SUPER-SCIENCE FICTION

DECEMBER 35¢

CHANCE OF A LIFETIME
by MILTON LESSER

NEW STORIES by
ROBERT SILVERBERG
HENRY SLESAR
HARLAN ELLISON
RUSS WINTERBOTHAM

ALL STORIES COMPLETE



MAN OF THE FUTURE

FOR the first issue of SUPER-SCIENCE FICTION we assigned Kelly Freas to paint the cover, knowing he would catch the theme of our magazine. That theme is PEOPLE.

In our time, science is becoming super-science. In our children's time, it will be super indeed, and this super-expansion of science, reaching for the very stars, is *part* of our story line. But the way this coming super-science will affect people, human character, is the *whole* idea of SUPER-SCIENCE FICTION.

Look again at the cover. See how Kelly Freas has caught our idea. He paints the spaceman raising a fist in typical homo sapiens fury and determination. At the skies. At the Universe!

The Man of The Future is going to conquer the Universe with fist and fury. He's going to land on planets of unknown peril and plunge through the eternal night of space. He'll meet terrors and dangers we can't even begin to grasp, and he'll meet them with courage and intelligence. His intelligence and his determination, his brains and his courage will conquer the stars.

We have a lot of respect for that guy on the cover. He's got guts! We want you to meet this MAN OF THE FUTURE, and we've lined up the best authors who have an insight into the guy on the cover. They know why he challenges the skies with such cold fury.

So happy reading to you all in SUPER-SCIENCE FICTION.

W. W. SCOTT

SUPER-SCIENCE FICTION

Vol. 1 — No. 1 December 1956

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W. W. Scott — Editor

SUPER-SCIENCE FICTION is published bi-monthly by Headline Publications Inc., at 1 Appleton Street, Holyoke, Mass. Editorial office at 1790 Broadway, New York 19, N.Y. Application pending for entry as second class matter at the post office at Holyoke, Mass., under the act of March 3, 1879. Single copy, 35¢. Subscription rates, $4.00 for 12 issues. Not responsible for unsolicited manuscripts, and all such material must be accompanied by self-addressed, stamped envelopes. All stories printed in the magazine are fiction, and any similarity between the characters and actual persons is coincidental. Copyright 1956 by Headline Publications Inc. All rights, including translation, reserved under International Copyright Convention and Pan American Copyright Convention. Printed in the U.S.A.

CATCH 'EM ALL ALIVE!

by ROBERT SILVERBERG

illustrated by KELLY FREAS

The fauna on that new planet was amazing. It was just too good to be true. There had to be a catch somewhere for the happy zoological scientists — and there was.

FROM fifty thousand miles up, the situation looked promising. It was a middle-sized, brown-and-green, inviting-looking planet, with no sign of cities or any other such complications. Just a pleasant sort of place, the very sort we were looking for to redeem what had been a pretty futile expedition.

I turned to Clyde Holdreth, who was staring reflectively at the thermocouple.

"Well? What do you think?"

"Looks fine to me. Temperature's about seventy down there—nice and warm, and plenty of air. I think it's worth a try."

Lee Davison came strolling out from the storage hold, smelling of animals, as usual. He was holding one of the blue monkeys we picked up on Alpheraz, and the little beast was crawling up his arm. "Have we found something, gentlemen?"

"We've found a planet," I said. "How's the storage space in the hold?"

"Don't worry about that. We've got room for a whole zoofull more, before we get filled up. It hasn't been a very fruitful trip."

"No," I agreed. "It hasn't. Well? Shall we go down and see what's to be seen?"

"Might as well," Holdreth said. "We can't go back to Earth with just a couple of blue monkeys and some anteaters, you know."



"I'm in favor of a landing too," said Davison. "You?"

I nodded. "I'll set up the charts, and you get your animals all comfortable for deceleration."

Davison disappeared back into the storage hold, while Holdreth scribbled furiously in the logbook, writing down the coordinates of the planet below, its general description, and so forth. Aside from being a collecting team for the zoological department of the Bureau of Interstellar Affairs, we also double as a survey ship, and the planet down below was listed as *unexplored.*

I glanced out at the mottled brown-and-green ball spinning slowly in the viewport, and felt the warning twinge of gloom that came to me every time we made a landing on a new and strange world. Repressing it, I started to figure out a landing orbit. From behind me came the furious chatter of the blue monkeys as Davison strapped them into their acceleration cradles, and under that the deep, unmusical honking of the Rigelian anteaters, bleating their displeasure noisily.

THE planet was inhabited, all right. We hadn't had the ship on the ground more than a minute before the local fauna began to congregate. We stood at the viewport and looked out in wonder.

"This is one of those things you dream about," Davison said, stroking his little beard nervously. "Look at them! There must be a thousand different species out there."

"I've never seen anything like it," said Holdreth.

I computed how much storage space we had left and how many of the thronging creatures outside we would be able to bring back with us. "How are we going to decide what to take and what to leave behind?"

"Does it matter?" Holdreth said gaily. "This is what you call an embarrassment of riches, I guess. We just grab the dozen most bizarre creatures and blast off—and save the rest for another trip. It's too bad we wasted all that time wandering around near Rigel."

"We *did* get the anteaters," Davison pointed out. They were his finds, and he was proud of them.

I smiled sourly. "Yeah. We got the anteaters there." The anteaters honked at that moment, loud and clear. "You know, that's one set of beasts I think I could do without."

"Bad attitude," Holdreth said. "Unprofessional."

"Whoever said I was a zoologist, anyway? I'm just a spaceship pilot, remember. And if I don't like the way those anteaters talk—and smell—I see no reason why I—"

"Say, look at that one," Davison said suddenly.

I glanced out the viewport and saw a new beast emerging from the thick-packed vegetation in the background. I've seen some fairly strange creatures since I was assigned to the zoological department, but this one took the grand prize.

It was about the size of a giraffe, moving on long, wobbly legs and with a tiny head up at the end of a preposterous neck. Only it had six legs and a bunch of writhing snakelike tentacles as well, and its eyes, great violet globes, stood out nakedly on the ends of two thick stalks. It must have been twenty feet high. It moved with exaggerated grace through the swarm of beasts surrounding our ship, pushed its way smoothly toward the vessel, and peered gravely in at the viewport. One purple eye stared directly at me, the other at Davison. Oddly, it seemed to me as if it were trying to tell us something.

"Big one, isn't it?" Davison said finally.

"I'll bet you'd like to bring one back, too."

"Maybe we can fit a young one aboard," Davison said. "If we can find a young one." He turned to Holdreth. "How's that air analysis coming? I'd like to get out there and start collecting. God, that's a crazy-looking beast!"

The animal outside had apparently finished its inspection of us, for it pulled its head away and, gathering its legs under itself, squatted near the ship. A small doglike creature with stiff spines running along its back began to bark at the big creature, which took no notice. The other animals, which came in all shapes and sizes, continued to mill around the ship, evidently very curious about the newcomer to their world. I could see Davison's

eyes thirsty with the desire to take the whole kit and caboodle back to Earth with him. I knew what was running through his mind. He was dreaming of the umpteen thousand species of extraterrestrial wildlife roaming around out there, and to each one he was attaching a neat little tag: *Something-or-other davisoni.*

"The air's fine," Holdreth announced abruptly, looking up from his test-tubes. "Get your butterfly nets and let's see what we can catch."

THERE was something I didn't like about the place. It was just too good to be true, and I learned long ago that nothing ever is. There's always a catch someplace.

Only this seemed to be on the level. The planet was a bonanza for zoologists, and Davison and Holdreth were having the time of their lives, hipdeep in obliging specimens.

"I've never seen anything like it," Davison said for at least the fiftieth time, as he scooped up a small purplish squirrel-like creature and examined it curiously. The squirrel stared back, examining Davison just as curiously.

"Let's take some of these," Davison said. "I like them."

"Carry 'em on in, then," I said, shrugging. I didn't care which specimens they chose, so long as they filled up the storage hold quickly and let me blast off on schedule. I watched as Davison grabbed a pair of the squirrels and brought them into the ship.

Holdreth came over to me. He was carrying a sort of a dog with insect-faceted eyes and gleaming furless skin. "How's this one, Gus?"

"Fine," I said bleakly. "Wonderful."

He put the animal down—it didn't scamper away, just sat there smiling at us—and looked at me. He ran a hand through his fast-vanishing hair. "Listen, Gus, you've been gloomy all day. What's eating you?"

"I don't like this place," I said.

"Why? Just on general principles?"

"It's too *easy,* Clyde. Much too easy. These animals just flock around here waiting to be picked up."

Holdreth chuckled. "And you're used to a struggle, aren't you? You're just angry at us because we have it so simple here!"

"When I think of the trouble we went through just to get a pair of miserable vile-smelling anteaters, and—"

"Come off it, Gus. We'll load up in a hurry, if you like. But this place is a zoological goldmine!"

I shook my head. "I don't like it, Clyde. Not at all."

Holdreth laughed again and picked up his facet-eyed dog. "Say, know where I can find another of these, Gus?"

"Right over there," I said, pointing. "By that tree. With its tongue hanging out. It's just waiting to be carried away."

Holdreth looked and smiled. "What do you know about that!" He snared his specimen and carried both of them inside.

I walked away to survey the grounds. The planet was too flatly incredible for me to accept on face value, without at least a look-see, despite the blithe way my two companions were snapping up specimens.

For one thing, animals just don't exist this way—in big miscellaneous quantities, living all together happily. I hadn't noticed more than a few of each kind, and there must have been five hundred different species, each one stranger-looking than the next. Nature doesn't work that way.

For another, they all seemed to be on friendly terms with one another, though they acknowledged the unofficial leadership of the giraffe-like creature. Nature doesn't work *that* way, either. I hadn't seen one quarrel between the animals yet. That argued that they were all herbivores, which doesn't make sense ecologically.

I shrugged my shoulders and walked on.

HALF an hour later, I knew a little more about the geography of our bonanza. We were on either an immense island or a peninsula of some sort, because I could see a huge body of water bordering the land some ten miles off. Our vicinity was fairly flat, except for a good-sized hill from which I could see the terrain.

There was a thick, heavily-

wooded jungle not too far from the ship. The forest spread out all the way toward the water in one direction, but ended abruptly in the other. We had brought the ship down right at the edge of the clearing. Apparently most of the animals we saw lived in the jungle.

On the other side of our clearing was a low, broad plain that seemed to trail away into a desert in the distance; I could see an uninviting stretch of barren sand that contrasted strangely with the fertile jungle to my left. There was a small lake to the side. It was, I saw, the sort of country likely to attract a varied fauna, since there seemed to be every sort of habitat within a small area.

And the fauna! Although I'm a zoologist only by osmosis, picking up both my interest and my knowledge secondhand from Holdreth and Davison, I couldn't help but be astonished by the wealth of strange animals. They came in all different shapes and sizes, colors and odors, and the only thing they all had in common was their friendliness. During the course of my afternoon's wanderings a hundred animals must have come marching boldly right up to me, given me the once-over, and walked away. This included half a dozen kinds that I hadn't seen before, plus one of the eye-stalked, intelligent-looking giraffes and a furless dog. Again the giraffe seemed to be trying to communicate.

I didn't like it. I didn't like it at all.

I returned to our clearing, and saw Holdreth and Davison still buzzing madly around, trying to cram as many animals as they could into our hold.

"How's it going?" I asked.

"Hold's all full," Davison said. "We're busy making our alternate selections now." I saw him carrying out Holdreth's two furless dogs and picking up instead a pair of eight-legged penguinish things that uncomplainingly allowed themselves to be carried in. Holdreth was frowning unhappily.

"What do you want *those* for, Lee? Those dog-like ones seem much more interesting, don't you think?"

"No," Davison said. "I'd

rather bring along these two. They're curious beasts, aren't they? Look at the muscular network that connects the—"

"Hold it, fellows," I said. I peered at the animal in Davison's hands and glanced up. "This *is* a curious beast," I said. "It's got eight legs."

"You becoming a zoologist?" Holdreth asked, amused.

"No—but I am getting puzzled. Why should this one have eight legs, some of the others here six, and some of the others only four?"

They looked at me blankly, with the scorn of professionals.

"I mean, there ought to be some sort of logic to evolution here, shouldn't there? On Earth we've developed a four-legged pattern of animal life; on Mars they usually run to six legs. But have you ever seen an evolutionary hodgepode like this place before?"

"There are stranger setups," Holdreth said. "The symbiotes on Sirius Three, the burrowers of Mizar—but you're right, Gus. This *is* a peculiar evolutionary dispersal. I think we ought to stay and investigate it fully."

Instantly I knew from the bright expression on Davison's face that I had blundered, had made things worse than ever. I decided to take a new tack.

"I don't agree," I said. "I think we ought to leave with what we've got, and come back with a larger expedition later."

Davison chuckled. "Come on, Gus, don't be silly! This is a chance of a lifetime for us—why should we call in the whole zoological department on it?"

I didn't want to tell them I was afraid of staying longer. I crossed my arms. "Lee, I'm the pilot of this ship, and you'll have to listen to me. The schedule calls for a brief stopover here, and we have to leave. Don't tell me I'm being silly."

"But you are, man! You're standing blindly in the path of scientific investigation, of—"

"Listen to me, Lee. Our food is calculated on a pretty narrow margin, to allow you fellows more room for storage. And this is strictly a collecting team. There's no provision for extended stays on any one planet. Unless you want to wind up eating your own speci-

mens, I suggest you allow us to get out of here."

They were silent for a moment. Then Holdreth said, "I guess we can't argue with that, Lee. Let's listen to Gus and go back now. There's plenty of time to investigate this place later."

"But—oh, all right," Davison said reluctantly. He picked up the eight-legged penguins. "Let me stash these things in the hold, and we can leave." He looked strangely at me, as if I had done something criminal.

As he started into the ship, I called to him.

"What is it, Gus?"

"Look here, Lee. I don't *want* to pull you away from here. It's simply a matter of food," I lied, masking my nebulous suspicions.

"I know how it is, Gus." He turned and entered the ship.

I stood there thinking about nothing at all for a moment, then went inside myself to begin setting up the blastoff orbit.

I got as far as calculating the fuel expenditure when I noticed something. Feedwires were dangling crazily down from the control cabinet. Somebody had wrecked our drive mechanism, but thoroughly.

FOR a long moment, I stared stiffly at the sabotaged drive. Then I turned and headed into the storage hold.

"Davison?"

"What is it, Gus?"

"Come out here a second, will you?"

I waited, and a few minutes later he appeared, frowning impatiently. "What do you want, Gus? I'm busy and I—" His mouth dropped open. *"Look at the drive!"*

"You look at it," I snapped. "I'm sick. Go get Holdreth, on the double."

While he was gone I tinkered with the shattered mechanism. Once I had the cabinet panel off and could see the inside, I felt a little better; the drive wasn't damaged beyond repair, though it had been pretty well scrambled. Three or four days of hard work with a screwdriver and solderbeam might get the ship back into functioning order.

But that didn't make me any less angry. I heard Holdreth and Davison entering behind

me, and I whirled to face them.

"All right, you idiots. Which one of you did this?"

They opened their mouths in protesting squawks at the same instant. I listened to them for a while, then said, "One at a time!"

"If you're implying that one of us deliberately sabotaged the ship," Holdreth said, "I want you to know—"

"I'm not implying anything. But the way it looks to me, you two decided you'd like to stay here a while longer to continue your investigations, and figured the easiest way of getting me to agree was to wreck the drive." I glared hotly at them. "Well, I've got news for you. I can fix this, and I can fix it in a couple of days. So go on—get about your business! Get all the zoologizing you can in, while you still have time. I—"

Davison laid a hand gently on my arm. "Gus," he said quietly, *"we didn't do it.* Neither of us."

Suddenly all the anger drained out of me and was replaced by raw fear. I could see that Davison meant it.

"If you didn't do it, and Holdreth didn't do it, and *I* didn't do it—then who did?"

Davison shrugged.

"Maybe it's one of us who doesn't know he's doing it," I suggested. "Maybe—" I stopped. "Oh, that's nonsense. Hand me that tool-kit, will you, Lee?"

They left to tend to the animals, and I set to work on the repair job, dismissing all further speculations and suspicions from my mind, concentrating solely on joining Lead A to Input A and Transistor F to Potentiometer K, as indicated. It was slow, nerve-harrowing work, and by mealtime I had accomplished only the barest preliminaries. My fingers were starting to quiver from the strain of small-scale work, and I decided to give up the job for the day and get back to it tomorrow.

I slept uneasily, my nightmares punctuated by the moaning of the accursed anteaters and the occasional squeals, chuckles, bleats, and hisses of the various other creatures in the hold. It must have been four in the morning before I dropped off into a really sound sleep, and what was left of the night passed swift-

ly. The next thing I knew, hands were shaking me, and I was looking up into the pale, tense faces of Holdreth and Davison.

I pushed my sleep-stuck eyes open and blinked. "Huh? What's going on?"

Holdreth leaned down and shook me savagely. "Get up, Gus!"

I struggled to my feet slowly. "Hell of a thing to do, wake a fellow up in the middle of the—"

I found myself being propelled from my cabin and led down the corridor to the control room. Blearily, I followed where Holdreth pointed, and then I woke up in a hurry.

The drive was battered again. Someone—or *something*—had completely undone my repair job of the night before.

IF there had been bickering among us, it stopped. This was past the category of a joke now; it couldn't be laughed off, and we found ourselves working together as a tight unit again, trying desperately to solve the puzzle before it was too late.

"Let's review the situation," Holdreth said, pacing nervously up and down the control cabin. "The drive has been sabotaged twice. None of us knows who did it, and on a conscious level each of us is convinced *he* didn't do it."

He paused. "That leaves us with two possibilities. Either, as Gus suggested, one of us is doing it unaware of it even himself, or someone else is doing it while we're not looking. Neither possibility is a very cheerful one."

"We can stay on guard, though," I said. "Here's what I propose: first, have one of us awake at all times—sleep in shifts, that is, with somebody guarding the drive until I get it fixed. Two—jettison all the animals aboard ship."

"What?"

"He's right," Davison said. "We don't know what we may have brought aboard. They don't seem to be intelligent, but we can't be sure. That purple-eyed baby giraffe, for instance—suppose he's been hypnotizing us into damaging the drive ourselves? How can we tell?"

"Oh, but—" Holdreth started to protest, then stopped



and frowned soberly. "I suppose we'll have to admit the possibility," he said, obviously unhappy about the prospect of freeing our captives. "We'll empty out the hold, and you see if you can get the drive fixed. Maybe later we'll recapture them all, if nothing further develops."

We agreed to that, and Holdreth and Davison cleared the ship of its animal cargo while I set to work determinedly at the drive mechanism. By nightfall, I had managed to accomplish as much as I had the day before.

I sat up as watch the first shift, aboard the strangely quiet ship. I paced around the drive cabin, fighting the great temptation to doze off, and managed to last through until the time Holdreth arrived to relieve me.

Only—when he showed up, he gasped and pointed at the drive. It had been ripped apart a third time.

NOW we had no excuse, no explanation. The expedition had turned into a nightmare.

I could only protest that I had remained awake my entire spell on duty, and that I had seen no one and no thing approach the drive panel. But that was hardly a satisfactory explanation, since it either cast guilt on me as the saboteur or implied that some unseen external power was repeatedly wrecking the drive. Neither hypothesis made sense, at least to me.

By now we had spent four days on the planet, and food was getting to be a major problem. My carefully-budgeted flight schedule called for us to be two days out on our return journey to Earth by now, and we still were no closer to departure than we had been four days ago.

The animals continued to wander around outside, nosing up against the ship, examining it, almost fondling it, with those damned pseudo-giraffes staring soulfully at us always. The beasts were as friendly as ever, little knowing how the tension was growing within the hull. The three of us walked around like zombies, eyes bright and lips clamped. We were scared—all of us.

Something was keeping us from fixing the drive.

Something didn't want us to leave this planet.

I looked at the bland face of the purple-eyed giraffe staring through the viewport, and it stared mildly back at me. Around it was grouped the rest of the local fauna, the same incredible hodgepodge of improbable genera and species.

That night, the three of us stood guard in the control-room together. The drive was smashed anyway. The wires were soldered in so many places by now that the control panel was a mass of shining alloy, and I knew that a few more such sabotagings and it would be impossible to patch it together any more—if it wasn't so already.

The next night, I just didn't knock off. I continued soldering right on after dinner (and a pretty skimpy dinner it was, now that we were on close rations) and far on into the night.

By morning, it was as if I hadn't done a thing.

"I give up," I announced, surveying the damage. "I don't see any sense in ruining my nerves trying to fix a thing that won't stay fixed."

Holdreth nodded. He looked terribly pale. "We'll have to find some new approach."

"Yeah. Some new approach."

I yanked open the food closet and examined our stock. Even figuring in the synthetics we would have fed to the animals if we hadn't released them, we were low on food. We had overstayed even the safety margin. It would be a hungry trip back—if we ever did get back.

I clambered through the hatch and sprawled down on a big rock near the ship. One of the furless dogs came over and nuzzled in my shirt. Davison stepped to the hatch and called down to me.

"What are you doing out there, Gus?"

"Just getting a little fresh air. I'm sick of living aboard that ship." I scratched the dog behind his pointed ears, and looked around.

The animals had lost most of their curiosity about us, and didn't congregate the way they used to. They were meandering all over the plain, nibbling at

little deposits of a white doughy substance. It precipitated every night. "Manna," we called it. All the animals seemed to live on it.

I folded my arms and leaned back.

WE were getting to look awfully lean by the eighth day. I wasn't even trying to fix the ship any more; the hunger was starting to get me. But I saw Davison puttering around with my solderbeam.

"What are you doing?"

"I'm going to repair the drive," he said. "You don't want to, but we can't just sit around, you know." His nose was deep in my repair guide, and he was fumbling with the release on the solderbeam.

"Gus?"

"Yeah?"

"I think it's time I told you something. I've been eating the manna for four days. It's good. It's nourishing stuff."

"You've been eating—the manna? Something that grows on an alien world? You crazy?"

"What else can we do? Starve?"

I smiled feebly, admitting that he was right. From somewhere in the back of the ship came the sounds of Holdreth moving around. Holdreth had taken this thing worse than any of us. He had a family back on Earth, and he was beginning to realize that he wasn't ever going to see them again.

"Why don't you get Holdreth?" Davison suggested. "Go out there and stuff yourselves with the manna. You've got to eat something."

"Yeah. What can I lose?" Moving like a mechanical man, I headed toward Holdreth's cabin. We would go out and eat the manna and cease being hungry, one way or another.

"Clyde?" I called. "Clyde?"

I entered his cabin. He was sitting at his desk, shaking convulsively, staring at the two streams of blood that trickled in red spurts from his slashed wrists.

"Clyde!"

He made no protest as I dragged him toward the infirmary cabin and got tourniquets around his arms, cutting off the bleeding. He just stared dully ahead, sobbing.

I slapped him and he came around. He shook his head

dizzily, as if he didn't know where he was.

"I—I—"

"Easy, Clyde. Everything's all right."

"It's *not* all right," he said hollowly. "I'm still alive. Why didn't you let me die? Why didn't you—"

WE HAD Holdreth straightened around by evening. Davison gathered as much manna as he could find, and we held a feast.

"I wish we had nerve enough to kill one of the local fauna," Davison said. "Then we'd have a feast—steaks and everything!"

"The bacteria," Holdreth pointed out quietly. "We don't dare."

"I know. But it's a thought."

"No more thoughts," I said sharply. "Tomorrow morning we start work on the drive panel again. Maybe with some food in our bellies we'll be able to keep awake and see what's happening here."

Holdreth smiled. "Good. I can't wait to get out of this ship and back to a normal existence. God, I just can't wait!"

"Let's get some sleep," I said. "Tomorrow we'll give it another try. We'll get back," I said with a confidence I didn't feel.

The following morning I rose early and got my tool-kit. My head was clear, and I was trying to put the pieces together without much luck. I started toward the control cabin.

And stopped.

And looked out the viewport.

I went back and awoke Holdreth and Davison. "Take a look out the port," I said hoarsely.

They looked. They gaped.

"It looks just like my house," Holdreth said. "My house on Earth."

"With all the comforts of home inside, I'll bet." I walked forward uneasily and lowered myself through the hatch.

"Let's go look at it."

We approached it, while the animals frolicked around us. The big giraffe came near and shook its head gravely. The house stood in the middle of the clearing, small and neat and freshly-painted.

I saw it now. During the night, invisible hands had put

it there. Had assembled and built a cozy little Earth-type house and dropped it next to our ship for us to live in.

"Just like my house," Holdreth repeated in wonderment.

"It should be," I said. "They grabbed the model from your mind, as soon as they found out we couldn't live on the ship indefinitely."

Holdreth and Davison asked as one, "What do you mean?"

"You mean you haven't figured this place out yet?" I licked my lips, getting myself used to the fact that I was going to spend the rest of my life here. "You mean you don't realize what this house is intended as?"

They shook their heads, baffled. I glanced around, from the house to the useless ship to the jungle to the plain to the little pond. It all made sense now.

"They want to keep us happy," I said. "They knew we weren't thriving aboard the ship, so they—they built us something a little more like home."

"*They?* The giraffes?"

"Forget the giraffes. They tried to warn us, but it's too late. They're intelligent beings, but they're prisoners just like us. I'm talking about the ones who run this place. The super-aliens who make us sabotage our own ship and not even know we're doing it, who stand some place up there and gape at us. The ones who dredged together this motley assortment of beasts from all over the galaxy. Now we've been collected too. This whole damned place is just a zoo—a zoo for aliens so far ahead of us we don't dare dream of what they're like."

I looked up at the shimmering blue-green sky, where invisible bars seemed to restrain us, and sank down dismally on the porch of our new home. I was resigned. There wasn't any sense in struggling against *them.*

I could see the neat little placard now:

EARTHMEN. Native Habitat, Sol III.

THE END

LOOK TO THE STARS

by SCOTT NEVETS

The big scientific news of the year is ESV—the Earth Satellite Vehicle program, the first major step in cracking the space barrier. A surprise announcement during the summer of 1955 set the stage for Project Vanguard, the launching of a dozen basketball-shaped artificial satellites into space during 1957 and 1958.

The so-called MOUSE (Minimum Orbital Unmanned Satellite of Earth) will be carried into space by a three-stage rocket. The first stage will supply enough power to push the unit into thinner atmosphere, then drop away. The second-stage rocket will take over from there, boosting the satellite further, and the third-stage rocket would carry it to its final height of 200 to 300 miles out from Earth. The satellites will travel at a pace that will bring them around Earth every ninety minutes.

In announcing the program, Defense Secretary Charles E. Wilson termed it "the first in a chain of experimental space flights in which each new missile would incorporate knowledge gained from previous trips."

The satellite will be a source of basic scientific knowledge. George Trimble, Jr., vice-president of the firm building the three-stage rocket, says, "Not even Einstein's general theory of relativity has been proved. The satellite will be the first celestial body that we can know with accuracy, since we'll be building it. Because of this we'll be able to keep a constant check on the gravity laws of Newton and Einstein."

Instruments aboard the satellites will bring us new information about the nature of cosmic radiation, of the Earth's atmosphere, of the effect of solar radiations on Earth's mag-

netic field. Questions that long have puzzled scientists will be answered by remote-control instruments orbiting in space, providing data that will be of vital significance when the first manned vessels leave the Earth.

Since there is still a tenuous atmosphere at 300 miles up, the satellite will not remain in space indefinitely, as it would do if it were orbiting in a vacuum. The slight air resistance it will encounter will gradually slow it down and it will drop back to Earth, vaporizing when it hits the thicker part of the atmosphere. Even this descent will be put to good use by observers who will report on the relative thickness of the atmosphere at different points on the way down.

The first American satellites will be launched from Florida some time in 1957. But they may find company in the upper altitudes. Russia has been working on a similar satellite program for years, and, while our information is sketchy in the extreme, it looks likely that they'll try to get their own satellite aloft as quickly as possible. With the major powers of the world engaged in a full-fledged race for space, the first landing on the Moon may not be too far in the future.

Amateur astronomers are going to be playing an important part in the program. They are to be recruited to help professionals plot the flight trajectory of each basketball-sized satellite as it whirls around the earth, according to astronomer Fred L. Whipple of Harvard University, a leading figure in the program.

The amateur astronomers in each area will be organized under a group captain to help keep an eye on the satellites. The amateurs will fix their telescopes—or binoculars, if that's the limit of their equipment—on a known star, and when they spot the satellite they'll tell the captain the time at which it passed and where it was relative to the star.

Radio "hams" are being counted on for the project too; they'll aid in relaying this information to centers where the satellite's orbit will be computed.

The satellites will be launched from Patrick Air Force Base early next year, and from the earth they will appear to weave along a band five thousand miles wide, ranging between 40 degrees North and South latitudes. That means they'll be observable in the United States, Central and South America, Africa, Southern Europe, the Balkans and the Middle East, part of the Soviet Union, India, China, Japan, Australia, and New Zealand.

Radio signals have been picked up from Jupiter. Astronomers at the Carnegie Institution of Washington have detected a static-like signal at 22 megacycles, which they think may originate in fantastic electrical storms in the largest planet's ammonia and methane atmosphere.

We know less about our own galaxy than we do about such distant star-clusters as the Magellanic Clouds or the Great Spiral Nebula in Andromeda. A single photograph will give us a good idea of the makeup and shape of these galaxies, but we're too close to our own to get any detailed view of its structure. The problem's something like trying to make a map of Manhattan while standing in the middle of Times Square.

The planet Pluto, according to astronomer Gerard P. Kuiper, is no planet at all, but a runaway satellite that once belonged to Neptune. Kuiper, advancing his theory in an astronomical journal, points out that Pluto is a freak planet, since it is small (no bigger than the Earth) while all the other outer planets are huge, and cites the fact that its orbit is an elongated ellipse that intersects the nearly circular orbit of Neptune.

The age of the Earth has been revised upward. Latest guesses are that the world is about four and a half billion years old, about a billion years older than earlier estimates reckoned. The new figure has been arrived at by a study of uranium decay in meteorites.

WHO *AM* I?

NOVELETTE

by HENRY SLESAR illustrated by EMSH

The young spaceman was a mixed-up kid. That was for sure! But then on the hideous planet of black death he found the right answer to his four-way confusion.

CHAPTER I

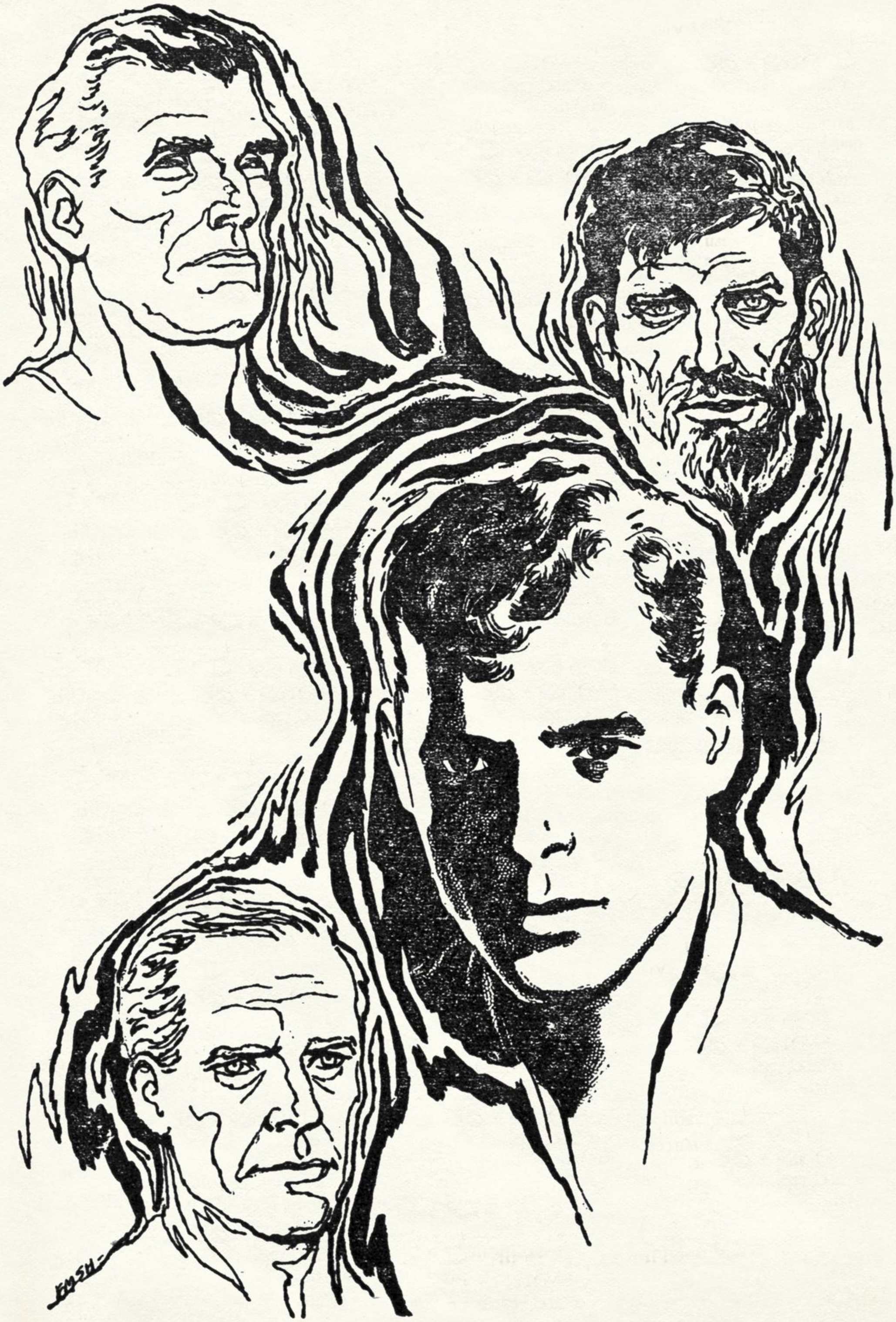
THE grappling hook snaked out of the *Buccaneer*. Jake Fisher, the astrogator, followed it into space, murmuring into the communicator all the while. The things he said would have made a space-bum blush.

Gilwit, the pilot of the hoary vessel, was immunized to Fisher's invective. The vaccine had taken two years of partnership to become effective, but now he could listen to Fisher's voice all day and strain out everything but the pure, sweet thoughts.

"The guy's alive," Fisher said when he made contact with the space-sled. "It's a blankety-blank miracle!"

"Reel him in," said Gilwit. He could have done some fancy cursing himself. They had already lost four days in profitless trading with a planet of mute tripeds, whose intelligence level couldn't equal the dullest canine's back on earth. ("Look for eye-expression and digital dexterity in the species you contact. You'll find them helpful indices when you are judging intelligence," said the Space T r a d e r ' s Handbook. "Phooey!" said Gilwit.) Now they would lose another precious few hours in rescuing some drifter in a space-sled.

Fisher's voice came over again. "The guy ain't got no spacesuit," he said. "I can't take him out."



"Come on back and pick one up," said Gilwit.

"No good." F i s h e r said something very dirty. "I can't get inside. This thing has no air-lock, and there ain't even room for two. We'll have to carry it alongside."

"Okay, so we'll carry it alongside!" Gilwit was annoyed.

"Then we might as well leave him here," said Fisher. "He's in bad shape. He won't make it to Tryon unless he gets medical care."

Gilwit exploded. "Well, what the hell can we do? This ain't no star-drive. This is a tank, Fisher!"

"Okay, then, you—" (here Fisher used a favorite expression). "We'll leave the guy to die. Maybe somebody will return the favor to you someday, you—" (He said the word again.)

"Well, what do you want from me?" pleaded the pilot. "I haven't got a solution. Have you?"

"We could land on Leo 3. That's the only idea I got."

"Leo 3?" Gilwit moaned. "You *really* want to blow our stake, don't you? Remember what happened *last* time we hit that sucker planet."

"Okay, wise guy. Don't forget who spent the night at the poker table. It wasn't me."

"Sure. You were with that blue-haired babe Margo—"

"For Pete's sake!" It was remarkable how much emotion Fisher could convey over the voice-deadening communicator. "There's a guy dyin' out here! Now let's decide what we want to do."

Gilwit reached to the panel and sent a magnetic current whistling through the grapple line.

"Hook up the sled," he said angrily. "We'll tow the guy to Leo." He added vehemently. "Then we blow outa there!"

WHEN the *Buccaneer* was moored at the New Monte Carlo Spaceport, the two traders and their "passenger" were welcomed by a smooth-faced man with the song of Ireland in his voice.

"W e l c o m e to Leo, my friends," he said. "Before you go through Customs, I'd like to introduce myself. I'm Danny Trevelyan of the Vegas Club, and I'd like to help you."

"Stow it," said Fisher out of the side of his mouth. "We ain't here for none of your entertainment. We got a sick man to take care of."

The smooth-faced man wasn't to be put off so easily. "We have four of the galaxy's finest medical men in constant attendance at the Vegas Club."

Gilwit said: "What's the difference, Fish? The Vegas is as good as anyplace else."

"And I'll bet they kept the poker table warm for you," said Fisher. "Just like last time."

"Not this time, Fish. Remember? We haven't got a stake big enough to throw away. And besides, isn't that the place where that blue-haired babe—"

"Okay, okay," said Fisher roughly. "Let's not gab about it all day. We got to think about our boy here."

They both looked at their unconscious passenger. He was an ordinary-looking young man of about twenty-five, with pleasant, even features, and a brush of sandy-hair.

"He's a lucky lad," said Gilwit. "A million-to-one shot, spotting a space-sled out there." He turned to Danny Trevelyan. "How do you like *those* odds, gambler?"

Trevelyan smiled. "Here's my card," he said.

THE three men were quickly installed in a small, but luxuriously appointed room on the third floor of the Vegas Club. The rates were low, but the management wasn't giving anything away. They knew that the inviting rattle of dice belowstairs would soon make their investment worthwhile.

The traders placed the boy full-length on one of the beds. He lay there without stirring, but every now and then his lips would part and he would moan a word or two.

"What's he saying?" asked Fisher.

"Can't make it out. Think we should call one of those fancy doctors?"

"He don't look as bad as I thought," said Fisher. "Nothing wrong with him that a little snooze and a little booze won't cure. Besides, who knows what one of these gilt-edged pill experts will charge us?"

They found out, and were pleasantly surprised.

"I'm Dr. Stanton," the jovial-faced man said as he entered their door. "Mr. Trevelyan said you had a sick man with you." He went over to the bed briskly, and grinned up at their curious faces.

"There won't be any charge," he assured them. "All part of the service." He dropped his bag on the floor, and made a quick, routine examination of the boy.

"Nothing wrong," he said finally.. "A little shock, a little space-fatigue. Nothing more. Who is he?"

"We don't know," said Fisher. "He was just floating around in a sled. We were on our way to Tryon—to the assay office."

The doctor packed up. "Let him rest," he told them. "Feed him, if you can. I'll drop by in the morning and look him over again."

"Thanks, doc."

Fisher showed the medical man out. When he came back to the bed, Gilwit had a surprised expression on his face.

"I just made out something he said."

"What was it?" said Fisher.

"He said...*Margo.*"

CHAPTER II

THE next morning, the boy was awake.

"What's your name?" asked Fisher.

The boy sat up in the bed and looked at the heavy-bearded faces of the space-traders.

"Joe," he said. "Joe Smith."

"Nice handle," said Gilwit. "What do you remember last?"

The boy raised his hands and looked at them curiously. Something about them must have startled him, because he jumped out of bed and went over to a mirror on the wall. He stared at himself, and rubbed the light blond bristle on his cheek.

"I don't know," he answered at last. "It's all hazy."

"You were out in space," said Gilwit. "In a sled, without a spacesuit. Do you remember that?"

"No."

The boy went back to the bed slowly. He sat down and rubbed his arms as if they were cold. Now, with his eyes opened, he looked different from the boy they had brought to the Club the night before. There was an odd intensity in

his face, a brilliant light in his eyes and a set to his features that made him look—was it older?

"Can I get something to eat?"

"Sure," said Gilwit. "We can order up breakfast. What would you like?"

"Bacon," said the boy, moistening his lips. "Eggs, too. But lots of bacon."

Gilwit made the call to Room Service. But when the tray arrived, the boy looked at the plate in front of him and made a gesture of great disgust.

"Ugh! Bacon! I *hate* bacon!"

He pushed the plate away from him, and the two traders looked at each other.

AFTER breakfast, the three of them went out to see the sights of Leo, the Gambler's Planet.

There wasn't too much to see in the daylight. The facades of the three dozen "Clubs" that constituted the Main Street of New Monte Carlo looked pale and washed-out in the white sun that served Leo's system.

The boy looked about him curiously, but with no more curiosity than the two traders exhibited about him.

"You mean it's all a blank?" said Fisher. "Everything?"

"Not a blank," said the boy. "It's worse than that. It's a kind of mental fog. I get a lot of confused impressions. Places. People."

"This joint is open," said Gilwit, pointing to a doorway that bore a sign: BARNUM BAR. They followed him inside.

"What kind of people?" Fisher insisted.

"I don't know. Just faces. I can't recognize them."

They were in a narrow bar, just outside the main gambling salon of the Vegas. The salon was deserted except for a lackadaisical domestic robot, wheeling softly around the upturned chairs. The bartender took their order, and they sat sipping cold green liquor from Tryon.

"So you got a hazy mind, eh, kid?" Fisher grinned at the boy. "Didn't get into some kind of jam, did you?"

"I don't think so," said the boy. "But I have an idea that *something* went wrong. It

seems to me there was a spaceship—"

"There m u s t have been," said Gilwit sharply. "Where else would you get the spacesled? Did you jump a ship, or did you crash?"

The boy m o v e d his head from side to side. "I don't remember. A crash I think. But I don't remember any—any *impact.*"

"Well, drink up," said Fisher cheerfully. "These things will jog your memory. They got impact, all right." He winked at his partner, but Gilwit's gaze was elsewhere.

"Hey, look," he said.

The three men turned their eyes to the far end of the salon. Down the velvet-covered staircase came a shimmering white gown wrapped around a woman with bright, blue-dyed hair. They watched her hypnotically; there just wasn't any looking away.

"It's Margo," b r e a t h e d Fisher.

She came t o w a r d s them. Gilwit n o d d e d to her, and Fisher greeted her with an enthusiastic hello. But the woman looked at the traders with only casual interest.

"Don't you remember me?" said Fisher, his face crimsoning under his heavy beard. "I was here last year. Me and my buddy."

"I'm sorry," Margo smiled. Her voice had as many blue tones as her hair. "I do meet a lot of people."

She looked at the boy. "Hi, there," she said coquettishly.

"H e l l o," said the boy. He looked impressed.

"What's your name?" she asked.

"Jim," said the boy. "Jim Mitchell."

Fisher nudged Gilwit in the ribs. "Kid learns fast," he said in a low voice.

THE Vegas Club hostess picked up the boy's drink and took a sip, looking at him over the edge of the glass. Then she put it down and went over to the wall. There was a jackpot machine in the corner. Her fingers trailed over it lightly. She turned and looked at the boy.

"Got some change, Jim?"

The boy flushed and slapped his pockets. "I—I guess I don't have any money." But he reached inside them anyway,

and came out with a round, shining object. "I seem to have this," he said, looking at it.

"Wow!" said Fisher.

"Do you think it's valuable?" said the boy.

Gilwit snatched the object from his hand. He looked at it closely, with the swift, perceptive examination of the experienced space-trader. He peered strangely at the boy.

"It's like a multi-colored diamond," he said. "Where'd you get it, kid?"

"Let me see that!" The blue-haired woman came over to Gilwit.

The pilot held it up to her. "Pretty bauble, eh?"

Suddenly, she swooped it out of his hands!

"Hey!" cried Fisher.

"You *pigs!*" Margo said. "You thieving *ghouls!*" She clutched the jewel to her breast.

"Hey, what's the big idea—!" Fisher reached for her arm, but she backed away from him. There was fury in her face.

"I know where you got this!" she rasped. "It was *his!*" She moved into the salon.

"Listen, lady—" Gilwit started after her. "Give it back to the kid."

"What did you do?" she said bitterly, looking at the boy. "Kill him for it? You couldn't get it away from him any other way. You space bums! You—" She used Fisher's favorite term of endearment.

Then Gilwit was on her. He held her wrists and bent her backwards. She tried to sink her white teeth into his arm, but he was too strong. She kicked at his shin, and the trader yelped but held on.

"Let *go* of me!" she screamed.

"Margo!" A door in the salon opened and Trevelyan came rushing out. Before he could reach the struggling pair, Gilwit had pried the gem loose from the woman's fingers.

"Anything wrong, gentlemen?" The Irishman was breathing heavily, but his manner remained urbane. Margo had composed herself, too, but she still stared at the boy with hatred.

"It's nothing, Dan," she said. "A misunderstanding."

"Honest, Miss," said the boy. "I don't know how—"

"Well!" Trevelyan flashed a wide smile. "If it isn't our sick friend. Feeling better, Mister—"

"Howard," said the boy, still looking anxiously at the blue-haired woman. "Gil Howard."

Fisher and Gilwit found their eyes meeting again.

IN their room that evening, the traders tried to make a decision.

"I say let's blow tonight," said Gilwit. "Before those wheels start spinning downstairs."

"Configurations off," said the astrogator. "T o m o r r o w would be better."

"Configuration, my eye. You just got a couple of hot Credits in your pocket, and you want to burn them up."

"Well, what about the kid?"

Gilwit swore. "What do you want to do? Adopt him? He'll shift for himself. He's got that rock, hasn't he? That's worth a small fortune."

The boy came over to them. "Look," he said. "You guys have been good to me. I don't want this thing." He took the gem out of his pocket. "Here—you take it."

Fisher eyed it h u n g r i l y. Then he waved his hand at the boy.

"Aw. I don't want your toys, sonny. We got plenty of stones in our ship."

"Sure," said the boy sourly. "Blind Man Rubies, silver dust, Rhinestone Wonders..."

Gilwit looked at him in surprise. "Hey, where'd you pick that up? That lingo? Were you a trader, kid?"

The boy looked confused. "No. I don't think so—"

There was a knock at the door. Fisher opened it, and frowned when he saw that it was Danny Trevelyan.

"Good evening, gentlemen!" He wore an impeccable white dinner jacket. The contrast to the grimy clothing of the traders was pointed.

Gilwit said: "What do you want, gambler?"

"I have an invitation. Ten t h o u s a n d Credits, on the house."

"What?" said Fisher.

"For Mr. Howard," Trevelyan smiled, looking at the boy. "From Margo. She wants to make up for the—inconvenience she might have caused

you this morning. It was all a terrible mistake."

Fisher whistled. "Ten thousand!" he said respectfully.

"Tell Margo that I accept her offer," said the boy smoothly. "I'll be down soon as I can get a change of clothing."

Gilwit looked at the boy in surprise. "Get him!" he said.

"I'll be happy to lend you some evening clothes," said Trevelyan. "I'll send them up."

He went out, with a mock salute to the traders. As the door shut, the boy went over to the mirror and began to comb his hair. There was a new cast to his young features now, and he looked like a man who knew very much what he wanted.

"Listen, kid," said Fisher, frowning at him. "I know this is all very new and exciting for you, but you gotta watch your step. These people aren't in the habit of giving something for nothing—"

"I can take care of myself."

"Then leave that bauble with us tonight," said Gilwit.

"No!"

"But you wanted to *give* it away a minute ago," wheedled Fisher.

"That was a minute ago. Now I want it."

Fisher came up to him, looking angry. "Look, buster. Don't go high-hat on us all of a sudden, just because some space-tramp—"

It happened so fast that Fisher didn't have time to blink. The boy's right hand dropped the comb and swept up from his hip, the hand closed in a white-knuckled fist. The blow landed square on the side of the trader's jaw, and he spun backwards. He collided with a chair and fell over it, sprawling on the floor. He looked up at the boy, more amazed than hurt.

"You little rat!" he said, mildly.

"Just watch what you say!" the boy said, shaking with his vehemence. "Just watch how you talk about her!"

Gilwit stepped forward. "Joe, listen—"

"Don't touch me!" The boy's face was knotted hard. "And don't call me Joe!"

Gilwit looked pained. "But, kid—"

"My name's Fritz!" the boy shouted. "Fritz Fredericks!"

"He's screwy!"

"And I'm warning you!" the boy said to him. "Don't ever talk that way about *my wife!*"

Then he turned on his heel and went into the bathroom.

CHAPTER III

AN hour later, the two traders had resolved their argument.

They shaved, changed into evening dress, and followed the boy downstairs. They had fairly well agreed that their "passenger" had been somehow deranged on his flying trip in the space-sled, and they were now "responsible" for him. Neither mentioned the fact that their pockets were stuffed with Credits as they came into the main gambling salon of the Vegas Club.

The place was crowded.

"There he is," said Fisher.

The boy was at the Astro-wheel, a game controlled by the incidence of cosmic rays striking an orbital rocket that circled Leo as an advertisement for the Vegas. This made the Wheel convincingly honest, but from the look on the boy's face, it didn't make it any easier to beat.

The pile of Credits had obviously diminished. His face was flushed, but grimly set. Margo was alongside him, leaning on his arm, her blue-dyed hair touching his shoulder.

"Forty-four," the Wheel operator said.

A muscle jumped in the boy's jaw, and the traders deduced that he had lost again. They saw Margo say something in his ear. He made a short reply and shoved a stack of bills on the betting counter. The Wheel spun again.

"Number Twelve!"

The boy had lost again. They watched Margo argue with him, but he seemed to pay no heed. He pushed the remaining stack of bills onto the counter. A small crowd gathered to watch this last-ditch effort.

"Thirteen!" the operator said.

The boy was cleaned. Fisher cursed softly.

Margo steered the boy over to their table.

"Hello, gentlemen," she said pleasantly. "I hope you have better luck tonight than your friend here."

"I don't gamble," said Gilwit.

The boy didn't even acknowledge their presence. He turned to the woman: "What can I get for it?" he asked anxiously. "The stone?"

"You're crazy, kid!" Fisher tried to interfere. "They won't give you any kind of a price here."

"Keep out of this!" There was a depth to the boy's voice they hadn't heard before.

"Give the stone to me," said the blue-haired woman. "I'll get you a good deal on it. I have influence."

Gilwit said: "I'll bet you do!"

Margo glared at him icily. "Bet? I thought you never gambled, trader?"

She took the round, brilliant gem from the boy's hand, and left the table. They watched her walk to the office at the other end of the salon. Trevelyan was just coming out, and she stopped him. They conversed briefly, and Trevelyan went back inside. Then Margo returned to their table and sat down next to the boy.

She put her hand on his and said: "Thirty thousand Credits."

The boy suddenly seemed blank again. "What?"

"Don't do it, kid," said Fisher. "That rock is worth a hundred thousand. Maybe more. Come to Tryon with us in the morning. We'll see that you get a fair shake."

Margo stroked the boy's arm. "Suit yourself, of course."

"Maybe I better do like he says," said the boy uncertainly.

MARGO looked angrily at the traders. But when she turned to the boy again, her voice softened, and the gaze she treated him to could have melted a statue.

"It's all right with me, honey," she said throatily. "But don't blame me for being disappointed. I was looking forward to...quite a night."

The boy melted before her. Then he smiled sardonically.

"Baby," he said, "you ought to wear a blindfold. Your eyes say too much."

Margo got up so quickly that her chair overturned.

"You *do* know him!" she cried. "*He* used to say that!"

"Hey!" Fisher jumped to his feet.

"I knew there was something phoney about you guys the minute you came in!"

"What are you talking about?" The boy looked bewildered.

"You killed him!" Margo shrieked.

She threw herself at the boy and lashed out with her long blue fingernails. Before the traders could stop her, she had torn a three-inch gash in the boy's cheek, sobbing wildly.

Gilwit managed to get them apart. "This is becoming a habit," he said.

Then the fury left her. She bent her head over the table and began to cry. Her shoulders heaved.

"Oh, Fritz! Fritz!"

"Let's get outa here," said Fisher, grabbing the boy's arm.

They pushed their way out of the fast-thickening crowd and made it back to the stairway. As their door shut behind them, Gilwit wheeled the boy around and said:

"Now let's have it! Let's cut this mystery junk! You know this dame from someplace. Is your name Fritz?"

The boy was befuddled.

"No!" he said. "Of course not!"

"Then who the hell *are* you?" said Gilwit.

The boy opened his eyes innocently. "Joe," he said. "Joe Smith."

THE *Buccaneer* left the planet Leo 3 at eight the next morning.

There was some clearance difficulty before blast-off, since Customs had never received a declaration from the traders about the peculiar jewel in Joe Smith's gear.

"That Trevelyan must have tipped them off," said Fisher as they headed into space. "They really wanted that rock."

The astrogator flipped through the pages of orbital calculation that had been run off on the computer at Leo's spaceport. He studied them briefly, and handed the batch to the boy, who was moodily staring out the viewport.

"You know anything about this kind of stuff, kid?" he asked.

The boy took the papers and looked at them carelessly. "A

little," he admitted. "It's a fix on Tryon." He placed a finger at a point on the orbital map. "You'll need a Dopplerscope fix right here."

Gilwit shook his head wonderingly. "You're a weirdie, kid. Sometimes you say the damndest things."

"I must have studied astrogation at some time or the other. Is there a Braun University?"

Fisher swore. "There sure is. But don't tell me you're a graduate, or I'll flip you out into space again. They give a six-year advanced course for accredited astrogators with at least five years of practical astrogation behind them. That's where all the star-liner boys come from."

The youth furrowed his brow. "I think I did graduate from Braun," he said.

"Nuts," said Gilwit. "You'd have to be thirty-five at least. Unless you started space-hopping at ten years old."

The boy seemed to be thinking hard. "When I was ten," he said, "I visited the Mars Colony. At the time of the Revolt."

"If you weren't so rich, I'd kill you," said Fisher. "The Mars Revolt was in '16. If you were ten years old at the time, you'd be sixty now. Get hold of yourself, Joe."

"Look!" said the boy, suddenly stabbing at the orbital tables with his finger. "What if we didn't alter our position here? What if we kept on course?"

Fisher looked over the boy's shoulder. "We'd head out into deep space, that's what."

"Would we? I mean, isn't there a four-planet system on that route?"

"Don't ask me," said Fisher. "We only scoot this tank around approved space lanes. We let the star-drive ships do the exploring. But don't tell me," Fisher said sarcastically. "You were a star-pilot, too. I know."

The boy looked at the paper in his hand. "Yes. I was."

Gilwit caught Fisher's eye and made a circling motion around his temple.

Fisher laughed. "Kid, you're a regular Baron Munchaussen."

The boy didn't even hear him. "There *is* a system out

there. We called the fourth planet Othello."

"Are you serious?"

"It was almost dead black when we approached it, but there was a light side, too."

"Who's *we?*" said Gilwit.

"Me and Gil Howard and the others."

The boy went over to the ship's miniature calculator and went to work. Fisher shrugged and joined Gilwit at the controls. They exchanged shrugs, and waited until the boy was through with his calculations.

His eyes shone with excitement when he was done.

"Look here," he said. "It would take a vector alteration of only .0086 to do it. We could make Othello in only sixty hours more than it will take to reach Tryon."

"But *why,* kid?" said Fisher. "We got business on Tryon. Money business. Why go buzzin' around some good-for-nothing planet?"

The boy reached into his pocket.

"I think that's where *this* came from," he said.

The multi-colored gem sparkled and flashed in rivalry to the stars.

WHEN the black planet loomed up in the *Buccaneer's* viewport, Fisher unleashed one of his juiciest strings of invective.

"I think we're nuts," he said to the pilot. "Listening to a crazy kid. Six hundred thousand miles off course. Heading for God knows what."

"You were all excited about the idea a while back."

"It's that lousy sparkler," said Fisher. "A handful of those and we could quit this racket. I didn't hear *you* raising any objections."

"Well, we made up our own minds."

"But the kid's a nut! We know that. He might have got that stone anyplace. Maybe he *did* kill Margo's boyfriend for it."

"And maybe he didn't," said Gilwit, as the blackness swallowed up the viewport. "Maybe he found them down there." The pilot reached out for the landing controls. "Kid still sleeping?"

"Yeah. He's moaning again, too. Gives me the creeps."

"See if you can make something out of it," said Gilwit. "Maybe we'll get some clues

about this place."

But they didn't have to wait for their clue.

The boy suddenly shot out of the bunk and ran up forward. He screamed as he saw the black shape in the viewport.

"Stop!" he cried. "Don't do it! Don't land!"

"What's wrong?" said Gilwit anxiously. Instead of answering, the boy fumbled at the control levers and Fisher had to pull him away.

"We can't go down there!" he raved. "We can't! We'll all die! We'll starve!"

"He's blown his stack!" shouted Fisher, battling him.

"Let go of me!" said the boy, his voice hysterical.

"Joe!" Fisher fought to keep him away from the control panel, but the boy had suddenly developed lunatic strength.

"We've got to get out of here!" said the boy wildly. "We've got to get away! We won't have a chance! They're cold—cold—"

"Whose cold?" said Gilwit.

"The Moors!" screamed the boy. He broke from Fisher's uncertain grip and wrestled the pilot for control of the *Buccaneer*. Fisher took quick action. He reached behind him and unhooked a lead fire-extinguisher from the bulkhead. He brought it down on the boy's skull with calculated violence.

CHAPTER IV

AFTER the descent, they waited until the boy came to before venturing outside the ship.

"We might as well," said Gilwit. "The kid knows this place better than we do. We can use every piece of advice we can get."

"It sure ain't in the handbook," said Fisher, looking out of the viewport.

The boy stirred and groaned. The traders leaned over him.

"You okay, Joe?"

The boy said: "Have we landed?"

Gilwit nodded.

"All right," said the youth crisply, suddenly taking command. "Get into your suits and pack plenty of ammo. Set your oxygen tanks at Low—there's a lot of atmospheric pressure out there. Stay close to the ship and *don't talk!*"

The traders followed his in-

structions. As they began to open the airlock, the boy repeated his warning.

"Remember, don't use the communicators. They can pick you up easy."

"Who can?" said Fisher uneasily. "Who's out there, kid?"

"Don't call me kid!" the boy snapped. "My name's Jim!"

"Have it your way," said Gilwit. "But give us some hint, will you? What kind of life's on this planet?"

"Hostile," said the boy curtly. "They're underground settlers, and they're blind as bats. But they must have supersonic hearing."

"Then they must have heard our rockets," said the pilot.

"Sure they heard them," said the boy. "But they won't pay any mind to them. This is a volcanic planet. They're used to strange explosions. It's voices that will bring them running."

"What do they look like?" asked Fisher.

"I hope you never find out," said the boy grimly. "I'll tell you one thing. They're intelligent. A lot more than you or me."

"I dunno," said Fisher. "Maybe this isn't such a hot idea."

"It was *your* idea, Fisher," said the boy.

The astrogator cursed. "The hell it was!" he said.

"All right. All right." Gilwit strapped an extra clip of shells onto his belt. "Let's cut out the bickering. We came to pick up some marbles, so let's do it and get out of here. Where do we find the stones, ki—er, Jim?"

"Look for dunes. Big dunes, like gray sawdust. They're like miniature mountainous eruptions. Must have been belched out of the inner layer. Start digging, and you'll find them."

"That easy?" Fisher looked d u b i o u s, but the others couldn't read his expression behind the face-plate.

"That easy," said the boy tightly.

"Then why didn't you come back with a truckload?" said Fisher.

"Because we didn't have sense!" the boy answered loudly. "Because we talked too much!"

The astrogator was mollified. "Okay," he said. "Let's



get going."

The airlock opened and they dropped outside on the iron-gray loam of the strange silent planet.

THEY searched for half an hour before they located the sandy dunes. The boy spotted them first, and with a wave of his arm, beckoned the others in his direction.

They followed him. Fisher took one look at the dunes and leaped into them, scattering a cloud of gray dust over their heads. Gilwit grabbed him and shook his head in caution.

More carefully, they began to dig.

After fifteen minutes of work, Gilwit put down his shovel and leaned his arms on it. But Fisher wasn't to be dissuaded. The shovel flew as he searched for the multi-colored gems.

The boy dug quietly, steadily, with an air of confidence.

Suddenly, Fisher threw down his shovel and flung himself on hands and knees onto the dune. He dug into the gray dust and came out with something.

"I GOT ONE!" he shouted over the communicator.

"You fool!" said the boy.

Fisher looked at them stupidly. There was a round stone the size of an earth-peach in his hand, glittering dully in the gray darkness. The boy waved his arm at the two traders, beckoning them back towards the ship.

Gilwit started to follow the boy, remembering his caution about the planet's hostile inhabitants. But Fisher wouldn't pay any heed. He stuffed the stone into a pocket and turned to the dune again, scrambling around and looking for more of the precious gems.

His partner tried to pull him away by force, but Fisher shook him off. Fifteen years of third-class trading had primed the astrogator for a moment like this. And he wouldn't be frightened off by an enemy he couldn't see—and who couldn't see him.

The boy was gesturing frantically. They couldn't read his face, but the very angle of his figure communicated his concern.

A low laugh came from Fisher's communicator as he unearthed two more of the round treasures.

The boy didn't wait any longer. He started back for the ship.

"Fish!" said Gilwit, breaking his silence. "You heard what the kid said! There's a hostile species on this planet!"

"Then keep l o o k o u t!" snapped the other. "I'll get enough of these babies to take care of us for life. Keep lookout and I'll split 'em with you!"

Gilwit had no choice. He unstrapped the pressure rifle from his gear and circled the dune. The only sound of life was Fisher's heavy breathing as he scattered the sands of the planet Othello.

The boy was already back at the ship, and Gilwit felt a stab of fear as he wondered if the kid would dare take off without them. But how could he? he thought. He'd have to be pilot and navigator, both. But the funny way he was talking...

"Fisher! Gilwit!" The boy's voice clanged through their communicators. "Get out of there! They've heard you! Run for the ship!"

Gilwit looked around him wildly. Nothing.

"He's trying to scare us," said Fisher. "I bet there's nothing on this planet. He's a nut, Gilly! He's a psycho!"

"I don't know," said Gilwit unhappily.

"Come back!" said the boy's voice. "Don't stay out there!"

Then they saw it.

At the base of a distant dune, a white pool of light suddenly appeared. It shimmered on the ground, and then a long black shadow emerged from its center. The shadow was about eight feet tall. It wavered mysteriously, like a strand of black seaweed.

"Gilly!" Fisher dropped his shovel and stared at the thing.

"Take it easy," said the pilot in a strained voice. "We've met alien life before."

The thing moved toward them.

"What is it?" said Fisher.

The black thing seemed to be heading right for the astrogator. He froze. Then, desperately, he heaved the jewels at it.

"Here! Take 'em back!" he screamed.

Gilwit lifted his rifle, but a blinding light hit his eyes and he fired wildly.

"Fish! It's blinding me!"

"Run! Run for it!" It was the boy, running towards them.

The pool of light widened, and the black shadow was almost on top of the traders. It was a tall, almost shapeless figure—a biped with arms and fingers, and a round, rubbery head—but that was all the relation it bore to the human animal. Its black body glittered with beads of moisture.

"I can't see!" Fisher dropped to the ground, holding his gloved hands across his face-plate.

"Run!" cried the boy.

But it was too late. Another pool of light formed alongside them, and the two traders, blinded, terrified, surrendered to the long black arms of the strange race that made the planet their home.

CHAPTER V

WHEN Fisher opened his eyes, he saw the boy standing a few feet away, hands searching through his gear.

Gilwit lay on the ground, snoring peacefully.

The astrogator propped himself up on his elbows. "What's happened?" he asked. "Where are we?"

"Down below," said the boy curtly. He continued to dig into the straps of his gear, and finally came out with a tin of chocolate. "We'll have to ration our food," he said. "These birds don't eat."

Fisher jumped to his feet. He looked about him crazily. The place was a cavern, with slick, wet black walls.

"How did we get here?" He felt himself for bruises, and realized that his space helmet was off.

"Don't worry," said the boy. "The pressure down here is good. We can breathe all right."

Gilwit groaned.

"You okay, Gilly?" The astrogator bent over his friend with concern. The pilot rattled his head to clear it.

"Yeah. I'm all right. Where'd those black things go?"

"You won't see much of them," the boy said. "I think our appearance disgusts them."

"Nuts," said Fisher. "I don't go for this super-intelligence stuff. Nobody ever found a smarter species than old homo sap."

The boy just smiled.

The smile made Fisher sore. He grabbed the boy by the cross straps of his suit and put his head close to the youth's.

"Now listen, buster! We've had nothing but trouble since we fished you outa space! Now we're in a spot, and we want to know the odds! Spill it! What's the story on these characters?"

"Take your hands off me!" The boy's voice carried authority. Fisher let go.

"I'll tell you all I know. They're bipeds, like us, but that's about all. They're technicians, and damned good ones. They got gadgets so simple and beautiful you could cry to look at them. And they're a dying race. There can't be more than a couple of thousand on the whole planet."

"If they're so smart, why are they dying?"

"Don't ask me," the boy replied. "They took us on a stroll through their city, and you can tell that the living quarters could have held a hundred times their number. Their birth-rate must be down to nothing. But they got a thing called *vitchos.*"

"Vitchos?" Gilwit stood up. "What the hell is that?"

"I can't explain it. It's some kind of life-integration process. Fritz could explain it better than I could."

"Whose Fritz?" asked Fisher.

"The bio-chemist. F r i t z Fredericks. He formed the expedition. His theory was that the Moors never really *died*—that they solved their declining birth rate problem by integrating the life-force of the dying with the life-forces of the living."

"Then who are *you?"* Gilwit said cautiously.

The boy looked at him. "I *told* you!" he said in annoyance. "I'm Gil Howard!"

"Brother!" said Fisher. "You really got it bad."

"So what h a p p e n e d?" pressed Gilwit. "To Fritz, I mean. And the others? How did they get away?"

"They didn't. Only I did."

"How come?"

"The Moors dismantled our space ship. Probably just what they're doing to the *Buccaneer* this minute."

Fisher leaned heavily against

the wall. "Then we're finished," he said dully.

"But what about the space-sled?" said Gilwit. "How did we find you?"

"They didn't touch the space-sled," said the boy. "I don't know why. Maybe they didn't figure out what it was for."

"Then they're really not that bright." Gilwit paced the floor. "What will they do with us?"

"Nothing, I think," said the boy. "They never bothered us after bringing us here. But time will fix us. They don't need food to keep them going, so there's nothing edible."

"Then we'll starve!" said Fisher.

The boy turned to him. "Unless we eat each other."

"Is that how *you* got away?"

"Fish!" Gilwit gripped his partner's arm.

The boy shook his head slowly. "I don't remember *how* I did it," he said.

THE TINNED rations began to disappear.

"A hamburger!" said Fisher. "Why do I keep thinkin' of a lousy hamburger!"

"Cut it out," said Gilwit.

"I thought you were supposed to think of gorgeous foods when you were starving. Turkey dinners. Steaks. All I can think of is a lousy old earth hamburger."

"Let's get some sleep," said the boy. "Take our mind off our stomachs."

"I'll stand watch," said Gilwit.

"There's no need for it," said the boy. "We've been here forty hours and nobody's bothered us. They don't care what happens to us. They got their own problems."

"I think we ought to explore this place," said the astrogator.

"No!" The boy was definite. "The ship's somewhere overhead. If we stay here, we know where we are."

"What good does that do us?" said Fisher. "We can't fly up there."

Gilwit said: "The kid got up there once. And he got to the space-sled. Maybe he'll remember how he did it."

"That's no good either," said the other trader. "Our space-sled's small, too."

He looked back and forth at them.

"It can only hold one of us," he said.

THEY STRETCHED out and tried to sleep. The boy soon went off, but Fisher and Gilwit remained awake. The astrogator nudged his friend.

"Gilly," he whispered.

"What?"

"We're in a pickle, huh?"

"That's a pretty good analysis."

"This kid knows something he's not telling us. There's a way out of this cavern."

"He doesn't remember," said Gilwit. "His brains are scrambled."

"Well, we gotta come up with something—"

"Fish! *What's that?*"

The traders leaped to their feet again. At the far end of the wide corridor, long black shadows moved solemnly towards them.

"It's the geeks," Fisher whispered hoarsely. "Or Moors. Or whatever-you-call-'em."

"They're coming this way," said the pilot tensely. "Should we wake the kid?"

The boy was already stirring at the sound of their conversation. "What's up?" he asked.

"Your pals are on their way," said Fisher.

"The rifles are upstairs," said Gilwit, hurriedly undoing a strap. "But they forgot this." A knife glittered in his hand.

"Don't do anything foolish," the boy cautioned. "Their hostility is passive. They won't use force unless they have to."

The black shadows came closer. The men could discern the outline of four dark figures, carrying something between them. It looked like a stretcher.

"They're carrying somebody," said Gilwit. "A sick one."

"Probably a dying one," said the boy.

The rubbery feet of the aliens made sharp, slapping sounds against the wet stone as they neared the three prisoners. They were eyeless, but their smooth round heads gave the appearance of looking past the three men. The two traders pasted themselves up against the slick walls as the Moors went by them. But the boy remained in their path.

"Chavaron!" he said loudly.

The procession halted.

"Kid!" Gilwit's eyes widened in fear. "Get back! Don't try to stop them!"

The boy remained unmoving.

"Chavaron!" he repeated. *"Fredericks! F r e d e r i c k s! Vitchos!"*

The leader of the group slowly raised a long, seemingly jointless arm. He placed the tips of his black webbed fingers on the chest of the boy, and Fisher cried out: "Look out, kid!"

He stayed firm. The webbed hand flattened against his chest, and the creature's round head developed a gaping maw.

"Churu!" said the alien, the voice emanating from a chest as cavernous as the place they were in. *"Churu!"*

His fingers pushed against the boy's chest, only slightly, but with enough force to send him reeling backwards. Gilwit made a motion to help him, but something in the boy's face decided him against it.

The alien swept his arm back in a gesture towards the sick creature on the stretcher.

"Vitchos," he said.

The Moor returned to his burden. With a nodded signal to the others, he continued down the slippery path.

When they were out of sight, Fisher relaxed with a string of rolling epithets.

"What did they say?" asked Gilwit. "What's it all about, kid?"

The boy watched the black creatures depart. He looked dazed. "What's that?" he said.

"What was all the chatter?" said Fisher. "What did you tell them?"

The boy shook his head. "I don't know. I can't speak their language. Fritz could, though."

"But you *talked* to them!" said Gilwit heatedly. "We heard you."

"You're crazy," said the boy. "I *couldn't* talk to them. I don't know how!"

Fisher threw his hands in the air. "I give up!"

The astrogator went over to his gear and fumbled for the remains of his chocolate tin. Savagely, he gulped down the last piece in some odd kind of defiance. He flopped on the ground, and his partner joined him. They both looked at the boy, who turned his face away.

Suddenly, there was a blast that shook the walls!

"WHAT *was that?*" Gilwit and Fisher were on their feet again.

The roar continued, directly above their heads.

"Rockets!" said Fisher. "It's the *Buccaneer!*"

"What are they doing to it?"

The boy interposed. "That doesn't sound like the *Buccaneer.* It's another ship!"

"How can you tell?"

"I've heard enough rocket blasts to know what's a tank and what isn't! That's a big ship!"

"Somebody's landing!" cried Fisher, jumping up and down. "Maybe they'll save us!"

"If they can find us. Come on," said the boy suddenly. "I've got an idea!"

He started on a fast trot down the wet, black corridor, carrying his helmet in one hand. The two traders hesitated a minute, picked up the gear that was on the ground, and ran after him.

"Where's he going?" Fisher panted.

"Maybe he's remembered how to get out of here!"

They sprinted through the darkness, trying to guide their running feet with hand light-torches. They ran until they were almost exhausted, and then the boy made a sudden sharp turn to the left.

"In here!" he shouted.

Through a narrow doorway cut into the solid stone they saw a patch of soft, gray light.

"It's a room!" cried Fisher.

THEY went inside, at a slower pace. There was an unintelligible jumble of machinery alongside one damp wall. The traders looked at it curiously as they passed, but the boy had his destination fixed at another doorway.

But the second room wasn't empty.

One of the black, alien figures was lying on a low stone bed. He raised himself feebly as they entered.

"Chavaron—" he said weakly.

Fisher gawked at the sight of him. The eyeless face frightened him, even though he had seen far more outlandish tricks of evolution in his space travels.

"Kill him!" said Gilwit.

"No!" The boy halted. "Let him alone. He can't hurt us."

He walked briskly past the bed and over to the far wall.

"It looks like a ladder!" said Fisher gleefully.

There were horizontal indentations in the black stone, each one about two feet apart. Fisher rushed past the boy and tried to scale the wall. But the indentations w e r e n't nearly deep enough for him to establish a foothold, and he fell back into the room.

"It's no use," he gasped. "We can't make it up there."

"How do *they* do it?" asked Gilwit.

"Look at his feet." The boy pointed to the bed. The black thing was turned in their direction. They could see the round, rubbery objects on the soles of his feet.

"Suckers," said Fisher under his breath. "They climb these walls with suction."

"Then how can we get out?" Gilwit looked up. The wall rose some sixty feet. They could see a few scattered stars in the opening above their heads.

"I don't know," said the boy. "But there's one thing we can do." He whipped his light-torch straight upwards, blotting out the stars. "Point your lights up there. Maybe whoever's landed will see it."

They followed suit.

After five worried minutes, nothing had happened.

"It's no use!" said Fisher.

The thing on the bed made a noise.

"I'm worried about that one," said Gilwit, looking over his shoulder. "Maybe he'll signal the others."

"He's harmless," said the boy, eyes trained on the opening. "He's dying. Waiting for *vitchos.*"

THEN they saw the helmet, a small glass ball reflecting the light of their torches.

"Somebody's there!" shouted Gilwit. "Hey! *Hey!*"

"Get us out!" s c r e a m e d Fisher. "We're earth people!"

"A rope!" the boy cried out. He turned the light on himself, and the others realized the sense of his maneuver. They did the same. "Throw us a line!" said the boy.

The helmet disappeared. The traders groaned.

Then a second space-helmet appeared over the opening. They shouted to it again, and this time with joy. A thin steelon rope came tumbling down the shaft.

"We're saved!" Fisher grabbed the rope and started to hoist himself up, almost before their rescuers could secure it up above. The boy followed at Gilwit's insistence.

Just as the pilot grasped the line, the thing on the bed started to move. With great effort, it lifted itself from the bed and started towards him. But it was too weak to make more than a few haltering steps. Gilwit saw it fall to the ground and lie still. Then he climbed up.

On the surface of the planet, the two traders jumped on their saviors and pummeled them happily. The boy didn't waste the time.

"Let's get to your ship," he told them. Then he realized that their communicators weren't operating on the same wavelengths. To instruct them, he resorted to exaggerated arm motions.

The strangers didn't seem to move. Gilwit grabbed the arm of the nearest one and tugged. "Come on!" he said. "Hostile planet!"

Then he realized who it was. *"Margo!"* he said.

There wasn't time for a reaction. Already, a pool of white light formed a hundred yards from them.

"They're coming after us again!" shrieked Fisher. "Let's get to the ship!"

The two traders broke into a run towards the new-landed space ship. It was a beauty; a huge, slim craft, white as moonlight. The boy hesitated, then dashed after them.

The two newcomers looked at each other in apparent bewilderment, and then they realized that their own ship was the destination of the men they had saved. They had no choice but to follow.

When they were safely inside, Trevelyan took off his space helmet and gasped:

"What do you think you're doing?"

Gilwit merely pointed to the viewport. When the gambler saw what was heading for the ship, he sat down without a word. Then he watched gratefully as the trader started the

rocket motors and shot them away from the black planet Othello.

CHAPTER VI

MARGO said:

"You knew my husband, didn't you?"

"Is that why you followed us?" asked the boy. "Just to find out more about Fritz?"

"That was my reason, yes." The blue-haired woman looked up at the Irishman by her side. "Trevelyan had somewhat different ideas. He was interested in that pretty gem of yours."

The gambler smiled. "Now who could be blaming me?" he asked.

"Fritz kept one as a lucky charm," said Margo. "He wouldn't sell it for anything. He said he'd bring me back a bucketful of them one of these days."

The boy said: "Fritz was the real discoverer of Othello. He was on a star-liner—the Dolphin, remember it?"

Trevelyan said: "Yes. It was lost."

"No, it wasn't," said the boy. "You'll find the pieces of it on the black planet. We got caught in its orbit and crashed. Fritz and I were the only survivors. We managed to get off all right, but Fritz was fascinated by the place and organized a return expedition."

The boy looked at the woman. "He wanted me to come along, because he had an idea that I had saved his life."

"Who were the others on the expedition?" asked Margo.

"Gil Howard was our pilot," said the boy, a far-away look in his eyes. "Jim Mitchell was our astrogator."

"And your name is really *what?*" said Fisher softly.

"Joe," said the boy. "Joe Smith."

Then he put his head in his hands and wept.

"What is it, kid?" asked the pilot.

"I don't know. I get all confused sometimes." He looked up at them with misty eyes. "I *know* I'm Joe Smith. *I know it!* I'm at *least Joe Smith!*"

"At least?" Margo looked baffled.

"I can't explain what I mean," said the boy. "I remember things. All sorts of things. Things I couldn't remember if I was only Joe Smith."

Gilwit said: "What sort of things?"

"The Mars Revolt. I remember that. The hydrogen explosion in the Embassy. But that was fifty years ago!"

"That's right," said Trevelyan curiously.

"And Braun University. A professor named Chambers, with a wooden leg. And a girl with red hair—a girl named Janette."

"I know a Janette," said Fisher lightly. "Prettiest little gold-digger this side of Saturn. But she's a blonde."

"And how about me?" the blue-haired woman asked. "How about me—Margo?"

"I know you, too!" the boy said. "I know so much I never knew before!"

He put his head back into his folded arms and sobbed. The sight brought out all the maternal sympathy in the woman. She went to him and put her arm around his shoulder.

"It's all right," she said softly.

The boy looked up at her. His eyes were still damp, but he smiled. "Baby," he said in an odd voice, "you ought to wear a blindfold. Your eyes say too much!"

Margo screamed.

"FRITZ!"

DR. STANTON came out of the room at the Vegas Club. He smiled reassuringly at Fisher and Gilwit.

"Your friend's in no danger," he told them. "But he's a pretty baffling case. Like four-way schizophrenia."

"How do you mean?" said Gilwit.

"He thinks he's four people. Joe Smith. Gil Howard. Jim Mitchell. And Fritz Fredericks—Margo's husband."

"Wow!" said Fisher. "That's quite a trick!"

"It may not be a trick at all," said Stanton seriously. "You learn a lot of marvelous things in space. Maybe this is another miracle. Maybe we have a medical phenomenon on our hands."

"Listen, doc," said Gilwit. "You're not going to have the kid put away, are you? I mean, he's really not insane or anything. He's just all balled up."

"He was Fritz Fredericks, just now. At least the Fritz-fourth of him had the upper

hand of his ego." The doctor smiled. "We had quite a talk. Fritz was a bio-chemist, and one of the best. He knew quite a bit, and he was always willing to learn more. It was a very instructive talk," he added.

The doctor looked at them quizzically. "Did the boy ever say anything to you about *vitchos?*"

"Yes," said Gilwit. "He mentioned it."

"Crazy stuff," said Fisher. "About integrating life-forces."

"Well," said Stanton, "it's either crazy stuff, and he's a mental case—or, it's the truth, and he's an example of this *vitchos* business."

"I don't get it," said Gilwit.

"Fritz' story is this," said the doctor. He paused and wiped his spectacles. "See? The kid's got me doing it. The *boy's* story is this: The expedition force—Fredericks, Howard, Mitchell, and Smith—were captured by these creatures on the planet that Fritz named Othello. Fritz had hoped that he could establish friendly relations with them—he even tried to speak their tongue. But the "Moors" as he called them, were too busy trying to save their civilization.

"So they let the prisoners alone, and promptly proceeded to take their ship apart. Why, he isn't sure. Possibly to make use of the material. At any rate, there was no way for them to leave the planet—and no way to get food that would keep them alive.

"They were slowly dying of starvation, when Fritz got the idea. He went to their captors and asked them if they would allow the prisoners to go through their *vitchos* process.

"For some odd reason, they accepted his suggestion."

"But what did they do to them?" asked Fisher.

"I can't tell you that. But it's some process for incorporating several different life-forces in just one body."

The traders looked at the medical man, horrified.

"You mean the kid is—"

"Fritz selected the boy because he was young and strong. They thought he would have the best chance to get away. He was obviously right. Somehow, Joe Smith got to the space-sled and escaped."

"Then the kid *isn't* Joe

Smith," said Gilwit, almost to himself. "He's really—"

"Only if the story is true," the doctor interrupted. "Only if it's true. But we have no idea if it is or not."

The doctor lifted his bag. "Well, I've got other fish to fry. I've got to be going." He shook their hands solemnly. "G o o d b y e, gentlemen. And good luck."

"So long, doc."

They watched him depart down the long velvet staircase.

CHAPTER VII

THE *Buccaneer II* blasted away.

Fisher watched Leo 3 disappear in the viewport. Then he sat down and watched his pilot operate the controls.

"Well, another week shot," he said.

"And we're no richer," said Gilwit. "Just a lot of Blind Man's Rubies, silver dust, and Rhinestone Wonders. . ."

"It's a shame we had to leave those big stones on Othello," said Fisher. "Maybe someday—"

"Skip it," said Gilwit. "You couldn't get me back there for all the diamonds in the galaxy."

Fisher took the seat beside him.

"Well," he said casually, "it wasn't a *total* loss. We had some fun—and we still have *this*."

"What?" said the pilot.

Fisher reached into a pocket and came out with a flashing, multi-colored gem.

"Where the hell did you get that?" asked Gilwit. "That's the kid's!"

"He gave it to me," said Fisher. "Insisted that we have it. Pretty nice of him, wasn't it?"

Gilwit looked at the gem with appreciation. "It sure was."

He cut the rocket motor and took the jewel from the astrogator's hand.

"You know s o m e t h i n g, Fish?" he said. "We shouldn't sell this baby. We should keep it as a memento.

"After all, it was from the nicest four guys we ever met."

THE END

PSYCHO AT MID-POINT

by HART LLISON

illu by ORBAN

Under the deadly tension of star-travel, with men wound tight as steel springs, and the earth light-years away, I still wanted the vital answer: Why did Wallace crack?

AFTER fifteen months, Wallace went mad.

They had expected death from a flaming sun, or gasping blue from air loss, or bloated and eaten away inside by fungus on a weird planet the other side of hell.

But it hadn't happened that way at all. There had been no planetfall. And Wallace was mad, quite mad. Mad enough to cause *all* their deaths.

The situation growing on the *Silverstar* was d a n g e r o u s: deadly deathly dangerous!

It had been like a bad symphony. Building and building with obviousness, to a final, blaring crescendo. Horner had seen it coming since Mid-Point.

It was not finding a mappable planet at the end of their outward year that had swung the needle. S o m e o n e had fouled up in the Plotting Division, and it was a straight two-year run in the ship, unrelieved. Wallace had begun to give since the end of the first year. Epstein, Wirtz and Bichimer were all right, they were sane and stable. No trouble from them. But Wallace was going to snap, and snap with a bang that might not be just noise.

Horner sat across from him, every now and then sneaking a look across his soup bowl. Wallace had a thin, almost hungry face; deep hollows in the cheeks, and if you looked quickly, no eyes at all, just dark triangles set far back on either side of the aquiline nose.



"I'm going to kill you, Wallace, kill you right now!"

He gave the impression that if his hair had not been crew-cut—as everyone's was—the brown straightness would have been tangled and tumbled over his face. He looked lean and hungry. *Yond Wallace,* thought Horner, *has a lean and hungry look.*

It was so easy to spot one that was ready to go. The nervousness, the starting at unexpected sounds, the irritability, the restlessness, the crankiness. And Wallace had all the signs.

"What's the matter, George?" asked Horner.

Wallace jerked visibly. He looked up from his soup bowl —so low and hunched over had he been—and swung his head around, till he realized it had been Horner who had spoken.

"Nothing's w r o n g; why? Should something be wrong?"

Another symptom. They had all five been cooped up in this metal coffin for fifteen months, and the sound of one another's voices was so well-known, only a deaf man could have had any doubt as to who had spoken. Yet Wallace had showed momentary confusion. It was getting worse.

"No, no, certainly not. It just looked—well—you know, as though you had something on your mind," Horner placated.

"No," W a l l a c e answered tightly, briefly, "nothing on my mind."

He gave Horner a sharp glance and thrust his face back down close to the soup bowl. His spoon made idle, repetitious motions in the thick green stuff.

HORNER reluctantly pulled his gaze off the man. He made a crooked smile, bringing out a dimple in his right cheek, and looked at the other three. They were all at ease and eating heartily as though nothing were amiss. No problem there. He had argued once or twice with his other shipmates, but it was not at all the same thing as the continual friction with Wallace.

He turned his attention back to Wallace.

Lord! How the man resembled a batch of raw nerve-ends, stuck together and waiting to twitch.

"A game of backgammon af-

ter dinner, George?" Horner asked.

This time Wallace's face came up slowly. His eyes narrowed and he said, through thinned lips, "What do you want from me, Horner? Is there something you want? If there is, tell me. If not, leave me alone, will you?"

Horner's eyebrows went up and he spread his hands in apology, "All I asked was did you want to play a game after you'd finished eating. Didn't mean to get you sore. Sorry, sorry." His voice was smooth, low, trying to cool Wallace. "Don't get mad. If you don't want to play, all right, I just thought you might, that's all."

"You know I beat you every time we play," snapped Wallace, slipping his leg over the bench and getting up. "Why do you keep asking when you're such a rotten player and I always beat you? Get someone else. You never ask Epstein or the other two—just me. Why me, that's what I want to know. Why me? Why always me?"

"Stop s h o u t i n g. Because you're the only one on the ship who can play backgammon, for God's sake."

"Then ask someone who isn't on the ship, goddammit, but leave me the hell alone!" Suddenly his face had gone white. The neck, too, paled into the shirt of his jumper. He was shouting, fists clenched at his sides. crushing into his pants' legs.

He turned and stepped over the sill, through the seal-port, and stamped away, his boots making a clear ringing through the ship.

"What did I say?" asked Horner.

HORNER came awake suddenly, and heard the steps going past his cabin. It was someone walking around during "nighttime". That was more than unusual.

During "nighttime" the gravity was shut off in the ship. They had no way of knowing when they might need extra power, and there was no sense wasting the energy directed for artificial gravity when they were all asleep and a strap could do as well as full-G.

The gravity had been shut off.

Anyone walking around was doing it with magnetized boots. Walking with magnetized boots was comparable to sloughing it through hip-deep swamps in your sleep. It wasn't impossible, but it wasn't fun and games either.

The reverberations of the footsteps on the metal bulkhead-floors came to Horner clearly. Why would anyone be walking around at that time? Everything was dark, no one was up, it was weird.

It was Wallace. Horner was sure of it.

He slipped out of bed, holding on to the edge of the bunk, sliding into his boots. He pushed himself away from the bunk, toward the wall-cabinet. He grabbed it with one hand and opened it with the other, extracting a pair of shoe-magnets. He slipped them over the toes of each boot quickly, and gave himself a downward shove.

The boots stuck with a sharp click! and he stepped awkwardly toward the door.

Horner opened it cautiously, a crack at a time, letting himself peer into the hall bit by bit. The passage was empty.

Had he gone to the left? Back that way was the galley, the lounge, Wallace's own cabin. Or up forward? To the control room? He drew a recall of the sounds he had heard. The footsteps had been going toward the front of the ship.

Wallace was somewhere up front.

Horner stiffened with crawling fear in his stomach. Wallace, who was about to give, was loose on the ship while they slept. Free to enter any cabin, do anything he wanted, walk around in the control room. It made the blood pound in his ears just to think about it.

He made his way to his bunk, and fished under the weighted pillow. The nightlight above the door cast a glow across the barrel of the service revolver.

Horner checked it, shaking as he did. He slid the charge compartment out and ran his finger across the triple row of racked charges. He edged his way into the hall, then, and hugged the curved wall, crouching low.

He moved slowly in the darkened passage, his finger-

tips lightly passing over rivet after rivet as he approached the control room.

THE cabin's door was ajar. He stepped silently to the other side of the passage, and looked into the room. It was quite dark. There was no sound, but he felt movement from within. The wide-angle viewport had been opaqued, and even the wormlike white lines of stars slipping past in the dead black of hyperspace was gone.

He put the toe of his foot against the door, being careful his magnet's surface did not touch the metal, and gave it a tiny shove. Without gravity, the door slid completely into its berth in the wall. The black rectangle of the doorway opened before him.

He was suddenly afraid. If Wallace had gone mad, and was loose in there, he probably had a revolver, too. And though Horner would hesitate to use his, Wallace would have no such compunctions. He hesitated.

Biting his lower lip, Horner angled himself up to the open blackness and crouched lower still, slipping into the control room without sound, his boots fastening down without their usual magnetic clack.

Wallace was there.

He was hunched over the supply cabinet, putting something on the shelves. His back was to Horner. Keeping his eyes on the dim figure in the darkness, Horner reached to his right and passed his hand over the light plaque. Overheads came on suddenly, causing him to blink.

Wallace spun around, flattened against the wall, eyes wide, he stared at Horner. He was half-blind from the sudden light.

"Who—who's that?" he demanded, one hand groping out in front of him. He was unarmed. "Oh, it's you, Horner. What are you doing up? What are doing spying on me?"

Horner let his gun-hand lower. He felt an urge to pocket the thing, but there were no pockets in his body-hugging pajamas.

"What do you mean, why am I spying on you? Don't you think it's a little unusual crawling around this ship in the middle of the night, hiding things?"

He advanced a step toward Wallace. The man fell back.

"Here, what's that you're putting in there?" he demanded, looking past Wallace's shoulder at the supply cabinet.

Wallace tried to block the cabinet with his body, but Horner motioned him off impatiently with a wave of the gun.

Dozens of neatly-stacked packages of concentrated food and bulbs of water were on the shelves. Wallace had emptied the supplies from the cabinet and loaded it with provisions. The displaced items were piled on a magnetized tray from the galley. "You brought the food and water on the tray. You were planning on hiding the supplies. No one ever looks in there, we seldom come in here. Why? Were you planning on living in here? What is this? I want to know, what is this, what is this?" He felt anger and confusion building in himself.

Wallace moved around the wall, felt his way across the computer-board behind him, and edged toward the door. "I just wanted to— I don't want any more— If you don't—" He left the sentences unfinished, the words unsaid. With surprising agility he bent his knees, left the floor, and shot down the companionway, away from the control room.

A few seconds later Horner heard Wallace's cabin door close. He felt sure if there had been such on the door, a lock would have slipped into place. He was thankful there were none on the crew's cabin doors.

Then he thought of his own, and he wasn't glad at all.

He looked at the cabinet, and its contents, pursed his lips, and shook his head. Horner passed his hand across the light plaque and closed the door behind him.

Back in bed, he wished fervently that he might have heard a lock click on his own door after he had closed it.

He hadn't, and his dreams were exhausting through the night.

"WHAT SHOULD we do, Don?"

Epstein shrugged his shoulders eloquently. "I haven't any idea, Horner. We can't lock him up, actually. None of the cabins have locks, and the closets are filled with supplies it would be just stupid to leave

floating around when we're without gravity. Besides, they're too small."

"The only rooms with locks on the doors," said Wirtz, "are the control rooms and the engine room."

Horner hunched down into his lounge chair, steepling his long, thin fingers. These were good men, but they were inadequate in situations that demanded fast thinking. "It would be suicide to closet him in either of those. We'd get ourselves blown up or thrown off course the first five minutes after he snaps."

"Are you sure he's cracking?" asked Epstein.

Horner's eyes narrowed momentarily, "Do we need a nerve-graph to trace his reactions? Just look at him, for God's sake. The man is about to go completely." He'd never really liked that Epstein. Short-sighted, inefficient—but a pretty decent fellow, taking everything into consideration.

"So what *do* we do?" Ray Bichimer inquired, running his hand over the film of moisture on his drink-bulb.

"We'll just have to watch him, that's all," answered Horner. "We can't let him out of our sight for five minutes. I don't know what all that food and drink he had in the control room means, but I moved it all back to the galley.

"I've been watching his cabin all morning, waiting till you got up. I had difficulty sleeping, thinking of him. Now perhaps we'd better put a guard on the control room, and someone to keep an eye on Wallace's cabin. We can take it in shifts."

"I'll watch the control room," said Bichimer. He sucked a final drink from the plastic tube on the bulb and set the emptied vessel on the lounge table next to his chair.

He left the lounge, walking easily in the re-instated artificial gravity.

"Now," said Horner, "who wants to take first shift at Wallace's door? I'd do it, but I was watching it since late last night—I didn't get much decent sleep—and I want to sack in for a while."

"I may as well," said Wirtz, rising.

"I'll loaf," smiled Epstein.

Thank the Lord all of us *are normal,* thought Horner, as he made his way back to his cabin.

THE SLEEP he desired came quickly, this time, and he lay there unfeeling for many seconds after Epstein had begun shaking him.

"Hey, Horner! Roust! Our boy is in the lounge. He's hit a new high—or low if you prefer in abnormality. Come on, get up!"

Horner came up from behind muggy eyelids, shaking his head to clear it. "How long have I been asleep?"

"Almost four hours. Come on, hurry up."

Horner slipped out from between the sheets, still fully-dressed, and pulled his boots on. He followed Epstein aft to the lounge.

Wallace was backed into a corner, a lounge chair pulled in after him, blocking him off from Wirtz and Bichimer, who stood in the lounge's center, pointing, jeering, laughing.

"Wirtz, Ray! Cut it!" Horner snapped. They turned and the smiles faded from their lips as their laughs died. "Knock it off. Let him alone. It's better that way." He moved toward Wallace, motioning the other three away. "Go on, beat it. Clear out of here. I'll take care of him." When they hesitated, he half turned on them.

"You're not Cap—" began Epstein, but Horner cut him off with a flat, slashing movement of his hand.

"I'm not anything. Neither are the rest of you, but I want to talk to him, so go on, get the hell out of here."

Casting looks over their shoulders at Wallace and Horner, the other three left the lounge. Horner heard their cabin doors close, one after another. He turned back to Wallace.

"What's the matter George?"

"Get away from me."

"Why? I only want to be your friend, for God's sake. If you tell me what's wrong, I can help, perhaps. Come on, tell—"

"Shut up! Leave me alone! Get away from me! I don't want to die, that's all. I'm afraid. I'm scared white, and I don't want to stay cooped up in here with you four any more!" He was nearly screaming, his face strained and white from the effort of keeping his voice in check, muscles in his jaw twitching spastically.

Horner moved toward him slowly, one hand reaching out. "Come on, George, come out

of there. We won't hurt you. We're your friends. Come on."

"I've never been a hero, and I'm not going to start now. I'm not a coward, either, but I'm scared. I'm so scared of all of you. All of you." He was mumbling, running his hands nervously over the fabric of the lounge chair.

"And I'm not going to die, you'll see. I'm going to protect myself." He stopped and licked his lips, "Yes, I am. I am. You'll see, I am." The sweat formed, rolled down his forehead, across his cheek, dripped into his jumper's neck. The man was a shaking, twitching wreck.

Horner stopped, started to pull the lounge chair away. His movements across the room toward Wallace had been slow, almost inexorable, like a glacier moving, moving, never stopping, never heeding, always moving.

Wallace was beginning to tear seriously around the edges.

"Come on out of there, George, let me help you."

Wallace slid up flat against the wall, as though trying to push out through the steel. "Get away from me!"

"I just want to be your friend, George, We're all in this together, let me help—"

Wallace's hand came up, swung in an invisible arc, smashed flat against Horner's face, the crack resounded down the passage, bouncing off the metal walls.

Horner stood back, his eyes wide, a light growing in them. The five-branched burning on his cheek was angry, and his temples throbbed.

Wallace edged out from around the chair, pointed a shaking finger at Horner, "Y—you're insane." He was out the door, and the click of his cabin door closing was even louder than the silence.

I'm insane? The words seemed trapped in his head.

He wished they weren't. He was terrified, and there was no room in there for anything but terror.

The hand that lifted a drink-bulb was shaking.

IT was "night" again. It had been "night" six times since the affair in the lounge. Wallace had kept to his cabin during much of that time, and once, when Wirtz had opened

the door, to see what he was doing in there, a metal bookend had preceded a foul oath through the door.

They had left him alone after that.

But tensions were there. Horner could feel them building. They would strain and tauten and snap, and something bad would happen. There was no doubt now. It would happen. .

But now it was "night" on the ship, and Horner lay in his bunk, thinking about Epstein watching Wallace's cabin, about Wirtz watching the control room, of Bichimer sleeping, of Wallace sitting with hunted, haunted eyes in that cabin.

He had looked in the mirror that day.

The change had been coming for weeks now. His face a mask of turbulence. The temples throbbed unnaturally, jaw muscles twitched, his eyebrows rose unexpectedly, his whole being seemed to express movement. Unnatural movement, nervous tension. Bichimer had dropped a spoon at mess, and he had leaped from the table, screaming. It was getting bad.

The fights between the four of them were getting worse. He didn't remember when *those* had started, but now they were all avoiding one another.

It would have to come to a head soon, or they would *all* go mad.

Crack-ups were infrequent in mapping ships, because one year out, a planetfall, and a year back, was not too much for a human being to stand. But when that year out was not terminated with a planet-find, the trip back was always tense. With a really unstable person like Wallace on board, things were inevitable to become complicated.

They had, and now their trip back—after fifteen months—was becoming an inescapable nightmare.

If we had landed somewhere, thought Horner, *it might have been different. But our flight-plot took us nowhere. A few floating rocks, but nothing, nothing. Nothing out there, nothing.*

It had been that, and instability, which had combined to bring Wallace to the edge. He was on the edge, about to fall, and if he went over, there

was a good chance they would all go with him.

THE shot and scream brought him up with his hair on end.

The sounds mingled together, one blending into the other, the shot ringing through the passage, drowning out the sheer horror of the scream that rang through the passage, drowning out the raw force of the shot.

It was Wallace. He had cracked! This was it!

He knew it instinctively.

He was out of bed, into his boots and magnetized in seconds. With gun in hand he threw open the cabin door, pushed himself off from the door frame and shot down the companionway.

Wirtz was floating a foot above the deck, revolving slowly, lying on his back, knees bent and sticking up like twin steeples. He was clutching his face and chest, breathing blood. Small globules of blood floated above the man.

He died as Horner approached.

Oh, My God In Heaven he thought. "Wallace, Wallace, Wallace, Wallace, Wallace!" He screamed, pulling the trigger again and again. Shot after shot exploded against the control room door. Somehow he knew the madman was in there, somehow he knew he had to kill him. Kill him before he killed them. His gun was pouring blast after blast into the super-hard steel of the door, burning and scarring it, leaving it still unopened. Silent and deadly.

Finally he stopped. The choking fumes of the hand-gun clogged the passage. Even the air conditioners were unable to clear them away quickly.

Horner leaned against the wall, rubbing the back of his hand across his mouth. It tasted from explosive chemicals. The revolver clung to his hand, a warm weight.

He stared at the door.

The problem and the hate. But first, the problem. There it was. All in a nutshell. The nutshell happened to be the control room.

His eyes came to rest on the body in the middle of the passage. The flow of air through the conditioners had edged the corpse into the angle of cabin door and passage roof, where

it hung, still. *Good old Wirtz,* he thought, realizing he was being inane and hysterical.

"Good old Wirtz," he said aloud.

Suddenly, the ship jumped. The body came crashing down and he was thrown to the floor on top of it. The gravity had been re-instated. The ship was changing thrust-vector! Course was being changed! The madman had done it! He had ripped out the wires in the plot-tank. Yes, that was it, the plot-tank! He had been afraid Wallace might think of the plot-tank, and now he had, he had thought of the plot-tank. Now they were no longer headed back for Earth!

HE WAS getting to his feet as Bichimer careened down the passage, trying to maintain his footing as the ship veered from its course.

Wallace is in there, he's ripped up the plot-tank, we're off-course, we've got to stop him!" Horner shouted, running his words together.

The other man stopped, his mouth open, one hand steadying himself on the bulkhead, as he caught sight of the body on the deck, the blood that had now spattered the passage, Horner's wild look.

"Bichimer, snap out of it! We've got to get to him in there. He's changed our course, we're heading out somewhere." He was shaking the other man, holding him tightly by the shoulders, shouting into his face. Bichimer stared at Horner with a growing dullness. Vague sounds came from his lips. Spittle drooled from a corner of Bichimer's lips.

"Muh-muh-muh-muh—"

It was the sound of insanity.

My God, thought Horner, *he's snapped, too!*

He propelled Bichimer before him, shoving him back toward the lounge. As they passed what had been Wallace's cabin, he saw Epstein lying sprawled against the bulkhead, his forehead bleeding from an ugly gash. He was shaking his head, and moaning.

"Don!" Horner snapped.

Epstein looked up dully. "Y-yeah?"

"Come on into the lounge. Wallace is loose in the control room. He's changed our course. Bichimer's gone, too. Snapped, must have snapped, snapped.

Wallace shot Wirtz, he's back there. We're all alone." The words crisped out, as though without any conscious effort on Horner's part, as though they had a life of their own. He seemed unaware he was saying them.

He walked past the bleeding man, allowing him to get up. Epstein followed them into the lounge.

Horner shoved Bichimer into a lounge chair. The man sat there, hunched over, staring at his hands, eyes strangely frosted over.

EPSTEIN went into the refrigeration-tank and brought up a roll of treated gauze. He pulled a tab on the roll and unwound a length of it.

After he had swabbed off his head and Horner had wrapped the wound in fresh gauze, after they had argued bitterly, Epstein fell into another chair, and looked blank. "What now?" he muttered.

"First, tell me what happened. I thought you were watching his cabin."

"I was. He opened the door and stuck his head out, with that crazy look of his—like someone was breathing down his neck. It was the first time he'd come out in days, and I didn't know what to say. I mean, we've been watching him, but I didn't know what I could do if he wanted to come out.

"Next thing I knew he was across the passage and there was a metal bookend—mate to that one the other day—on my skull. I woke up a few minutes ago." He rubbed the bandages apologetically, as though offering them as an excuse for his inefficiency. "What happened to you?"

"I was in bed. Heard a shot and Wirtz scream. I got out and went to the control room. Wirtz was all over the place and Wallace was in there, with the door locked. I tried to blast it, but you know how effective a hand-gun is on treated steel." For a second Horner marveled at the calm way he could talk while such things were still fresh, still happening.

"Then the gravity came back on and the ship changed course," he continued. "Only way he could have done that was to rip up the plot-tank's

guts. And if he did that, there's no control on this ship. We're heading off into space somewhere, *do you understand?*

"We've got to get him out of there before it's too late. This ship has only so much extra fuel."

Epstein motioned toward Bichimer. "What about Ray?"

Horner shrugged his shoulders, "He snapped when he saw Wirtz, and felt the ship change course. Everything must have been piling up on him till the strain of the last few days was too much. This was enough to finish him. He'd have been all right under normal circumstances—no crack-up—but this flight has been enough to unravel anyone."

"At any rate," he concluded, "we're all alone now. I don't think we have to worry about Bichimer, he's almost catatonic, but we have to pry Wallace out of there."

They both looked at Bichimer who slumped in the lounge chair, mouthing incomprehensibles, hands limp across his knees.

It was two down, two to go. And one both down and still going.

EPSTEIN rolled the mobile torch up to the control room and signalled Horner, down the passage, to turn on the juice.

The long, flexible nozzle leaped in Epstein's hands. His spacesuited figure tensed, feet spread apart, back arched, as flames poured out of the hose.

He had been the most expert at handling the all-purpose welding machine, so to him had fallen the chore of burning a hole in the control room door.

In spacesuit, staring out through the hard plastic window of the helmet, Epstein played the flame-thrower against the door. Huge balls of flame rolled out, roaring, and flung themselves at the door. They disappeared magically to be replaced by others. Again and again the flames rushed at the door, till the hall was clogged with thick, black smoke.

"Cut it, Horner, cut it!" Epstein yelled.

The flames sputtered and died.

After ten minutes the passage was clear and they saw the melted hulk of the door. It was slightly recessed into its

wall-berth. The lock had been melted, and droplets of still-molten metal dripped onto the deck, spattering. The door was open a slit. A thin slit beyond which darkness from the cabin could be seen.

"May as well be me," said Epstein.

Horner stepped up next to him. "It may sound ridiculous, but I'm right behind you, Don," he said.

There was sense to that. Epstein was in a spacesuit, Horner was unprotected. It was logical.

The man in the spacesuit pulled off his thick gloves, drew his revolver. He stepped up to the door, trying to crouch in the restricting garb. He turned once and looked at Horner. A sudden clarity came over his face and his eyes changed depth for a moment. Then,

"Why does this have to happen? What made Wallace crack?"

For a second Horner looked at him. Then he realized: that face would be burned in his memory forever.

SOMETIMES we sense the future, even though we have no conscious idea of what is to come. Horner saw the future in Epstein's eyes. The man knew what was to come. He turned back, and gave the door a kick. It slid into the wall completely. The black within the cabin seemed to ooze out into the hall. Only a faint patch of light was cast into the control room. Epstein took a step forward. Then another.

The flash and roar of the gun was overshadowed by Epstein's scream. The darkness that was his face lit up hideously, once, twice, blackness before and after and between. He spun, his legs twined into almost rubber twistings, took one hobbled step, and fell back through the doorway. The helmeted head hit the deck with a crash, and he lay still. A huge, smoking hole had been torn in the tough fabric of the spacesuit.

Inside the hole was a nightmare.

Horner wanted to retch. But his terror was overcome by his hatred of the madman crouching in the darkened control room. The passage began to stink.

"Wallace!" he shouted, and

threw himself over the body, through the doorway, into the cabin.

A blast of flame shot the silence and dark of the cabin into flinders, and Horner slid on his stomach across the cold metal deck. He lay still, his cheek pressed against the floor, his skin hot and perspiring. Using forearms and legs he pulled himself forward.

In a moment he was behind the bulk of the communications desk.

He pressed his lips close together, his breath stopped in his throat. He listened. Somewhere he heard Wallace breathing.

The man was gasping shallowly, the breath escaping him in whistling spurts. Horner could see nothing. The viewport was still opaqued, cutting out the lights of hyperspace. The light plaque was on the wall near the door, out of reach.

But Wallace could not see him, either.

"I'm going to kill you, Wallace, just you see, I'm going to kill you, because you've killed everyone else, and I'm going to kill you the same way." He knew he was running on and on, the words half-formed, but even giving away his position didn't seem to matter any more.

THE voice came out of the darkness, and Horner knew why Wallace had not fired at his voice. There was no direction in the darkened control room. The metal bulkheads picked up the sound and threw it from every corner.

"I—I'm sorry I had to kill them."

"You're insane, Wallace," said Horner.

"No, that's just it. I'm not," answered Wallace.

Horner decided to play it for time. He had no idea what extra time might avail him, but it was better than merely sitting there, watching the darkness.

"Certainly you're insane, Wallace. You've killed two men and cast a ship adrift in hyper-space. That isn't insane?"

Wallace's voice quavered, an edge of desperation to it, "But it was you who was going insane. You. And you were infecting them. I saw you slipping, day by day, and I was

scared. Plain scared. You'd be scared, too, if you were locked up in a spaceship wondering how soon your four inmates would turn into madmen."

The fellow was so far out of his mind it was pathetic. *Sheer gibberish,* thought Horner, *doesn't even make sense. His sentences are nonsense. What's he saying?* He was out of his mind, but somehow it pleased Horner to hear him say these things. "Go on," he said into the dark.

"Go on? What more is there to say? I took food and water and planned to lock myself in here and make sure we got home. You were driving me—driving me to it. I'm not insane, *you're* insane!"

The bright pinwheels in Horner's head suddenly meshed together, formed a sheet of light that seared the inside of his eyes. "Madman! Madman!" he screamed, leaping to his feet.

He swung his head about in search of Wallace.

The roar of a million revolvers going off in the control room set him screaming again. His voice shattered the air, brought slivers of darkness crashing down to smash on the ice-cold deck. He blasted into the night where Wallace was hidden.

"Oh, God, I'm shot!"

He stopped when he heard that.

THE nightmare was over. Wallace had cracked, but now it was over. Wallace had been hit, and he was free, free, free! He stumbled to the wall and passed his hand roughly over the light plaque.

Brilliance flooded the room and he saw Wallace leaning against the wall, near the plot-tank, clutching his hip. Blood seeped between the madman's fingers and stained his dark uniform. The man was gasping, his teeth chattering.

Horner had never seen such terror in anyone's eyes before.

"Now I've got to save us," said Horner. "I've got to rectify all the damage you've done in here. You've thrown us off course. We're going into space again, and I've got to get us, get us, get us back on the plot to Earth."

He strode over to the plot-tank, giving Wallace a vicious shove.

The injured man took a step, moaned with the pain and fell heavily against the wall. He slid slowly down till he was sitting on the deck, still clutching the wound in his hip.

Horner used the front sight on his revolver and pried up the lid of the plot-tank.

A million million tiny wires criss-crossed and looped over one another in a baffling complexity. Each one had a different color, each one came from some place down in the confusion, went someplace else lost in the maze. Horner looked at it with eyes that sparkled and shone.

"Save us. I've got to save us. Not you, Wallace, you're mad. We're not going to save you. You're a trouble-maker. I saw you making trouble right from the first—took me a long time to show them you were going insane, but they saw. Didn't they? You'll die."

He reached a hand into the wired interior of the plot-tank.

Wallace's eyes grew larger, his face drew itself into a long mask of horror.

"My God, *no!*" He tried to stand up, fell back. "Don't touch those wires. They guide the ship! Our course is set, leave it!"

"No, no, I know you changed the course, I felt the ship lurch—when you changed it, when you changed it. Now I'll set us back on course. You'll die, madman."

"I didn't change the course, I only applied more power! I didn't touch the controls, leave them alone, Horner, leave them alone!"

"No, no, I know you're insane. This wire you pulled out of *here* belongs over *here!* And this wire from *here* belongs in *here!*" He yanked one slender blue strand loose and shoved it into the mass somewhere else. The ship shuddered.

"Stop! Stop! There's nothing loose in there. *You're* ripping them out Stop!"

"And this one from *here* goes over—" He pulled a yellow line from a corner and pushed it wildly back into another corner, where it hung unattached. He did it with another wire, then another.

THE ship heeled, turned, began to revolve. It shuddered and moved ponderously in another direction.

Outside the lines and waves of hyperspace shifted, readjusting themselves to accommodate the ship.

Inside the ship Horner steadied himself against the plot-tank, face flushed and perspiring, and continued to save himself and the crew.

Wallace tried to rise, tried to slide across the floor to the gun he had dropped.

"Stop, stop, stop! You're mad, you're insane"

Horner turned, drew his head down, and moved toward the crawling man. Wallace stopped moving, looked up, lips drawn back tightly in fear. Horner stepped toward him, holding his revolver by the barrel.

He bent over the wounded man, pulling him up by his collar. He looked deep into his eyes. They were terrified. Wallace's face was totally unrecognizable. It was pulled up and out of shape. And for a moment Wallace's eyes didn't even look insane as Horner knew Wallace had to be.

"You've sent us off course, you madman, but—"

"No, no, stop, stop, I didn't do anything, I didn't—"

"Madman," said Horner quietly.

He raised the gun, brought it down with all his might into Wallace's face. He smashed again. Then once more. Even the revolving and turning and shuddering of the ship as it moved in new paths did not stop him.

Only the slippery hold he had on Wallace made him let go. The pulped madman that had been Wallace slid over onto what had been its face, crimsoning the deckplates.

Horner's face broke into a wide, healthy grin, bringing out the dimple in his right cheek. He settled back on his haunches, staring at the plot-tank. A few wires stuck up from the interior.

A rainbow of sparks flew from the box, spattered against the bulkhead. Horner ignored the sparks.

He steadied himself as the ship shuddered again.

Again, he said to the empty control room, "*Now* we'll go home."

THE END

NUCLEAR NEWS

by STEVEN RORY

Strontium 90, an element with a chemical half-life of about twenty-eight years, may play a role of terrifying magnitude in the world to come.

Strontium 90 is one of the many radioactive by-products of a nuclear explosion—with a particularly nasty habit of settling in bones. A report issued by the National Academy of Sciences terms it the greatest menace in the event of radioactive fallout, listing Cesium 137, another long-lived radioactive by-product, as also highly dangerous.

After an atomic explosion, tiny radioactive particles are sucked into the stratosphere, and drift down to the surface of the earth over a period of years, often thousands of miles away from the point of explosion. It may take about seven years for particles of Strontium 90 to descend to earth and begin their deadly cycle.

"Radioactive elements," says the ominous report, "are taken up and concentrated by plants. The plants may be eaten by humans or by animals.... At present the contamination is negligible. But the maximum tolerable level is not known."

Implied in the Academy's report was a veiled hint of danger to come, threatening future generations with a legacy of lethal radiation.

Work is in progress at Brookhaven National Laboratory on the first atomic reactor designed specifically for medical research and therapy. The reactor will be capable of producing a beam of neutrons about fifty times as powerful as the neutron beam from Brookhaven's present general reactor.

The new reactor will be used particularly for the treatment of brain tumors. The patient

will receive an injection of a substance such as boron, which has an unusual capacity for capturing n e u t r o n particles. Once the tumor is packed with boron particles, a stream of neutrons is directed at it, and the malignant tissue is destroyed by the reaction between the boron and the neutrons in the beam. The Brookhaven Medical Research Center will be a major step forward in the application of atomics for peace-time uses.

A huge Geiger counter-type device, into which a person can be slid for measurement of the radioactivity in the body, is now in use at the Los Alamos Scientific Laboratory of the University of California. By use of the giant detector, it is possible to measure all radioactivity present in the entire body.

All persons have in their bodies naturally—occurring radioactivities, principally potassium and carbon. Study of this natural level of radioactivity is valuable in determining how much radiation exposure is permissible without danger.

Contra-terrene matter, first predicted by science fiction fifteen years ago, has been created in the laboratory! Scientists working with the giant Bevatron at the University of California have produced the "antiproton," a particle with a negative charge that annihilates ordinary matter on contact.

Pieris brassicae, otherwise known as cabbage white butterflies, are helping in the quest for more knowledge about the effects of atomic radiation. Seventy of them have been made radio-active and sent fluttering around the countryside.

Dr. Edward Elmhirst, whose hobby is the study of radio-activity in its medical aspects, is conducting the experiment, and hopes that in time it may show how the pigmentation of the human skin is likely to react to radiation, and what effect radiation has on heredity.

The butterflies have been marked with a red dye. Farmers have been asked to report when they see one.

CHANCE OF A LIFETIME

by MILTON LESSER

illustrated by ORBAN

The chance to swap bodies with those outworld aliens and to see the other planet as its natives saw it was too good to pass up. It would be an unique experience.

MRS. IMBER looked about the bare, dirty room distastefully. "You're sure it won't hurt?"

Mr. Imber shrugged his shoulders. "They said it won't. They said we would feel nothing. After all, they're in a position to know."

"Really," Mrs. Imber scolded. "You're behaving like a schoolboy. They're in this for the money, you know; not any other reason. Don't tell me you believe they care whether we see their filthy little planet or not."

"Doris, please. They're right in the other room. It isn't very expensive, anyway."

"Not everyone's a millionaire. A hundred dollars is a lot of money, to them. Earth dollars, Fred. I still think we ought to see Travar the ordinary way. I get all itchy just thinking of getting inside a Travarese body. Fred, it's disgusting."

"Travar*man*," Sar Uano corrected her with a polite smile as he entered the room.

"Well, it's confusing," Mrs. Imber said. "If Bordil*ese* is good enough for the natives of Bordile, I don't know why...."

"They have their language, we have ours. Don't you agree, *Sor* Imber?"

"I guess so," Mr. Imber nodded.

"*Sor* Imber? That's ridiculous. He was born in La Jolla, California, not Macao."

"You see?" Sar Uano



"Look, that's US there. They have stolen our bodies!"

grinned, his gaunt, craggy face flashing the smile for an instant, then resuming the stolid, expressionless stare of his people. The Travarmen were tall, sparse humans with gray skin, small, deep-set eyes, bright orange hair and an almost painful sense of what is logical and what is not. "The first Earthese to visit Travar...."

"Earthmen!" Mrs. Imber screamed furiously. "Fred, the man is insolent."

"I am sorry," said Sar Uano. "Anyway, I wanted to point out I call your husband 'Sor' because the first Earthmen to visit Travar were Portuguese."

Mrs. Imber sniffed. "It s e e m s—well, incredible. I mean, that speck of a country developing space travel first."

"Ummm," said Mr. Imber.

"Your history books claim that while the major powers of your planet sought new and more inclusive ways to destroy one another, Portugal gleaned what it could from the physics of rockets and guided missiles and reached the stars first." Sar Uano spoke English impeccably. "Of course, they were amazed to find human-type natives on Travar and elsewhere, but I need not point out the human species is older than anyone dared imagine two centuries ago. No doubt there was a flowering among the stars so long ago that all our planetary peoples have forgotten."

"Tell me, Sar—" Mrs. Imber was careful to use the Travarman word and not its direct E n g l i s h translation, which was doctor, because she could never consider the Travarman n a t i v e a man of science— "Tell me, is the change-over absolutely painless?"

"Absolutely," Sar Uano assured her blandly. "This is no mere experiment, my dear Mrs. Imber. You and your husband will not be the first Earthmen to see Travar through the eyes of its natives. I assure you the transference has o c c u r r e d many times before. It is completely safe, and I'm sure you can realize there is no better way to see a planet."

"Agreed," said Mr. Imber. "Then Mrs. Imber and myself become Travarmen for seven days at a cost of one hundred dollars each?"

"Essentially, that is correct. Your minds inhabit the bodies

of two Travarmen. The Travarmen are—shall we say?—stored in your bodies. Quite a routine transference, and a splendid opportunity for you to see what life on Travar is really like. The chance of a lifetime, you might say."

"You said we're not the first," Mrs. Imber told Sar Uano. "Why haven't we heard about it on Earth?"

SAR UANO stared at her with piercing black eyes until Mrs. Imber averted her gaze. "That is peculiar. But alas, I am not an Earthman and I have no answer for it. Shall we proceed?"

"That's why we came here," said Mr. Imber brusquely. A plump, moon-faced man in his early forties, Mr. Imber had the calm self-confidence of a rich Earthman in a stellar system where Earth was the richest planet.

"Their minds are....stored in *our* bodies?" Mrs. Imber asked distastefully.

Sar Uano shook his gaunt head deprecatingly. "It is nothing. Nothing. The mind is a complex electronic field which will dissipate unless it is contained. You merely switch places with the Travarmen for seven days. The change-over then is reversed, and you leave Travar after having seen it through native eyes."

"At least we select the—well, specimens?" Mrs. Imber wanted to know.

"Unfortunately, no. I assure you, however, the bodies you inhabit shall in no way be deformed. Quite the contrary, two active Travarmen, a man and a woman in the prime of life, shall be your hosts."

"Well...." Mrs. Imber began doubtfully.

"Oh, come off it," her husband said. "I find the prospect immensely interesting. Immensely. We're supporting these people, aren't we? We're supporting the whole damned stellar system, aren't we? Here's a chance to see their world from the inside. How do the Travarmen feel about Travar? About Earth? About love, hate, fear, eating? You know. Wonderful opportunity. I'm going through with it, Doris. Of course, I don't want to force you. You can wait in the tour ship if you want. It

takes off in seven days, I'll be there then."

"I'd go positively mad with nothing to do. I'll join you, Fred."

"Fine. When do we start, Sar Uano?"

TWO Travarmen, as if obeying some command the Imbers failed to hear, shuffled into the room. They stood at ease until Sar Uano spoke to them in Travarmanian, then they stretched out on the floor and remained motionless. Sar Uano attacked them with complex gear hanging from wall hooks, fastening it expertly to their heads. Two dome-shaped head pieces remained ominously empty.

"For us?" Mrs. Imber gasped.

"For you. Painless, my dear Mrs. Imber. Some even say exhilirating, although I suspect that is imagination."

"You might at least provide chairs," Mrs. Imber sniffed, squatting awkwardly on the floor.

"We are a poor people."

"Poor, eh?" Mrs. Imber snorted. "Not so poor you couldn't invent this gadget."

Sar Uano shrugged. "To each people its own excellence, *Sorina*. Physics is the forte of Earth, and so Earth rules the physical universe. Here on Travar we have, in our modest way, developed excellence of another sort. The science of electro-biology hardly has made inroads on your world."

"Electro-biology?" Mr. Imber demanded.

"You have heard of it, I'm sure. A simple concept, that of electro-magnetism, seems to underly everything in existence. Early in your own civilization men learned that electro-magnetic vibration on a varying scale could explain such apparently diverse phenomena as radio, light, color, x-rays, cosmic rays and the alpha-beta-gamma triad of atomic raditation. Then, in your twentieth century, Raney proved conclusively that even gravity was no more than electro-magnetism. Is it not so, *Sor* Imber?"

Mr. Imber frowned his protest. "But all *that* has to do with the queen science, physics. Earth science. Earth's greatness. You said so."

"Alas, then my explanation

is not complete. In the same century, if memory serves me, it was discovered that the so-called brain-waves were also of the same nature. Further, like fingerprints or retinal patterns they were unique in the individual. Each man had his own electro-magnetic impulses, his *elan vital,* if you wish.

"It only remained for us of Travar to develop a method to capture these wave-lengths in much the same way that a cloud chamber captures cosmic rays. You understand?"

"Of course," Mr. Imber declared, although he had lost Sar Uano at the fingerprint stage.

"These headpieces," said the Travarman as he made some final adjustments while Mrs. Imber edged nervously away from the dome-shaped device, "draw out the electro-magnetic impulses, the *elan,* the mind, the soul, if you insist. They are then transferred from person to person, and the exchange is complete. Naturally, the impulses which have so long resided in one brain have left their mark: hence you will find yourself with a dual, Earth-Travar memory." Sar Uano clamped the headpiece on Mrs. Imber's skull. "Comfortable?"

"It's heavy."

"You'll hardly feel it in another moment. And you'll need no tourist tickets, no interpreter, no guide. Travar-memories in your new bodies provide all. You will see Travar from the Travarmanian point of view. Incidentally, *Sor* Imber: you are Tekar Dorun; that is your wife, Nidra. One of your wives, I might add."

"That's a female?" Mrs. Imber cried, looking at the supine Travarman whose secondary sex characteristics, if any, were hidden in the folds of a sari-like garment.

"*One* of my wives, eh?" Mr. Imber asked in growing delight. "Polygamous, eh? Well."

"Earthmen are strangely proud of their virility," said Sar Uano. "And how many children have you left behind on your planet?"

Mrs. Imber's mouth shut like a clam.

"None," Mr. Imber said. "Let's get on with the change-over, Sar Uano."

Electricity hummed. The two Travarmen—man and wife

—writhed on the floor. Mr. and Mrs. Imber fainted painlessly.

"WELL, Nidra. How do you feel?"

"Oh, really. Really, Fred. Act your age. My name is Doris."

"For the next seven days your name is Nidra Dorun, one of my wives."

"I feel so filthy. Look at me." Mrs. Imber spoke Travarmanian. She thought her own thoughts but could apply them to the memory of the Travarman she inhabited. She'd never had on anything remotely resembling a sari, but a few deft tucks had secured the garment properly in place after they left Sar Uano's office. Oddly, Sar Uano and the two Travarmen —now Mr. and Mrs. Imber from external appearances— had disappeared. Alarmed, Mrs. Imber wanted to wait for their return, but her husband pointed out they only had seven days at their disposal, and he wanted to make the most of them.

"Might as well find Dorun's house and live there, eh?"

"That's what you think. Really, Fred. I still feel like Mrs. Doris Imber, even if I look like a Travarman. I want to find the best hotel in town and stay there."

"Dorun's family, you know. Might worry."

"Fred Imber. Don't tell me the base impulses of a Travarman have you in tow? Are you thinking of Dorun's wives or something?"

"On Kurchin you said the lodgings were terrible. Damn it, Doris, we Earthmen built the lodgings for the Kurchinese."

"Positively squalid."

"We built them. On Tremaine you didn't like the climate."

"Terribly humid, wasn't it?"

"We get latex there. Has to be humid. The point is, Doris, you're the most finicky tourist I ever saw. We can't see anything, not with you always complaining. We might as well have stayed on Earth and studied the solidios, for all the good this traveling does you. Should be broadening, you know. Doris?"

"What."

"We're going to Dorun's place—or else we're going right

back to Sar Uano, changing-over and waiting in the tour ship until it takes off. Make your choice."

-Mrs. Imber's new gray face was inscrutable. "Give me a cigarette."

"That's just it. The Travarmen don't smoke."

A ludicrous pout twisted the features of Doris-Nidra into an unfamiliar shape. "You win, Fred."

"That's damn well better. You know how much this traveling around means to me. Got to see the universe. See what makes it tick. Wonderful experience."

"It does mean a lot to you, I know. All right, Fred. But when we get back you're going to take me on a real vacation. To Palm Springs or Sun Valley or somewhere. I'll need it, I'll positively be dying for it."

"Women," Mr. Imber grinned. The expression was painful to his facial muscles. Apparently the Travarmen did not smile a great deal. Well, a winning smile was often all you needed on the out-worlds. It worked wonders with the natives.

DOWN a narrow, muddy street they walked—two Travarmen among many. Crowds of Travarmen, their gray faces immobile and devoid of expression, thronged the tortuous street which wended its way, after much meandering, down to a muddy river. A stiff wind, hot and moist from the sub-tropic ocean, made hundreds of skin-gray saris flap like crippled wings. The meaningless chanting cries of the Travarmen now took on simple market-place significance as they pushed rickety little carts from place to place on the steep hill and announced their wares. For Mr. Imber it was a revelation. In foreign lands everything had always possessed a sing-song, unreal quality. The flapping saris were eye-catchers for tourists; the singing chants in the dirty, colorful market-place meant nothing to anyone.

But now—now Mr. Imber's sari flapped too. Now the native venders all around him cried: Who'll buy my fish, good fish? Fifteen cents a pound.... Fifteen cents, it made Mr. Imber feel warm inside: Earth's monetary system

here on far Travar.... I sell wine, rich red wine. Hey, trinkets here! Trinkets! Ho-ho trinkets he says. Trinkets is right, but I have jewels. Why do I sell eggs? I sell eggs because everyone eats eggs, and mine are good eggs. Superior eggs. Pin cushions! Novelty pincushions....

"Who ever heard of a man making a living selling pin cushions?" Mrs. Imber demanded.

But a crowd gathered around the vendor. There was considerable poking and jostling for position, coarse laughter, haggling over prices—but the vendor of pin cushions sold the little objects as fast as he could get them into his gnarled old hands from a basket at his feet and then make change.

"Let's go see," said Mr. Imber, his curiosity aroused. They joined the crowd of usually poker-faced Travarmen, most of whom were now grinning.

"That....that's a little soft statue of an Earthman!" Mrs. Imber gasped in the Travarmanian language which came most readily to her tongue.

"What did you expect, woman? Hey now, what did you expect? Can you use as many as half a dozen? I have six left."

THE vendor's bony fingers wrapped themselves around one of the rag dolls, a tiny Earthman in miniature, alarmingly like Mr. Imber in appearance, with a potty little paunch, expensive if minute clothing, a smiling, somewhat vapid moonface. The vendor jabbed pins playfully into the mannikin and Mr. Imber thought it made tiny squeaking noises, like midget screams.

Someone purchased the six remaining dolls. The crowd dispersed while the vendor stooped to pick up his basket.

"I don't think I like that," said Mrs. Imber to her husband. "Earthmen in effigy, it's very....unkind."

"Ridiculous. A healthy sign. When outworlders seem content and complacent, then you worry."

"Take me to a hotel, Fred."

"We already settled that. Going to Dorun's house. Six wives, if I read Dorun's memory right. Afraid of the competition?"

"Fred! How could you?"

"I'm joking, dear. Wonderful opportunity to see how the Travermen live, though. Come on."

"Nidra likes it, but it's a dirty place. Like this market, filthy. Fred, I'm beginning to wonder if we shouldn't go back to Sar Uano and tell him we changed our minds. You don't have to take me to Sun Valley. You could take me to Mars, Fred. It's just like the travel agents say, see the Solar System first."

"Mars?" Mr. Imber snorted. "The Coney Island of the Universe."

"But those horrible dolls."

"Merely proves Sar Uano's point. He's no dope, Doris, for an outworlder. You're a stranger, an alien, if you walk around Travar in your own skin. Can't see the natives as they really are. Or any other planet, for that matter. Trouble with Sar Uano is he lacks imagination. He can make a billion dollars on that invention of his and doesn't realize it. Well, I do. When we get back I'm going to offer Uano some money for it. We'll revolutionize the tourist industry all over the galaxy, Doris. 'When in Rome, do as the Romans,' you know. We can go one better. When in Rome, *be* the Romans. There's a fortune in it, Doris. Trust your old man to recognize a good thing when he sees it, eh? I can out-Cook Cook in the whole Galaxy with this thing, you'll see."

"If you say so," Mrs. Imber nodded glumly, her gray face somehow more mournful than a Travarman would ever let it become. "But I won't pretend to enjoy myself. It's positively distasteful. Nidra's skin is like elephant hide."

"They bathe in salt water," Mr. Imber said. "Drinking water's too valuable. Crude, primitive society, I'll admit it. But a wonderful experience—and when it's over and done with, make you twice as glad to be an Earthman, you'll see. Outworlders would give their eyeteeth to be Earthmen, you know. Can't blame them."

"You can say that again," Mrs. Imber told her husband.

"Nice to be top dog for anyone."

"But the way they stuck pins in that doll, Fred. It makes me afraid. What if Dor-

un and Nidra feel the same way. They have our....bodies now. They might do—well, anything. They probably don't like us."

"Forget it. Sar Uano will take care of that. He's got business interests to protect, don't forget. Let's go home, Mrs. Dorun."

MR. IMBER'S winning smile worked only too well on Dorun's five other wives. You hardly could tell them one from another, and they all looked like Nidra. For that matter, they all looked like Dorun himself, except Mr. Imber was slightly larger and, if anything, more bony.

Dorun's house, hardly more than a shack of dirty wood with a completely out-of-place, fantastically clean door which looked like a slab of polished marble, stood among other identical dwelling places on the side of a hill overlooking the market-place and the muddy river. Mr. Imber knocked on the door, realized a moment later he should have walked right in but realized simultaneously it was too late.

Dorun's wives stood there, five of them. Mr. Imber smiled. They smiled back. The smiles almost froze on their faces and it must have been painful. Then they laughed. It came out someplace halfway between laughter and wailing, but the memory residing within Mr. Imber translated it as laughter.

"We're home," said Mr. Imber.

The five Travarmanian women laughed. "Your home is four hundred light years away," one of them said, and laughed some more.

"Fred, they know."

"I guess Dorun and the other wife told them. Well, it doesn't matter," Mr. Imber declared, then turned to the women. "See here, we'd like to come in and have something to eat. After all, we do live here."

One of the women pinched Mr. Imber. "The same," she said, clucking her tongue in disbelief.

Two of them pinched Mrs. Imber. "Nidra, as well. Come in, if you want to."

But all the women stood in the doorway, laughing, and soon some neighbors came from the other houses on the

hill and joined them. "These are the new Dorun and Nidra," one of the wives said.

It struck them uniformly funny. They all laughed.

"Fred, if you don't take me away from here I'll scream."

Mr. Imber nodded. "Would be intolerable, at that. Aliens in native skins, you know. Worse than just plain aliens, we'd see nothing of the real Travar. I'll take you to a hotel, Doris."

"Oh, Fred. That's positively wonderful."

THEY left the chattering, laughing women on their hillside and went down the steep hill, back through the market-place and to the seashore beyond it. A strange, frightening sense of not belonging began to possess Mr. Imber the moment they left the hill. They had worn Travarmanian bodies only a few hours, but it seemed a very long time ago when the change-over had occurred. Mr. Imber wondered idly if his Travarmanian body would like liquor, decided with a sigh it would not. And now when he saw Mrs. Imber scratching her posterior without discretion, he began to feel itchy himself. A sari of silk he might admire; this coarse sari he wore was hot, cumbersome, scratchy. He wondered how long Dorun had worn it without bathing. Even the Travarmen, who had to clean themselves in salt water, did not like it. Mr. Imber had a wild impulse to tear the repulsive cloth from his body and run back to Sar Uano's place naked. But neither Travarmanian nor Earth law would protect him then, and besides, he would not return to Sar Uano's without clothing or with it, not until their seven days were up.

The vendor of dolls, an annoying experience. Dorun's five wives' laughter, the same. Certainly Dorun and Nidra would have told them before departing for Uano's and a hundred dollars each. More money than they saw in a year, probably. But Mr. Imber's initial enthusiasm about Sar Uano's invention revolutionizing the tourist trade had diminished considerably. As a novelty he was still all for it, but the change-over was not without its uncomfortable, even

somewhat alarming aspects.

They got as far as the doorman of the Interplanetary Hotel, Mrs. Imber's breath coming fast merely for seeing the gleaming glassite walls and glamorous facade.

"I'm sorry, the employee entrance is around the side."

"We don't work here," said Mr. Imber.

"Want a job?" See Mr Carstairs, room 304. But enter through the rear."

"We want rooms."

"Really. Why don't you try one of your own hotels down the street?"

A cab pulled up outside the hotel. Three well-dressed women climbed out while a trio of flunkies ran for their bags.

"Mrs. Jackson! Mrs. Adams! Mrs. Peters!" Mrs. Imber cried, running toward them. "How positively wonderful to see you." But she was a Travarman and even her Travarman vocal chords had to battle the unfamiliar syllables. The resulting torrent of speech bore a marked Travarmanian accent.

"Who on Earth is this creature? Dear me."

"She knows us, apparently. Strange, isn't it? Really odd."

They had found Sar Uano's place quite by accident, and Mr. Imber had been so excited over the prospect, he hadn't told anyone. Now the change-over seemed unclean. He had in fact struck up more than a casual acquaintance with Mrs. Peters, a youthful and attractive widow, on the tour ship, quite without Mrs. Imber's knowledge—and the propect of revealing himself to Mrs. Peters as an unclean native of Travar, he suspected, would forever ruin his chances with her aboard ship at some later date.

Clamping a hand over Mrs. Imber's mouth, he mumbled in pidgen-English, "I sorry for my woman. Bad woman, no happen again. Excuse."

He bore Mrs. Imber away and heard the voices behind them:

"But she knew our names."

"Oh, read the luggage, or something. You know these outworlders."

"Peculiar, anyway."

Mr. Imber told his wife, "If you stop struggling, I'll let you go."

She nodded. "But you don't have to behave like some wild native. Really, Fred."

"Travarmanians can't stay at the Interplanetary. I didn't want to make a scene, that's all. Our mistake for not realizing it."

"Fred, I absolutely refuse to try one of those filthy Travarmanian hotels. I positively refuse."

"Well, now—" But Mr. Imber stood on the sidewalk in front of the Interplanetary Hotel, and something within him which was not part of the Travarman body at all stirred hotly when he saw Mrs. Peters disappearing into the hotel. It made him feel young again. Hell, Mrs. Imber was hardly a conquest anymore, hardly something new to be won and cherished, hardly even a variation on a tired old theme. She was a creature of sloppy habit—in the one place where Mr. Imber would not tolerate habit at all. There was something lush and inviting about Mrs. Peters, who by now had disappeared within the hotel.

Remain a week as Travarmanians? The idea had lost its appeal quite suddenly. Mr. Imber now found it mildly loathesome, and longed to shed the Travarman body even more than he longed to shed the garment which covered it. His pride might have been a barrier, but the Travarmanian change-over was something to talk about *after* it was a thing of the past, and it might even provide the opening wedge into Mrs. Peters' confidence.

Mr. Imber licked his dry gray Travarman lips. "I don't want you to be uncomfortable, darling. We'll find Sar Uano and get this thing straightened out."

"You *are* good to me, Fred."

SAR UANO proved extremely adamant. "You asked for a week. A week you will get. There is nothing I intend to do about it."

This wasn't the suave, polished Sar Uano of several hours ago. This was almost a new man, a kind of Travarman Mr. Imber never dreamed existed. Or any other outworlder, for that matter. The man was insolent, definitely insolent.

"I'll go to the Earth Consulate," Mr. Imber threatened.

"There are ways to keep you outworlders in line."

"Go right ahead, Mr. Imber. Good day."

"But you're being unreasonable. We'll double the fee if you return us to our bodies now. Say—" A cold fear gripped Mr. Imber. "Just where are our bodies?"

"They are in good care, I assure you. Please, I have a busy day. If you will kindly leave?"

Mr. Imber slammed fist into palm. "I won't tolerate this kind of behavior."

Sar Uano merely looked at him. "Won't you?"

Mr. Imber realized he'd been made a fool. He preferred not to take his story to the Consul, but it appeared he had no other choice. He detested being a laughing stock. It was bad for a man in his position, certainly harmful regarding Mrs. Peters. Mr. Imber sighed.

"I'll give you one thousand dollars."

"Give him five, Fred. Anything. I'm so....itchy."

"Five thousand," said Mr. Imber, but Sar Uano shook his head without expression.

"We're going to the Consul," said Mr. Imber. "You'll regret this, Sar Uano."

"Perhaps."

"MIND telling that story again?" the immaculate man in the white linen suit asked. He was a young, handsome man—a credit to the foreign service, Mr. Imber thought.

"Not at all. I apologize for the accent, Mr. Parston. Can't be helped in this body."

"I'm sure."

Mr. Parston soon called in three or four other young men. Mr. Imber wasn't sure how many. He hadn't eaten in many hours. He was tired, uncomfortable, unclean—and not a little desperate. However, he managed to maintain his composure admirably and administered a mental pat on the back for it. He told his story again, from the beginning, and finished with: "Obviously, it's an outrage. I'm usually pretty level-headed, but I must admit my temper is at the breaking point."

Young, clean-cut Mr. Parston looked first at one of his companions, then another. He smiled. One of his friends gig-

gled. Another one coughed discretely behind a handkerchief, then gave it up and grinned broadly.

"That's the funniest thing I heard in a long time," said Mr. Parston. "You want us to ship you to Earth on the basis of that?"

"Not at all," Mr. Imber said, trying to hide his annoyance. "I merely want you to right a wrong. Get Sar Uano to give us back our bodies."

"I'm going positively crazy," declared Mrs. Imber.

"Your, uh, bodies, eh?" Mr. Parston was still grinning, the kind of grin which won outworlders. "That is a good one."

"I'm afraid I....I feel a little weak from it all.... I'm afraid I don't understand. You don't believe me?" Mr. Imber asked desperately. "You've got to believe me."

"Your story is impossible. Maybe you Travarese believe in transmigration of souls, but I'd like to see you do it. I don't know what your game is, but...."

"I want to see the Consul himself!" Mr. Imber roared in his broken Travarmanian.

"He's far too busy."

"I'll wait. I must see the Consul."

"If this is some kind of Travarese game, I don't find it amusing."

"Travarmanian," Mr. Imber said automatically, then bit his tongue furiously. He was even talking like a native.

"Get out."

The handsome young men herded the protesting Imbers toward the door. "The Consul!" Mr. Imber shrieked.

"Any time your spit-and-string science can do something like that, Earth culture will start taking a back seat in the universe. Now get out of here."

FOR the next three days they tried to see the Consul and failed. Mr. Imber found a little money in his pocket, took a room in a small Travarmanian hotel and found the food revolting—despite a system which should have been acclimated to it, the service conspicuous by its absense, the Travarmanian way of life drab to the point of despair.

He tried to find Sar Uano in the phone book. There was no Sar Uano listed. Mrs. Imber began to cry hysterically on the

third night, and Mr. Imber took to locking her in their room and going out alone. He returned to Sar Uano's office and discovered a souvenier shop had replaced it. The toothless proprietor looked at him out of unblinking eyes and swore he never heard of a Sar Uano.

The seven days dragged by intolerably. Mrs. Imber had passed through a hysterical state to one bordering on coma. She wouldn't eat anything, least of all the Earth food which Mr. Imber managed to steal.

On the final day Mr. Imber took her from the hotel room and ignored the strange stares of the Travarmanians present in the lobby. "Sick," he told the room clerk as he paid his bill, and stumbled out into the street with his vacantly-staring wife. Mrs. Imber was heavy; he almost had to drag her. Somehow they reached the spacefield.

"The Earth tour ship," Mr. Imber croaked to a uniformed guard.

"Pit seven. Want to see someone off, eh?"

As the Imbers went past him, Mr. Imber heard: "Some of these Travarese are like faithful little puppies. Do a favor for you anytime. Nice people. Lick your hand if you let them."

Travarmanians, Mr. Imber almost said. Ahead of them, the great spaceship pointed up as a symbol of Earth's might at the warm blue sky. It was hot. It seemed hotter on Travar for a Travarman than an Earthman. Heat shimmered in the sky over the spaceship. Mr. Imber dropped his inert wife and ran.

Gay people climbed the gangplank. Happy p e o p l e, smiling. Rich people, well-dressed. There was Mrs. Peters, lush and pretty Mrs. Peters. And there....

Mr. Imber roared.

THERE were Mr. and Mrs. Imber of LaJolla. Smart couple, the Imbers. Always traveling. Too busy to have children. Husband somewhat better looking than the wife, but Mrs. Imber was no dog.

"NO!" cried Mr. Imber.

He reached the gangplank, stumbled, clawed his way up it. Firm hands grabbed him, pulled him down.

"Please," he said. "Please, I want to see the Consul."

He was s h o v e d away, dragged away, carried away. The spaceship shimmered in the g l a r i n g sunlight. It throbbed, pulsed. It climbed into the sky slowly on a column of thick, ugly flame.

Other hands grasped Mr. Imber. He began to cry. He stopped crying. It was Sar Uano.

"Your wife is sick, Dorun, but your other women will know how to care for her."

"You....can't do....t h i s to....me."

"I suggest you go to your house on the hillside and get well. You seem sick yourself."

"I'll see the Consul."

"You'll try to see him. It doesn't work. It might if we restricted our operations to Travar. But a planet here, a planet there. We replace rich p e o p l e, important people. We've replaced hundreds."

"And they live....the.... good life!" cried Mr. Imber in self pity, frothing. "I must suffer."

"They don't l i k e being Earthmen any better than you like being a Travarman. They would like to be top dog someday. Someday they will be. All of us."

"I'll see the Consul."

"You'll try. But you'll either kill yourself—no, you are hardly the type. You'll spend your life in the house among other identical houses on the hillside. Fetch your wife, Dorun."

Mr. Imber found Mrs. Imber, lifted her, carried her. *I'll see the Consul*, he thought.

I'll spend my life in the house among identical houses on the hillside, he knew.

THE END

BRAINS UNLIMITED

by S. T. KAMMER

A human mind is the most complex thing in the universe.

How far British medical scientists have advanced in "brain mapping" was indicated by Dr. W. Grey Walter, one of the leading men in the field. By charting the electrical impulses of the brain with a Toposcope and decoding them with a wave analyzer Dr. Grey Walter has collected mental patterns of hundreds of students and patients.

He even claims to be able to tell whether two people have antagonistic or sympathetic personalities. "There might," he said, "be fewer divorces if people had a test like this before marriage."

The wave analyzer is coupled to cathode ray screens. It unmixes the various rhythms produced when the brain is stimulated or at rest on an electronic machine and throws the pattern onto these screens.

Glutamic acid is one of the amino acids, the building blocks of protein which is the foundation material of all living things. When glutamic acid is given to children with epilepsy, mental retardation or emotional immaturity, it helps build up the brain so that these ailments are considerably benefitted.

Dr. E. D. Kane gave glutamic acid to 150 patients for three months and obtained good results in almost all the cases.

The blood and spinal fluid from the mentally ill contains a mysterious poison which may be helpful in psychiatric diagnosis. Fed to seedlings of a kind of lima bean, the blood stunted their growth, Dr. David I. Macht found. Only blood from true psychotics

causes stunting; the worse the psychosis, the more seriously the plant was affected. Blood from mildly upset alcoholics or neurotics produce no toxicity.

Some twenty-five years ago, Dr. Macht began to develop the science of phytopharmacology, which is the use of plants or plant tissues for the study of drugs and poisons. Through it, poisonous qualities in the blood can be discovered that do not show up in tests with animals or by other methods.

Blood from more than 1,200 mental hospital patients was tested by Dr. Macht. He added 1 per cent solutions of the blood to test tubes in which *lupinus albus* seedings grew in liquid plant food.

Still unknown is the nature of the poisonous quality in psychotic blood. Also unanswered is this significant question: Is the toxicity a result of the psychotic state—or is it one of the causes?

The human brain is still something of a mystery, but we are daily learning new and startling facts about it. One of the world's great brain surgeons is Dr. Wilder Penfield. "The brain is made up of ten thousand million neurons—I haven't counted them, but that is a fair approximation," he states.

Each, he explains, contains a minute electric charge, which it uses to accept an idea, a smell, a sight, etc., and to create therefrom an appropriate set of bodily responses.

Some of these brain cells produce and store away dreams made up of human experiences.

When operating on the human brain, Dr. Penfield discovered that he could recreate a past dream by artificially stimulating with a very low power electric shock those brain cells which had stored it away in the patient's memory.

Using a patient under only a local anesthetic—who could talk of his dreams—Dr. Penfield succeeded in reversing the sequence of the dream by electrically stimulating brain cells in reverse order.

Uric acid is an old chemical that has been known to exist in the human blood stream for a great many years. Now Dr.

Egon Orowan, well-known chemist at the Massachusetts Institute of Technology is of the opinion that the uric acid in man's blood stream is a brain stimulant which accounts for man's intellectual rise as compared with conditions in other animals, which break down their uric acid oxidation into allantoin.

There is great merit in this theory since the so-called uric acid group of purine derivatives, like caffeine, are well known brain stimulants. Without uric acid in his blood stream, Dr. Orowan is of the belief that man would never have amounted to much, since man is naturally lazy.

A drug called LSD (short for lysergic acid diethylamide tartrate) is capable of artificially producing psychotic symptoms in a human being for a short span of time. The drug, derived from ergot, a fungus that grows on rye, has caused great excitement in psychiatric circles and is expected to be a major weapon in the war on mental illness.

The drug enables researchers to fight mental disease the way other diseases have successfully been combated—by producing the disease experimentally to study its cause, process, and cure. With a drug able to create temporary psychoses, scientists expect to be able to learn what a psychotic person is thinking and feeling, relate the psychological changes to body chemistry, and speed research. It is possible to telescope a severe psychotic reaction that normally might take years to develop into a six-to-twelve-hour period, and examine it in its successive stages.

Several hundred volunteers have already been treated with lysergic acid, and their reactions have been recorded both by themselves and by trained observers. The major effects of the insanity-producing drug last for about six hours. Within an hour after the dose is administered, the volunteer feels physical weakness, begins to sweat and shake. Mentally, he becomes irritable and apprehensive. After the second hour, he begins to lose touch with reality and show psychotic symptoms. The subject

withdraws into himself, closing out the world. All sorts of hallucinations may result. The drug has caused authentic psychosis.

By the fourth hour after the drug has been taken, the psychotic symptoms begin to decline rapidly. In the sixth hour, only the early symptoms of anxiety and hostility remain, and shortly afterward the subject returns to complete normality.

The value of the drug is enormous, since the volunteer is generally a trained psychiatrist who is able to report step-by-step on the stages of his own mental disintegration for as long as possible, thus providing valuable data. Members of mental-institution staffs who take the drug are better equipped to deal with the needs of real psychotics after having experienced something of what their existence is like.

The drug aids communication between patient and psychiatrist, helping to bridge the gulf that often is the obstacle in the way of cure.

There is now a computing machine that outwits people at the uncomplicated game of pitching pennies. The news doesn't speak well for the human gambling abilities, but the device, developed by Bell Laboratories, wins 55 to 60 percent of the time against all comers.

The machine's object is to match its opponent's choice of heads or tails. The opponent first records his selection, then pushes a button which activates the machine. The results are compared.

The trick is to make choices strictly at random—and here's where the machine is superior. It's provided with a built-in series of random heads-and-tails guesses, while human beings can't help but be influenced by the previous few falls of the coin. People who have won twice in a row on "heads" will generally play the "probabilities" and shift to "tails" for the third choice, while the computer, picking totally at random with no regard for what happened on the last fall, usually comes out on top.

THE END

ONCE WITHIN A TIME

NOVELETTE

illustrated by EMSH

by RUSS WINTERBOTHAM

The time machine was a menace to civilization. It had to be destroyed! But how can the future destroy part of the past without altering the basis of the future?

IF PEM ROLLINS might seem to be an extraordinary young man, it must be remembered that the world is full of extraordinary people and he was no whit less of a normal person than anyone else.

Externally no one could see anything unusual about him. He was a nice looking fellow, 27 years old, full of healthy muscles and various organs that never gave him trouble. He was a husky chap too, having played football in college. But he was in love with electronics.

So, after five years of hard work for a manufacturer of electronic gadgets, he was probably considered ripe for the marriage market. And this was where he was extraordinary. He bought himself a small house and filled the rooms with electrical equipment, instead of a wife.

And so on Wednesday, April 26, 1960, he was puttering around, when there was a sparkle and a flash, and there at one side of his work bench he saw something appear out of nothing.

It looked like a sort of a cage, made of copper, and the inside was wired in the most intricate fashion that he had ever seen. Far more unusual was the fact that right in the center of the cage, dressed in what might pass as a sun suit, was a very pretty young woman with golden hair, even rows of teeth and a healthy bloom on her cheeks.


EMSH-

"Hel-lo," she said softly.

There was a curious accent in her throaty voice. It was almost "Hel-lah" the way she said it.

Pem looked at the girl, blinked and scratched his head.

"I'll be doggoned," he said. "What kind of a contraption is that?"

"You should know," said the young woman. "You invented it." She looked at him closely. "That is, if you are Pem Rollins—and you do resemble your pictures in the history books. And, of course if this is August 27, 1960."

"I am Pem Rollins, all right," he said. "What's your name?" As he spoke he took mental note of the unusual electronics hook-up. The machine used transistors and there were a number of condensers that were exactly the type he used on his various machines. The wiring was strange, though.

"I'm Zilla TU-36-503-74."

"Your phone number?" He pretended to write it down, but actually he was sketching the wiring.

"No," she said, "my serial number. Of course! I forgot. The use of surnames was abandoned in 2172. Just call me Zilla."

"Oh," said Pem, still trying to follow the maze of wires with his eyes. He had good eyes. "Aren't you afraid of catching cold in that outfit?"

"It's August, isn't it?"

"Uh-uh," said Pem. "It's April. April 26, 1960."

A look of befuddlement crept into her eyes. She reached into her pocket, took out a book and studied it. "I must have forgotten the leap years."

"You forgot a lot of them then," said Pem. "It won't be August for four months."

She studied the book, and Pem kept on sketching the wires. "Let's see," she said. "The years 2100, 2200 and 2300 aren't leap years, because they're not divisible by 400, but 200 and 2400 are—"

"What a r e you talking about?"

"—that'll leave 123 leap years in 500 years."

"I said," Pem almost shouted, "what are you talking about?"

"That's 182,623 days alto-

gether. I'm just 123 days off—no, let's see 1960's leap year date is past. No, we have to count the leap year in 2460—"

"All right, all right," said Pem. He had finished the sketch of the wiring. "Now what's all this about?"

"We'll call it 182,623 days," she said. Then she looked up. "I'm talking about time travel, you idiot. And I got here on the wrong date. Just 123 days before you discovered time travel."

"Oh," said Pem. He would have said more, but the young woman, who said she was Zilla TU-36-503-74 faded away, just as she had come a few minutes before.

"Darn the luck," said Pem. "I wanted to check that wiring." He studied his diagram for a moment. "Mmm. Time travel. That's something worth looking into." Which he did.

PEM'S diagram, of course, was sketchy and incomplete, but the operation of the machine was so simple that once he understood the mechanics of it, the only thing that slowed him down was the expense of building it. So it was necessary for him to continue on his job.

The power was the main question. Zilla's machine seemed to have a small box, about the size of a popular novel, that supplied the power. Pem decided it was a battery of a type that had not yet been invented. So he substituted a heavy duty storage battery.

Germanium transistors seemed to have been used instead of vacuum tubes, but there was no trouble here. Pem even used a few transistors, although most of the equipment was vacuum tubes. There were wires of various sizes, coils that he had to select by trial and error, and condensers which he made himself. One thing escaped notice during the interview with Zilla. This was a magnet, which also served for her seat.

However, Pem deduced that a magnet was necessary, and he found one that suited his purpose.

The machine produced an intense electrical field which was transmitted by the copper bars, actually pipe which he obtained from a plumber, which served as antenna and ground.

The field was modulated by a series of vacuum tubes which thrust it into the time dimension, distending it forward or backward, depending upon the controls. The magnet drew the cage and its occupant into the past or future. The intensity of the field determined the speed, while the distance traveled was governed by an automatic device resembling the controls on a radio clock.

The machine was finished and ready for testing at 9 o'clock, Sunday morning, August 27, 1960. Pem was excited, but not apprehensive, for Zilla had told him that history had recorded his success many years hence. However, this was no reason to abandon all caution, and so he set the machine to travel only a short distance into the past. He estimated it would be about a day, although the test itself would show him how to set the controls for future experiments.

Squeezing through the copper bars, Pem seated himself on the magnet in the cage and hesitated one moment as his finger touched the control button which would activate the machine.

FOR AN instant he had a creepy feeling, as if someone were standing behind him, looking over his shoulder. Then he pressed the button and felt an odd, jarring sensation, and the sinking feel of an elevator ride. The workroom grew dark and then the movement ceased.

Pem shut off the battery, and squeezed out of the machine. It was night, but what night? All nights look the same without a calendar.

He found his desk, so he knew he had not traveled too far into the past. Reaching upward he found the light and turned it on. The clock on the bench said three minutes after two. Opening a drawer he found the bulky, black loose-leaf notebook in which he had put his diagrams, his theories, the records of his work on the time machine. Flipping the pages, he found the last entry. It was dated Friday August 25.

Therefore it was three minutes after two o'clock Saturday morning. He had traveled a distance of thirty hours and 57 minutes into the past, thus becoming the first human being to sail the tides of time.

Out of his first elation came

a disturbing thought. Where was he at this hour? He knew where he should have been, but was he there?

He took his flashlight from a drawer of his work table and tiptoed through the house. He opened the door of his bedroom. The lamp's beam showed a figure sleeping soundly on the bed. It was Pem, in the flesh, fast asleep.

Pem was shocked, even though he saw what he expected. This meant that one of the axioms of crime detection had been shattered. It was actually possible for a man to be in two places at the same time!

A SUDDEN panic struck Pem as he first began to to realize that he had invented a monstrosity, a thing more hideous than that of Frankenstein. The time machine struck at the very essense of reality. It attacked truth, it shattered logic, it dispersed a coherence of the universe like mist before the wind. This world, mad as it was, would seem to be a sane paradise compared to what it would become in an age of time machinery.

Pem fled back to his utility room. Quickly he boarded the machine and by the light of his workbench he set the controls for zero, the place where he had started. Once more, as he touched the control button, he felt that jarring and sinking sensation. Then light of day streamed through the windows at him. And in front of where he stood, he saw himself in the act of touching the button on the time machine. But it was not the machine he had returned in—or was it? For a brief instant he feared that he would be going and coming, never stopping between thirty-one hours ago and now. But then he saw the machine divide like an amoeba, fade and grow smaller in the perspective of time, speeding away toward a horizon of fleeting moments.

Pem squirmed through the the bars and went to his desk. He found his notebook. Beneath the notation for August 25, which he had glanced at only a moment before, it seemed, although in the time scale it was 30 hours and 57 minutes, he saw the records of his work on August 26.

Taking his pen, Pem wrote:

"Aug. 27. Today I have test-

ed my machine and it is a scientific success but a moral failure. A hideous, monstrous thing, it strikes at the very roots of the universe. It could easily cause the end of the world!

"My machine can make a person suffer the consequences of an act before the act is committed.

"My first impulse is to destroy the product of my labor. But someone else m i g h t stumble onto the secret of time travel. In fact, I know it will be known centuries hence. My second desire, was to turn my diagrams and plans over to the highest officials of our nation to be held in secret for use only against enemies who might use the machine to destroy us.

"With time travel, all constitutional guarantees become meaningless. T h e machine strikes at logic, at goodness, at everything, even sin. For what can be an original sin, if you can always put another before it?

"I must think and I must decide. But whatever steps I take will be with greatest concern for the future of the universe."

The pen fell from his hand as he sank back, trying to decide what to do. But at that moment, another cage appeared beside the time machine in the corner.

"HELLO, Pem!" It was the voice of Zilla TU-36-503-74. "I do hope this is the right date! It *is*! You have invented the time machine." She was dressed as she was the first time he saw her.

"I'm afraid I have," said Pem.

"This is August 27, 1960? A bright Sunday morning?"

"It is. But a sad day."

"You've tested your machine?"

"I have." Pem looked up at her. Strange, he had not noticed that she was so attractive. Naturally he noticed previously that she was pretty, but prettiness and attractiveness are separate things. Or maybe it was the mood he was in.

"And you're still here?"

"Shouldn't I be? Didn't history say what happened?"

"H i s t o r y," said Zilla, "doesn't know what happened

beyond that entry in your notebook." She rushed from her machine to Pem's desk and glanced down at what he had written. "There it is! You have written it and the ink is still wet! To think that I should be here on such an historic occasion."

"Such a sad occasion," Pem said solemnly. "The world will regret this day."

Slowly Zilla nodded her head. "I know. Scientists have developed ulcers for 500 years because of that thing you just wrote. And that is why I came to see you. Science has suffered long enough. Science must know what is in store for the world."

"Science must know? Surely it knows. Haven't you a time machine?"

"Believe me," said the young woman, "it's the first successful time machine since you built yours. And nobody but me knows that it exists."

Pem looked at his machine, then hers. "They're almost alike, except for a few items of equipment. I had to use what was available."

She smiled. "So did I. You see lots of things you used don't exist in my day. My place in time is 500 years from now."

"But what happened to me. What will happen?" Pem asked.

"I don't know," said she, with a shake of her head. "You were never seen after you visited the corner grocery store on Saturday, August 26. Neither you nor your time machine. So you must have gone off in time. And you never came back."

PEM SHUDDERED. "Please tell me what happened."

Zilla moved over to his desk and seated herself on one corner of it.

"The fact that you had disappeared did not become apparent for several days. On Monday, August 28, 1960, the woman—a Mrs. Lizzie Green, I think her name was—"

"Yes," said Pem. "She comes three times a week to empty my ash trays, do the laundry and clean house."

"Yes, she is mentioned in history too. Anyhow she did not think when she came on

Monday that anything was wrong. She thought you were at work. But when she came on Wednesday, she found nothing disturbed and it was plain to her that you had not been home since the last time she was here. She was concerned, and so she called your employers. They told her you had not been on the job Monday or Tuesday, and they had assumed you were ill.

"Mrs. Greene notified the police, who investigated, suspecting foul play. Then they found your notebook and that last entry. They knew they were onto something big. The notebook was taken to Washington. It became a top-drawer secret, but by then it was too late. The police had already told reporters and radio men that you had invented a time machine.

"Drastic measures were taken to protect the secret and no one but a privileged few were permitted to examine your diagrams and plans. That notebook of yours was subjected to a study for 100 years, before anyone knew exactly what had been done."

"What? I thought I wrote everything down."

"You did," said Zilla. "But nobody could read your writing."

"Well, that saved a few ulcers."

"Not as many as you think. Your last entry was legible and it was also clear that you had made a dangerous discovery and had gone somewhere in time. Nobody believed for an instant that you would really destroy your invention, or try to help the world by destroying it. It's contrary to human nature not to grasp an instrument of power when it's within reach. People believed that you planned to do something terrible."

"But I have no such plans," groaned Pem.

ZILLA studied him. "I believe you. You act like such a nice young man. But to continue my story. When your plans were finally deciphered, scientists, working under a security shield, realized that your machine could not travel in a linear dimension, but it would reappear eventually in

the same spot where it took off."

"But your machine—"

"Five hundred years from now," Zilla explained, "there will be a tremendous building on this spot. It will house some of the top government secrets, including time travel. The time laboratory is located in the exact spot where your workshop is now. I was one of the workers who was assigned to the Pem Rollins project, as we called it. And I was able to—but I'm getting ahead of my story."

"Yes," said Pem. "Tell it in order. Don't skip anything."

"At first the possibility that you went backward into time was considered. Had you wanted to destroy the machine, you might have flown it into prehistory. But there was always a chance that a fossil might turn up and reveal the secret. Besides, historians who worked on the case found nothing that had a bearing on the time machine. Nostradamus, of course, was considered, but he can be explained in other ways. So could other prophets."

"Yes. Nostradamus probably was a good guesser."

"So you must have gone into the future. But where again? The only thing left to do was to stand guard, day and night, waiting for you to return.

"Year followed year, decade followed decade and centuries piled up. You did not appear. Some people doubted if you really existed, inside or outside of time. Ulcers have been plentiful in the security center, I tell you. Where did you go? In what age did you finally appear?"

Pem shook his head. "You are speaking of my future, and for all I know, your past. I do not know."

"The main idea scientists had for almost 500 years was to keep your invention from being used again. That's why we have the government building where it is. Your time machine will not travel in a lineal direction, only through time. When you arrive at your destination, you will reappear in that building—providing there is such a thing as man in those days.

"Almost every possible contingency was considered in the plans to deal with you. But for a long time no one thought of

trying to stop you before you started. Then about 250 years ago—beg pardon, from now—somebody came up with a suggestion of using your diagrams to make a machine that would visit 1960 in time to prevent you from going away. But you see the fallacy there. When you change the past, you must alter the present and the very thing that we wished to avoid would occur.

"Then someone said we ought to have a representative visit you on August 27 and find out where you were going. That was practical. The only trouble was that when we tried to build your machine, it wouldn't work!"

"Good heavens! It *does*. Your machine works too, unless this is a trick or something."

Zilla nodded. "Yes, but in your diagrams, you forgot to put the most important part of the machine—the magnet."

Pem's mouth gaped open a moment, then he smiled. "Yes," he said. "I almost missed it. It took me quite awhile to figure out what you were sitting on. But my electronics experience told me that a magnet was the answer."

"Strange that none of the scientists who tried to build a time machine from your diagrams thought of that," she said. "I suppose that's the difference between following someone else's idea and creating something of your own. The creator thinks, the copyist follows a pattern."

"I FOLLOWED a pattern," said Pem. "I wouldn't have thought of a time machine if you hadn't appeared last April."

"I don't know what you would have done, and you don't either," said Zilla. "The fact remains that you created the magnet part anyhow." She paused, drew a breath, then continued. "One of the machines stood in the security building when I went to work there—about five years ago. Then Xack, the chief of the security bureau devoted to the Pem Rollins project, told me to get rid of it. But instead of junking it, I took it home and studied it in secret. I probably violated a dozen regulations, but nobody thought it would

work. Suddenly I thought of a magnet. I inserted one and the machine worked."

"Is that when you came here?"

"Oh no," said Zilla. "That was when I went into the future. But that was only a test flight. I was excited about it and probably I didn't consider the consequences. It wasn't discovered because I turned up in my own home, where no one was waiting for you to appear. Then I decided to stop you, single-handed. But the big job was arriving here—where you were. It meant carrying the machine back into the laboratory again without Xack discovering what I was up to."

Pem looked at the machine. "I suppose you must have done it, but I don't see how—"

"No," she said, "that's the funny part about it. I didn't take it back to the lab. Xack took it back himself."

"He *what?*"

"He took it. A time machine can't travel in a linear direction, but you can move it. When you're in a car, you don't move, but the car moves. So I simply placed the machine on a little rug I had, set it for the proper time in the future and had Xack carry the rug to the security center.

"That was on April 26, 2460, the day when I made my first experiment. I had arranged to work late and sure enough, late at night the machine showed up, because I had an automatic mechanism on the controls. Then I took my trip to see you. When I got back, I set the machine for August 27, 2460, and it faded away again. Nobody saw it. On August 27, I again arranged to work late and it appeared."

"But what will you do with it when you return?" asked Pem. "As long as it exists it's as big a danger as my machine."

"After I find out where you're going, this machine will have served its purpose. I'll dismantle it and scatter the parts. Where are you going?"

For a long time the idea had been forming in Pem's brain. At last he made his decision. "Where you go," he said, simply. "I want to live in the age you live in."

For a moment she regarded him thoughtfully. "I knew you would," she said. "You see,

when I took my first trip in the time machine, I went 100 years into the future."

"And you know what happened to us?"

She shook her head. "I know that in that day, Pem Rollins and his time machine was a legend, a legend that was laughed off as a half-truth. People agreed that maybe a Pem Rollins did live in 1960 and that maybe he invented a strange machine. But nobody thought he could invent a real time machine."

"What does that mean?"

"It means that you had reappeared. That officials had hushed up everything and managed to convince people that the entire idea was a wild-eyed fancy." She paused. "But it may mean that you were hushed—p e r m a n e n t l y. I thought I ought to warn you."

Pem was thoughtful for a moment. "It's a strange thing," he said. "We speak of the future, and yet I know that it already has existed. "You know it, too. I wonder if it would be possible to refuse to do some of the things we were born to do." He paused. He got up. "I'll go," he said.

She slipped off the desk into his arms.

THE problem was two time machines. Between t h e m they decided that only one must make the trip. The other would be dismantled and during the night they would drive to the nearest lake and drop the parts into the water.

Since Zilla's machine contained parts not manufactured in 1960, and which might arouse suspicion if found, it was decided to dismantle Pem's machine. This was done, and about midnight of August 27, Pem Rollins and Zilla TU-36-503-74 set off for the future.

Strangely enough, they arrived at 9 a.m., Saturday, August 27, 2460. Almost at the same second that Zilla had departed for Pem's age.

The room still resembled Pem's old workshop in shape. But there were new walls, new ceiling and new floor. The last item caused him to wonder what would have happened to his machine had he tried to navigate 500 years in it. Would it attempt to hit all of the scattered molecules that once made up the floor of his workroom?

Or would it merely strike an average? It might well be one of the factors that would make time travel a hazard. Then he realized that Zilla had come to his workroom long before her rug was woven. Trips into the past, he decided, were governed by different rules than those in the future. It had been fortunate for Zilla that her house still stood after 100 years when she made her first trip.

Zilla gave the alarm the instant they arrived. Men wearing battle dress, not far removed from the uniforms of troops in the twentieth century, except that they were interwoven with some sort of material that possibly guarded against atomic radiation, appeared at once and took Pem into custody.

No one attempted to question him. The machine standing in the room was enough for the soldiers who had been drilled for years on the procedure to take when Pem Rollins arrived.

Presently a heavy-set, blue jowled man with bushy eyebrows came striding through the doorway.

"We've got him, Xack," said Zilla.

"Ah!" sighed the man called Xack. "A vigil of 500 years has ended."

THERE WAS an electric quality about Xack ZM-40-400-004. Outwardly he was cordial, even sympathetic, as he took Pem to a cell, closed the door and told him to sit down.

"You are being held imcommunicado for obvious reasons," he explained. "We must take no chances that you will reveal the secret of time travel until we decide what steps to take in disposing of your machine. Late today you'll be questioned more thoroughly, but right now I want to know why you came to this particular time?"

"That is my own business," said Pem. He didn't wish to involve Zilla, since she had obviously fractured security regulations.

"Come now," said Xack. "We'll not be satisfied with that answer,"

"Five hundred years is a nice round figure," said Pem. "Why shouldn't I be more likely to go to a date 100 or 500 years

ahead of my time, rather than an era of say 499 or 100?"

"It's a better answer," said Xack. "But it won't do. You see, Pem Rollins, I happen to know that the machine you came in was not your original time machine. If you did not come from 1960, where have you been?"

Pem was almost stunned by the words. He realized now that no matter how well Zilla had planned her part in this affair, she had vastly underestimated her chief, Xack.

"That was one you didn't expect, eh?" Xack laughed. "Well, think it over, Pem Rollins. This is one of the biggest problems mankind has ever had to grapple with, and we've got to solve it very soon. And to solve it, we must know everything. And we'll have the facts out of you one way or another."

There was a cruel gleam in his eyes as he turned, and strode toward the door. There was no knob on the door, simply a button, which Xack pressed. The door swung open and the door closed. There was a whining hum and a click as the door locked behind him. Pem dully realized that lock was operated by some electronic device. His curiosity turned his eyes on the door. There was something strange about that lock. Something that did not make sense.

THE ROOM had no windows and its walls were of steel, but otherwise it was comfortably furnished with a single cot, toilet facilities, and even reading material.

It had been built, apparently, for one purpose. To house Pem Rollins so that he could not communicate with a n y o n e. Since he heard no sounds from outside, he knew the room was soundproof and he could not be heard no matter what he said, or what noise he might make.

"Best to take advantage of all the comforts," he said.

He washed himself, then selected a book and sat down on the bed to read. The book was uninteresting, principally because it continually referred to things that Pem knew nothing about. He imagined that John Cabot, the English navigator, would have had trouble understanding m o d e r n literature

had he found it on his first voyage to America.

More than man hour later, Xack opened the door and brought Zilla into the room.

"She told us everything," he said. "She's probably violated every law we've got pertaining to the Rollins matter, but inasmuch as she almost had to do it to bring you here, I don't think she'll be punished."

Zilla stared at the floor.

"It was easy to see at first glance that that time machine of yours hadn't been made in 1960. The vandulan battery which powers it wasn't invented until 242. Do you think your time machine is safe from discovery?"

"It should be," said Pem.

"It may interest you to know," said Xack, "that security officers of your day left no stone u n t u r n e d. They thought you might have been drowned, so they dragged the lake. They uncovered almost every particle of your time machine. That was one fact that has been kept secret for 500 years. There are other facts, too."

"I'll tell you everything," said Pem. He didn't know if police of 2460 used rubber hose, but they probably had something just as effective. Besides, now that Zilla had told her story, there was nothing to hide.

Xack listened quietly, nodding his head from time to time, and asking one or two questions. It was easy to see that much more was known of the time machine than even Zilla knew.

"The magnet stumped us," said Xack. "Possibly it got buried to deep in the mud in the lake bottom, but we never found it. We never suspected its existence because there was no mention of it in your notes." He turned and looked sharply at Zilla. "Now about your trip into the future. You say that by that time, Pem Rollins will be regarded as a legend?"

Zilla nodded.

"You understand what that means," said Xack to Pem. "No one must know that you ever reached 2460."

"I'll give whatever guarantees you need," said Pem.

Xack shook his head. "Guarantees are not enough. There is too much at stake. I'm sorry, Pem. But you'll have to die."

AFTER Zilla was taken from the cell sobbing, Xack returned and sat in a chair facing Pem, who sat on the edge of the cot. "You understand that this is entirely impersonal, don't you?"

Pem laughed bitterly. "It's hard to think of my death be ing impersonal."

"We can't take risks," said Xack. Furthermore, lifelong imprisonment in a sound-proof room would be inhumane, and you'd long for death. And there's still another reason: you'd die anyhow, whether we gave you radiation exposure, or let you stay here in your cell. Even if you were granted freedom you'd die."

"What do you mean?"

"I mean," said Xack, "that a living creature, perhaps even some things that don't live, like stars and galaxies, cannot exist outside their own little spot in space-time."

"That's preposterous," said Pem.

"It's a fact," said Xack. "Look at the dinosaur. Look at the millions of prehistoric animals that died at the end of their space-time place."

"They all lived millions of years," said Pem. "Five hundred years is almost contemporary in geological time."

"It's not so contemporary as you think," said Xack. "If you don't believe it, look at the gulf between one generation and the next. Youth never understands its parents, parents never understand youth. We say that youth doesn't change, that this generation is just as rambunctious, or just as wild as the last and the next, but it isn't true. Every generation is its own self. There may be similar traits, similar actions, but time is a spatial dimension, and you and the generation before you are light-years apart."

"But that doesn't mean I should die!"

"Columbus lived only 468 years before your time," said Xack. "That's less than 500 years. How long could he have survived in your age? He'd have believed he was in an age of witchcraft. He would have been bewildered, confused and very soon mad."

"I don't believe in witchcraft," said Pem.

"There are inventions today that will make you believe in

it," said Xack. "And besides, how long would Columbus have held out against new germs and viruses that appeared since his day? A new disease appears almost every 50 years and takes a toll of lives. Only those who can establish immunity live. Columbus would have been subject to polio and influenza; and at least one venereal disease dates from the discovery of America. Besides, there are allergies Columbus would have had to make his body tolerant of smoke, various kinds of dust, nylon, coal tar products and thousands of things you accept as commonplace. And if, by some slim chance, Columbus could have survived all these things, how long do you think he'd have lasted in city traffic?"

"But surely I'm more civilized than Columbus. I'm better fitted to get accustomed to new things—"

"No more than Columbus. Remember he was ahead of his time. The fact that he believed the world was round put him among the most advanced thinkers of the Fifteenth century. Perhaps you're on a par with Columbus, but no better than he intellectually in reference to his own day."

Pem sighed and shook his head. "I'll admit you have a case, but it doesn't seem to justify my execution like a criminal. I've done nothing to deserve such a fate."

"There's a lot of injustice in the world," said Xack. "And you should be dead now anyhow."

With these cold words, he rose and strode to the door.

"You'll have a week here first. We many want to question you some more."

Once more the electronic lock clicked shut. But Pem was too dazed to wonder about it now.

TWO OTHER men, who were introduced as scientists, questioned Pem that day. Xack came with them both times. Outwardly Xack was sympathetic, but Pem sensed a hidden resentment he could not understand. It was almost as if Xack hated Pem, but Pem could find no motive for this hatred.

There was a small electric clock in the wall of his cell. It was divided into 24 hours, in-

stead of 12, and when a tray of food appeared in an elevator that came up in the wall, Pem noticed it was 18 o'clock. He was not hungry and he sent the tray back with the food barely touched.

Pem suddenly felt an urge to do something. He didn't want to sit here until the men came to take him away—to the radiation chamber, Xack had said. Now they killed men with atoms, instead of electricity.

Foot by foot, he examined the walls. They were solid, no doubt steel that could never be pierced with any tools Pem could lay hands on. The food elevator was too small to offer a chance for escape. The only exit would have to be through the door.

Pem went to the door. He peered down at the lock. It was an electronic unit all right, but there was something about it—something that made him think it was not as it was supposed to be.

Pem reached out his hand to touch it. There was no lock there. His hand sank right through the lock as if it were simply a shadow. On the other side of the door, his fingers touched some sort of a latch. The door swung open.

He could have walked out of the building then, but Pem sensed this would be foolish. He had nowhere to go. He would be like Columbus trying to find his way around the streets of New York. He had to have help from someone outside and there was only one person he could turn to. Zilla.

PEM ASKED Xack to let him see her next day. Xack frowned and suddenly Pem realized why Xack hated him. Xack was jealous. Xack did not really want to save Pem from death as long as Pem stood between Xack and Zilla.

"It was customary in my day," said Pem, "to let a man condemned to death have a few privileges. Don't tell me you're less civilized."

Xack snarled. "Okay. If it makes you feel any better, she's already asked to see you alone. She'll be here in an hour."

Pem watched Xack when he left. His hand did not sink through the electronic lock. Instead, the fingers seized the control knob firmly. It was solid to Xack.

Could this be a dream? Pem felt the solid walls, and the door around the lock. If it was a dream, it was made of dream stuff only in one spot.

Xack brought in Zilla an hour later. "You'll only have fifteen minutes with him," he told her as he closed the door.

Zilla fell sobbing in Pem's arms. Quickly Pem wiped away her tears. "Don't cry," he whispered, "there isn't time for that. Listen. I can escape if you'll help me get away in the time machine."

Zilla lifted her head and looked around the cell. "From here?"

"Yes," said Pem. "Don't ask me how. All I know is that I can. But we've got to get away from this age. They'll kill me if I stay."

"You can't go back to your own age," she said. "You can't do that to the world."

"No," said Pem, "and Xack has an interesting theory, too convincing to be disregarded. He believes that people can't live too far out of their own age. That means you couldn't live long in mine, and I can't grow old in yours. And I won't go without you."

"You must, Pem, if you can!"

"No. I'd rather die than never see you again. But I know that you did come to my age twice, without ill effects. I'm in your age now, and I'm not going to die, naturally anyhow, very soon. So it must be that we're pretty good risks to live at some intermediate age. Say in 2210, halfway between your day and mine."

"But there are men waiting for Pem Rollins in that age."

"Only in the security office."

"How could I get the time machine out?"

"The same way you brought it in," said Pem. "But we've got to act fast. The machine will be missed almost immediately. So I must escape. During the confusion of my escape, you set the machine in motion, so that it will reappear in a very short time, an hour at most. Carry it home. Then we'll meet climb into the machine and sail back to 2210, landing at some spot where no one will be watching."

"What then, Pem?"

"We'll destroy the machine. Xack will never know where to find us."

Zilla thought it over for a moment. "My apartment is safe. But you can't find it."

"Isn't there some kind of taxi?"

"Of course!" She brightened at once. "A helitaxi. You can find one near here at a hotel. But you'll have to travel on the low-speed ramp and someone might see you."

Hastily she explained. Pedestrian traffic was handled by conveyor belts. These traveled at different speeds with the lowest speeds next to the buildings. Zilla gave Pem instructions, then pressed some bills into his hand. "Helitaxi fare," she explained. "My address is Level 5, Crossing 9XB, Ninety-eighth Street, Number 1348.

Pem repeated the address and fixed it in his memory. "I'll break out of here in ten minutes," he said. "You've got to start your end of the plan when the alarm is given."

He took Zilla in his arms again. When Xack opened the door, Pem was still holding her. Xack scowled. "Time's up," he said.

As he took Zilla out, he turned and looked at Pem with bloodshot eyes.

Pem watched the clock. At 11.15 he went to the door, thrust his hand through the electronic lock, and opened it. He remembered the corridor that had brought him to the cell and it was empty. But he took the one leading away, the one that Pem had told him led to the street.

Just as he neared the exit, a man dressed in the uniform of a security officer came in. He saw Pem and reached for a tube-like weapon at his side. He never touched it, for Pem leaped and swung with one motion. The blow caught the man and spun him backward and the weapon clattered to the floor.

Without stopping, Pem ran through the door. He was almost upset as his feet hit the conveyor-belt sidewalk, but he maintained his balance.

Following Zilla's directions he remained on the belt as it rose gently toward an elevated roadway. He looked back, saw no one pursuing, but he knew that the alarm must already be sounding in the immense federal building behind him.

The belt reached the elevated traffic level and then Pem

realized that five centuries of study had left the traffic problem unsolved.

In the street were small cars, large cars, vans and caterpillar vehicles by thousands, crowding tooting and crashing. The cars were low, stream-lined and with transparent bodies, but they were still recognizable as cars. There were not many different kinds, and Pem realized that the race for body differentiation had probably been called off many years ago. The difference lay in uses for which a car was built.

But there was no time to study Twenty-fifth century traffic. Pem saw the hotel towering ahead of him. In a vacant area to one side, several small helicopters, not much different from those of Pem's day in appearance, were waiting.

Pem ran to the first one and got in. The driver looked at him.

"Goin' to a masquerade, buddy?" he asked.

"Probably," said Pem. He thrust the bill into the driver's hand. The driver himself wore a loose-fitting coverall, which in no way resembled Twentieth century clothing. All the men he saw seemed dressed in this garb, except those in uniform, such as the security officers. The officers also seemed all to be dressed the same. Pem assumed there were only two kinds of clothes, those for public officials, and those for private citizens.

Pem gave the address and the helicopter rose.

The acceleration upward and forward almost crushed Pem, and he realized the machine was jet powered. For only a few seconds the acceleration continued, then there was deceleration and the helicopter settled down on the roof of a building.

"Thanks," said Pem, starting to get out.

"Just a minute, buddy. Your change!" The driver held out some coins toward Pem.

"Keep it," said Pem.

"Oh no, you don't. Wanna get me thrown out of the union?"

Sheepishly Pem took the change.

Beyond was a door. He went in. An escalator with a big 56 over it was beyond the door. Again, following Zilla's instructions, he rode down. At

last the fifth level was reached and Pem got off. A directory hung on the wall and he saw Zilla's TU-36-503-74's name beside 53-B. That was the apartment right across from the escalator.

Pem went to the door and tried the lock. The door wouldn't open.

HE looked frantically up and down the hallway. No one was in sight. His clothing was a dead giveaway, if anyone saw him. Then suddenly he realized that his arrest had been kept secret. No one outside of security officials knew that Pem Rollins had landed after five centuries.

A man, dressed in overalls, came up the escalator. He stared at Pem. Pem nodded and g r i n n e d. "Masquerade party," he said, with a nervous laugh.

The man rode on, turning once to look again.

"Whatta costume," he said.

Then another figure came down the escalator. It was Zilla, carrying her rug. She waved and then ran the remaining steps to her doorway, with the key in her hand.

"They'll probably come here as soon as they miss me," she said. "But thank goodness, the hour's almost up."

She pushed open the door and spread the rug on the floor.

Pem took furniture and piled it in front of the door. When he finished, he found Zilla standing before a window looking out. She turned and looked at a fission clock on the wall. It was 12:05, and there would be ten more minutes of waiting.

"They're searching for us now," she said. "They may come here any time."

Pem nodded. "We'll escape," he said.

"How can you be sure?"

"The lock on the cell door," Pem said enigmatically.

"The lock?"

Pem had forgotten he had not told her of his escape. Quickly he told how the lock seemed to have no substance. "Everything I've noticed in our travels in time, except seeing myself on two occasions and the lock, had a certain amount of acceptibility. I think I can understand how I could see myself, yet it is impossible to believe that I could exist in

two places at one time. Then I began to wonder. Perhaps the real me did exist, not in one place, but in an infinite number of places. If I can travel in time and see myself, the 'I' that I saw would be just like that lock—visible, but it would appear without substance if I touched it."

"But the lock is not part of you," Zilla reminded him.

"In a sense," said Pem, "it is. It was an electronic lock. I'm an electronics technician. Have you any idea when it was invented?"

She thought a moment, then her eyes widened. "I'm not sure of the exact date, but I know it has been in use about two hundred years."

"Then it was invented in the Twenty-third century—and that is where we are going." He smiled. "I invented that lock, Zilla. It is my creation, therefore in a sense, a part of me and a part of my future."

"Nonsense. The Twenty-third Century is behind us—this is the Twenty-fifth."

"For you, the Twenty-third Century is in the past, for me in the future, both in respect to 1960 and 2460," Pem explained. "Remember that Einstein said that measurements depend on the platform on which you stand to take the measurement. On the earth an inch, but to an observer of another world, speeding half the velocity of light, that same inch would not be an inch. Time may vary, too, if you are on a different platform."

Zilla nodded her head. "In other words, your time is *not* my time, in spite of the ancient song?"

"RIGHT. My time pertains only to me and I measure it in respect to my own existence. In my life, 1960 is followed by 2460. In your life, 2460 is followed by 1960, then by 2460. Every person has his own continuity. In most cases 1961 follows 1960 or 2461 follows 2460, just as a line proceeds point by point from zero to infinity. But we are the privileged ones who were able to jump away from that point-by-point journey, into another dimension. We might go ahead to a point far in advance of 1961, or behind 2460. We might zig-zag, squirm, look and

vary the natural sequence infinitely. But in our own experience with time, events follow in a logical order. When we meet something outside the natural sequence it refuses to have substance."

"But you saw the lock!"

"But it did not actually exist, because neither I nor any of my creations can have a meaning until they have reality."

"But you and I have both gone into the future and seen events before they occurred. Are you trying to say that I do not exist to you?"

"Far from it, Zilla. You are the most important of all realities. But you are not my creation and not a part of me. You are a point in my time line. Time itself does not move. Only energy moves. The energy of life progresses through time like a man walking through the hills. The man sees the landscape, but it was there before he arrived and will continue to be there after he passes. But if he should see himself, he would not be seeing something that has been there before or would be there again."

Zilla sighed. "I'm not so sure you offer a hopeful picture of things. There is no incentive to do anything, no reason for success. This is consoling to a person who is a failure, for he can tell himself that everything was made that way, it could not be otherwise. But there's no reason for trying to better ourselves."

"On the contrary, man is master of his own fate. Up to a point, and that point is where he tries to alter the past to change the future. It is in history that I invented the time machine, but I did not invent it. I copied it from the one you brought into my workshop in April, 1960. Who invented it? From my platform in space-time, you did, because you made one before I did. But from your platform, the time machine was invented 500 years ago. The answer is that the time machine was a part of different time lines. I saw one in April 1960, but had I tried to touch it, it would not have been there. In August, 1960, I saw it again. Then it was real, for meanwhile I had invented one. I saw the lock in my cell door in August 2460, but it did not exist. You tell me it was in-

vented sometime after 2200. You and I could invent it, and I know you did not, because the lock was real to you. My fate cannot be altered by me, but my individual life can be changed if it does not alter fate."

"There does not seem to be much sense in what you say," said Zilla, "but of course I am not a philosopher."

"Nor will anyone ever know for sure how many of his achievements were his own work, or how much was due to his position in time. There are injustices, of course. Think of the babies born blind, of the people maimed by war which they did not cause or want, of the other things that happen to men. These things are fate. But there are men who have achieved things as they moved through time that were their own doing. That is something you must always believe, even if you cannot prove that anything you do is your own volition."

"Your invention was not yours, Pem?" said Zilla.

"My time machine was the result of a peek into the future," Pem explained. "Maybe all creations are the same. The look ahead may not be something the inventors are concious of, but progress is building and creation and the product of time."

"But—"

Zilla did not speak what she had on her mind. It was lost in time. For at that moment there was a pounding on the door.

Pem glanced at the rug. It lay on the floor, undisturbed.

THE pounding came again. "Open up!" shouted a voice. It was Xack, the security chief. "Open up Zilla, or I'll break down this door."

Pem nodded to her. "Stall him," he whispered. He glanced at the clock.

"Just a minute, Xack!" she called. "I'll unlock it."

"Is Pem Rollins with you?"

"How could he be here? He's in custody."

There was a moment's hesitation. "Open the door. Immediately!"

Pem saw a small dark spot hovering over the rug. Something was moving inward from the distant horizon of Now.

"Open up. I'll count to five, then I'll come shooting. One—"

The spot was larger. It grew rapidly.

"Two—"

The time machine was in the room.

"Three—"

"Quickly!" said Pem. Get inside."

"Four—"

Zilla squeezed through the bars.

"Five!"

Pem was right behind her as a cherry spot glowed on the inner side of the door. He adjusted the controls and touched the button, just as the door melted away. Beyond he caught a brief glimpse of Xack with a tube-gun in his hand.

Like an echo came Xack's voice: "I'll get you yet!"

Pem felt the weeks and years hurl themselves past him as the machine rushed int he century gone by. Decades fell off to the left and to the right. and upward. There was a series of short, bumping turns, like hours going around a curve, and days that dipped into valley . ears like mountain roads. The last twenty years whipped out of space-time and then the machine stopped.

THE mist of time swirled away, and Pem stood beside Zilla, looking at the walls of a dingy room in the year 2210.

The building was still an apartment, but the occupants of the suite were not at home. This was fortunate, for much remained to be done. First, the machine must be disposed of.

Pem's immediate problem was whether to dismantle it and try to lose it as he had done once before, or to send it deep into the prehistoric recesses of time. Even the latter idea seemed dangerous. A fossil cast of the machine might be found in civilized times. But this was better than trying to hide the machine piece by piece. Once before he had tried to do this, and that attempt had failed.

With hope that the metals would corrode and rust before man evolved on the earth, Pem set the controls as far back as he could. It would be at least two million years, perhaps more, for he had no idea what the machine could do at an extreme range.

Stepping back, he turned the

switch and watched the machine disappear. Only the rug remained and Zilla stood by with scissors, ready to cut it into small bits and put it in the waste disposal. A time machine would have a hard time landing on that, but the rug would not be needed if the machine came from the past.

Hunting through the suite they found clothes. Bell-bottom slacks for Zilla and lose-fitting, ugly pantaloons for Pem. He did not like them, but they were no doubt the style of the day.

"Where shall we go?" she asked after they had dressed.

"Security agents are waiting for me here," said Pem, "and they'll have my photo. We must go to another place."

"Then what?"

"We're alone, strangers to everyone, without a friend in the world. We'll have to fake amnesia, but that won't be all fake—for we know practically nothing, except what you've learned in history."

"It's a dull age. Nothing much happened," she said.

"All the better. We've nothing to disturb."

HE TOOK Zilla's arm and started toward the door. Suddenly he stopped. Between himself and the door a small speck floated in the air.

He knew at once what it was. A time machine. But where had it come from? He thought he had destroyed it when he sent it far back into the prehistoric past.

The dot grew larger and he saw something in it. A man!

It was growing fast. Pem picked up a chair, swung it with all his might at the small but growing object. The chair shattered, and there was a blazing of violet light. He had dented the bars enough to short the controls!

Bits of metal grew red, and a tiny figure squirmed out of of the twisted cage. On the floor, the size of a doll, lay the image of a man called Xack, security officer of 2460.

Xack struggled to rise, then fell back to the floor, weak and exhausted, he coughed and tried to catch his breath.

The tiny eyes blazed hatred as he looked up at Pem. "You've killed me," he hissed. "I'm partly suspended in time-

less space, and partly in this room with you."

"You shouldn't have followed us," said Pem. "You should have taken my word that I knew the danger of the time machine. You knew I would destroy my machine, and it has been destroyed—except for this."

"This is your old machine," said Xack. "This one I rescued from the lake. All it needed was a magnet, so I set it up in Zilla's apartment after you disappeared, it took some time to find out where you went, but I was able to discover it by searching—police files. I learned that on August 29, 2210, the apartment on the site of where Zilla lived in 2460 had been burglarized and clothing was taken. Police also found pools of metal on the floor as if the burglar had been melting a kind of copper cage, and a few other odds and ends. Too bad we hadn't connected this with a time machine before this. We could have stopped you long ago. But this time I thought it was your machine that had been destroyed —not mine."

"So you went to your doom," said Pem. "If it makes you feel any better, I don't believe you could have done anything about it."

"It wasn't your machine I wanted," Xack went on. "I wanted Zilla."

"She doesn't want you," said Pem.

But Xack did not hear him. A great sob came from the tiny man. "Few men can live outside their own time," he managed to say. "You are the lucky ones, if you can."

Then he stopped breathing.

Zilla looked at Pem. There was a body to dispose of.

But not for long. Slowly Xack's body grew smaller, then disappeared. The part of him in what remained in time.

"Let's go," whispered Zilla. "Let's follow the rest of our time line."

Pem took her into his arms and kissed her. Then he opened the door. They went out into a strange world that neither of them knew. The world of 2210.

THE END

SCIENCE SHORTS

by EDGAR P. STRAUS

Chemists are now making use of a thermometer so sensitive it can even measure "the temperature of an ice cube a half mile away at the North Pole." The instrument is called the infrared pyrometer, and it distinguishes temperature changes as small as four hundreths of one degree Centigrade.

It works on the principle that every object gives off infrared radiation at a rate dependent on its temperature. The core of the pyrometer is the thermistor, a flake of metallic oxides whose conduction of electric current is increased when it is heated. An amplifying and recording system translates the frequencies it gives off into temperature readings.

German scientists have proven that elephants *do* remember. Tests run on a young Indian elephant showed that the pachyderm can remember instructions and learn faster than most smaller animals.

It's a smaller world. New radio-echo techniques used by the U. S. Army Map Service have revealed that Earth's radius at the equator is 6,378,260 meters—almost five hundred feet shorter than the previously accepted figure. The survey is expected to increase the accuracy of our maps fourfold.

A new type of radio transmitter powered by the voice of the sender alone has been developed by the Army. Weighing one and a half pounds, the transmitter does not need batteries or any other external source of power, and has an operating range of one mile.

Engineers are now at work on a companion device, a receiver which would use voice energy stored during transmission to power it. The transmitter-r e c e i v e r unit would make a battery-less walkie-talkie no bigger than the mouthpiece of a telephone.

SERENDIPITY

by J. FOSTER BLAKE

"Serendipity" is the key to some of the wonders of science. The dyes that give women's clothes the colors of the rainbow, the X-ray that detects broken bones, and super-drug penicillin, all are products of serendipity, described in the dictionary as meaning "the gift of finding valuable or agreeable things not sought for."

Scientific discoveries are generally the product of painstaking care—but not always. The prize example of serendipity was the discovery of penicillin, thanks to a lucky gust of wind. It blew a bit of mold through an open window in the laboratory of Dr. Alexander Fleming, in 1928, and contaminated one of his plate cultures. The contaminated mold was discovered to possess bacteria-killing properties, and eventually became the basis for the wonder-drug penicillin.

A key carelessly tossed on a photographic plate gave the world the invaluable X-rays. It happened when German scientist Wilhelm Roentgen turned on a cathode tube with which he was experimenting, unaware that his key was atop an undeveloped photographic plate covered with black paper. A lab assistant accidentally developed the plate, and Roentgen saw the outline of his key on the negative—the rays of the cathode tube had penetrated the black paper, and the X-ray was born.

Serendipity was responsible for the vulcanization of rubber. Charles Goodyear was showing a bit of experimental rubber to a friend when it dropped on a stove, unlocking the heat treatment that has made possible rubber tires, galoshes, and a host of other valuable things. It's not listed on the aptitude tests, but the knack of finding something you're not looking for is one of the most useful talents a scientist can have.

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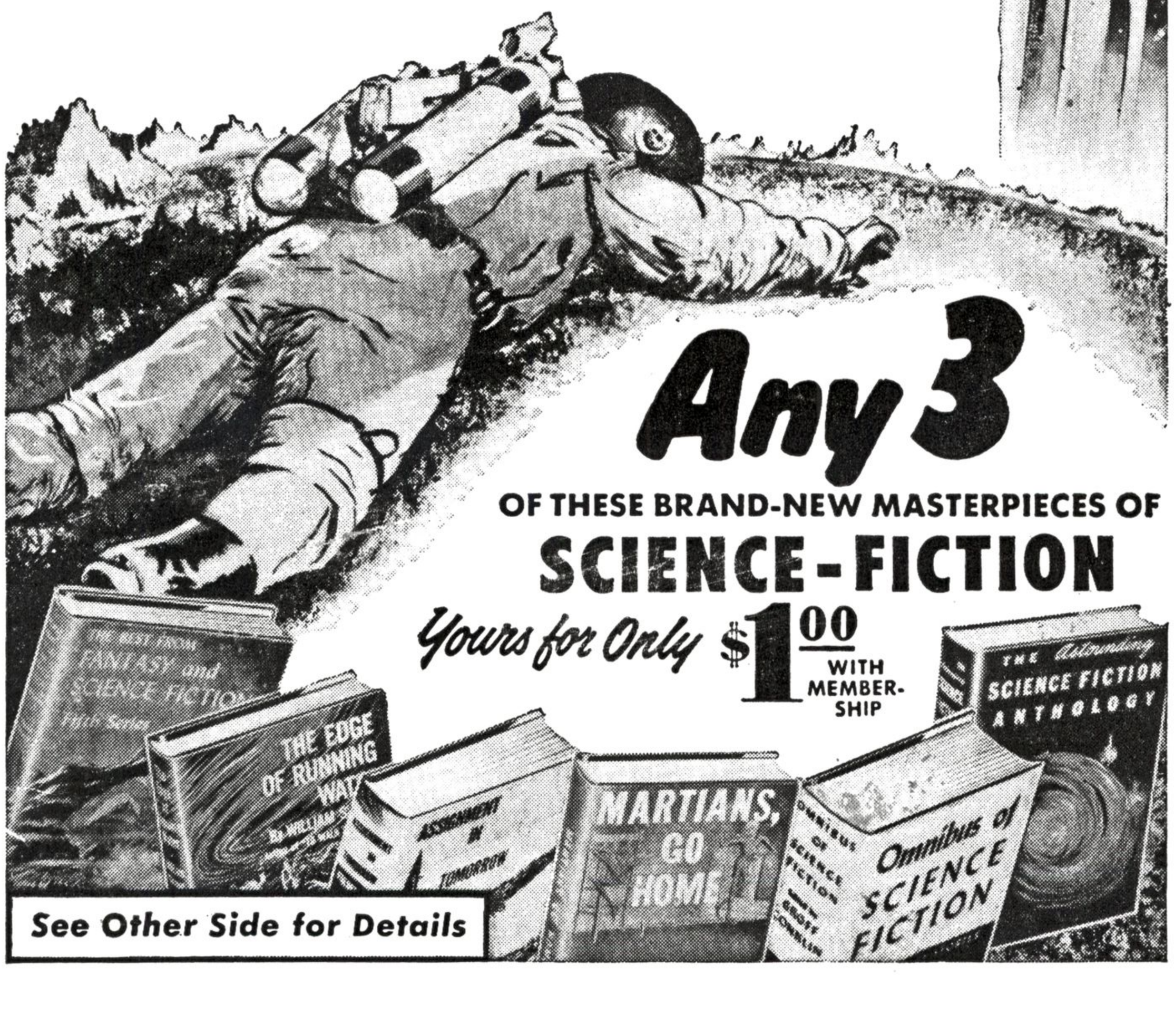
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