant out here hadn't run down yet—gave a lustre to her fair hair as she leaned forward and looked at him. The man saw the play of the red light on her blonde hair—cut short like his—and briefly shut his eyes.

"All I know is—we're both the products of our respective civilizations, Kathy. Good or bad—I don't know. Who cares? Girl, go to bed! It's after midnight, and I thought we promised each other we weren't going to hash this over any more!"

The girl nodded. "I'm sorry." She rose, shading her eyes. "Jeff, tomorrow let's see if we can't find some other light bulbs *some-where*. These red things are going to drive me nuts!"

He laughed. "Talk about needles and haystacks! New York of the bright lights and I have to look for a light-bulb. Okay, Kathy, I'll find one if I have to shinny up a light pole."

"Good night, Jeff."

"Night, Kathy."

The man sat quite still until he heard the Yale lock snap shut on the inside of the door; an old sign—this had once been a well-known night club—said NO STAGS, PLEASE. Jeff slid something out of his pocket and sat looking at it. It was a key, the key that belonged to the Yale lock.

He opened the street door and went out. The hunks of jammed cars, partially smashed, still blocked the sidewalks, and many of the light-poles were down, but here and there a solitary street lamp would burn until some day the power went off at the central station. One, near the corner, spilled a puddle of brilliance into the shadows of broken concrete and brickwork. Slinking figures a foot long made eerie shadows around the old bones that lay in the street. The man barely glanced their way. Once they had made him so sick that he could not walk in a street where they lay. Now he kicked them carelessly aside. *Deconditioning*, he thought. Too many of the dead to worry about them.

Could other taboos go the same way?

Grass would come back some day and cover the bones. He wouldn't live to see it. Grass, in Harlem!

HE still held the key in his hand. Did Kathy know he had it? Two weeks ago, she had told him that she had lost it, but since she could lock the door on the inside with a turn of her wrist, he hadn't worried—until he found the key, the next day, lying almost in plain sight by the bar. Had she *lost* it—on purpose?

Jeff scowled. What if she had?

They'd have it to live with for the rest of their lives.

Their children would never know or care. . . .

"Oh, Jesus," the man muttered, and put his face in his hands, almost a childhood reflex. "Oh sweet Jesus . . ."

The new awareness of Kathy was almost that; a crucifixion. Kathy's face swam before his eyes. He did not think it was a pretty face. He never had. A fair-haired, blue-eyed woman, an *object forbidden, forever taboo, beyond desire. Doubly taboo, doubly beyond desire.*

He scrambled to the summit of a pile of smashed concrete and looked down at the river. The water was clean, now, freed of the dead fish that had clogged it for a month. The river, like the city, had its own scavengers that ate the corruption away.

A question of sin? But is there a clean-cut question of sin in these days? Morality used to be a matter of black or white, right or wrong, not all shades of—of brown, he said with his teeth clenched. He fished in his pocket for the key and sent it flying in a high arch far out over the waters. He didn't even hear the tiny splash.

"Well, that's that," he said aloud. "Clear cut. Black or white."

That was that, even before Kathy and I talked it over that

one time. You know that, Father.

Father, lead us not into temptation . . . Oh my God, I am heartily sorry for having offended thee . . . and I detest all my sins . . .

He put his hands to his temples, feeling the black crisped hair there. Who are you trying to kid—*Father*? He turned and walked back to their home. He spread his blankets, shucked shirt and pants. Under his pillow lay a curious white object Kathy had never seen. It was the one thing he concealed from her since they had come to share joint loneliness. He held it musingly a minute.

Did it mean anything now? You've lost everything else that goes with it.

Be honest now. Did it ever mean anything? It couldn't prevent this from happening—this, the end of the world!

He glanced up at the fragment of unbroken mirror over the bar and in a sudden rage raised his hand to shatter it. It only accentuated the difference between himself and Kathy. Then he stayed his hand. Mirrors meant a lot to a woman.

His own face looked grimly back at him. Neither handsome nor ugly to his eyes. Just an ordinary, brown-skinned face, the face of a Negro man about thirty years old. He swallowed, then did a curious thing. He raised the

white thing in his hand and started to put it around his neck—then crumpled it furiously in his fist. He started to throw it away, then thrust the Roman collar back beneath the pillow. Father Thomas Jefferson Brown, a priest without a parish, glared at his own image, turned suddenly away from the mirror, laughed softly, crawled into his blankets and went to sleep.

JEFF said, "Maybe it would have been easier on you if you'd been brought up in the south, Kathy. You wouldn't even have been thinking this way."

Kathy smiled and shook her head. "It wouldn't have changed much. Be honest, Jeff. What you're really thinking is—the human race isn't worth much, if it can end this way."

He laughed out loud. "At least it's not worth starting the whole bloody mess all over again," he said.

She spoke with a seriousness rare for her. "Did it ever occur to you, Jeff, that it might have been *meant*—our finding each other, from such a distance apart?"

He chuckled grimly. "Like Lot and his daughters, you mean? Frankly, no."

She rarely spoke of the thing which was so much in the forefront of their minds that it was almost never on their tongues.

But now she said "It's rather terrible, in a way. It took a cataclysm to make me realize that the problem even *existed*. If you'd ever asked me, I'd have said that civilization was just a veneer—take a man, and a woman, right out of society, and they'll revert to primitive man, and primitive woman."

*Against thy last temptations,
O Father . . .*

Should I tell her I was a priest? No. She wasn't a Catholic, she made that clear. And, with all my apologies, dear Lord, I'm not going to fight for one last soul. You made your clean sweep of the fields, and left no gleanings in the corners, and I'm not going to try to convert her. But I'm not going to tell her and let her try to make me over-ride my vows either. *A priest forever*. If you wanted Adam and Eve, Lord, you should have picked a couple of other people. I don't mind letting her think it's because I'm colored and she's white, but I'm not going to have her call me a fool because with the world ending I count on the next one more than this. *Amen*.

After a stretched silence he said "Aren't you getting tired of canned foods? I am. Let's take the boat and go across the river. There are plenty of wild rabbits—we'll shoot a few for supper. It will be a welcome change."

THE breeze over the lower Hudson blew, with a clean freshness, down from the hills. They were both hardened now to the sight of the ruined city, but Jeff found himself toying, again, with the notion of striking upriver again. The few things they had—lights, a few caches of food and clothing—could be weighed against the immense good of not having to look at the ruins every time they moved.

Then he laughed, shortly. Only the memory of what the *last* civilization had done to itself, kept his resolve firm. . . .

Above the city, grass was beginning to grow down to the water's edge, and rabbits hopped on the overgrown fields without shyness. "Look how tame they are!" Kathy said in wonder. She had been loading her pistol; now she dropped it back into her windbreaker.

"Oh, Jeff, let's not shoot them! They're such cute little fellows, and now there's nobody to scare them!"

"I could sure go for some rabbit stew," the man said doubtfully, then chuckled. "But have it your way, Kathy. Why should the last humans make themselves obnoxious to the new dominant species?"

"You—really don't mind?" She looked at him with the look he had seen so often these last

days, half imploring, half concealed.

He shook his head. "Not a bit. Maybe we'll find a pig—some of them must have gotten loose and run wild. Anyway, we're sure to find something—"

"Jeff!" The woman froze. "*What was that noise?*"

"A shot," the man said huskily, "A shot—a rifle! Kathy, there's someone else here!"

"Were they—shooting at us?" the woman faltered.

"I doubt it. Rabbits, probably, but—"

"I'll fire a signal!"

Jeff was already heading the boat to shore. He said quietly "No. Kathy, it's rotten to sound suspicious, but there could be trouble. Men, running wild—well, you're a woman."

And all men aren't like me . . . instincts tamed so long ago it doesn't matter. . . .

She frowned at him "Oh, surely—there wouldn't be trouble? After all this time? Remember how—how glad we were just to find out we weren't alone in the world—"

"Just the same, keep the gun out of sight," Jeff urged gently. "They'll probably take to us better if we're not armed. Put it away until we're sure we're safe with friends—or until we know we'll have to fight."

Obediently, the woman put the pistol back into the pocket of her

windbreaker. Jeff stood up and shouted in his ringing basso "Hello! Hello! Anybody there?"

Silence. After a long time, a thin echo rang back, "Hello!"

"That was no echo," Jeff muttered, "took too long. Hello! Hey there! Can you hear us?"

THREE rifle shots in rapid succession answered them; after a little, a man topped the brow of the hill, stood looking down for a minute, then yelled and broke into a run toward them.

"Hello!" he gasped breathlessly when he got to them. "Well, I'll be damned, a few others made it too! You fellers been here long? I been—well, hell! It's a *girl!*" His eyes rested on Kathy. "Seeing you so far off, in them slacks—and with you—" his eyes, now strangely altered, rested on Jeff. The newcomer was a thickset man, bearded, his clothes in tatters, and Jeff held himself by force from distaste. A man alone in the wilds would not feel the same obligation as a man living with a fellow human being—to maintain some semblance of normalcy.

He said quietly, "I'm Jeff Brown, and this is Kathy Morgan."

"I'm Hank Nichols," the man said. "Glad to see y'all, Miss Morgan. Jeff."

Jeff held out his hand, but the man ignored it and after a mo-

ment Jeff let it fall to his side. *Social gestures were a little incongruous now, anyway.* Nichols' eyes were still fixed on Kathy, but Jeff, remembering how, after his own long isolation, he had wept for joy, just to see another human face, thought tolerantly; half mad with loneliness. Poor devil!

Nichols asked "Any more of you in the city? I hoped—"

It was Jeff who answered, though he had spoken to Kathy; "No. I travelled all over the Midwest, looking, and finally gave it up. Katherine travelled all over New England. There was an old man—he died just before she found me."

"Katherine, eh? I ain't seen any soul either. Guess we're all that's left." His gaze at Katherine was open now and his side glances at Jeff more frequent. "I just caught me a mess of rabbits. Y'all might as well come eat with me, theirs plenty more."

Kathy was looking at the man with dismay; bearded, slouching, not exactly filthy but certainly not clean. His eyes, which followed her, made her feel strange. She caught Jeff's arm and murmured.

He smiled and said reassuringly "Steady, girl. He may not be a very prepossessing specimen, but he's one of God's creatures, after all. We're not in a position to be—" he smiled at

her, winningly, "segregationists."

She nodded, hesitantly, but clung to Jeff's arm. Nichols, turning, saw the gesture, and his eyes narrowed, an odd light behind them.

IN a small clearing not far away, he had pitched a tent, and the embers of a cookfire smoldered, smoke hanging over the untidy campsite. He squatted on his heels, skinning the rabbits deftly.

"Sure is nice here. I never got to see the country before—worked in a garage down in Kentucky. Only thing, I miss the movies. Some day I'm going to find me a movie projector someplace, must be one around. Sure lonesome, too."

"It is," Jeff agreed. "But there may be others somewhere—in Europe, Africa—we just don't know. We've no way of knowing."

Nichols tossed away a rabbit skin. Kathy took up the skinned animal. "Can't I help you?"

"Sure, baby." He handed her his knife, holding her small hand for a moment in his great paw. "Sure been missing someone to cut up my rabbits." He laughed and leered, picked up a second rabbit from the pile and began expertly trimming off the paws and stripping away the pelt. "Jeff, why don't you hunt up some more brushwood?"

The tone, casual and commanding, made Jeff seethe; but he stood up, said mildly "Right you are," and walked away. His thoughts were confused. *Oh Lord, thy practical jokes are beyond human understanding.* A man and a woman, and even a priest to marry them. Kathy had been afraid of the man—yet she was laughing with him, offering to help him. Instinct. *Each after his own kind, male and female . . .* rough and dirty and unsavory as Nichols looked, he was a man; and he could, and would recognize the instincts in himself, and in Kathy.

The thought made sickness rise in Jeff's throat; he swallowed, trying not to gag. Kathy—and that creature!

Be sensible. He'll give her what she wants and you can't—or won't. *Damned fool . . . clinging to a remnant of superstition, a vow made for a world that's ended . . .*

You protected Kathy from a dozen dangers. A pack of starving dogs. Falling walls. Rats. Savage, homeless cats, turned predatory-wild. . . .

But are you going to turn her over to a man who's worse than any of these?

He clenched his fists and his teeth, shaking, sick, fighting the need to run back to the clearing, to fight Nichols, if need be, savagely, hand to hand, for his wom-

an. But she's not yours . . . *oh God, oh my dear God . . . blessed Mother of Mercy, Mary have pity on me . . .*

Kathy screamed. And screamed again, horribly. "No! No! Jeff—help! Help! Jeff! Oh, no-o-o—!" and the cry was choked off as if a rough hand had stifled the screamer's throat.

Jeff cast thought, prayer and compunction aside; the last remnant of civilization dropped from him and he ran. "Kathy! Kathy!" he shouted. "Easy, darling, I'm coming—"

Nichols bullet struck him broadside in the lung and he toppled headlong into the little gully.

KATHY, her hands to her mouth, stared in crazy horror at the bearded man. "You—shot him! You—shot him!"

"Yeah, I shot the dam—," he said, but Kathy understood nothing of the rest of the sentence except that it was unbelievably foul. "Anyway, *that's* all over. Figured you'd be damn glad to get rid of him. What'd he do—catch you when you were alone? Anyhow, now we got rid of him. Come on, babe, c'mere—hey! What you doing?"

Kathy fumbled in her windbreaker pocket. She had become expert at shooting the swift-moving, starveling rats. *Just another rat*, she told herself, and

her hand was steady on the trigger; the slug tore away his smile, wiped the sickening memory of his leer from her mind forever. Not until she found herself kicking his limp body again and again did she realize that she was crying. She ran to Jeff, kneeling at his side, babbling.

His eyes opened painfully. "Kathy—"

"I shot him," she wept, "I killed him, I—"

"You shouldn't have," he whispered. His mind strayed. "Say—an act of contrition—"

She stared down in horror and sudden wild surmise as the man clawed slowly at the deep agony in his chest. Then he muttered, his eyes and his brain quite clear, "I was—right all along. As long as we—feel this way—we might as well—end it here. Good thing he—came along, or I would have given in . . ." he choked on bloody spit.

"Don't talk! Oh, Jeff, darling, darling—don't talk—" Sobbing, she cradled his head on her knees. His eyes, already unseeing, sought vainly to find her in the closing darkness. He muttered incoherently in Latin for a moment, then suddenly, softly, "Kathy—darling—bend down and tell me—did you lose that key on purpose?"

Sobbing, the woman bent to whisper her answer, but he was already beyond hearing. Father Thomas Jefferson Brown said clearly, loudly, "Sorry, Lord, you'll have to start from a fresh batch of clay," and died. After a minute, Kathy straightened, letting his limp body fall.

"He was right all along," she said to nobody, put the pistol in her pocket, picked up the two skinned rabbits with a grim smile, and went back to the boat alone.

THE END

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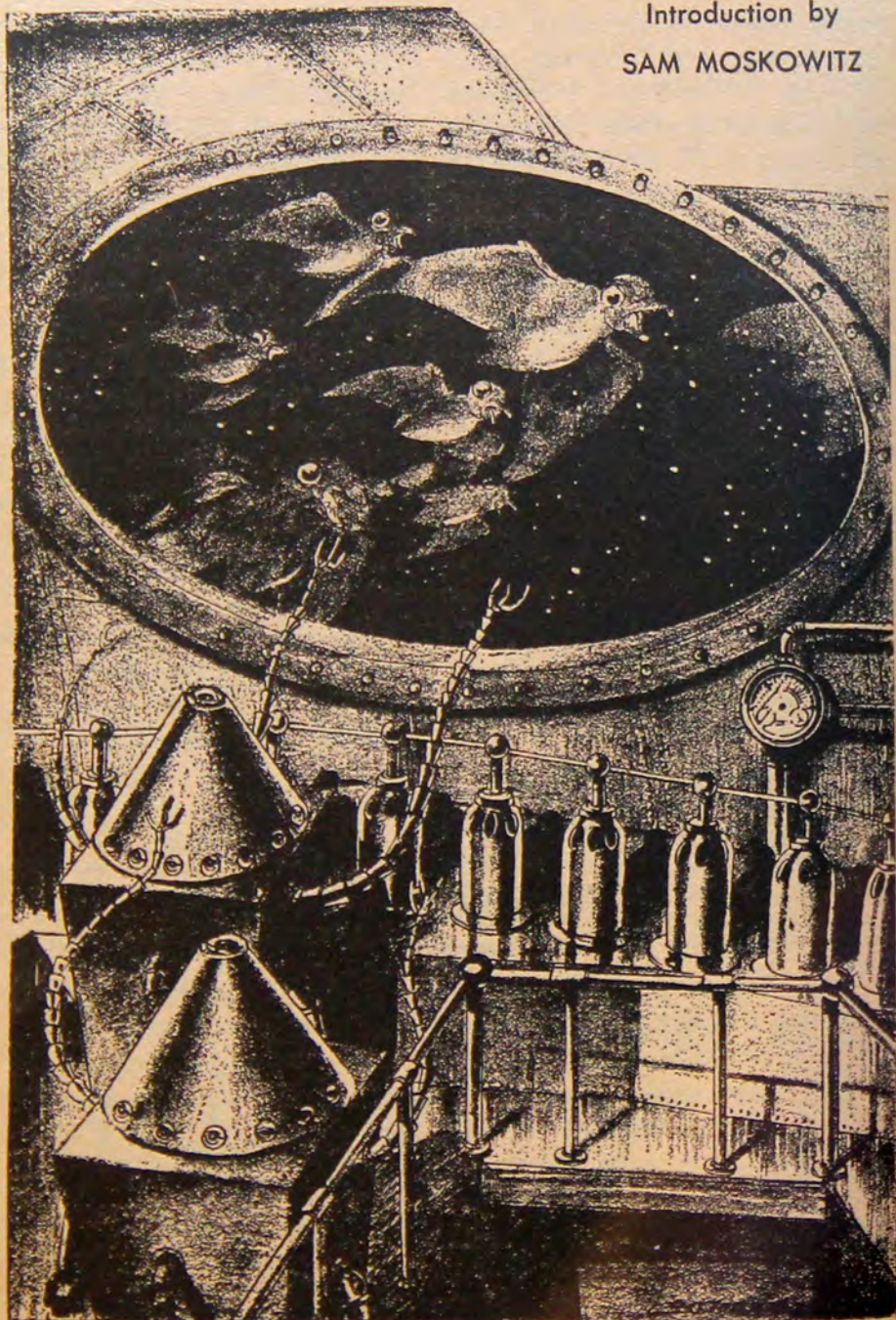
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A Classic Reprint from AMAZING STORIES, February 1932

Introduction by
SAM MOSKOWITZ



the Planet of the DOUBLE SUN

By NEIL R. JONES

THERE is no denying the popularity of the "series" story, particularly when they center about a fascinating pivotal character. No greater testimonials to the acceptance of the "series" story can be offered than the past success of entire magazines built around such talented heroes as Doc Savage, The Shadow, Nick Carter and Operator Five.

Science fiction has no dearth of characters that possess this wide appeal. Back in the heyday of the dime novel, Frank Reade, Jr. and Jack Wright invented aircraft, submarines and tanks on a weekly schedule. Second only in popularity to Sherlock Holmes, among A. Conan Doyle's inspired characterizations was Professor Challenger who ranged so effectively through the epics of The Lost World and The Poison Belt.

AMAZING STORIES has been the birth place of a number of popular science fiction characters, in-

cluding Buck Rogers, Adam Link, John W. Campbell's Arcot, Wade And Morey and Edward E. Smith's Seaton, Crane and DuQuesne. Certainly most favored by the readers was the remarkable Professor Jameson, a character who debuted in the July, 1931 issue of AMAZING STORIES in The Jameson Satellite. That story is notable on two counts; it introduced the Zoromes, a strange race of space adventurers with flesh and blood brains in metal bodies, and it presented one of the early stories of the earth satellite. It did not, however, establish Professor Jameson's popularity, doing little more than set the stage. The second story, The Planet of the Double Sun, was the one really responsible for eliciting a strong response of approval.

Seemingly immortal, his human brain in a metal body, Professor Jameson, once an earth man, would now explore the universe with the Zoromes. And

what he found was several cuts above the ordinary run of adventure. With all their advanced science and their metal bodies the Zoromes were far from immortal and before they departed from The Planet of the Double Sun, their existence as a functioning unit would be considerably in question.

In this story the reader will find elements of the psychology that made Isaac Asimov's masterpiece *Nightfall* so effective, though there is no direct link or influence between the two tales. The special success of Neil R. Jones also bears a corollary to Asimov's, since in this instance, *The Planet of the Double Sun* is

essentially a murder mystery. The research for the culprits and the perils along the way, provide suspense that augments the various scenes on the strange world.

The momentum provided by *The Planet of the Double Sun* was to a great degree responsible for carrying the Professor Jameson series through 21 published stories which ended just about 20 years after the publication of the first in 1931. This reprinting provides the opportunity for the modern reader to experience some element of the "series" magic, which has infected countless readers of all types for generations.

The Machine Men of Zor

PROFESSOR JAMESON stood in the fore of the space ship and gazed philosophically into space, ruminating upon the past, present and future, and upon the strange events of his life. How weird and unbelievable it had all been. Yet, here he was, one of the machine men of Zor, a convert of the dying world.

Forty million years had passed into the uttermost realms of eternity since that far gone day on which the professor, in the year 1950, had ordered his dead body enclosed in a rocket and shot into space on the belief that

his corpse would withstand the rigors of time eternal. His funeral rocket had become a satellite of the earth, a cosmic coffin, pursuing its lonely way within the silent, restful graveyard of space, the endless vacuum between worlds—a meteor amid cosmic dust.

For more than forty thousand centuries, the body of Professor Jameson, true to his theories and predictions, had remained wholly intact, untouched by the hoary palm of time. The vacuum of space had preserved his dead body, and forty million years later, when the expedition from Zor had found him, he was in the

same state as upon the day of his death.

Born of the sun's incandescent mass, the earth, with its sister planets, was destined to return to its death within the fiery globe. Following the venture of Professor Jameson, kept secret from the world by his nephew, Douglas Jameson, the world had continued its rapid strides in scientific progress until one day, centuries later, mankind had destroyed itself in a great war. Out of the reigning chaos, the remnants of agonized humanity had degenerated into barbarism and savagery, finally disappearing entirely from the earth.

Then there had come various other cycles of living beings who, in their various forms, ruled the earth for their allotted time and then, like mankind, had faded into dust and obscurity. There had been the ant-cycle, and the bird-cycle, as well as the Terseg invasion from Mars. The latter represented a horde of queer animals with wings, who, being gifted with scientific intelligence, had, through necessity, journeyed across space to the earth, to escape the chill, dying atmosphere of the little red planet.

But to all this history subsequent to his death and journey into space, Professor Jameson had been completely oblivious.

With the distant stars as his only companions, he had roamed in the state of death upon his orbit around the huge ball of the rotating earth.

During this entire period the sun slowly lost its heat as did the earth and the other planets of the Solar System. The earth's atmosphere became rarer, and slowly wasted away. Life did not find it easy to flourish as it once had. The rotation of the earth gradually slowed up, and, attracted by the sun's immense gravitation, gradually circled in closer to the solar luminary. The sun's great pull would soon draw its planets back to the flaming folds from which they had been hurled out on their career.

Then came the Zoromes, wanderers of the seas of space, who, in their space craft, passed the vicinity of the dying world. The machine men from Zor had discovered the strange rocket, and they had brought Professor Jameson back to life, removing his brain from the body, stimulating it into activity once again, and placing it in one of the metal machines.

The professor allowed his glance to drop from the darkness of space, studded with its fiery points, to his metal anatomy. A great metal cube upheld by four jointed, metal legs constituted his body, while six metal tentacles curled outward from the

upper structure of the cube. A cone shaped head of metal surmounted the body, enclosing the brain. A series of eyes encircled the head, and one eye was in the peak, possessing the power of looking straight upward.

He was now a Zorome, one of the deathless individuals of a far-off world of the Universe. Millions of years ago the Zoromes had renounced their flesh and blood bodies and had invented the machines which knew no death but only repair and replacement. Theirs was a life of eternity and continual adventure, and being given the choice of eternity or death, Professor Jameson, after a bit of hesitation and consideration, had thrown his lot with the machine men.

Blue and Orange Suns

GAZING once more into the boundless depths of the cosmic void, the professor, who had been labeled 21MM392 by the Zoromes, contemplated two close-set discs of light which the space ship rapidly approached.

Another machine man walked to the side of the professor and aroused him from his dreamy reveries by a telepathic observation.

"We are nearing one of the double suns."

"How weird and beautiful

they are," said the professor, transferring his thoughts to his fellow Zorome. "One of them is a blue sun; the other an orange sun. Are there many of such?"

"Yes," replied 8B-52. "We have also found triple suns, each one of a contrasting color. Of course, even the double suns are not numerous, but among the trillions of suns in space they are not hard to find."

"I recollect," remarked Professor Jameson, "that the astronomers of my day and age viewed a few of them through their telescopes, but they were so far off, and the telescopes were so comparatively inadequate to cope with such inconceivable distances, that little was ever learned of the double stars, though they were known to exist."

"I have seen them before," stated 8B-52. "If you think the double suns beautiful, wait until you see their planets."

"I can imagine," mused the professor.

"You can imagine nothing compared to what you will see," returned the Zorome. "We are heading for the planet nearest the two suns. There are four planets to the system, and they all have their orbits about both suns. Occasionally, in the case of double suns, you will find that some of the planets revolve around each of the suns while

others of the same system, having their orbits farther from the suns, revolve around both. The suns, as in this case, invariably revolve about a common center between them, passing completely around one another at intervals."

"That would tend to produce eclipses," said the professor.

"It would," agreed the machine man. "There would be no lunar eclipses, however, seeing that the first planet possesses no moons."

"If it did possess moons," ventured Professor Jameson, "what queer, varying effects of moonlight we might witness. There would be a full moon, one side colored blue and the other orange."

"We shall observe such a phenomenon from one of the other planets before we leave this system," stated 8B-52. "The second planet has two moons and the third one has four moons. The fourth and last planet, however, like this one, has not a single moon."

Together they gazed in rapt wonder at the fascinating contrast of blue and orange colors of the great flaming globes.

"Then we shall land on the inner of the four planets?" asked the professor.

"Yes, 21MM392," replied another of the machine men who had just come up and joined the

two. He was the leader of the expedition, 25X-987. "It should be a novel experience, your first meeting with the planet of a double sun."

"I have had many a wonderful adventure with you since you took me from my rocket," said Professor Jameson appreciatively. "It is with keen anticipation that I look forward to this exploration before us. As you say, it will be my first sight of a planet having a double sun of bi-colors."

More of the Zoromes crowded about the three. The machine men were never tired of hearing the discourses of Professor Jameson. He was educated and had taken quickly to their ways and philosophy. He was an interesting figure among them, and in their emotionless, companionable manner they had grown fond of him. His viewpoint was that of an earth-dweller of some forty million years before, and his ideas, though sometimes appearing grotesque to them, were indeed unique.

And now they discussed the double sun and the retinue of planets as the space ship raced on at a fantastic speed ever nearer the bi-luminary of the starry heavens.

Time meant little or nothing to the Zoromes. They never slept, their bodies required no food or fuel of any kind, and

there was no night or day in space. They took no trouble to measure time by any manner even though back home on the planet, Zor, the machine men kept a record of time by which they might measure history. The machine bodies of the Zoromes never irked them as flesh and blood anatomies would have done, and time being merely relative, as it truly is, passed swiftly for them. Monotony was an unknown quantity among the machine men of Zor.

The twin globes of the two suns gradually grew more flaming and brilliant as the space ship neared the inner of the four planets. The blue sun appeared slightly larger than its orange contemporary, though less brilliant.

A Wondrous World

SLOWLY the space flyer of the Zoromes descended upon the planet of the two suns.

"How beautiful!" expressed Professor Jameson in awe. "What unparalleled splendor!"

"It is indeed so," agreed 25X-987.

The sunlight from the two suns, which were situated several million miles away from one another, presented an alluring color effect upon the side of the planet facing them. From one portion of the rotating planet,

an observer would have seen the blue sun in the east just above the horizon, while the orange sun was just past its zenith. From another position upon the planet, it would seem that the orange sun was just sinking, while the blue sun rapidly neared its zenith.

It was at this latter point that the space ship came to rest upon the surface of the strange planet bathed in its unworldly glory. Looking down from the cosmic traveler far above the atmosphere, the surface represented a weird blend of blue and orange hues. The view upon the planet was even more vivid and alluring, the two colors blending, clashing and contrasting as the case might be, depending upon the nature of the topography.

The Zoromes left their space flyer and walked out upon this strange planet of kaleidoscopic beauty. In temporary silence they viewed the exotic magnificence of the world they had come to explore—the planet of the double sun.

Never, thought Professor Jameson, had he seen aught to parallel its awesome, unearthly elegance. Truly, the mental vision of heaven by the early saints of Christendom could not have excelled this world of paradise for the optical senses.

A rolling, undulating landscape of hills and valleys

stretched away in every direction. Beautiful trees grew out of a luxuriant riot of vari-colored vegetation, their tall tops bending over on every side, feathery festoons of misty, trailing creepers adorning their branch ends swaying ever so gently in the breeze. Many shades of moss carpeted the lower extremities of the massive tree trunks, while in the upper foliage of the forest giants, birds of lovely feather and plumage trilled sweetly or else echoed strange calls entirely foreign to the ears of the Zoromes. Lovely shrubbery, interspersed here and there with open spots of violet sward, dotted the landscape as far as the eye might reach. Flowers of gorgeous hues bedecked the sun-kissed hillsides, their lovely heads nodding dreamily, as if welcoming these strange creatures to their wondrous world.

From where he stood with his companions upon a comparatively lofty eminence, Professor Jameson gazed out over a silent sea whose waters spread away to meet the far distant horizon. The crystal clear atmosphere of the planet appeared to be of a rarefied nature, or else it supported little dust, for several stars of the first and second magnitudes were clearly visible within the sapphire vault of the sky's illimitable depths. The blue sun, being of a slightly fainter

intensity than its lesser companion, now occupied the zenith, being not quite directly overhead, while the orange sun rested upon the watery horizon, preparing to sink out of sight.

THE latter sun threw a rippling path of strange-hued rays across the violet-tinted ocean which lay calmly lapping its flowered shores. It was such a lane down which one might have expected the immortals to have walked. Had the Zoromes been of a nasal sense, intoxicating fragrances of the verdure's surrounding blossoms would have crept up to them from the dense foliage bordering the sea.

The orange sun's burnished disc drew gradually toward the vague line which marked the blending of violet water with sapphire sky. The burning orb slowly sank among a few wisps of multi-colored clouds drifting on the far distant horizon of water like dim, ghost ships. Sinking, sinking, as if reluctantly bidding its blue contemporary farewell, it passed slowly into the translucent depths of the peaceful sea which lapped a distant shore.

And now, except for the orange and golden sunset, a wonderful, blue transformation took place, and many of the blossoms were seen to close their petals. It was a deep, somber blue, and the

Zoromes felt a strange influence overcome them, as if an intangible presence held their minds in a grip of morbid imaginings. Like an oppressive mantle, it altered the previous cheerfulness of the beautiful world.

Near the shores of the ocean, the Zoromes had noticed thousands of rough, craggy protuberances projecting above the water line, literally thousands of them extending in heterogeneous array for some half mile from shore. Now, as the blue sun reigned supreme in all of its azure majesty, mysterious ripples broke the surface of the silent sea, and strange animals of the water crawled out upon the miniature islands. They were medium-sized creatures, fully half the size of the machine men, and were equipped with eight flipper-like appendages.

Raising their heads to the blue orb in the sky, they voiced in unison a weird, wailing cry, which rang dismally in the ears of the Zoromes.

"This is nearly as oppressive as your dying world, 21MM392," spoke 25X-987, addressing the professor. "What a contrast there is here between the shining of the orange and blue suns and the blue sun alone."

"I should say that it was much more oppressive here at this time than on the dying world which you called Earth," ob-

served 72N-4783, an eminent philosopher of Zor. "I have the feeling that there is an unseen presence about us."

"Perhaps it is the influence of the blue sun and the dismal wailing of those water animals," suggested Professor Jameson.

"No," replied 25X-987. "Such things do not affect us. We are too accustomed to strange scenes for that. We shall journey over the planet and see what we can find."

"In the space ship?" asked 9G-721.

"No. We'll leave the space ship here with half our number. The rest of us will explore, using the mechanical wings."

Exploration

AND so it happened that half of the Zoromes, twenty-five in number, were detailed to stay with the space ship while the remainder, including 25X-987 and Professor Jameson, went upon an extended journey of exploration over that part of the planet in the vicinity of the interstellar flyer.

With the mechanical wings attached to their metal bodies, the Zoromes flew low over the surface of the planet, and were soon far from their companions and the space ship. The wings were capable of propelling the machine men at a fast rate over the sur-

face of the world, and they traveled steadily with few stops until the setting of the blue sun.

Then there fell an intense darkness, and down from the sky gleamed a multitude of fiery stars. There they stretched across the dark expanse of heavens like the flaring sparks of some mighty, universal conflagration, which, in a literal sense, they truly were. It was equally true that among their flaming sparks there were many dark, cooling embers which had once been brilliant sparks themselves. Of the latter rank was the earth, one of the cold, dead cinders, and soon its cooling sun would also become a burnt-out ember. Such is the law of the Universe.

With the setting of the blue sun, the Zoromes descended for a conference.

"The night will not be long," said 25X-987. "The orange sun will soon rise."

"The planet has three times as much daylight during the present situation of the suns as it has darkness," spoke 8B-52. "The suns revolving about one another give to their planets different phases of daylight as well as the varied periods of daylight and darkness. There is usually more daylight than darkness in the case of these double suns, but occasionally the two periods of daylight and darkness are equal. The period of darkness is never

longer than the period of daylight, unless the planet's axis is tipped as was the earth's."

"I do not experience that uneasy feeling since the blue sun went to rest," mentioned 72N-4783.

"Nor I," exclaimed 9G-721.

"It has something to do with that blue sun," said 25X-987.

"When the orange sun is not in sight," added the professor.

"We shall find out the reason before we leave," stated 25X-987.

The Canyon of Death

TRUE to 25X-987's prediction concerning the rising of the orange sun, it was not long in coming. First there was a suggestive lessening of the darkness in the east, followed by a bronze haze which gathered rapidly until in a burst of glory the flaming orb of the great sun broke above the horizon.

Under the dazzling brilliance of the solar orb, the Zoromes took to the air once more, continuing their tour of exploration. They found they were approaching a comparatively barren section of the planet. Deep canyons lay below them, and there grew but little vegetation.

25X-987, followed by his twenty-four companions, soared down out of the sky and into the deepest canyon, the high, rocky walls rising far above the Zoromes as

they flew lower and lower into the depths. Professor Jameson judged the bottom of the rocky defile to be some two miles below the surface. Farther and farther they sank within the cavernous maw of one of the great scars which extended across the face of the planet.

Finally the bottom was reached, and the machine men of Zor found themselves in a semi-darkness which had not yet been penetrated by the sun's rays. Indeed, the suns would of a necessity be high in the heavens to send their rays down into the long, ragged pit in which the Zoromes now found themselves.

"Look-" exclaimed 9G-721. "It is a pit of death! See the bones!"

Following the wave of 9G-721's tentacle, the rest of the machine men saw that the floor of the canyon was littered with white, gleaming bones. They were strewn about profusely, and in the semi-gloom of the deep canyon shone pale, mysterious and forbidding.

"What could have occurred here?" asked the professor. "Surely, it must have been a wholesale destruction of life."

25X-987 gazed in rumination at the moldering bones. "I wonder," was all he said.

Eagerly, the machine men inspected the bones carefully, attempting a reconstruction in their vivid imaginations concern-

ing the probable appearances of the dead creatures. How might the living possessors of the bones have looked? What sort of animals were they, and why had they died in such wholesale numbers? Ah, it was a mystery, and if there was anything of which the Zoromes were inordinately fond, it was mystery. They searched for evidence of weapons used in the slaughter, but they found none, enhancing the obscurity of the situation.

The machine men spread far out, examining both sides of the canyon, but there were only the white heaps of bones to mock them.

"They were creatures who walked on three legs," informed 8B-52, who had been spending his time with another of the Zoromes examining the bones. "They possessed three upper appendages, but they were not tentacles."

"The upper appendages were more like those of 21MM392 when we found him in the rock-et," spoke 5F-388, the other machine man who had been inspecting the bones. "They were jointed."

"Like my arms, you mean," supplemented the professor.

"Yes, that's it," affirmed 5F-388.

"Do you find the bones of any other creature besides those of the Tripeds?" asked 25X-987.

He received negative replies from the others.

"It would seem then that it was a battle which involved but one species," observed 965A-10.

"Not necessarily," countered 25X-987, enjoying the mystery of the situation. "The victors of the fray could possibly have emerged from the conflict unscathed, or else removed their dead. We do not know as yet whether there was a battle. These creatures might have died of a plague."

"I am certain they were intelligent beings," spoke one of the Zoromes. "We found these articles on some of them."

He extended to 25X-987 several small, metal articles. One of them was a curiously formed ring which had been taken from a digit, or finger, of one of the Tripeds' upper appendages. The Zoromes gathered around their leader to examine the trinkets. They were especially interested in the ring.

"There is some sort of an emblem upon it," spoke the professor.

"Three double suns!" exclaimed 25X-987. "What do you suppose that——"

965A-10 did not finish his telepathic speech which was suddenly interrupted by a message from down the canyon. Incessantly it rang in their minds.

"Come! I've found something!"

CHAPTER II

The Tripeds' Bones

THE Zoromes, as one man, made their way quickly to their companion, who had announced his find, some of them running rapidly on their four legs while others took to the air, their mechanical wings gliding them rapidly through the crystal atmosphere of the planet.

Quickly they swarmed about the machine man who had summoned them. He stood before the canyon wall, pointing upward.

"Hieroglyphics," exclaimed Professor Jameson excitedly.

There, upon the wall, were carved and painted an intricate set of pictures and symbols.

"What does it mean?" asked 9G-721.

"That we must decipher this and perhaps learn of the fate of the Tripeds," replied 25X-987.

"Look" spoke the professor, waving a tentacle at a scrawled figure upon the wall. "There is what the Tripeds looked like! See—the figure has three legs, and there are also three jointed arms!"

"And there above him are the two shining suns," said another of the machine men, pointing out the solar orbs upon the wall or rock.

"He is running," observed 72N-4783.

It was even as 72N-4783 had

said. The Triped was sketched in the act of running, casting a fearful glance over his shoulder. Nothing pursued him, however, and the Zoromes were at a loss regarding the reason for his flight.

"Here is another picture," stated one of the machine men, "and it seems to bear a connection with the other in some respects."

"Only one sun is shining in this picture," stated 25X-987.

"The blue one," commented the professor.

"And the Triped is falling down dead!" exclaimed 3R-579.

The engraver, who had put the pictures upon the canyon wall, had executed this particular sketch with masterful skill. Still casting a fearful look of terror and anguish over his shoulder, he was in the act of pitching forward dead. Around him lay many other silent companions who had fallen to rise no more.

The Zoromes now contemplated the next picture group. It was a strange one. One of the Tripeds was depicted in the act of leaping off the heights of a rugged cliff. Another, with upraised bludgeon, was about to crash it down upon the skull of a comrade, while others, apparently horror stricken, rushed forward to foil the consummation of the terrible deed. Above this scene the blue sun held sway.

The last group of pictures was the strangest of all. The orange sun shone brilliantly, surrounded by a blue ring. The Tripeds were shown running hither and yon, while above them in the air flew dim, shadowy, menacing forms. The Tripeds were evidently trying to avoid them.

"What does it mean?" queried several of the machine men.

"The two suns are in eclipse for one thing," said 25X-987. "As for those creatures in the air, we have not met them here as yet."

"We have seen but few creatures of any kind, come to consider the matter," observed Professor Jameson. "There were the water animals who voiced their weird cries, and we have seen many birds of varying species, but do you know that in all our traversal of the forests we have seen no animals?"

"That is true," mused 72N-4783.

They now inspected a new row of pictures above the ones at which they had been looking. In one picture the orange sun shone alone. Below it, the Tripeds were engaged in various peaceful duties. In the next picture, both the blue sun and the orange sun shone. The Tripeds were still engaged in the occupations of their everyday life. In the third picture, which was the last of that group, the blue sun shone by it-

self in the azure sky, and below it not a Triped was in sight. Only one object was visible, and this appeared to be a symbol of some kind. There was a round, white object, under which rested a six pointed cross.

Weird Symbols

IT is the skull of a Triped with three of the upper appendage bones laid across one another below it," explained 8B-52.

"The skull and cross bones," remarked Professor Jameson. "In my day and age upon the earth, such an emblem meant death."

"And that is probably just what this means too," considered 25X-987. "There is something sinister in that blue sun, though I am at a loss to know why it should be so."

"Then our morbid feelings we experienced beneath the sole reign of the blue sun were not our imaginations?" queried the professor.

"Never," replied 25X-987. "It is not like the Zoromes. That blue sun held some terrible menace over the Tripeds."

"Perhaps its rays killed them," ventured 43V-73.

"I doubt it," spoke Professor Jameson. "They appeared well and happy in the sunlight of both the solar orbs."

"But," argued 43V-73, "could

not the rays of the orange sun have nullified the death rays of the blue sun?"

"Possibly," was the professor's partial agreement.

"Behold!" cried one of the Zoromes, pointing a long tentacle above them.

The attention of the machine men was focussed directly upward through the single eye in the peak of their heads. Far, far above them on the canyon's western lip there shone a blue haze.

"The rising of the blue sun!" exclaimed 25X-987.

The machine men of Zor followed the canyon's long, winding course. Sometimes it grew narrower and then again it would broaden out once more. Small side canyons now commenced to run into the larger crevice, many of them being far below the level of the main canyon floor, so that the Zoromes often looked into the dark, giddy depths of canyons within a canyon. Several times they found piles of bones of the long dead Tripeds, some of them crumbling to a white powder when touched. Occasionally they came across mysterious writings and illustrations.

One of the pictures appeared to warn all trespassers to avoid searching the canyon any farther. It was an ominous warning to go back. The symbol of the skull and bones lent it emphasis. But still the machine men fol-

lowed the deep canyon's course, and now it commenced to get darker, and the crevices and chasms in the rocky floor grew more numerous, so that a good share of the time saw the machine men of Zor on the wing.

"The orange sun is setting," said 25X-987. "The blue sun has passed its zenith."

"Have you noticed anything peculiar regarding those suns?" asked the professor as he watched the ebbing glow of burnished bronze upon the high cliffs above them.

"They appear nearer," replied 25X-987.

"But they are not."

"No. It is merely their revolutions about one another."

"The distance between them never varies at any time."

"The orange sun has gone below the horizon," spoke 25X-987.

"How beautiful it is when they are both shining, and how depressing and deathly when the blue sun shines alone."

Suicide and Tragedy

THE Zoromes continued on between the towering walls of rock. The blue, gloomy haze which now settled down about them like a dismal shroud of despair seemed scarcely to lessen the Stygian blackness, lending to it only an eerie, sombrous feeling of intense sadness.

"This is what one upon my planet in my day would have called 'giving a person the creeps.'" remarked the professor.

"It is queer," agreed 25X-987. "In all our millions of years of travel we have never before experienced such strange sensations, such indescribable and undesirable feelings. I believe it is what you explained to us as fear, 21MM392, that frame of mind we have never yet known."

"It might be termed that," replied Professor Jameson, analyzing the situation of the machine men. "Never having known fear before, you are not in a position to know whether or not your sensations are born of fear. I have known the sensation of fear many times in my past life upon the earth, and can readily recognize it. Our present sensation is not so much of fear as it is an ominous warning of danger which constantly disturbs our minds. Were it fear, my friends, we should experience the desire to depart from the canyon at once, spread our wings and fly back to the space ship. As it is, we have not the slightest inclination to do so."

The professor's logic was convincing.

Ahead of them there suddenly occurred a commotion. The Zoromes milled excitedly about the edge of a ragged pit.

"Seize him quick; he knows not what he does!" came the telepathic message ahead of 25X-987 and the professor who, absorbed in their conversation, had lagged in the rear.

"He's gone!"

"We were too late!"

"What's up?" inquired the leader of the expedition, flying quickly over the heads of those before him.

The professor followed swiftly behind him.

"7L-4208 developed a sudden disease of the mind, we believe!" came the reply. "He took off his wings, laid them down upon the edge of yonder crevice, and before anyone could restrain him, had jumped!"

"Head first!" added another of the machine men who had witnessed the mad act.

"Such occurrences are rare and do not happen for ages at a time!" exclaimed 25X-987. "Go down to the bottom of the pit, and see if he can be saved."

Swiftly, several of the machine men flew down into the darkness and out of sight. It was a long while before a reply came up to them.

"He is a mass of wreckage!"

"His brain! His brain!" inquired 25X-987 anxiously.

The leader of the Zorome expedition received an answer in three cryptic words laden with deep portent. "It is destroyed!"

"7L-4208 is dead!" lamented 25X-987 in regret. "21MM392, you have witnessed something which is practically unheard of—the death of a Zorome. Your coming added one to our ranks now our number is the same as before. Evidently something went wrong with 7L-4208's brain, prompting him to do the rash, unreasonable act that he did."

"Either that or else it was the dismal influence of the blue sun," spoke Professor Jameson suggestively.

"Impossible," stated 25X-987. "We are not susceptible to such influences."

DO you remember my sensations just before we left the dying world, and how near I came to doing the very same thing as that which 7L-4208 just did?"

"Certainly," replied 25X-987. "But you must remember that your mind is a great deal different than ours in structure, even if we do enjoy a mutual exchange of ideas. We are immune to any outward attempts to sway our judgment."

"Indeed," agreed the professor, "our minds are much different."

"Silence!"

The caution came suddenly from one of the machine men. Each and every Zorome halted and stood motionless that his

passage over the canyon floor should emit no noise. The rattling, scuffing and clatter of metal limbs against rock ceased.

"Do you hear it?" asked the machine man strangely.

"Hear what?" asked 25X-987.

"Listen—there it is again!"

Mystic Sounds

AND now to the Zoromes there came a hum, a low, droning buzz as if from far off—yet very near. For a time it hung on a long, monotonous, doleful note, which gradually arose to a faint wail.

"What an awful cry that was!" observed 72N-4783.

"If I possessed bones, it would have chilled them," said Professor Jameson.

"Did you recognize how nearly the last half of that cry resembled the sound emitted by the water animals we saw on the tiny islets of the ocean?" asked 25X-987.

"Yes," replied the professor, "but that cry came from something else—not from the water animals."

"There it is again!"

"I hear several—they mingle together!"

"It is coming nearer!"

"From where?"

"Around the bend ahead of us!"

"No, from behind!"

"Out of the air above us!"
"From the walls of the canyon!"

"It emanates from all around us!" exclaimed the leader of the Zoromes. "How unusually excited my men have become, this is not their usual way! I too feel a tensity—it is strange."

In truth, the Zoromes were not acting like their usual selves. Excitement strode rampant among them. Some of the machine men betrayed a bit of nervous panic which was radically unlike them. Awe had supplanted their customary, stolid indifference.

Above, the blue sun now poured its suffused light straight down into the canyon, its azure orb set like a flaming jewel in the depth of sky. Like a scattering of lesser gems, the fiery stars gleamed in riotous profusion beyond the circle of its aura of closer light.

The low buzzing and hum became more intense, and appeared to rise and fade all about them. Frequently the hum would rise and terminate in a dismal wail. They were the most deathly cries the professor had ever heard, and his companions, the Zoromes, seemed strangely affected.

"Help!"

The cry rang in the minds of the machine men.

"Help!"

With a tremendous leap, one of

the Zoromes had repeated the act of 7L-4208, jumping into a deep cross canyon, his wings folded uselessly against his metal body. From the doomed man, there came an unintelligible gibberish mixed with wild thought pictures.

"He pushed them off!" elucidated 8B-52 excitedly to his superior who had leaped to the edge of the precipice. "22D-5 shoved 429C-257 and 98S-533 off the edge just before he himself leaped! The cry for aid came from 429C-267!"

"What madness is this?" asked 25X-987 in desperation. "What possesses my men,"

From the dark canyon's depth into which the three Zoromes had pitched to their deaths there issued a whirring noise. Up out of the gloom there hove a dark object which flew aimlessly in and out of the darkness a moment before it came to rest upon the edge of the pit.

"98S-533!" exclaimed several of the machine men simultaneously recognizing their companion.

"I spread my wings just in time to check my swift descent!" stated 98S-533. "Someone pushed me off as I was standing on the ledge looking down!"

"It was 22D-5!" informed 8B-52. "He also pushed 429C-267 just before he leaped himself!"

"This is terrible!" stated 25X-

987. "There is a presence within this canyon whose menacing influence is irresistible. We must see if our two comrades are within our power to save, and then we shall quit this gloomy place."

22D-5 and 429C-267 were found to be irreparable. Their metal skulls had been crushed like egg shells.

Like a horde of departing birds, the machine men spread their metal wings and flew far up to where the canyon walls began, evacuating the blue depths of the immense crevice with its insidious humming and unseen, haunting death which played grimly upon the minds of the space wanderers.

"I have never encountered such a horrible place as this before," deplored 25X-987 to the professor, as up through the air they coursed far above the canyon. "We have met and overcome much flesh and blood opposition in our wanderings, and we have successfully repulsed the attacks of scientifically organized beings of other planets without casualty to our ranks. Here is an enemy or invisible entity which wreaks death by suggesting a self-imposed destruction."

"What are you going to do?" asked Professor Jameson.

"Return to the space ship, bring it up here, and with our scientific apparatus discover why our comrades plunged to

their deaths. We shall then remove the menace, whatever it is."

The Insidious Menace

A CALL came from the rear. "We are short four men!" "We must go back," stated 25X-987, "and rescue them!"

"27R-410 is beyond rescue!" stated one of the machine men. "When we had arisen half way up through the canyon, he unscrewed his head and threw it back into the depths! His body flew onward aimlessly for a ways before it crashed into a canyon wall and smashed to pieces!"

"We must go back!" repeated 25X-987 resolutely.

"To return is death!" impressed Professor Jameson upon his friend's mind. "We shall return in the space ship if we return at all! It is rash suicide to turn back! You saved me from that once, and now I am determined to save you!"

"You are right, 21MM392," agreed the leader of the space expedition finally. "We must leave this vicinity as soon as possible. Our group now numbers eighteen. We must hurry back to our comrades."

Swiftly they flew back over the barren country of the canyons. Beneath the smoldering glow of the blue sun they saw afar off on the horizon the thin line of vegetation which marked the begin-

ning of the great forests.

"That sound—that terrible humming sound!" warned 25X-987. "I hear it again! We are being pursued! Put on speed!"

"It is no use," declared Professor Jameson. "The terrible sound comes from before us as well as from behind us."

"Let us gain the space ship where we are certain we shall be safe."

"We'll be much safer when that blue sun has set," opined the professor. "You know, I believe that some form of radio activity emanating from that blue sun is responsible for all this."

"Would it create that humming noise as well as bring disorder and death into the minds of my unfortunate men?"

"Perhaps."

"We shall find out."

"Where are the rest?" asked the professor, looking back.

"There is no one behind us."

"We have flown far ahead of them," observed 25X-987, "unless——"

"Unless they have succumbed to the menace," finished Professor Jameson.

25X-987 sent out a call. There came an answer from behind, and as the two machine men wheeled in the sky they perceived upon the horizon three black dots which rapidly overtook them. They proved to be three of the Zoromes.

"Where are the others?" asked 25X-987. "There should be thirteen more of you."

"They dove to their destruction along the way back!" exclaimed 8B-52. "This is a veritable death hole!"

"Were they attacked?"

"No. Either something happened to their wings or else they left us voluntarily."

"Some of them flew madly into one another, cleaving each other's wings off and thus ending their lives," said 305N-56. "I could declare that some of those accidents were no more than vicious attacks. They were completely demoralized. It occurred just after you and 21MM392 forged ahead of us and out of sight."

"This is the worst yet!" ejaculated 25X-987. "Thirteen of them—I have lost twenty now!"

Struck dumb by this latest tragedy within their ranks, the five remaining Zoromes winged their way rapidly back over the luxuriant forests and dense verdure toward the space ship and their companions they had left with it. And as they sped on over forest, hill, valley and stream, the blue sun set in a murky haze of azure, bringing on the darkness.

The Zoromes immediately felt a peace of mind as the blue orb disappeared below the horizon. The malignant pressure upon

their minds abated, and no longer did they sense the sad promptings of the evil influence. The humming in the air had ceased a short while before sundown.

CHAPTER III

Death's Feast

PRESENTLY they neared the space ship, and as they did so the telepathic communications came thick and fast.

"A terrible thing has befallen us while you were gone!" stated a voice from the space ship. "We are nearly wiped out—but two of us remain!"

"What happened?" demanded 25X-987, fearing the worst.

"A strange thing occurred among us! Our comrades went crazy mad, killing each other and themselves!"

"You mean—you mean—during the reign of the blue sun?"

"Yes—that was it!"

"And were there humming noises?"

"Many of them—and the water animals came up and wailed."

"There are but two of you remaining? What happened to the rest?"

"Some of them are at the bottom of the ocean," replied 69B-496. "They flew above the rocky crags and disappeared under the surface when the water animals voiced their weird cries. Then, too, several of them smashed in

each other's heads in hideous combat. 4C-9721 even spread death among us with the ray gun before we overpowered him. He later answered the lure of the wailing water animals. He is somewhere out there."

69B-496 pointed a tentacle into the darkness toward the silent sea with its rough, jagged islets.

"They were possessed of the devil!" exclaimed Professor Jameson.

"What do you mean?" queried 25X-987.

"Merely an earthly expression which at present comes nearest to solving the situation."

"Where are the rest of your tentacles?" inquired the leader of the Zorome expedition, glancing over 69B-496.

The latter machine man stood before them with but two of his six tentacles remaining. In place of the other four, there projected only ragged, metal stumps.

"The ray gun wielded by 4C-9721, did it," replied 69B-496. "It cut a clean swath clear through 149Z-24, but luckily it didn't hit his head, and he can be repaired."

"Bring me down," issued a new voice, breaking in upon the thought transmissions.

69B-496 reached upon a shelf and brought down the peaked head of a Zorome who opened and shut his metal eyelids a few times.

"Place his head on a new body," ordered 25X-987.

"It was horrible!" exclaimed the head of 149Z-24 suddenly. "I saw them! I came near to going, and I saw them!"

"Saw them? Saw what?" queried 25X-987.

"I didn't get a good look at them, but I saw the things just the same."

"What things?" asked Professor Jameson.

"I don't know," replied 149Z-24. "They were dim and shadowy objects which floated about in the air. I had only a glimpse of them when 4C-9721 shot the ray gun among us. There seemed to be a fascinating, enticing lure they held forth to me. It was irresistible, and I came near to giving in and going when the ray gun cut through me. Then of course I couldn't and after a while the persuasion left me."

"Go where?" asked 25X-987 excitedly, eager to get to the bottom of the mystery. "Explain yourself! What were your feelings, and what made you want to go?"

"I really don't know," answered 149Z-24. "I never felt that way before. There seemed to be no definite incentive, and I do not remember any particular lure. It was a strong persuasion for me to give up thinking—that was all they asked of me—just to give up thinking. That humming

and wailing was a voice—an audible voice, not a thought voice. Yes, there were the thought voices, too, but they appeared to linger in the background, as if waiting. The wailing and humming voices were the more insistent."

"Hypnotism!" explained Professor Jameson. "Strange creatures are hypnotizing our forces to extinction!"

"Yes, but what are they?" asked 25X-987.

"And where are they?" added 69B-496.

The Mystery Deepens

25X-987," warned the professor, "we now are but seven where we came fifty-one. I advise that we leave at once to avoid complete extinction."

"But they can't get us inside our space ship, and I am going to return to the canyon of the bones to see if our companions are really beyond recall. I shall also solve the mystery, and wreak out revenge upon whatever creatures that have killed my comrades."

"Your revenge will but lead you on to destruction," stated Professor Jameson.

"But perhaps our companions, who fell back into the canyon, may not be past rescue," entreated 25X-987.

"We should investigate that most assuredly," stated the pro-

fessor, "but I wouldn't do it while the blue sun shines alone in the sky."

"That is the mystery," mused the leader of the Zorome expedition. "What has the blue sun to do with it?"

"I would forego the satisfaction of knowing," warned the professor. "It would mean stepping into a death trap."

The seven Zoromes prepared for the return trip to the canyon of the dead. The head of 149Z-24 was mounted upon a new body, and new tentacles were placed on 69B-496.

The orange sun had peeped above the eastern horizon, and now the planet of the double sun was once more transformed into a vision of celestial loveliness, a veritable Garden of Eden.

The space ship cruised far above the weird forest with their bright plumed birds and queer lack of animal life. Off toward the barren canyon of death they headed. It was only a short time after the rise of the orange sun that the blue sun hove into view, following closely upon its contemporary.

"See how close together they are," observed Professor Jameson.

"Yes," said 25X-987. "Before the sunset, there should be an eclipse."

"The orange sun is the more brilliant of the two, even though

it is a bit smaller," spoke the professor. "When the orange sun comes between the blue sun and the planet, there will be a blue ring around the orange sun."

"There is the canyon," said 25X-987, pointing to the barren lands far below where a great ragged rent cut the surface of the strange world, disappearing into the far flung horizon.

Under skillful manipulation, the space flyer was lowered into the ominous depths of the shadowy canyon, the walls rising menacingly as if ready at any moment to close in upon the space ship of the machine men, crushing it beneath millions of tons of rock debris. Or so it seemed to Professor Jameson who felt ill at ease, and was possessed of grim, gloomy forebodings.

Slowly they settled down upon the canyon floor among the white clumps of scattered bones, many of which crunched hollowly beneath the dark hull of the space ship.

"Search up and down the canyon," ordered 25X-987. "See if you can find the remains of the thirteen men we lost in leaving the place."

The search was made, and remains of most of the dead Zoromes were found. Their metal bodies and brain cases were discovered smashed and crushed where in their mad plunges plan-

etward they had come into contact with the rocky terrain.

"We are safe from the devastating death as long as the orange sun accompanies the blue sun in the sky," warned Professor Jameson. "To remain when the blue sun shines alone is rank suicide. Every one of our companions either killed himself or was killed by a comrade. None of them was killed forcibly by anything on this planet, yet some compelling influence drove them to suicide. Now that we know our friends to be unquestionably beyond our aid, I would advise most urgently that we leave at once."

"Not until I know, and have been at grips with, whatever killed so many of our men!" stated 25X-987 firmly.

"To remain is death!" counselled Professor Jameson.

"But we are now prepared, where before we were taken unawares," said the leader of the expedition from Zor. "We shall build up a mental resistance against the menace which seeks to derange our minds."

The Eclipse

BEWARE!" warned the professor. "I can now understand the reason for so many white bones in the canyon! The Tripedes died of the same malady beneath the terrible rays of that

damnable blue sun as afflicted your men!"

"We shall meet and destroy the menace!" was 25X-987's ultimatum. "Remember that we are Zoromes!"

"And that forty-four of us have fallen prey to the unseen evil within the last rotation of this planet!" reminded the professor. "Confidence has supplanted your caution entirely, 25X-987!"

"The suns! The suns!" exclaimed one of the machine men suddenly. "They are touching!"

"The beginning of the eclipse!"

"The orange sun is crossing before the blue one!"

A small tip of the blue sun had already disappeared before the encroaching, orange orb, and very gradually the great solar spheres moved into conjunction with their first planet.

And then upon the ears of the machine men fell a faint humming noise which increased in volume and intensity.

"The death call!" exclaimed 149Z-24 excitedly. "It is the death call!"

Now, there came several wails, rising to a more piercing pitch than the Zoromes had yet heard them during their brief stay upon the planet.

"Into the space ship!" commanded 25X-987.

Eagerly the machine men obeyed the order. But even within

the space ship the dismal howls and terrible humming vibration were heard. Every now and then there occurred a wailing noise which apparently issued from within the space ship itself, drifting suddenly back to the outside once more, as if the author of the hideous sound had passed through the walls of the interstellar craft.

"Look!" cried 69B-496 in alarm. "I see them! I see them plainly!"

"Where?" queried the machine men in unison.

"There!" exclaimed the Zorome, pointing above him with wildly waving tentacles.

"The shadows!" exclaimed 25X-987. "They are the shadows which fly about!"

And now all of the Zoromes perceived them as the two suns merged into an eclipse. Wide, flapping, shadowy forms they were, flying on leathern wings, the air being full of them. Queer, round heads surmounted the bat-like bodies. A pair of bright, gleaming eyes were set in the head, while below them from a wide distended mouth issued the frightful wails and dismal humming.

"You can see right through them!" ejaculated the professor.

"And they are flying through the rock walls!" added 8B-52.

"Here comes one of them for the space ship!" warned 149Z-24.

Directly toward the space flyer from Zor the ghostly creature flew, and with a piercing wail came right through it as if the ship had not been there. The phantom swooped straight down toward 25X-987 and Professor Jameson where they stood a bit apart from the rest of the Zoromes. It enveloped them and passed, the two machine men being clearly visible to their companions all the time. The wraith continued on and out of the space craft, leaving the two machine men standing together in surprise and consternation.

"The thing passed right through us!" exclaimed 25X-987 in surprise. "It must be an optical illusion!"

"That medley of sound they are making is no illusion," said the professor. "I am not superstitious, but I believe that here is something entirely beyond us. We had best leave while we may."

"Turn the ray guns upon them!" commanded 25X-987, gazing upward through a transparent section of the space ship at the horde of encircling bird creatures.

The machine men obeyed his bidding, and presently several iridescent fingers of light were probing upward to where the ghostly creatures wheeled and circled on the wing. Where the destroying rays touched the can-

yon walls the rock disappeared, leaving dark holes, but the rays had no effect whatever upon the phantoms who continued their aimless course above the space flyer.

Amid the Phantoms

VOICING their weird, depressing cries, they gazed downward upon the space ship of the Zoromes, regarding it with a solemn mien.

"They resist the ray!" cried 305N-56. "It leaves no impression upon them!"

"Seize 149Z-24!" cried 69B-496. "He has gone mad!"

Several of the machine men seized their companion, who had staggered towards a section of the craft's delicate mechanism with an upraised metal bar, evidently bent on destroying the apparatus.

"Those creatures have his mind in their power!" exclaimed 25X-987. "Quick! We must get out of here! Rise out of the canyon immediately!"

Swiftly the space ship arose from the floor of the canyon, leaving the pathetic piles of scattered bones far below. Through the midst of the phantoms they passed, not so much as perturbing them in the least. Back and forth they flew in the space occupied by the interplanetary craft as if it were not there.

A singular fact which Professor Jameson noticed concerned the queer conditions regarding the passage of the phantoms through an opaque object. Though possessed of the ability to disappear within the solid walls of the canyon, and the power to fly through the space craft at will, Professor Jameson saw that they never flew through one another. Often their wings would strike together in contact, placing either one or else both of the creatures off balance temporarily. How queer, he mused. The phantom creatures who voiced their evil, menacing cries were barely visible, it being possible for the professor to discern the cliff wall through their semi-transparent bodies.

The space ship flew above the ghostly crew, but their weird calls still lingered, and the Zoromes were possessed of the forlorn and dejected spirits which had previously been engendered by the blue moon. At a far height above the canyon the leader of the Zoromes ordered the space craft to be halted. He had no sooner stopped the ship than from below there came the humming sound which the machine men had now come to regard in loathing and disgust.

"They're coming!" admonished 305N-56.

"Wait!" ordered 25X-987.
"Don't start away yet!"

From below, two of the dim apparitions flew up around the space craft, flying back and forth through it several times, giving voice to their sepulchral wails, the solemnity of their faces entirely free of changing expression. As they flew about the interplanetary ship, through the machine men, and through any solid object they encountered, the phantom creatures grew dimmer and dimmer, until they were entirely invisible. Only their weird cries were heard, and these grew faint and dwindled away.

"The orange sun is nearly past the blue one," observed 8B-52 after the last faint hum had died out.

"The eclipse is nearly over," spoke 69B-496.

"What manner of creatures could those things have been?" pondered 25X-987.

"I believe that I have the secret at last," said Professor Jameson with gravity. "I have solved the riddle of the blue sun and the deaths of our companions."

"What is it?" asked 25X-987 eagerly. "Speak, 21MM392!"

"With all your super intelligence," stated Professor Jameson, "I don't believe you would have ever solved the problem. During all of your millenaries of exploration among the cosmic realms of space you have never encountered the likes of such cir-

cumstances as we find on this planet of the double sun. With all your super knowledge, you lack the one item of experience which my earthly life gave to me quite coincidentally, and which now places me in a position to understand the amazing circumstances through which we have gone.

Professor Jameson Explains

WHERE we stand upon this planet there are really two worlds—the world we see about us now and the world of the phantoms. The world of the phantoms, however, is in a different dimension than this one, being upon a different light and color vibratory scale. The creatures we saw are not really phantoms in the literal sense of the word. They merely appear as phantoms to us, just the same as we do to them. They are of concrete proportions in their own plane of existence, even as we are real in our own life.

“When the blue sun shines alone, it exerts a strange color and vibratory effect upon whatever part of this planet it strikes. It produces the strange character of partially bringing together these two worlds, each of a different dimension. The presence of the orange sun neutralizes this effect. The depressing influence of the blue sun which we noticed so quickly is due to the fact that

it brings together the sound and thought transferences of these two worlds. The strange quality of the blue rays has not the power to bring the two worlds into bodily contact, however, and that explains the reason for the phantoms flying through the opaque objects of this world.

“When the blue sun is alone in the sky, the voices and thought transferences of the two worlds mingle as one. The strange apparitions from the other world of this planet are responsible for the deaths of our companions as well as for the wiping out of the Tripeds.

“Do you remember the drawings we found on the rock walls in the canyon of death? Everything was depicted as peaceful beneath the reign of the orange sun alone, as well as during the shining of both suns, but under the spell of the blue sun, we saw a great havoc wreaked among the Tripeds. Suicide and murder stalked rampant among them, and death finally took its toll of the entire race just as it destroyed our companions.

“Then we saw the illustrations of an eclipse of the suns, the blue sun being eclipsed by the orange one. Beneath it, we saw the Tripeds pursued by this malignant horde of shadowy appearing birds, phantoms such as we just saw. They are visible to us only during an eclipse. A mysterious

action of the blue rays around the orange sun during an eclipse brings about a partial visibility of this hidden world, though I truly believe that while the blue sun shines solitary the denizens of the other world can always see us. It stands to reason.

THE CREATURES we saw from the other world are of a warring, destructive nature. By a hypnotic power peculiar to them, they seek to destroy the animals of this world by mentally reaching across the boundaries separating the two planes of existence and wiping them out by overpowering, mental suggestions of murder and self-destruction. This power, as you have already witnessed, is great enough to even counterbalance the super-intellect of a Zorome, though I believe that they themselves are possessed of no great intelligence. Their propensity for hypnotism is not necessarily derived from a magnitude of brain power. I believe it to be a birthright similar to that of the electric eel of my own planet about which I once discoursed to you. Hypnotism and occult power is their birthright even as the power to exude electric shocks is the eel's natural ability."

"Why didn't they kill the birds we saw in the forest, and also the water animals?" asked 25X-987, greatly impressed by the pro-

fessor's impressive conclusions.

"That I can't say for sure," replied Professor Jameson. "It explains the lack of animal life in the forests. As to the birds, I might venture the suggestion that they are so much like the creatures of the other world that they have sentimentally been spared. Perhaps the water animals' environment renders them impregnable to the suicide inducements of the other world entities. Then again, they may have something in common with them. Their cries were similar, and they emerged from the water only when the blue sun shone alone."

"You are a genius, 21MM392!" exclaimed 25X-987 admiringly.

"Not necessarily," said the professor. "You see, when a young man at college, I was very much enthused at one time in hypnotism, and though unable to exercise it myself, I read a great deal concerning it."

"With all our traveling from planet to planet—from sun to sun—from system to system—we have never before come across what you call 'hypnotism'. I can readily perceive that it is the key-note to this mystery, and were it not for you, the puzzle would forever have remained unsolved."

"And can you now understand why it is imperative that we leave at once?" asked the professor, gazing apprehensively at the

blue sun. "Even now the orange sun has passed from before the face of the blue one, and is sinking beneath the horizon."

"Now I realize how 149Z-24 saw the shadowy forms when he came near to answering their lure," said 69B-496. "The light from the ray gun combined with the blue sun's rays and the fact that he was under the hypnotic spell gave him the power of vision to see them."

"We must hurry from here," announced 25X-987 gravely. "21MM392 has spoken correctly. It is death to remain!"

CHAPTER IV

The Juggernaut

THE space ship rose upward on a slant, and as it did so, the orange sun, whose great shining sphere had rested half above and half below the horizon, sank out of sight. The blue sun now occupied the sky, and it would not be long before it, too, would follow its orange contemporary to rest.

Almost immediately, with the cessation of the orange sunshine, there arose upon the air the vibrant humming accompanied by its concert of sad wails. The volume of sound swelled up and around the speeding space craft, and the apprehensive Zoromes knew that in, out of and around their ship, the ghostly creatures

from the invisible dimension flew, eager to lure them to self-destruction.

"Keep control of your brains!" exclaimed 25X-987 wildly. "Concentrate as you never have concentrated before, or it is certain death!"

One of the horrible wails directly at their ears came to mock the machine man's command. Swiftly the space ship sought to leave the heavy atmosphere.

Somewhere below in the control room there came a rending crash of metal. Professor Jameson and 25X-987, in company with 8B-52 and 69B-496 rushed into the compartment to ascertain the cause of the furore.

"149Z-24 has broken loose!" ejaculated 372V-22.

The machine man who had spoken was firmly holding his mentally deranged companion with a grip of entwined steel tentacles.

"Put him in the buckler!" ordered 25X-987. "We have no time to waste if we are to leave this accursed planet of the double sun!"

But the order was never executed. All at once there occurred throughout the space ship a terrific shock. With a terrible impetus of increased motion, the interplanetary craft multiplied its speed and whirred madly on through the dense atmosphere of the globe. The Zoromes were sent

tumbling to the floor, their metal bodies and limbs rolling into grotesque heaps at the far ends of the space craft chambers.

Hurriedly they regained their feet.

"The ship will crash!" exclaimed 25X-987 wildly. "149Z-24 has broken the controls of the mechanism which regulates our speed! We are doubling speed every moment!"

"We'll crash or else burn up in the atmosphere like a meteor!" cried 8B-52.

The wind of their passing whistled eerily around the space craft. The shrieking arose to a hissing roar as the space flyer of the Zoromes rapidly gained speed on its mad rush through the sea of crystal ozone.

"Where are we heading?" asked 25X-987, expecting to be smashed into atoms at any moment.

69B-496 glanced at a dial.

"We are pursuing a long arc, in relation to the planet," he said.

"Upward or downward?" asked 25X-987 in mingled hope and dread.

"Downward!" came the hope shattering reply. "The curve of the arc is slightly greater than the curve of the planet's surface so that in view of our present altitude we shall not crash right away."

"But in that time we shall be

burnt up with our space ship!" cried 305N-56, his tentacles waving excitedly.

"The friction is becoming terrific!" exclaimed 25X-987.

"There is nothing we can do but wait for a miracle!"

"Or death!" added Professor Jameson.

The hissing roar had climbed the scale of sound vibrations until it was now a terrible whine. The space ship juggernauted on through the planet's atmosphere, carrying the seven machine men to perdition in its inevitable crash which the passing time brought rapidly nearer.

"It is the end!" prophesied 372V-22. "The accursed planet will claim us all!"

25X-987 appeared to have lapsed into a strange stupor, a dazed condition. He said nothing.

"We are halfway there!" came the notification of 69B-496 at the dials.

Super-Hypnotism

A WAVE of suffocating heat swirled through the interplanetary craft. The friction of the terrific speed was beginning to manifest itself. It appeared to be a race between the atmosphere and the lithosphere, to see which would claim the space ship first.

"There is nothing we can do," came the resigned observation

of Professor Jameson, "but—"

"Leap!" came the startling thought wave from the crazed 149Z-24. "Leap!"

"Leap!" echoed 25X-987, a strange concourse of thoughts mingling with the suggestion of 149Z-24.

"Leap out before we crash!" cried 149Z-24 wildly. "Save yourselves from sure death!"

"Leap out!" mused 69B-496, turning the matter over in his mind.

"Yes!" exclaimed 149Z-24 enthusiastically. "It's the only way!"

"The only way!" repeated 305N-56 mechanically. "Yes, it is the only way!"

"Come, jump out and be free!" urged 149Z-24.

"Stop!" cried Professor Jameson. "Enough! You are yielding to the will of the phantoms of the other world! They are leading you on to suicide!"

The machine men were oblivious to his warning. Evidently they had not heard him.

"Leap!" was 25X-987's only thought. It was rapidly nearing a conviction under the masterful hypnotism of the unseen creatures from another dimension. Already, they had made 149Z-24 their tool and devoted emissary and were largely spreading their insidious influence over the little group of machine men through him.

"The only way!" reechoed 8B-52.

"Cease!" pleaded the professor in a superhuman mental effort. "Do not yield!"

"I'll leap!" was the ultimatum of 305N-56, as if in reply to a request.

He moved slowly toward the door of the space ship. Professor Jameson sprang forward to bar the way. 149Z-24 was before him, however, and came to grips with the professor before he could reach the egress and prevent 305N-56 from leaving the craft.

The machine man appeared to execute the act by no volition of his own, and Professor Jameson knew it to be another prompting of the hypnotic menace.

"Leap!" continued 149Z-24. "The only way!"

305N-56 moved to the space ship door, flinging it open. Had it been in the fore of the craft the onrushing atmosphere would have smashed him backward like a feather to the far end of the room, but the egress was in the rear. Without another thought impression, 305N-56 leaped out into the deep blue sunlight and was gone. Eagerly following suit, 25X-987 and 8B-52 moved toward the opening.

"Don't!" warned the professor in vain, madly attempting to struggle from the tentacled deadlock of 149Z-24. "You are crazy!"

A sickening feeling obsessed the professor as the two machine men jumped. 149Z-24 now said nothing, and the professor perceived that his mind was in a chaos of terrible resolves. The professor knew that he was viewing the destructive thought impulses of the flying phantoms. He no longer sought to check his companions' mad intentions, knowing full well that it was useless. Helplessly he looked on as 69B-496 and 372V-22 took the fatal leap.

And now 149Z-24 released the professor suddenly and backed away. Was he about to leap too?

Then into the mind of the mentally deranged Zorome, Professor Jameson saw the horrible thought, the terrible command from the other dimension, come slowly stealing.

"Death to 21MM392!"

The professor faltered and backed away from the machine man who stood dazedly before him. The open door clanged dismally while the screaming wind still shrieked gloomily. The depressing sunlight of the blue sun spread a melancholy, azure glow into the interplanetary craft.

With the quickness of a cat, 149Z-24 grasped a heavy metal bar behind him and rushed down upon the unprotected 21MM392 to crush his metal skull.

Professor Jameson, the instincts of self-preservation still

dominant in his clear thinking mind, slumped forward as the crazed machine man struck. Two quick actions occurred simultaneously. As the heavy, metal bar missed the ducked head of Professor Jameson and placed a great dent upon his metal cubed body, the latter's tentacles closed quickly about 149Z-24's jointed legs and lifted him off the floor.

Staggering to the opening of the space ship, the professor hurled the metal body of 149Z-24 down upon the great planet which was spinning dizzily past below them.

The Last of the Zoromes

PROFESSOR Jameson made his way to the fore of the craft after having closed the door, and now he gazed out to see what lay ahead of him. The space flyer raced along, apparently on a horizontal position with the planet, its broken, uncontrolled propulsion mechanisms running wild, but the professor knew that the distance between the space ship and the planet was gradually closing.

He was the last of the Zoromes, spared but for a short interval following the fate of his machine comrades. He would soon crash to his death with the space ship.

Contrary to the assertion of 305N-56 that the space flyer

would double and redouble its speed until the friction of the air burned it up, the interplanetary craft from Zor did nothing of the kind. Though the friction with the atmosphere had produced an unusual warmth within the interior, the speed of the ship had failed to rise above a certain maximum. This was due to the solidity of the air which did not allow the tremendous velocities attained in free space.

Far ahead of him, Professor Jameson perceived a dull, pinkish glow lighting up the distant sky line in the direction the space ship was headed. The blue sun was sinking below the horizon, and the inky blackness of night hovered near as the unpiloted space flyer catapulted onward at such a remarkable speed for terrestrial travel.

The far-off pink glow the professor had discerned upon the horizon in the azure dusk had now mounted to alarming proportions, spreading a red, lurid flare far up into the sky. It was a long way off. Rapidly the space craft ate up the distance, and in the complete darkness which had now fallen, the professor saw the red, angry flare to be a tremendous holocaust leaping skyward from the bowels of the planet.

Great, scarlet tongues of flame licked upward angrily for many miles from the terrible inferno the uncontrolled space ship now

recklessly approached. Huge fragments of rock many times the size of the space craft, along with red spurts of fountainous lava, vomited skyward. It was such a volcano as human imagination could never conceive in its actual picture. The vastness of the awesome display and the boundless magnitude of the spectacle lent the impression that a ravaging eternal fire was about to consume the entire world. It was a vision far beyond the conception of Dante, beside which his inferno would have appeared belittled by the contrast.

Into this hell of upcast molten rock and seething flame the space ship of Zor careened in its mad flight. It contained the solitary machine man, 21MM392, known previously to men of the earth as Professor Jameson. As the space ship raced into the first ring of smoke and flame, the professor realized that here was a dramatic climax to his equally dramatic career. He would be burned into gas, and the residue of his body and of the space craft would be converted into lava. The crash of the ship of space would occur in a swirling lake of living fire, or else a hurtling boulder cast out by the tremendous fury of the perpetual flame and seething activity would crush the space ship in flight.

Professor Jameson, the last

Zorome of the ill-fated expedition, awaited his end with a patience born of martyrdom and philosophy. He had been a martyr to science in his earthly life, and among the Zoromes he had become a confirmed philosopher. Death offered no terrors to him. It was life's greatest adventure, if, however, a bit mysterious and menacing. But what could constitute adventure without mystery or menace of some description?

Through the Inferno

THE hell of the raging conflagration enveloped him, and produced a roaring as if all the elements of the Universe unloosed at once. Red, raging flame licked hungrily about the speeding space ship, and swirling smoke spread its murky haze around the ill destined craft. Glowing rock debris and spattering, liquid fire showered the metal sides, while by a miracle the huge boulders missed the ship in its mad flight through the raging hell.

A dizziness and weakness assailed the mind of Professor Jameson within its metal skull. The terrific heat, which would have shrivelled the body of a flesh and blood creature, killing it instantly, was now beginning to affect the metal machine man's brain a bit. The space

ship was intensely heated, parts of its metal shell glowing red. The skull of Professor Jameson was growing hot, and with a sudden lurch of dizzy senses, his consciousness departed and he knew no more. The professor's last sensation was that of being whirled rapidly over and over as the space flyer glanced from the side of a huge, smoldering, upflung rock and gyrated dizzily down into the lake of fire.

Why was it that Professor Jameson had eluded the sinister fate of his fellow Zoromes to succumb to the living fires? Why had his mind escaped the irresistible lure of the phantoms from the other world? The sagacity, wisdom and power of intellect of the Zoromes had outweighed his own in most respects—yet they had fallen before the hypnotic spell to which he had remained immune.

The truth of the enigma lay in the fact that Professor Jameson's mind, as 25X-987 had once remarked, was a great deal different from the gray matter of the machine men of Zor. In justice to the Zoromes, those wanderers of Cosmic space who had stored up the knowledge of millions of years, let it be said that the hypnotic influence of the winged phantoms depended not upon the power of intellect. Their weird power of mind

across the barrier of an invisible dimension exerted its influence through the susceptibility of the mind's structure.

Professor Jameson's brain structure was radically different from that of the Zoromes and the Tripeds, and as there was no harmonizing of his mind matter with that of the winged phantoms on the other plane of existence, the professor had been immune to the fatal lure.

The professor attempted to compose his thoughts. His mind rolled sluggishly in a riot of confused mental pictures. He appeared to be drifting in an immense, unending blackness of eternal mystery. He groped—he sought about him, and found he had nothing to reach with, nothing with which to apply the sensation of touch. He scarcely knew whether or not he existed, and imagined himself merely a shadow among shadows, a bare hint of existence. Where was he—what had become of him? He wondered vaguely, but there was no manner in which to satiate his inquisitiveness. All was mystery.

For a long time he felt the presence of objects near him he could not touch, and then out of the depth of blackness before him there shone a dull, gray light. It grew slowly to gradually fill up his vision. The light whirled like a mammoth pinwheel and

then slowed up, resolving itself into three spots of varicolored light surrounded by finer points of scattered brilliance. His blurred vision was clear once more, and he seemed a bit more conscious of himself. Something long and circular lay before him. Involuntarily he moved a bit, and the thing moved. It was a tentacle—his tentacle. Then he was not removed from the body—not dead even. But where was he?

His senses and thinking power now emerged from its state of temporary incapacity to function properly. He looked upon the other side of him, lifting the eyelid shutters of the eyes on that side of his head.

He saw the interior of the space ship. Once more he looked out through the transparent side of the interplanetary craft at the three comparatively large splotches of light he had previously seen so indistinctly. They were grouped close together.

Two of them were bright disc-like objects which shone against a velvety blackness while the third object appeared as a semi-disc which glowed less brilliantly. Professor Jameson gave a gasp of incredulity. He was once more out in space far from the planet of the double sun which was represented by the half circle of light. The two round objects were the double sun, one orb blue and the other orange.

How had he escaped the volcano's fiery depth into which the uncontrolled space ship had madly rushed in its wild, unrestrained flight? The last thing he had remembered before his heat disordered brain had given way to unconsciousness, was the terrific, glancing impact with the red hot boulder cast from the blazing inferno's chaotic activity. A great indentation upon the side of the interstellar traveler mutely testified to the collision with the volcanic rock. And then, the professor remembered that through the window of the spinning space ship he had obtained a few fleeting glimpses of the white hot lake of fire rushing up at him with incredible velocity.

Eternal Loneliness

WHAT had happened? Had this final sight been the delusion of an overheated brain? Evidently the glancing blow dealt by the huge chunk of volcanic debris had driven the interplanetary ship back into space where its uncontrolled speed had rapidly taken it from the vicinity of the planet. A plausible solution suddenly occurred to the professor. Possibly the lake of fire he had seen approaching, following the collision with the hurtling boulder, was but the reflected mirage of the lake's fiery

surface upon the bank of lurid smoke clouds hovering far above the blazing holocaust. Suffice it to say, however, that he had been miraculously delivered from the hellish fate to which he had considered himself inevitably consigned.

He arose, and made his way to the control room where he glanced at the partially wrecked machinery. He found the dials and consulted them, finding that the space ship pursued a course around the double suns. The space ship had become a satellite of the blue and orange suns even as the four planets which encircled the suns. Professor Jameson found that the orbit of the disabled space craft was midway between the first and second planets. The space ship had long since ceased its own mad speed, making the professor wonder how long he had remained unconscious. For an earthly day? Had it been a month, a year, or—or an age? It made little difference, for there in space, time was an unknown quantity, and when one is devoid of senses, time ceases to exist. The professor had no knowledge of how long he had remained unconscious and could calculate no approximate guess.

The space ship's machinery was irreparably wrecked, and Professor Jameson was doomed to a solitary, lonely life of per-

petual existence in his annual course around the double suns, enabled to watch at all times the various phases of the planet on which had occurred the death of his fellow comrades. He was the last of the Zoromes, and the only escape from the monotony of the existence which lay before him was by suicide. The professor contemptuously shunned this expedient of release.

For over forty million years he had lain preserved in death within his rocket container, to be found and brought back to life by the Zoromes. And now he was consigned by the irony of fate to a similar existence, except that, this time, he was not bereft of life and the sensation of living. His was to be a perpetual life of loneliness, in trivial comparison with the life of a flesh and blood creature of any planet.

The stars and passing comets would be his only companions, silent ones of the cosmic Universe, and perhaps occasionally a passing meteor would flit its temporary greeting before continuing its aimless pilgrimage on into the realms of eternal mystery.

Would a space ship from Zor ever chance that way some time in the eonistic future to release him from his cosmic prison?

There were many of the machine men expeditions scattered throughout space, but his disabled space craft represented the proverbial needle of the haystack, and the haystack but a solitary haystack among billions. It was a forlorn hope, with chances of a trillion to one. Better were the chances of a space expedition from one of the four planets of the double sun finding the wrecked space traveler.

Perhaps in the ensuing ages measured only in geological history, the simple forms of life upon these planets would rise through various progressive scales of evolution to an inevitable position of scientific prominence, where the art of space flying would be conquered. Then would the professor's eons of loneliness be abruptly ended, plunging him into a series of new and startling adventures.

Such a hope must lie far within the interminable future, and the fruits of such a hope were to be born only of an undying patience and a wonderful philosophy. Moodily, and in deep, meditative rumination, Professor Jameson, lost in the twisting labyrinth of his own thoughts, stared across the depths of vacuum to where spun lazily in space the planet of the double sun.

THE END



THE SPECTROSCOPE

The Sixth Galaxy Reader. *Edited by H. L. Gold. 240 pp. Doubleday & Co.,*

The Best From Fantasy and Science fiction. *Edited by Robert P. Mills. 258 pp. Doubleday & Co., Inc. \$3.95.*

The yearly anthologies are out from GALAXY and FANTASY AND SCIENCE FICTION and, as they say in the wine business, it doesn't seem to have been a vintage year. It's hard to pick and choose, but I'd say that FANTASY AND SCIENCE FICTION comes somewhat closer to the mark in over-all quality, though the GALAXY collection has a few individual stories that are enjoyable. But even though I'm disappointed in not really enjoying two books that I usually look forward to, I cannot condemn them completely for two reasons. First of all, I remember with pleasure many entertaining hours spent with these two collections in other years. Secondly, I can under-

stand and sympathize with the dilemma that must face an editor who has established a tradition of yearly readers. Should he break his chain because he doesn't have enough first-class material or should he maintain the tradition even at the expense of its quality?

In the GALAXY collection (the sixth of its kind) it is the ladies who save the day. Margaret St. Clair furnishes a highly original tale, "The Nuse Man." And in "True Self," Elizabeth Mann Borgese gives us another of her chillers, seemingly normal and natural in content, but weird in effect. Outside of these, the most interesting thing in the book is Editor Gold's brief but nicely thought out Introduction.

The pick of FANTASY AND SCIENCE FICTION's crop are the contributions by Jay Williams, a story of children on the moon; Isaac Asimov, a new wrinkle in the battle of man versus com-

puter; Clifford Simak with another tale of his own brand of alien and an interesting moral choice; and Kurt Vonnegut's satiric little "fable of our time" on equality. But to balance these contributions there are disappointments from Avram Davidson, Poul Anderson and Cordwainer Smith. Rosser Reeves has two good poems, and the rest of the selections fall in between. Among these are two interesting but somewhat clumsily written fantasies, a real sick story which could have made its comment on our age in half the time and with half the morbidity, and an off-beat bit of psychology by Jody Scott. All in all, a score of 50% maybe, a respectable number of hits, but this same volume has been known to hit near 100% in the past.

The Seed of Earth. *By Robert Silverberg. 139 pp. Ace Books. Paper: 40¢.*

If you're looking for straight entertainment and don't care if anything else sticks with you or not, this latest from the prolific (too prolific?) pen of Robert Silverberg ought to be the thing.

Earth is in the process of colonizing planets far out beyond the limits of our solar system. The computer picks the fifty men and fifty women who are to carry human civilization to the stars. Every day ships leave with their

cargo of unwilling conscripts, the draftees of a system from which there is no escape.

The narrative device Silverberg uses in his rudimentary plot development is a very common one—jumping around and dropping into the lives of this cross-section of people one at a time as they learn the news and prepare for departure, and then following them as they meet and their paths converge in their common fate. Yet old as the device may be, it almost always proves interesting, given an author of the slightest competence.

Why is this so? Probably because each of us has at one time or another traced in his own mind and memory the way he came to meet certain friends, or the seeming chance with which he has been pulled into certain events, or the seeming coincidental occurrences that turn out to be so strongly linked at a later date. So, as cliché-ridden as Silverberg's device is, it almost never fails to attract because it has universal appeal as part of the universal experience.

Worlds of When. *Edited by Groff Conklin. 159 pp. Pyramid Books. 40¢.*

Mr. Conklin has always been one of the busiest anthologizers in the field. Last month he showed some enterprising imagination with a collection of sci-

ence fiction by scientists. This month, I can report he has shown the most discriminating selectiveness in this grouping of five short novels—brain children of Chad Oliver, Fritz Leiber, Arthur C. Clarke, Mack Reynolds and Margaret St. Clair. The book is billed as “novels of improbable todays and possible tomorrows,” and this is as good a description as any of these stories, for it is their unifying thread. None of them is wildly impossible, but the ones set close to the present are neither more or less plausible than the ones set in the future.

The first story, Chad Oliver's *Transfusion*, concerns some anthropological investigations with a time machine. All is going well with these scientists until at one point in time, they discover that all the skeletons, skulls, artifacts and cave paintings on which we base our theories of evolution have simply disappeared. The story follows the frantic search to get to the root of the mystery and what is found when they get there. Fritz Leiber's *Bullet With His Name* is the saga of Ernie Meeker, a normal American bachelor, who is saddled with a fearsome responsibility. Two powerful Beings from Galaxy Center are testing him, as a representative of all Earth people, to see if Earth shall be admitted to Galactic citizenship. Needless to

say, neither Ernie nor anyone else on Earth is aware of these other Galactic inhabitants nor is he aware that the tests are more than freak occurrences.

In *Death and the Senator*, Arthur Clarke pursues the thoughts and feelings of a prominent Senator who has just learned that he has not much longer to live. In the course of his career he has made many enemies and now he is trying to make peace with himself and others. Just when he has succeeded, this peace is shattered by an unexpected discovery from the least anticipated quarter.

In *Farmer*, Mack Reynolds transports us to the Sahara, where modern American technology has started to turn the area into a green and comfortable land again. But the U.S.'s motives are suspect and, adding to the difficulties inherent in such a project, sabotage suddenly rears its head.

In the last novella, *The Rations of Tantalus* by Margaret St. Clair, we are carried to a safe, sterile and dull future where anything resembling a normal psychological or physiological process is taboo, and where Euph pills assure that no one will ever be anything but pleasant, shallow and bland. But the fly is always in the ointment if one digs deeply enough. Euph

(Continued on page 128)

. . . OR SO YOU SAY

(Continued from page 7)

alarm, he leaped to his right into the strange tunnel."

Finally, Kline's heroes and heroines are a little more realistic than Burroughs', and his situations infinitely more exciting. This is why he is a better adventure-story writer than Burroughs ever was.

Charles Dixon
4578 Comanche Rd.
Gainesville, Ga.

● *Well, you've probably started something all right. ERB-ites, our lettercols are open. First come, first printed!*

Dear Editor:

Though I am normally accounted as being as phlegmatic as most, Mr. Cotts has pegged me as an "irate reader" (which I am not); therefore, I *am* feeling rather irate. First, I write a dissenting opinion on a book review. In return, I am told that I am entitled to my opinion—though I am clearly wrong, which is another opinion! Then, I receive rather special mention by Mr. Cotts wherein he still disagrees, but explains why. Also, I find that another reader likes *Stranger*, reasons not given, as your reasons are not. Now then, the only person I am now a trifle perturbed at is you, Miss Goldsmith; because only you of the printed opposition, have not stat-

ed your reasons for disagreement.

I would like to thank Cotts for his explanation to me why he disliked Heinlein's novel. It is seldom that a reviewer bothers with such dissenting opinions. I enjoy both magazines and am rather in awe of the competent staff which can select such a wide and varied range of material for presentation. However, I will continue to write dissenting opinions.

The July issue was very good, especially Stuart's story. I also liked N.L.'s editorial. After reading a story in one of your rival mags on the same subject, I found that its story line was much clearer to me due to N.L.'s editorial.

J. J. Tilton
Box 199, Ft. Clayton
Canal Zone

● *Cotts is in the Voltaireian tradition—disagreeing with what you say but defending to the death your right to say it. Cele is more in the tradition of the eternal female. She disagrees with you but won't say why. Perhaps she doesn't even know. We put up with these eccentricities of hers as long as the magazine gets out on time each month.*

Dear Miss Goldsmith:

I write this letter for one main purpose: to vent my dissatisfac-

tion with S. E. Cotts as a book reviewer.

To elaborate: Cotts' reviews lack coherence and a definite opinion of the book in question. A case in point is his review of Damon Knight's anthology. He starts out by saying the anthology is excellent because of Knight's good taste; but then his tone alters slightly and he commences to complain of the placement of stories (saying that "Call Me Joe" could very well be placed in the "Other Worlds and People" section; but I'm sure if Knight had put the story in that section, Cotts would have wondered why it wasn't in the original "Superman" section), then whines about the omission of Theodore Sturgeon. Has Cotts ever tried to assemble an anthology? Did it ever occur to him that just possibly none of Sturgeon's stories fitted into the anthology; or possibly rights couldn't be secured for a possible story; or possibly the stories available were overly familiar, or overly long? I might just as well complain of the omission of stellar names like Jack Williamson, Henry Kuttner, Clifford Simak, Murray Leinster, A. E. van Vogt, Fritz Leiber, and many others, all certainly shapers of current science fiction. Then he complains of the absence of some science fiction. Then he complains of the absence of some

important science fiction novels; did it ever occur to him that anthologization of several novels, or even one novel, rather cramps things in a 350 page anthology? And then seems to think that Knight doesn't consider them science fiction because of their absence.

His reviews seem interminably long and murky, and after a while one wonders what the heck Cotts thinks of the book he's reviewing. If he says something complimentary, he seems to feel he has to drag out some insignificant criticism to counteract the praise. The reverse is also true. Occasionally he comes up with a perceptive comment, but not enough, unfortunately, to warrant further inclusion of his ramblings in your otherwise fine publication.

To wind up this letter on a more laudatory note, I would like to commend you on the sparkling stories you've had occasion to publish recently.

Larry Shellum
19227 Belshaw
Gardina, Calif.

● *Sorry we can't agree with you. The function of a reviewer is not to praise or damn, but to do both if he finds both are deserved. The final judgment is, ultimately, always up to each individual reader. However, do you feel better now that you've vented? Good!*

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THE SPECTROSCOPE

(Continued from page 125)

pills are distributed a month's supply at a time. For those who run out, there is the black market. And then there are a few brave souls (as in *Brave New World*, natch!) who scorn this artificial well-being and who choose to suffer depression, rage, perspiration and all those other "nasty" human failings in order to feel and remain true to themselves.

All the entries are not equal, but the range starts with good and runs up through excellent. The stories seem to fall very neatly, and without forcing, into categories. In Oliver's *Transfusion* and St. Clair's *The Rations of Tantalus*, the ideas are not particularly original, but the writing is smooth and completely convincing. In *Farmer* by Mack Reynolds and *Death and the Senator* by Arthur Clarke, the ideas are fresh, but the writing is somewhat clumsy. In the case of Reynolds, the denouement is as sudden and as inadequately prepared as in a third-rate detective magazine, while the Clarke story suffers from some embarrassing cliches where there should have been some of the really moving prose of which I know he's capable. Only in Leiber's *Bullet With His Name* is there the perfect meshing of plot, character and high order writing.



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