JUNE 1953

GALAXY Science Fiction

Galaxy
SCIENCE FICTION

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TANGLE HOLD By F. L. WALLACE

PEBBLE IN THE SKY

by Isaac Asimov

IT began when Joseph Schwartz was walking down a street in Chicago, past the Institute for Nuclear Research. He raised one foot in the twentieth century; he lowered it in Galactic Era 827, the victim of an odd accident inside the Institute involving an experiment with crude uranium.

Schwartz awoke to a strange world—he was still on Earth, but at a time when all the planets of the Galaxy were inhabited, and the people of Earth were outcasts, suffering vindictive discrimination because their tiny world was radioactive!

His subsequent adventures involved Schwartz in a brewing revolution of the Earth militarists, and a romance between the daughter of an eminent Earth scientist and a young Galactic archeologist. Then, strangely, it was the little retired tailor from Chicago who found himself the only man who could avert the impending cosmic disaster. But Schwartz, homesick and confused, wasn't sure he even cared!

Combining tenseness, irony, romance, and fast action with a basis of really intriguing science, Pebble in the Sky is a truly ingenious tale of the far-distant future.

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Galaxy

SCIENCE FICTION

ALL ORIGINAL STORIES • NO REPRINTS!

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Cover by MEL HUNTER showing A URANIUM STRIKE

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OF ALL THINGS

IN spite of its turbulence, or maybe because of it, our era is rolling out a seemingly endless belt of miracles that were "impossible" only yesterday.

That's the surface phenomenon. There are three others, however, that are more significant in foreguessing possible future trends:

• The flow of marvels is accelerating instead of slowing down, which is astonishing only if you follow the wrong line of reasoning.

Discoveries, even supposedly ultimate ones, generally lead to others, which in turn make still others possible. The vacuum pump, for instance, gave impetus to research and produced electric lights, radio, TV and vacuum cleaners. We haven't seen the final results of the Curies' experiments with radium. When the security wraps can be taken off the physical sciences, we are likely to find that entire new fields have been opened up, which will open up many more.

For science fiction writers, the devil of it is that none of us can even imagine what those advances will be. And to make it still worse, what further discoveries will those advances lead to?

• Sociologically, the attitude toward these discoveries is important, for as fast as former impossibilities become reality, they are accepted and absorbed — sometimes prematurely, as with Chloromycetin, sometimes too uncritically, as with chlorophyll —which is a great contrast to the caution of the past. The willingness to accept innovations also is accelerating.

There are risks involved, of course. Whenever a societal pendulum swings, it follows Newton's third law—to every action there is an equal and opposite reaction—and swings too far. But it does come back. Besides, we have enough professional, industrial and governmental safeguards to make the risk small in comparison with the gains.

• Rather than creating greater complexity, very many of these discoveries simplify things. The transistor is a good example. Medicine is another—a general practitioner today, using modern drugs, can combat more major diseases more effectively than a whole group of specialists a few years ago.

Great discoveries aren't merely more damned things to add to our technical warehouse. They often unify masses of previously unrelated data.

It's a bit hard to find a book that commits as many mental

assaults on the reader as Charles Galton Darwin's *The Next Million Years*, which is probably reason enough to fight back, but that's not my purpose in mentioning it.

Sir Charles tells us that the human race is coming unglued because the "superior" element is allowing the "inferior" to outproduce it. The ancient Greeks and Romans also yelped about that situation—and for the same reason, which Sir Charles and his too-numerous co-yelpers neglect to analyze.

The plain fact is that a large family is an economic asset to the poor, a liability to the better-heeled. As long as the children of the poor boost the family income by working, it's absurd to hope that the poor will start having small families.

Don't look at me—I have no answer, except that a number of children of poor families have made the race a lot richer.

Josué de Castro's *The Geography of Hunger* claims that malnutrition increases human fertility. All we have to do then is feed the overproducers until they start reproducing sensibly. The "how" might be a problem—but then there'd be still more economic advantage in having large families. And how would it help if the "superior" element began breeding unrestrainedly? It would only help crowd us off the planet that much sooner.

To smooth the feathers ruffled by my statement that we are not facing inflation, one reader suggests this diplomatic formula: "Price and income could be aligned more equitably."

Well, sure, of course they could be. But how often have they been, and for how long? I recommend parity for the whole country—but let George administer it, not me.

Science fiction shares a wonderful privilege with news analysts — both can solve the problems of the world without leaving the desk. The difference, of course, is that we label our opinions "guesses," while analysts claim omniscience.

There must be something wrong somewhere in the analysis business. If they were that good, we wouldn't need so many of them. One would be enough to tell us what's going to happen and why.

Odder still, science fiction, dealing with guesses just for mental and emotional stimulation, has a better record.

—H. L. GOLD

By F. L. WALLACE

TANGLE HOLD

Jadiver objected to being the greatest influence for good on Venus . . . because what was good for Venus was bad for Jadiver!

Illustrated by EMSH

SOMEBODY was wrapping him in a sheet of ice and spice. Somebody was pulling it tight so that his toes ached and his fingers tingled. He still had fingers, and eyes too. He opened his eyes and they turned in opposite directions and couldn't focus on what they saw. He made an effort, but couldn't keep it up and had to let his eyes flutter shut again.

"Rest. You're all right." That's where he got the idea of ice and spice—from that voice.

"Mmmm," said Jadiver. He tried to raise his hand, but it wouldn't move. It was good advice—to rest; he couldn't do otherwise. "What happened?" he whispered.

"You had an accident. Remember?"

He didn't. It was his mind

playing tricks, of course. It couldn't have been pleasant if his memory didn't have access to it.

"Mmmm," he evaded.

"Go to sleep. We'll talk later."

He thought he felt something shoved deep in his flesh, but he may have been wrong. In any event, the light that filtered through his closed eyelids faded away and the external world, of which there wasn't much in the first place, vanished completely.

LATER, he awakened. How much later, he didn't know, but it may have been days. The oppressive languor had left him and he felt capable of movement. To prove it to himself, he turned his head. He was alone, and he thought he recognized where he was. He didn't like it.

There was an odor in the room, but this time it was the kind that lingers in all hospitals. He tried to sit up, but that was more than he could manage. He lay there a long time, looking through the heavily reinforced window; then someone came in.

"You'll live," said the voice behind him—the same voice.

"Think so?" He hadn't intended to turn around, but the spice was back and he wanted to see. It was only the fragrance she wore—there was none in her voice or demeanor. That was still ice.

When she sat down, he could see that her hair was a shade of copper and the uniform she wore a dark green. She was not a robot and therefore not a nurse or a guard. It was logical to assume she was a doctor, police variety—definitely the police.

Thadeus Jadiver sighed. "What am I in for?"

"You're not in for anything. Maybe you should be, but that's not my business," she said in a flat voice. That was the only thing about her that was flat; the rest curved nicely even under the uniform. "This is an emergency as well as a police hospital. We were close, so we took you in."

That was reassuring. Jadiver tried to smile as he lifted a curiously bandaged arm. "Thanks for this."

"I'll take only half the credit. That was a combo job."

He was going to have difficulty if she insisted on using technical slang. "What's a combo job?"

"Just what it sounds like. A combination robot-human surgeon. All hospitals use them. The robot is more precise and delicate, but it lacks the final margin of judgment that's supplied by the human. Two of us work together in critical cases."

He still couldn't remember what had happened, but it would come back in time. "I was critical?"

Her mouth was firm and her cheekbones a trifle too broad. Just the same, the total effect was pleasing, would have been more so with a little warmth stirred in. "To give you an idea, you'll notice that every square inch of your skin is now synthetic." She leaned over and took his hand, which was encased in a light spongy cocoon. Expertly, she peeled back the end and exposed the tips of his fingers.

Jadiver looked, then turned away. "Cellophane," he said. "A man can be born, live, die, and be shoveled away; begot and beget, completely untouched by human hands."

She looked blank at the mention of cellophane. Probably didn't know what it was, thought Jadiver. So few people did any more.

"Don't worry about it," she said. "Your skin's transparent now, but in a few days it will be normal."

"That's nice," said Jadiver. "I suppose it would be educational, but I'd just as soon not be an anatomy model of the first layer of the human body."

She stood up and managed to work up a creditable imitation of interest. "We had to peel off the burned part, and when you were completely raw, we fitted the synthetic skin to your body. Over that we sprayed the bandage. New body cells form with this synthetic substance as the matrix. You'll gradually return to normal or better. Your new skin may be more resistant to corrosive chemicals and microbe invasions."

"Glad to hear it," said Jadiver. "Superman."

For the first time, she smiled. "Don't count on it. This stuff is too new for us to know how it reacts in all cases." She turned around at the door. "In a few days I'll take off the bandages and you can go home. Meanwhile, you know what to do if you need anything."

JADIVER lay there after she left, thinking. He hadn't asked what the accident was and she had assumed he remembered. He ought to, but he didn't. He frowned and tried to recall the last thing he had been doing.

They had removed his skin and replaced it with a synthetic substance. Why? Take it from there and work back.

He stirred uneasily. The last he remembered, he'd been in his apartment. That didn't help much; he was often there. He shook his head. He was in the apartment, preparing to leave. That meant he must have used the autobath. That was it. The picture came into focus:

He touched the door of the

autobath and it swung open. He went inside. "Shave, massage, bath," he ordered.

The mechanism reached out of the wall to enfold him. He leaned back. It gripped him, not comfortably, as usual—but tightly. He squirmed, but when the grip didn't adjust, he relaxed.

The autobath rumbled familiarly and a jet of water spouted up from the floor. It was icy cold and Jadiver shivered.

"You didn't listen," he said firmly. "I asked for the bath last."

The autobath paid no attention. The top and side jets turned on. The force was greater than he had ever experienced. It was difficult to breathe. The water got hotter rapidly, and then, seconds later, steam blew out of the nozzles.

Jadiver shouted and tried to struggle free. The autobath did not let go. Instead, it ground at his muscles with hard inflexible hands. Here and there his skin began parting from his flesh. The autobath kept on kneading him. It was when it reached for his face—Jadiver remembered very clearly—he lost consciousness.

He lay on the bed in the hospital, sweat soaking into the bandages. He could understand why he'd had a memory block—being boiled alive was frightful enough for his mind to repress.

It was not only the accident that was disturbing, but the manner in which it occurred. He knew robot machinery and the principles used in the construction of it. The autobath was one of the best—foolproof, if there was such a mechanism.

Someone had tampered with it —object: *to try to kill him.*

That was one possibility and he could face it with equanimity.

There was also another, but he didn't like to think about that.

HE looked out over Venicity. From his apartment, the topography resembled that of a lunar crater. In the middle was a giant concrete plain, the rocketport. From the edges of the rocketport, the size of the buildings increased gradually; at a third of the distance from the center, they were at maximum height; thereafter, they decreased gradually until one and two story structures nibbled at the surrounding forest.

Five million people and in ten years there would undoubtedly be seven, a sizable metropolis even for Earth. That didn't mean that the population of Venus could compare with the home planet. Venus was settled differently. Newcomers started with the cities; only later did they venture out into the vast wild lands. Venus was civilized, after a fashion, but it wasn't a copy of Earth.

The screen glimmered at his back. "Thadeus Jadiver, consulting engineer?"

He turned. "That's right. Can I help you?"

The man on the screen closed one eye slowly and opened it again the same way. "This is Vicon Burlingame. I've been doing some experimenting and am now at the point where I can use some technical assistance."

"I'm not sure. I've been in the hospital until this morning. I think I need a checkup."

"I called while you were gone," said Burlingame. "I know about the hospital; however, I don't think my work will be strenuous. Perhaps you'd come over and we'll discuss it."

"I'll take the chance I can help you."

"Good." Vicon Burlingame gave him the address before fading out of the screen.

Jadiver dressed slowly. Weak, but better than he expected. Physically, his recovery was far advanced. It wasn't he who was taking a chance, of course; it was Burlingame. Jadiver had warned him and if Burlingame was willing to risk it, that was up to him.

Before he left, Jadiver checked his office. A few calls in the last week, but nothing important. It was a routine check and he gave the robot routine instructions.

A tiny thing, that office, located on the ground floor of a building fronting a principal thoroughfare. A space large enough for a client to sit down, if one should come, which wasn't often. Behind the desk was the upper half of a robot. Tiny though the office was, it was not inexpensive, and the business that passed through it was barely enough to pay the rent.

There were other advantages in maintaining it, though. As long as he had a business address, he was spared certain legal embarrassments.

FIVE minutes later, he was greeted by Vicon Burlingame. "Come in." Jadiver did so.

Burlingame silently studied Jadiver closely. "Maybe you're tired," he said at last. "A little sun would relax you."

"It might," agreed Jadiver. "This cloudy Venus."

"It's not so bad when you're home," said Burlingame. "But public places are bad for ultraviolet." He indicated the next room. "The lamp is in there."

Jadiver went in and began to remove his clothing. Before he finished, a little man came in, nodding silently at Jadiver. Without comment, Jadiver stood in front of the machine. While the little man methodically examined him, his clothing disappeared.

The little man looked up at the end of the intensive investigation. "You'll do," he said.

"Clear?" asked Jadiver.

"Clear as the atmosphere of the Moon. We were afraid they'd planted you while you were in the hospital, but we decided to take the chance."

For the first time since the accident, Jadiver felt relaxed. "Thanks, Cobber. I was hoping to contact someone to check it for me."

Cobber shrugged. "Who can you trust? If you go to a doctor good enough to find a gadget that small, what is he? A high-powered professional and he's got his problems. He sees something inside and smiles and says you're fine and charges you a fat fee. Even if he tells you that you've been planted, there's nothing you can do. No one's going to cut it out—not while the police can hear everything through it."

"Thanks for taking the chance."

Burlingame came in smiling confidently. "Now we can talk," he said. Behind him were three other men Jadiver had never seen.

"Where are my clothes?" Jadiver wanted to know.

"They'll be ready," promised Burlingame. "The police have got all kinds of cute tricks, only we don't fall for them. We're systematic."

They were that, decided Jadiver, and something more. They had to be to survive so long. Burlingame was good.

A gamin's face peered through the doorway and one hand thrust his clothing into the room and waved it. "Here. They didn't try to conceal anything." She sounded disappointed.

Jadiver dressed as Burlingame relayed the clothing to him. The gamin wrinkled her nose and disappeared. By the time Jadiver was completely dressed, she came back with refreshments.

They sat down at the table. "I want faces," said Burlingame, across from him—"five faces."

Jadiver looked around. There were six. "None of my business, except in a professional way, but who do I leave out?"

"Cobber. We have other plans for him."

It wasn't a good idea to pry. He had to know the human material on which he was expected to work, but it was safer not to know what they were planning.

He tapped his glass. "What kind of faces? Soft faces, hard faces, space faces? And do you want anything else?"

"Society faces," said Burlingame. "Emily wants to wear a low-cut gown. The rest of us just need faces."

"Real low," the gamin insisted, wriggling.

"Society," mused Jadiver. "I always did think it was better to rob the rich . . . like Robin Hood."

"Sure," Burlingame said.

Jadiver tilted the glass. "Especially since the poor don't have much money."

"That has something to do with it," Burlingame cheerfully agreed.

Cobber broke in. He was a little gnarled man, older than the others. "A point, Jadiver. The poor don't have much money, but there's so many more of them. You can actually be more successful robbing them. But you have to keep at it every day in the year, and then you don't call it robbery; you say you're governing them."

"Don't have that kind of stamina," said Burlingame.

"A good point, Cobber." Jadiver leaned on the table. "I don't want specific information, but how can you make robbery pay off these days?"

BURLINGAME looked at him astutely. "Considering it yourself?"

Jadiver shook his head. "Intellectual curiosity. I'm doing all right in my own line."

"It's a theory," said Burlingame. "You can't touch banks or financial institutions. Too many electronic safeguards, robots, and what have you. In order to get past that kind of equipment, you have to be a top-notch scientist —and one that can do better at a top-notch job.

"Now, who's got money? The rich, and they *want* to show it off wherever they go. Naturally they take precautions, too, but people are always involved and that's the weakness. You can build a machine that does one thing perfectly, but people make mistakes—they get rattled. Teamwork can take advantage of it. A feint here, and a block there, and before anyone knows what's happening, we're through their defenses. With, of course, their money."

Jadiver looked at him, at his handsome, ruddy, respectable face. "You played football?"

Burlingame grinned. "Twenty-five years ago."

"It's changed. You wouldn't recognize it now."

"Perhaps not. But the principle is still the same, and it's the principle that pays off."

Jadiver stood up. "I'd better get started. Where do I work?"

"Here," said Burlingame. "We have the tools ready for you."

"Mind if I look at the setup?"

"Go ahead."

The gamin bounced up and took charge of Jadiver, leading him to a small workshop screened off in a corner of one of the larger rooms. The layout was

authentic enough to justify the equipment—a few robot forms in the rough state, handbooks on design, several robot heads in various stages of completion, and an assortment of the specialized tools of the trade. It was standard for the tinkerer, for the would-be designer of robot bodies. Burlingame always covered himself in every detail.

Jadiver inspected it thoroughly, the gamin standing impatiently at his side.

"I'm first when you're ready," she said.

He eyed her amusedly. "What's the hurry?"

"There's more to do on me and you'll do your best work when you're not tired."

"I'll start soon. Let me see the plastic."

SHE opened a cabinet and there it was. Jadiver squatted and read the instructions on the containers. He shook his head in despair. Every amateur always did this.

He stood up. "You've got the worst kind," he said.

She shrugged. "They told me it was the best."

"That depends. There are two kinds, and this one does look more real than the other. In fact, for a time this actually becomes a part of your body, a pseudo-flesh. But it's quite dangerous."

"The other kind is just a cosmetic, isn't it?"

"That's right, but—"

"Then I'm not worried," she said, tossing her head. "The way I see it, it's dangerous not to use the best disguise we can get."

She might be right. At least he'd warned her, and as long as she had the facts straight, the decision was hers to make.

Jadiver peeled off his jacket and slid into a protective smock. "Ask Burlingame to come in. This is going to be delicate, you know."

The gamin grinned. "I've never been overly concerned about Vicon, and he knows I can take care of myself." She stepped behind a screen and presently came out again, nude. "Where do you want me to stand?"

"On the pedestal, under the light." He looked at her closely. He had thought she was a little girl, a tired little girl who hadn't slept much recently. It was the pert face that had fooled him, with the upturned nose, because she wasn't young. Forty he would say, maybe more, nearly as old as Burlingame.

Her body was slight, but not much was wrong with it. Here and there were a few wrinkles, though in general her figure appeared youthful. It would require all his skill to make her as spectacular in a low-cut gown as she

wanted to be. And her legs, though well shaped, were slightly bowed, a sure sign of Venusian rickets. Early settlers hadn't realized that the soil was deficient in some essential trace elements.

He would have to straighten her legs if she expected to mingle with society. It was beyond his power to change the bones, but he could add pseudo-flesh to give the same effect.

He slipped on the mask, attached the various containers, thrust his hand into the glovelike control valve, and began to work.

She winced involuntarily as the spray tingled against her body and adhered with constrictive force. He blocked out the areas he had to alter and then began to fill in and build up.

"I don't see it," said Emily. "I know you must be good. That's why Burlingame wanted you. But it seems to me this is out of your line."

He brought the spray up in a straight line along the edge of her shin. "How good I am is a matter of opinion. Mine and the places I've worked."

"What places, for instance?"

"Mostly Earth."

"I've never been there," she said wistfully.

"You haven't missed much." He knew that, while he believed that with part of his mind, essentially he was wrong. As the spray was drying on her legs, he started filling out her breasts. "However, this isn't as much out of my line as you think. Engineers specialize, you know. Mine's industrial design. We don't usually monkey with the internal mechanism of a machine, though we're able to. Mostly, we design housings for the machines, robots as a rule."

He proceeded to her face and changed the upturned nose to a straight one. "The ideal external appearance of a machine ought to establish the function of that machine, and do so with the most efficient distribution of space and material."

HE stood back and eyed the total effect. She was coming along. "The human body is a good design—for a human. It doesn't belong on a robot. That, for most purposes, should be a squat container with three wheels or treads, with eyestalks and tentacles on top. I designed one like that, but it was never built. Robots always look like beautiful girls or handsome men, and the mechanism is twice as clumsy as it should be, in order to fit in with that conception."

He squinted at the spray. "In other words, I design robot bodies and faces. Why should it be strange I can do the same with humans?"

The spray was neither a liquid nor a dustlike jet. She shivered under it. "Why don't you like robots? I don't see anything wrong with them. They're so beautiful."

He laughed. "I'll give you an idea. I got tired of the meaningless perfection of the bodies I was turning out. Why shouldn't the bodies be beautiful, considering how they're made? Anyway, I put a pimple on one model. Not on her face. Her shoulder."

She extended her hands and he took off the fine wrinkles with a sweeping motion of the spray. "What happened?"

"I had to start looking for another job. But somebody higher up began to think about what I'd done. Now, on Earth, all robots that model clothing have some perceptible skin defects. More lifelike, they say."

"Is that why you came to Venus?"

"I'd been considering it for some time. It seemed to me that there ought to be a place for a good designer, even if I did have to work on robots." He smiled wryly. "A lot of other engineers had the same idea."

"Too much competition?"

"Sort of." He grimaced. "My first job here was designing female bodies for so-called social clubs."

"Oh, those," she said scornfully. "It's legitimate on Venus. Anyway, I tried out that idea again. Customers didn't like it. Said they could get women with blemishes any time. When they got a robot, they wanted perfection."

"Don't blame them," Emily said practically. She looked at him with sudden suspicion. "Don't give *me* pimples."

"Not a one," he assured her. "You're flawless."

And she was—with only one item missing. He flexed his fingers in the control glove and sprayed on nipples. She was finished.

He shucked off the mask and laid aside the spray gun. "Look at yourself."

She went to the mirror and turned in front of it. She smoothed her hands across her face and smiled with pleasure. "It feels like flesh."

"It is, almost. Tomorrow you'll bleed there if you cut yourself."

She nodded. "Is that all?"

"Except for instructions, yes."

She looked at him with curious shyness and hurriedly slipped into her clothing. She hadn't minded nudity before, when she wasn't as lovely as she wanted to be. What she didn't know was that Jadiver liked her better as she had been.

DRESSED, she came back to him. "What are those instructions?"

He tore off two envelopes attached to the container. He checked the spray gun to determine how much had been used.

"Pseudo-flesh is highly poisonous," he said, handing her the envelopes. "The tablets in the white package neutralize the toxic effects. Take one every eight hours. And don't forget to take it, unless you want to end up in convulsions on the floor."

"I'll remember. When do I begin?"

"In three hours. And now for some advice I know you don't want. You can keep yourself as you are for two months. But you'll be healthier if you get rid of the pseudo-flesh as soon as you can."

She looked longingly at the face in the mirror. "How do I do that?"

"When you're ready, take the tablets in the green package, one every hour until the pseudo-flesh is absorbed. After it's gone, take three more at the same interval. The total time should be about thirteen hours." She was not paying attention. He eased between her and the mirror. "Get a complete checkup before you try this again. It takes years off your life."

"I know that. How many?"

"I can't say exactly. It's a body, pseudo-flesh weight ratio, plus some other factors that no one knows anything about. I'd estimate that you'll lose about three years for every two weeks you keep it."

"It's worth it," she said, gazing again into the mirror. She turned away in indecision. "I've always known Burlingame was mine, even if I wasn't pretty. Now I'm not so sure, after this."

It wasn't exactly Burlingame she was concerned with, thought Jadiver. For a while she was going to be beautiful beyond her expectations. The irony was that almost any robot outshone her temporary beauty. She was jealous of machines that had no awareness of how they looked.

Jadiver straightened up. He hadn't fully recovered from his accident and he was tired. And the artificial skin, no matter what they said, hadn't been completely integrated to his body. It itched.

"Send the rest of them in, one at a time," he said as she went out.

It wasn't going to take long, for which he was grateful. Now that he knew a spying device hadn't been surgeried into him, there were certain aspects of the accident that demanded investigation.

JADIVER limped into the apartment. The chair unfolded and came to meet him as he

entered. He relaxed in the depths of it and called out for food. Soon he had eaten, and shortly after that he dozed.

When he awakened, refreshed, he began the thinking he'd put off until now. The fee from Burlingame was welcome. It was dangerous business, so Jadiver had charged accordingly. Now his economic problem was solved for about a month.

In the hospital he had been sure of a motive for the accident. It had seemed simple enough: the police had planted a spying device in him. However, since he had been examined thoroughly at Burlingame's and nothing had been found, that theory broke down.

There was still another possibility—someone had tried to kill him and had failed. If so, that put the police in the clear and he would have to look elsewhere. He might as well start there.

He walked over to the autobath and began inspecting it. It wasn't the one he'd been injured in. That had been removed and replaced by the management. It would have helped if he had been able to go over the original one.

The new autobath was much like the old, a small unit that fitted decoratively into the scheme of the room, not much taller than an upright man, or longer than a man lying down. The mechanism itself, and there was plenty, was effectively sealed. Short of an atomic torch, there wasn't any way to get into it.

Jadiver pryed and poked, but learned nothing. In response to the human voice, it automatically provided all the services necessary to human cleanliness, but there was no direct way to check on the involved mechanism.

HE finally called the firm that made it. The usual beautiful robot answered: "Living Rooms, Incorporated. Can I help you?"

"Information," he said. "Autobath unit."

"Sales? New or replacement?"

"Service. I want to see about repairs."

"We have no repair department. Nothing ever wears out."

"Perhaps not, but it becomes defective and has to be replaced."

"Defective parts are a result of wear. Since nothing wears out, no repair is necessary. Occasionally an autobath is damaged, but then it doesn't work at all, even if the damage is slight. It has to be replaced."

That was what he thought, but it was better to be sure. "This is hypothetical," he said. "Suppose there was an accident in an autobath. Is there an alarm system which would indicate that something was wrong?"

The robot was smooth and pos-

itive. "Your question is basically misleading, according to our statistics. In eight hundred and forty one million plus installations, on all the inhabited planets of the Solar System, there has never been one accident.

"The autobath is run by a small atomic motor and is not connected in any way to an outside power source. There are plumbing connections, but these are not suitable for the transmission of a signal. To answer your question specifically: There is no alarm system of any kind, local or general, nor is there any provision for someone else to attach one."

"Thanks," said Jadiver, and cut the screen.

He was nearly certain now. One check remained.

HE flipped on a switch and walked out of the room to the hall and stood there listening. He could hear nothing. He came closer to the door and there was still no sound. He pressed his ear against the juncture of the door and jamb. Not the slightest noise.

He winced when he opened the door. The music he had switched on was deafening. He hurried inside and turned it off. He had known his apartment was soundproofed. Just how good that soundproofing was, he hadn't tested until now.

The so-called accident had happened in the autobath. The unit couldn't signal that anything was wrong. No one passing in the hall could hear his yells.

The evidence indicated that no accident could happen in the autobath—yet it had.

Logically, he should have died in that accident that couldn't happen—yet he hadn't.

What did they want? And was it the police? In the hospital he had been sure—certain, too, of what they were attempting. Now the facts wouldn't fit.

Tiredness came back, reinforced by doubt. His skin itched—probably from nervous tension. He finally fell into an uneasy sleep with the help of a sedative.

IN the morning, the itch was still there. He looked curiously at his skin; it appeared normal. It was definitely not transparent, hadn't been even in the hospital when the bandages were removed. He'd had a glimpse of it in the original transparent stage only once, when the doctor had exposed the tips of his fingers.

Briefly he wondered about it. Did it really itch that bad, or was it an unconscious excuse to see the doctor? She was a sullen, indifferent creature, but without doubt worth seeing again. He didn't know her name, but he could find out easily enough.

As if in answer to the silent question, his whole body twitched violently. He raked his fingers across his forearm and the nails broke off. She was at least partly right in her predictions; his skin was considerably tougher than it had been, though nothing appeared different.

He didn't like communicating with the police, but he had little choice. He flipped on the screen and made a few inquiries.

The name he wanted was Doctor Doumya Filone. She was off duty at present. However, if it was an emergency—? His skin crawled and he decided it was just that and identified himself. There were a number of persons with whom he had contacts who wouldn't approve his doing this, but they didn't have to live in his skin.

He dialed her quickly. He couldn't place the number, but figured it was probably across town, in one of the newer districts. He didn't fully remember what she was like until she appeared on the screen. With that face to put on a robot, he might make a fortune. That is, if he could capture the expression as well as the features.

"How's the patient?" she asked. Behind her briskness he thought he could detect a flicker of concern.

"You can take back that skin you gave me," he said. "It itches."

She frowned. "I told you it was very new. We aren't able to anticipate all the reactions." She paused. "However, it shouldn't itch. By now it ought to be well integrated with your body and new cell growth should be occurring with the synthetic substance as the matrix."

"Thanks," he said dryly. "That doesn't explain how I feel."

Unperturbed, she looked down at a desk he could imagine, but could not see. She got up and walked out of the field of vision. She was gone for quite some time.

A disturbing thought formed in his mind. Was she calling elsewhere for instructions? There was no reason why she should, yet the thought persisted.

She came back. "Get a detergent. What kind doesn't matter. Put it in the autobath and take a hot bath, plenty of lather. Soak in it for at least fifteen minutes."

HER prescription was primitive in the extreme. Did she really expect it to be effective, or did she have something else in mind?

"Do you think I'm going to trust myself to that machine?" he said. "I've got myself a little enamel basin. Had to steal it out of a museum."

Nothing was outwardly

changed, but she seemed slightly sympathetic. "I can understand how you feel, but you'll have to get over it or go pioneering in the wild lands. As long as you're in a city, you can't rent, buy or build accommodations that have no autobath. Besides, I've been assured that the odds are against that happening again."

That was an understatement, if his information was correct. Actually, he had wanted her reaction, but it didn't tell him a thing.

"Feel better already," he said.

She nodded. "Suggestion at work. Take your bath now and call me tomorrow if it doesn't work. Sooner, if you need to." She cut their connection before he could answer.

In addition to physical relief, he had hoped that she would let slip some information. She hadn't done so. Of course, she might not know anything more than the purely medical aspects of the police plan. If it was the police.

He left the screen and checked the autobath for supplies. Satisfactory for the present. He removed his clothing, stepped inside, and followed her instructions. A tub rose out of the floor, filled with water, and the mechanism immersed him in it. Thick soapy suds billowed up and warm water laved his skin. The rubbery hands of the autobath were soft and massaged him gently and expertly.

He tried to relax. So far, he had suffered no irreparable harm. He tried to avoid the memory of his accident, but that was impossible. The one comfort was that his death was not the objective. He corrected himself—not the *immediate* objective.

Anyway, he'd been rescued and placed under good medical care. How the rescue had been effected was unknown, unless it had been included in the plan from the beginning. If so, he could assume that the autobath had been tampered with and fixed with a signal that would indicate when he was unconscious.

"Fifteen minutes and ten seconds," said the autobath. "Do you wish to remain longer?"

"That'll do," he said. "The rinse, please."

He lay back and curled up his legs, stretching his arms while clear water flowed soothingly over him. In spite of his skepticism, this primitive prescription of Doumya Filone seemed to work. The itch had stopped completely; although his skin was now mottled. No scars; the hospital and Doumya Filone had done a good job.

He scrutinized his skin carefully. The marks were not actually on his skin; they were beneath it. So faint as to be almost in-

visible, it was nevertheless a disturbing manifestation. The marks gradually became more distinct. It looked like a shadowy web thrown over and pressed deep into his body.

THE autobath lifted him and he stood in front of the mirror. There was no mistake—a network spread over his body, arms, legs, face too; perhaps on his head as well, though he couldn't see that. His skin was not transparent—it was translucent for a certain depth.

Disfigurement didn't concern him. Even if the condition persisted, it wasn't noticeable enough to constitute a handicap. It was not the superficial nervous system showing through, nor the capillary blood vessels. The web effect was strikingly regular, almost mathematical in appearance.

As he looked, the translucence faded and his skin switched to normal, the marks disappearing. That was the word, switched. He ought to be thankful for that, he supposed. Somehow he wasn't.

He was out of the autobath and half dressed before the realization came to him. He knew what the network was, the patterned marks beneath his skin.

A circuit.

A printed circuit, or, since it was imposed on flesh, possibly tattooed.

A circuit. What did anyone use a circuit for? To compute, to gather data, to broadcast, to control. How much of that applied to him, to the body it was concealed in? The first he could eliminate. Not to compute. As for the rest, he was not certain. It seemed possible that everything could be included in the function of the network beneath his skin. He hadn't been controlled up to now, but that didn't mean control wasn't there, quiescent, waiting for the proper time. However, it didn't seem likely. Human mentality was strong, and a reasonably intact mind was difficult to take over.

What else? To gather data and broadcast it. Of that he could be almost positive. The data came from his nervous system. He suspected where it was broadcast to —back to the police.

How the circuit on his body gathered data was unknown. The markings appeared to parallel his central nervous system. It seemed reasonable that it operated by induction.

That meant it involved chiefly tactile sensations, unless, of course, there were other factors he didn't know about. He felt his forehead carefully, his temples, and his skull around his ears. Nothing, but that didn't mean that infinitesimal holes hadn't been drilled through his skull and taps

run to the optic and auditory nerves.

It could be done and he wouldn't know about it, couldn't feel it. The broadcasting circuits could then be spread over his head, or, for that matter, over any part of his body.

IF his suppositions were correct, then he was a living, walking broadcasting station. Everything he felt, saw or heard was relayed to some central mechanism which could interpret the signals.

The police.

Cobber had been looking for a spy mechanism, a mechanical device in Jadiver's body. He hadn't found it, but it was there, almost impossible to locate. A surgeon might find it by performing an autopsy, but even then he would have to know what to look for.

How Jadiver had been able to find it was a pure puzzle. Obviously, the police hadn't been as thorough as they had meant to be. Their mechanism had somehow gone awry at precisely the time Jadiver was most conscious of his skin. Without the itch, he would never have noticed it.

At least one thing was clear now—the purpose. He'd been boiled into unconsciousness, his skin removed, the circuit put in place, and then had the synthetic substance carefully fitted over his body.

His tension increased, for he knew now that he had betrayed Burlingame without meaning to —but it was betrayal nonetheless. It wasn't only a question of professional ethics; it was how long he would remain alive. Burlingame's survivors, if there were any, would have an excellent idea of who was responsible.

This thing went with him wherever he went. Did it also sleep when he did? That wasn't important, really.

He had to try to warn Burlingame.

Even these thoughts might be a mistake. The police might know what he was thinking. This was one way to determine whether there was such a thing as mechanically induced telepathy, but he couldn't work up much enthusiasm for the experiment.

His own problem was essentially the same as if a mechanical spying device had been planted in him—with one difference. A mechanical part was a foreign object and could be cut out by any competent surgeon willing to risk police retaliation. But only those who had installed this complicated circuit would know how to take it out.

BURLINGAME didn't answer. It was probably useless trying to trace him—he very likely had arranged to drop out of sight.

He was good at that. The police hadn't caught up with him in twenty years.

There was Cobber. He'd be elsewhere, setting up a rendezvous to which Burlingame and the rest could return and hide while their faces and figures were absorbed into their normal bodies. Cobber would be even tougher to locate.

The only place Burlingame could be found with any degree of certainty, Jadiver reasoned, would be at the scene of the robbery. Jadiver went to the screen and spent an intensive half hour in front of it. At the end of that time, he had narrowed it down to two society events, one of which would occur in a few hours. He made a decision to cover it and warn them, if he could. After that, it was up to Burlingame.

Jadiver rubbed his chin; the stubble had to come off. He went to the autobath, but it wouldn't open. A figure in bas-relief appeared on the door. The surface had been smooth an instant before.

"Sorry," said the voice of the lifelike, semi-nude girl, "the autobath is out of certain supplies. It won't function properly until these are replaced."

"Let's have the list," growled Jadiver. He was jumpy.

The bas-relief figure extended a hand with a slip in it. "If I may suggest, these can be placed on perpetual order to avoid future inconvenience."

What the future held was unknown. It wasn't likely to include a comfortable existence in a well-furnished apartment. "I'll think about it," he grunted.

"If there's any other way I can help you—"

"There isn't," said Jadiver.

The door shivered and the figure snapped back into the memory plastic from which it was made. The surface was smooth again.

HE went to the screen and punched a code. The counter display flashed on and then was replaced by a handsome neuter face. That face studied him, ascertained his maximum susceptibility, and promptly faded.

The next face was that of a robot harem girl. Sex sells, that was always the axiom. "Is there anything I can do for you?" she asked huskily.

"Yes," said Jadiver. "You can get off the screen and let me see some merchandise."

"We're not allowed to do that."

Jadiver grumbled in defeat. "I want something for my whisk—"

"Just the thing," she said enthusiastically, reaching out of his field of vision. The hand came back with a package. "Tear off a capsule, crush it, and apply to your face. It removes whiskers

permanently for two days, and leaves your face as soft and smooth as Martian down."

Jadiver shuddered. "I'd rather be a man than a bird. Do you have anything that leaves a face feeling like skin?"

The robot harem girl stabbed out frantically, but nothing came to hand. She turned around and went off to search. Jadiver sighed with relief and started to scan the shelves. The robot returned before he could make a selection.

"We have nothing like that," she said, crestfallen. "Asteroid alabaster or hydroponic grapes and several other things, but no whiskoff that will leave your face feeling like skin."

"Then order something that will," said Jadiver. "Meanwhile I'll settle for a face of hydroponic grapes. Two weeks supply will be enough."

The robot complied eagerly. "Anything else? Shampoo?"

Jadiver looked at the list and nodded.

"No need to open the bottle," she rushed on. "Just place in the autobath dispenser and let the machine do the rest. The bottle will dissolve, adding to the secret ingredients. Foams in micro-seconds as proven by actual test, and when you're through, only an expert can tell your hair from mink."

"Mink?" he repeated. "Don't think I'd like it. What about raccoon? I've always admired the legendary Daniel Boone, alone in the terrestrial wilderness with a single-shot rifle. Sure, make it raccoon."

"I know we have none of that." The clerk was positive.

"Then order it," he snapped. "You don't have to furnish the rifle, though."

She seemed confused. "There is a ten per cent extra charge for non-standard merchandise."

"All right. Just don't stand there arguing."

When the clerk left the screen to place the order, Jadiver hastily selected what he wanted. He validated the purchases and snapped off the screen. The merchandise arrived in a few minutes.

He loaded it into the autobath. This time the door opened and the bas-relief figure didn't appear on it. Within a half hour he was ready to leave.

THE door was not a door. It was a mirror, three-dimensional. The difference to the eye was slight, but since he knew what to expect, it was not difficult to detect. It was a legitimate piece of staging, but it cost plenty to maintain the illusion. A society event, he supposed, called for such precautions. There must be more inside.

He ignored the mirror and

pressed a blank section of the wall directly opposite. The wall faded and a robot in an impressive black-and-white livery stared at him with the proper insolence.

"Your invitation, sir."

"What?" he said tipsily.

"Your invitation, sir." The voice was louder and the insolence increased. If he asked again, the robot would very likely shove him out and close the door. Delicately adjusted and unhumanly strong, it was a bit too invariable in the behavior department to be consistently efficient.

His knowledge of robots was more than fair. In a few seconds he sized up the model facing him. A thin slip fluttered from his hand to the floor. The robot bent over to pick it up. At that instant Jadiver thrust a long, thin, double-tined fork deep into the back of the robot's neck, probing for the right place. He found it. Time became static for the robot; it remained bent over and could not move.

Jadiver rifled the pockets, removed all the invitations, glanced at them, found one that would do, and thrust the rest back. Shadows of figures passed across the field behind the robot. Could they see what Jadiver was doing? Probably not; privacy was too highly regarded. Nevertheless, some people were coming down the corridor and *they* could see when and if they got close. Stepping back, he took away the double-tined fork and the robot straightened up.

"You dropped something, sir," said the robot, handing him the slip from the floor.

"It was nothing," said Jadiver, taking it. That was the best description of what he had dropped. He extended the invitation he had just filched.

The robot grasped the invitation and seemed unable to focus. It tried to examine the markings invisible to human eyes. It passed a trembling hand across a troubled forehead.

"Didn't you come in half an hour ago?" it asked in bewilderment.

Someone had—the person to whom the invitation had been issued. The robot, of course, had remembered.

"Nonsense," said Jadiver sharply. "Do you feel right? Are you sure of your equilibrium?"

If it was sure, he had miscalculated badly. Robots were so much more or less than humans. It should be possible to design a perfect robot, one that would realize all the potentialities of a mechanical personality. It had never been done; anthropomorphic conceptions had always interfered.

"Must be mistaken," mumbled the robot, and swayed. It would

collapse in twenty minutes. The robot pressed a button and the field behind him flickered off. Jadiver passed through it and the field fell back in place.

INSIDE, he looked around. The usual swank, or maybe more so. Impressive, if he cared to be impressed by it. At the moment he didn't. He had to find Burlingame or Emily. He had created the faces of the other three as well, but he had made them into handsome nonentities. Among so many others who resembled them, he doubted that he could recognize them.

For an instant he thought he saw Emily and made his way through the crowd. When he got there, he saw his mistake. This girl's flesh hadn't been put on with a spray gun.

Burlingame was after jewels, of course, to be carefully selected from two or three of the wealthier guests. He must also have currency in mind, something negotiable for immediate use. He'd need cash to drop out of sight for a while.

Time was growing short for a word with Burlingame, just one word, whispered or spelled out silently: "Police." That was all Burlingame would need.

Jadiver was weaponless, and aside from warning Burlingame, he couldn't help. Until now he'd steered clear of violence and illegality. He'd known the use to which his disguises had been put, but that was the business of those who paid him.

Now it was different. The police had a line to him, direct. How much they knew was impossible to estimate. He could visualize a technician sitting in front of a screen, seeing everything that Jadiver saw. That, however, was a guess, for he didn't actually know how the circuit beneath his skin functioned. Until he learned, he would have to continue guessing, and blunder accordingly.

He made his way to the balcony that encircled half the huge high room. He didn't know the entire layout or the habits of those who lived here, but it was reasonably certain that they kept a large amount of cash on hand and that it would be safeguarded in a room not accessible to all the guests. It might even be up here.

The few people on the balcony were at the far end. He looked down on the milling guests. Still no sign of Burlingame or any of his crew. Jadiver had done his work too well. They were indistinguishable from the others.

At that moment, the lights brightened glaringly. The guests looked less glamorous. Women bulged excessively, top-heavy, and the tanned faces of the men turned an unpleasant gray.

Magically, uniforms appeared at every exit.

"Attention," a harsh voice rang out. "Please line up. There are criminals among you and we can identify them."

JADIVER didn't listen to the rest. His eyes were on the uniformed men. Mercifully, they carried tangle guns. That much he was thankful for. Burlingame and his crew would be taken alive. They might not like what would happen later, but at least they would live.

The tangle gun was the most effective and least lethal weapon ever conceived. It would bring down a butterfly at two hundred yards and hold it there, without crumpling a wing or disturbing the dustlike scales. It would do the same with a Venusian saurian or a Martian windbeast, either of which outbulked an elephant and outsavaged a tiger.

It didn't have to hit the target. With proximity fuses—and it was usually furnished that way—it was sufficient for the bullet to pass near. Jadiver drew a deep breath. No one was going to get killed because of him. Nevertheless, his skin crawled.

He gazed down at the guests lining up. They, too, knew what tangle guns were.

Suddenly a man darted out of line and headed toward one of the exits. He collided with an officer and the policeman went down. A tangle gun snapped. The running man fell headlong. Three more

times the tangle gun fired at the man writhing on the floor—at his hands, at his face, and again at his legs.

The tangle gun propelled a plastic bullet, and that plastic was a paradox. It was the stickiest substance known and would adhere to a sphere of polished platinum, tearing away the solid metal if it were forcibly removed without first being neutralized. It also extruded itself into fine, wire-like strands on a moving object. The more anything moved, the tighter it wrapped around. The victim was better off to relax. He couldn't escape; no one ever had.

Jadiver watched the man threshing on the floor. One shot would have been enough. Someone on the Venicity force liked to see men squirm.

As nearly as Jadiver could determine, the man on the floor was not Burlingame. The leader hadn't been taken, but he didn't have long to enjoy his freedom. The theory he had about teamwork was tarnished now—a feint here and a block there—and they were all headed into the arms of the Venicity police. It couldn't work against superior force, and an ambush set unwittingly by Jadiver.

Then Jadiver saw them. They moved as a unit—Burlingame, Emily and two others. They smashed through the guests with

a formation that had the flying wedge as a remote ancestor. Burlingame was leading it, tangle gun in hand. The guests were thrown back and a policeman went down.

It was hard to fire into the mob through which Burlingame and his crew were bulling. In that respect, the tangle gun was not selective. It seized on any motion.

They couldn't make it, but Jadiver hoped for them. They were at the edge of the crowd. Between them and freedom was a thin cordon of police. Beyond the police was a planted area where jungle vines and shrubs, considerably taller than a man, grew dense. Just past that area were two exits leading to the street.

From the balcony, Jadiver could see it clearly. If they could reach the exits, they had a chance for flight.

They broke through the cordon. They shouldn't have, for superior trained men were opposing them. But it was another kind of training that Burlingame was using and with it he split the police. The group plunged into the jungle shrubs and emerged on the other side. The police on the floor couldn't see them, the planted area screened off the view. They were almost safe.

The exits opened before they could reach them—more police. Burlingame went down, a cloud around his face, weaving wire shapes that tightened on his throat. The other two stumbled as police fired at their feet.

EMILY alone was not hit. She was close and moving too fast. She escaped the tangle guns, but ran directly into the arms of a burly officer. He laughed and grabbed her as if she were a robot. She bit him.

He swore at her and swiftly looked around. The guests couldn't see. He hit her solidly in the middle. She gasped for breath. He took out his tangle gun and fired into her mouth.

Jadiver sicklily knew he had been wrong about the tangle gun; it could kill if the person who used it had sufficient experience and brutality.

Emily would never have to lose that beautiful face and figure. She could keep it until she died, which wouldn't be long. Nobody could stop the peristaltic motion of the digestive system, voluntarily or otherwise, or of the lungs in trying to breathe.

Burlingame wouldn't know. Policemen were cooperative, and it would be listed as an accident.

Jadiver closed his eyes. Emily was dying and no one could help her. Or himself, either, when they came to pick him up. They had to know exactly where he was. He waited, expecting a tap

on the shoulder or the snap of the tangle gun.

The lights dimmed and the same harsh voice spoke. "The danger is over, thanks to the efficient work of the Venicity police force. You are now safe."

Nothing like advertising yourself, thought Jadiver.

No one came near him. Apparently the police didn't want him yet—they expected him to do more for them.

He went down the stairs and mingled with the excited guests. It had been a good show, unexpected entertainment, especially since it hadn't involved any real danger for them. He circulated through the chattering men and women until he came near the planted area. At an opportune moment, he slipped in.

It was a miniature jungle; he was safe from ordinary detection as long as he stayed there. He went quietly through the vines and shrubs toward the other side. The broad back of a policemen loomed up in front of him.

Jadiver was an industrial engineer, a specialist in the design of robot bodies and faces, robots that had to look like humans. He knew anatomy, not in the way a doctor did, but it was nonetheless the knowledge of an expert. He reached out and the policeman toppled.

He dragged the unconscious man deeper into the little jungle and listened. No one had noticed. Physically a large man, the policeman might be the one who had shot Emily—and then again he might not be. He did have a tangle gun, which was the important thing. Jadiver took it and rifled the man's pockets for ammunition.

He knelt for a final check on the body. The chest rose and fell with slow regularity. For insurance, Jadiver again pressed the nerve. This man wouldn't trouble anyone for a few hours.

Jadiver looked out. When he was sure he wasn't observed, he walked out and joined the guests. He moved politely from one group to another and in several minutes stood beside the door. He left the way he came.

It was that simple. He had to assume that until events proved he was mistaken.

OUTSIDE, he walked briskly. It was not late and the city overflowed with men and women walking, flying, skimming. Roughly dressed men down from the north polar farms, explorers from the temperate jungles, government girls — the jumbled swarm that comes to a planet in the intermediate stages of exploitation. It was a background through which he could pass unnoticed.

The circuit, though — always the circuit. He couldn't escape that by walking away from it. But at least he'd proved that telepathy wasn't possible by means of it, or he wouldn't still be free.

Other than that, he didn't know how it operated. If it was purely electronic in nature, then it had a range. He might be able to get beyond that range, if he knew how far it extended.

A lot depended on the power source. He hadn't been able to check closely, hadn't really known what he was looking at when he'd seen it in the autobath. He remembered that the circuit seemed to be laid over his own nervous system. Considering the power available, the range was apt to be quite limited.

That was pure supposition and might be wrong. There was nothing to preclude an external power source, say a closed field blanketing the city or even the entire planet. If so, it represented a technical achievement beyond anything he was familiar with. That didn't disprove it, of course. The circuit itself indicated a startling advance and he knew *it* existed.

There was still another possibility. The circuit might not be entirely electronic. It might operate with the same forces that existed inside a single nerve cell. If so, all bets were off; there was no way he could determine the range. It might be anything at all, micro-inches or light-years.

With unlimited equipment and all the time in the worlds, he could answer some of those questions floating around in his mind. He had neither, but there were solutions he could make use of. Limited solutions, but it was better than waiting to be caught.

Jadiver headed toward one such solution.

The robot clerk looked up, smiling and patient, as he entered. It could afford to be patient. There was no place it wanted to be other than where it was at the moment. "Can I help you?"

"Passage to Earth," said Jadiver.

The clerk consulted the schedule. That was pretense. The schedule and not much else had been built into its brain. "There's an orbit flight in two weeks."

In two weeks, Jadiver could be taken, tried, and converted ten times over. "Isn't there anything sooner?"

"There's an all-powered flight leaving tomorrow, but that's for Earth citizens only."

"Suits me. Book me for it."

"Be glad to," said the robot. "Passport, please."

IT was going to cost more than just the fare, Jadiver knew. He would arrive on Earth with

very little money and could expect to start all over. He was no longer fresh out of training, willing to start at the bottom. He was a mature man, experienced beyond the ordinary, and most organizations he could work for would be suspicious of that.

But it was worth it, aside from the escape. No future for him there, jammed in on a crowded world, but it was his planet, always would be, and he wouldn't mind going back.

"Sorry," said the clerk, flipping over the passport and studying it. "I can't book you. The flight's only for Earth citizens."

"I was born there," Jadiver impatiently said. "Can't you see?"

"You were?" asked the robot eagerly. "I was built there." It handed him back the passport. "However, it doesn't matter where you were born. You've been here three years without going back. Automatically, you became a citizen of Venus two and a half years ago."

Jadiver hadn't known that. He doubted that many did. It was logical enough. Earth was overflowing and the hidden citizenship clause was a good way of getting rid of the more restless part of the population and making sure they didn't come back.

"There's still the orbit flight," said the clerk, smiling and serene. "For that you need a visitor's visa, which takes time. Shall I make the arrangements?"

Aside from the time element, which was vital, he couldn't tip the police off that he intended to leave.

"Thanks," he said, taking the passport. "I'll call back when I make up my mind."

Down the street was another interplanetary flight office and he wandered into it. It might have been the same office he had just left, robot and all.

"Information on Mars," he said, his manner casual.

The clerk didn't bother to consult the schedule. There was a difference, after all. "There'll be an orbit flight in four months," it said pleasantly. "Rate, four-fifths of the standard fare to Earth."

Nothing was working out as expected. "What about the moons of Jupiter?" This was the last chance.

"Due to the position of the planets, for the next few months there are no direct flights anywhere beyond Mars. You have to go there and transfer."

That escape was closed. "I can't make plans so far in advance."

The robot beamed at him. "I can see that you're a gentleman who likes to travel." It grew confidential and leaned over the counter. "I have a bargain here,

truly the most sensational we've ever offered."

Jadiver drew away from that eagerness. "What is this bargain?"

"Did you notice the fare to Mars? Four-fifths of that to Earth, and yet it's farther away. Did you stop to think why?"

HE had noticed and he thought he knew why. It was another side of the citizenship program. Get them away from Earth, the farther the better, and don't let them come back. If necessary, shuttle them between colonies, but don't let them come back.

"I hadn't," he said. "Why?"

The voice throbbed throatily and robot eyes grew round. "To induce people to travel. Travel is wonderful. I love to travel."

Pathetic thing. Someone had erred in building it, had implanted too much enthusiasm for the job. It loved to travel and would never get farther than a few feet from the counter. Jadiver dismissed that thought.

"What's this wonderful offer?" he asked.

"Just think of it," whispered the robot. "We have another destination, much farther than Jupiter, but only one-tenth the fare to Earth. If you don't have the full fare in cash, just give us verbal assurance that you'll pay when you get the money. No papers to sign. We have confidence in your personal integrity."

"Sounds intriguing," Jadiver said, backing away. It sounded more like a death sentence. Alpha Centauri or some such place—hard grubbing labor under a blazing or meager sun, it didn't matter which. Exile forever on planets that lagged and would always lag behind Earth. It took years to get there, even at speeds only a little below that of light, time in which the individual was out of touch.

"I hope you won't forget," said the robot. "It's hard to get people to understand. But I can see that you do."

He understood too well. He ducked out of the flight office. He'd stay and take it here if he had to, escape some way if he could. Nothing was worth that kind of sacrifice.

He went slowly back to the apartment. It was not so strange that the police hadn't arrested him. They knew that he'd stay on the planet, that he had to. They'd had it figured out long before he did.

He fell into the bed without removing his clothing. The bed made no effort to induce him to sleep. It wasn't necessary.

IN the morning, Jadiver awakened to the smell of food. The room he slept in was dark, but in

the adjacent room he could hear the Kitch-Hen clucking away contentedly as it prepared breakfast.

He rolled over and sat up. He was not alone.

"Cobber?" he called.

"Yeah," said Cobber. He was very close, but Jadiver couldn't see him.

"The police got them," Jadiver said, reaching for the tangle gun. It was gone. He'd expected that.

"I heard. I was waiting for them and they didn't come." He was silent for a moment. "It had to be you, didn't it?"

"It was," Jadiver said. "When I found out, I tried to tell them. But it was too late."

"Glad you tried," said Cobber. At that instant, so was Jadiver. "I checked you myself. I couldn't find anything," Cobber added thoughtfully. "They must have something new."

"It is new," Jadiver wearily confirmed. "I can't get rid of it."

"Mind telling me? I figure I ought to know."

Hunched up in the darkness, Jadiver told him what he could. At present, he was defenseless. Cobber was a little man, but he was no stranger to violence and he had the weapons. Perhaps that was what the police counted on—that Cobber would save them an arrest.

"Bad," said Cobber after an interval. It sounded like a reprieve.

Jadiver waited.

"I liked Burlingame," continued Cobber. "Emily, too."

Burlingame was a decent fellow. Emily he had seen only once, twice if he counted last night. She deserved better than she got.

"I don't know who it was," Jadiver said. "Some big policeman."

"I know a lot of people—I'll find out," Cobber promised. "I liked Emily."

It wouldn't do any good, though Jadiver approved. For a while there'd be one less sadist on the force, and after that they'd hire another.

"You'd better leave while you can," said Jadiver.

Cobber laughed. "I'll get away. I know Venus and I don't have a spy inside." He got up, turned on the lights and tossed the tangle gun on the bed. "Here. You need this worse than I do."

Jadiver blinked gratefully and took it. Cobber believed him. If the police wanted to eliminate him, they'd have to come for him, after all.

He stood up. "Breakfast?"

"No breakfast," said Cobber. "I'm going to take your advice and get out of here." He went to the door, opened it a fraction and listened. Satisfied, he closed

it and turned back to Jadiver. "Tell that cop I know a few tricks with a tangle gun he never heard of. I'll show him what they are."

"I won't see him, I hope."

"You don't have to. They're taking everything down. They'll tell him. That is, I hope they do."

He slipped out the door and was gone.

THE Kitch-Hen tired of waiting for Jadiver to come out. It cackled disgustedly and sent a table into his room. Mechanically he sat down and began to eat.

Not only how far but also what kind of data did the circuit transmit? That was one unanswered problem. If he couldn't outrun it, he might outthink it.

First, the data was transmitted to the police with some degree of accuracy. They had been able to anticipate the robbery. Not completely, but they did know it was Burlingame and how many men he was using. They also knew the approximate date. From that, it was a matter of logic to determine what specific society event he was aiming at. Jadiver had been able to do the same.

Thoughts, visual and auditory impressions, tactile and other sensory data—that was the sum of what the circuit could transmit, theoretically.

He could almost positively rule out thoughts. It had never been proved that thoughts could be transferred from one person to another, mechanically or otherwise. But that was not his reason for rejecting it. If they could read his thoughts, it was useless for him to plan anything. And he was going to plan ahead, whether it was useless or not.

Tactile sensations, temperature, roughness, and the like were unimportant except to a scientist. He doubted that police were that scientifically interested in him. He could forget about the sense of touch.

Sight and hearing. Neither of these could be eliminated at present. They could see what he saw, hear what he heard. As long as they could, escape was out of the question. It wouldn't take much to betray him—a street sign glimpsed through his eyes, for instance, and they knew where he was.

As long as they could see what he saw.

But there was such a thing as a shield. Any known kind of radiation could be shielded against.

He was working with intangibles. He didn't know the nature of the phenomenon he had to fight. He had to extrapolate in part, guess the rest. One thing was certain, though: If he was successful in setting up a shield against the circuit, the police

would arrive soon after. Arrive here.

His value to them was obvious. Through him they could make an undetected contact with the shadowy world of illegality. If that contact was cut off or if he seemed about to escape, his usefulness came to an end and they would want one more arrest while they could get it.

Once he started to work on the shield, he would have towork fast.

Jadiver went to the screen. There could be no hesitation; the decision was ready-made.

The bank robot appeared on the screen and Jadiver spoke to him briefly, requesting that his account be cleared. He scribbled his signature and had it recorded.

WHILE waiting, he began to pack, sorting what he wanted to take. It wasn't much, some special clothing. His equipment, except for a few small tools, he had to leave. No matter. With luck, he could replace it; without luck, he wouldn't need it.

In a few minutes he was ready, but the money hadn't arrived. He sat down and nervously scrawled on a scrap of paper. Presently the delivery chute clattered and the money was in it, crisp new bills neatly wrapped, the total of his savings over the years. He stuffed the money in his pocket.

The scrap of paper was still in his hand. He started to throw it away, but his fingers were reluctant to let it go. He stared curiously at the crumpled wad and on impulse smoothed it out.

There were words on it, though he hadn't remembered writing any. The handwriting was shaky and stilted, as if he were afflicted with some nervous disease; nevertheless, it was unmistakably his own.

There was a message on it, from himself to himself. No, not from himself. But it was intended that he read it. The note said:

RUN, JADIVER. I'LL HELP.
YOUR FRIEND

He sat down. A picture rose involuntarily in his mind. The face was that of Doumya Filone.

He couldn't prove it, but it seemed certain that she was the one. She knew about the circuit, of course, had known long before he did. He remembered the incident when his skin had itched.

He had called her about it and she hadn't seemed surprised. She had left the screen for some time —for what purpose? To adjust the mechanism, or have someone else adjust it. The last, probably; the mechanism was almost certainly at the police end, and at the time he called she had been at home. In any event, the mech-

anism had originally been set too strong and she had ordered the setting to be reduced. That suggested one thing: the power to activate the circuit came from the mechanism—a radarlike device.

Then what? His skin had momentarily become translucent, allowing him to see the circuit. How she achieved that, he didn't know, but the reason was obvious. It had been her way of warning him and it had worked.

The message in his hand told him one thing. He had known about the danger, but he hadn't guessed that he didn't have to face it alone. Something else was evident: her control was limited—perhaps she could step in at a critical moment, but the greater part was up to him.

He moved quickly. He opened the delivery chute and put in the small bag that held his clothing, then punched a code that dispatched it to the transportation terminal. In return, he received a small plastic strip with the same code on it. The bag could be traced, but not without trouble, and he should be able to pick it up before then. At this stage he didn't want to be encumbered.

He took a last look around and stepped into the hall. He leaped back again.

A heavy caliber slug crashed into the door.

THAT had been meant to kill. He was lucky it hadn't.

Who was it? Not the police. By law they were restricted to tangle guns, though they sometimes forgot. In this case, their memory should be good—they'd have difficulty explaining away the holes in his body. Not that they'd have to, really; if they wanted, they could toss him into an alley and claim they had found his body later.

Still, there was no particular reason why they should want to kill him outright when they could do it by degrees scientifically and with full legal protection. They didn't call it killing. There was another term: converting.

The converting process was not new; the principles had existed for centuries. The newness lay in the proper combination of old discoveries. Electric shock was one ingredient, a prolonged drastic application of it during the recreation of a situation that the victim had a weakness for. In the case of an adulterer, say, the scene was hypnotically arranged with the cooperation of a special robot that wouldn't be short-circuited. At the proper moment, electric shock was applied, repeatedly. Rigorous and somewhat rough on the criminal's wife, but the adulterer would be saddled all his life with an unconditional reflex.

That was only one ingredient. There were others, among them a pseudo-religious brotherhood, membership in which was compulsory. C. C.—Confirmed Converters. *They* kept tab on one another with apocalyptic fervor. Transgressions were rare. Death came sooner.

Jadiver stood there thinking. It wasn't the police, because they had converting with which to threaten him. It wasn't Cobber, either. He could have killed Jadiver earlier and hadn't.

Cobber might have talked, though. There were enough people who now regretted that Jadiver had once given them new faces. As far as they were concerned Jadiver was in the hands of the police.

The identity of the man outside didn't matter. He was not from the police, but he did want Jadiver dead.

Jadiver stood back and pushed the door open. Another slug crashed into it, tiny, but with incredible velocity.

He knelt, thrust his hand outside the door near the bottom and fired a random fusillade down the corridor. Then he took his finger off the trigger and listened. There wasn't a sound. The man had decided to be sensible.

Jadiver stepped out. The man was crouched in an inconspicuous corner and he was going to stay in that position for a long time. He couldn't help breathing, though, and his chest was a tangle of wires. There were some on his face, too, where his eyelids flickered and his mouth twitched.

The gun was in his hand and it was aimed nearly right. There was nothing to prevent his squeezing the trigger—except the tangle extruded loosely over his hand. And he could move faster than it could. Once, at any rate.

"I wouldn't," said Jadiver. "You're going to have a hard time explaining that illegal firearm. And it'll look worse if I'm here with my head wrapped around a hole that just fits the slug."

The man reaffirmed his original decision to be sensible about it by remaining motionless. Jadiver didn't recognize him. Probably a hired assassin.

The man paled with the effort not to move. He teetered and the tangle stuff coiled fractionally tighter.

"Take care of yourself," Jadiver said, and left him there.

JADIVER headed toward the transportation terminal. The police could trace him that far. Let them; he intended that they should. It would confuse them more when he walked right off their instruments.

Once inside the underground

structure, he lost himself in the traffic. That was just in case he had been followed physically as well as by radiation. People coming from Earth, fewer going back. They arrived in swarms from the surface, overhead from the concrete plain where rockets roared out on takeoff or hissed in for landing. Transportation shunted the mob in one direction for interplanetary travel, in another for local air routes.

Jadiver reclaimed his bag, boarded the moving belts and hopped on and off several times, again just in case. The last time off, he had coins ready. He slipped around a corner and walked down a long quiet corridor. There were doors on either side, a double deck with a narrow balcony on the second story. At intervals, stairs led to the balcony.

He walked a third of the way down the corridor, inserted coins in the slot, and a door opened. He went inside the sleep locker and the door closed behind, locking automatically.

It was miserable accommodation if he intended to sleep, but he didn't. It was also a trap if the police were trailing him. He didn't think they were—they were too certain of him. Nevertheless, the sleep locker had one advantage: it was all metal. Considering the low power that probably went into the circuit, it should be a satisfactory temporary shield.

He changed into clothes that looked ordinary—out of style, in fact, though that was not noteworthy in a solarwide economy—but the material, following a local terrestrial fad of a few years back, contained a high proportion of metallic fiber. That solved only part of the problem, of course. His hands and his head were uncovered.

The pseudo-flesh that he had used on Emily was not for him. In a way, it was the best disguise, but he was playing this one to live, as much as he could, all the way. A standard semidurable cosmetic would do; that is, it would when he finished altering it to suit his purpose.

The chief addition was a flaky metallic powder, lead. However the signal worked, radar or not, that should be effective in dampening the signal. He squeezed the mixture into a tube and attached the tube to a small gun which he plugged into a wall socket. Standing in front of the tiny mirror, with everything else cramped in the sleep locker, he went over his face and hands. He had trouble getting it on his scalp and under his hair, but it went on.

He looked himself over. He now appeared older, respectable, but not successful, which fitted

neatly into the greatest category on Venus—or anywhere, for that matter. He stuffed the clothing he'd worn back into the bag and walked out. He'd been in the sleep locker half an hour.

He was operating blind, but it was all he could do. He had to assume that the metallic fiber in his clothing and the lead flakes in the cosmetic would scramble the circuit signal. If they didn't, then he was completely without protection.

He'd soon know how correctly he had analyzed the problem.

HE walked out of the transportation terminal and hailed an air cab which took him over the city and left him at the edge of a less reputable section.

It was not an old slum—Venicity hadn't endured long enough to have inherited slums; it built them quickly out of shoddy material and then tore them down again as the need for living space expanded outward.

He checked in at a hotel neither more nor less disreputable than the rest. The structure made up in number of rooms what it lacked in size and appearance.

This was the test period and he had to wait it out. If he passed, he was on an equal footing with any other person wanted by the police. He'd take his chances on that, his wits against their organization; he could disappear if he didn't carry a beacon around with him. This was the best place to spend the interim period, crowded together with people coming and going to and from the wild lands of Venus.

But if he didn't pass the test—

He refused to think about it.

He walked aimlessly in the grayness of the Venusian day. Different people from those in the bright new sections of Venicity, quieter, grimmer, more bewildered. Tough, but not the hardness of the criminal element. These people had no interest in either making or breaking the law.

After nightfall, he loitered on the streets for a few hours, watching faces. When policemen began appearing in greater numbers, he checked into his room.

It was a grimy, unpleasant place. Considering the comfort it offered, the rate was exorbitant. Safety, however, if it did afford, and that was beyond price. He lay down, but couldn't sleep. The room, apparently, was designed on the acoustical principle of an echo chamber or a drum.

The adjacent room on one side was occupied by a man and woman. The woman, though, was not a woman. There was a certain pitch to the laughter that could come only from a robot. The management obviously offered at-

tractions other than sleep.

The room on the other side was quieter. Somebody coughed twice, somebody sniffled once. Two of them, decided Jadiver, a man and a woman, both human. They weren't talking loud or much. He couldn't hear the words, but the sounds weren't gay.

In the hall, other voices intruded. Jadiver lay still. He could recognize the way of walking, the tone of voice. Cops. His test period wasn't lasting as long as he'd hoped.

"What good is it?" grumbled one, down the hall, but Jadiver could hear distinctly. "We had him dead center and now we've lost him. If I had my way, we'd have taken him sooner."

JADIVER'S reasoning was not so good if the police were this close. He got up and crept noiselessly toward the door, fully dressed, as he had to be at all times if he expected to scramble the circuit signal.

The companion of the first policeman was more cheerful. "He's not lost. We've just mislaid him. We know the direction he's in. Follow the line and there he is at the end of it."

"Sounds good, but have we got him?"

"We will."

That was the fallacy. He'd scrambled the signal, but he hadn't eliminated it. He still showed up on the police instrument as a direction. He could imagine a technician sitting in front of a crazily wavering screen. The instrument could no longer pick up what he saw through his eyes, but it hadn't lost him altogether.

Jadiver clutched the tangle gun.

"Better check where we are," said the first officer.

"Going to," answered the second. Jadiver couldn't see, but he could visualize the pocket instrument. "This is Lieutenant Parder. How close are we?"

The voice came back, almost inaudible. What he could hear, though, was disturbing. It sounded like someone he knew, but not Doumya Filone. "You're off a hundred yards to your left," said the voice. "Also, he's a mile farther out. Either that or a hundred and fifty miles."

"He's really moving," said the lieutenant. "A hundred and fifty miles is in the middle of the swamp."

"I know that," said the tantalizing familiar voice. "I can't choose between outside and inside the city. If he's inside, I want him to move. That motion, extended a hundred and fifty miles, by simple mathematics will indicate a distance he couldn't possibly travel in the jungle." The voice

paused. "We'll send a party to check the swamp. You go to the point a mile farther on. We want him tonight. If we don't get him, we'll probably have to wait until tomorrow night."

"I'll find him," said the lieutenant. "Report when I get there."

Jadiver could hear footsteps receding down the hall.

He breathed in relief. The makeshift shield hadn't been a total failure. They knew the direction, but not the distance from some central location. The scramble had affected the strength of the signal and they couldn't be sure.

The impromptu visit told him this as well: there was only one instrument on him. With two, they could work a triangulation, regardless of the signal strength.

He could hazard a guess as to why they had to get him at night. During the day, there were radiological disturbances originating in the atmosphere that made reception of the signals difficult. That meant that the day was safest for him.

HE went back to the bed and lay down, to puzzle over the familiar voice, to sleep if he could. Sleep didn't come easily. The man and the female robot had left, but the quiet couple on the other side had been awakened by the noise in the hall.

The woman sniffled. "I don't care, Henry. We're going back to Earth."

It was not an old voice, though he couldn't be sure, not seeing her. Thirty-five, say. Jadiver resented the intrusion at a time like this. He was trying to sleep, or think, he wasn't sure which.

"Now, hon, we can't," Henry whispered back. "We've bought the land and nobody's going to buy it back."

"We bought it when they told us there would be roses," said the woman, loud and bitter. "Great big roses, so big that most of the plant grew below ground, only the flower showing. So big, no stem could support them."

"Well, hon—"

"Don't hon me. There *are* roses, ten feet across, all over our land, just like they said." Her voice rose higher. "Mud roses, that's what they are. Stinking mud roses that collapse into a slimy hole in the ground."

She sniffled again. "Did you notice the pictures they showed us? People standing by the roses with their heads turned away. And you know why the pictures were like that? Because they didn't dare show us the expressions on those people's faces, that's why."

"It's not so bad," said the man soothingly. "Maybe we can do something about it."

"What can we do? The roses poison cattle and dogs run away from the smell. And we're humans. We're stronger, we're supposed to take it."

"I've been thinking," said Henry quietly. "I could take a long pipe and run it at an angle to the roots. I could force concrete through the pipe and seal it off below ground. When it collapsed, the rose wouldn't grow back."

The woman asked doubtfully, "Could you?"

"I think so. Of course I'd have to experiment to get the right kind of concrete."

"But what would we do with the hole it left?" There was a faint tremor of hope.

"We could haul away the slime," he said. "It would stop smelling after a while. We might even be able to use it for fertilizer."

"But there's still the hole."

"It would fill with water after the next rain. We could raise ducks in it."

"White ducks?"

"If you like."

THE woman was silent. "If you think we can do it, then we'll try," she said. "We'll go back to our farm and forget about Earth."

Henry was silent, too. "They're kind of pretty, even if they do smell bad," he said after a long interval. "Maybe I could pump a different kind of cement, real thin, directly into the stem. It might travel up into the flower instead of down."

"And make them into stone roses," enthused the woman. "Mud roses into stone. I'd like that—a few of them—to remind us of what our farm was like when we came to it." She wasn't sniffling.

They had their own problems, decided Jadiver, and their own solution, which, in their ignorance, might actually work. He'd been like that when he first came to Venus, expecting great things. With him it had been different. He was an engineer, not a farmer, and he didn't want to be a farmer. There was nothing on Venus for him.

He couldn't stay much longer on Venus in any capacity. Earth was out of the question. Mars? If he could escape capture in the months that followed and then manage to get passage on a ship. It wasn't hopeless, but his chances weren't high.

The puzzling thing was why the police wanted him so badly. He was an accessory to a crime —several of them, in fact. But even if they regarded him as a criminal, they couldn't consider him an important one.

And yet they were staging a manhunt. He hated to think of the number of policemen looking

for him. There must be a reason for it.

He had a few days left, possibly less. In that time, he would have to get off the planet or shed the circuit. Without drastic extensive surgery, there was not much hope he could peel off the circuit.

Unless—

He had received a message from someone self-identified as a friend. And that friend knew about the circuit and claimed to be willing to help.

He kept seeing gray eyes and a strong, sad, indifferent face, even in his sleep.

HE awakened later than he intended. Since daylight was safest for him, that was a serious error. He wasted no time in regret, but went immediately to the mirror. Under the makeup, his face was dirty and sweating. He didn't dare to remove the disguise for an instant, since to do so would be to expose himself to the instrument. He sprayed on a new face, altering the facial characteristics as best he could. His clothing, too, had to stay on. He roughed it up a bit, adding a year's wear to it.

For what it was worth, he didn't look quite the same as yesterday. Seedier and older. It was a process he couldn't keep extending indefinitely. He would not have to, of course. One way or the other, it would be decided soon.

He shredded the bag and his extra clothing, tossing them into the disposal chute. No use giving the police something to paw over, to deduce from it what they could. The tiny spray gun he kept, and the tube of makeup. He might need them once more.

It was close to noon when he left the room. There were lots of people on the streets and only a few policemen. Again he had an advantage.

He found a pay screen and began the search. Doctor Doumya Filone wasn't listed with the police and that seemed strange. A moment's reflection showed that it wasn't. If she were officially connected, she might not show the sympathy she had.

Neither was she listed on the staff of the emergency hospital in which he'd been a patient. He had a number through which he could reach her, but he resisted an impulse to use it. It was certain the police wouldn't confine their efforts to the instrument check. They knew he had that number and they'd have someone on it, tracing everyone who called her.

Noon passed and his stomach called attention to it. He hadn't eaten since yesterday. He took a short break, ate hurriedly, and resumed the search.

Doumya Filone was difficult to find. It was getting late and he had ascertained she wasn't on the staff of any hospital not listed for private practice.

He finally located her almost by accident. She had an office with Medical Research Incorporated. That was the only thing registered under her name.

Evening came early to Venus, as it always did under the massive cloud formations. He got off the air cab a few blocks from his destination and walked the rest of the way.

Inside the building, he paused in the lobby and found her office. Luckily it was in a back wing. He wandered through the corridors, got lost once, and found the route again. The building was almost empty by this time.

Her name was on the door. Dr. Doumya Filone. Research Neurological Systems, whatever that meant. There was a light in the office, a dim one. He eased the door open. It wasn't locked, which meant, he hadn't tripped an alarm.

NO one was inside. He looked around. There was another door in back. He walked over to it. It didn't lead to a laboratory, as he expected. Instead, there were living quarters. A peculiar way to conduct research.

The autobath was humming quietly. He sat down facing it and waited. She came out in a few minutes, hair disarranged, damp around her forehead. She didn't see him at first.

"Well," she said coolly, staring at him. There was no question that she recognized him through the disguise. She slipped quickly into a robe that, whatever it did for her modesty, subtracted nothing from the view. He wished he was less tired and could appreciate it.

She found a cigarette and lighted it. "You're pretty good, you know."

"Yeah." But not good enough, he thought.

"Why are you here?" she asked. She was nervous.

"You know," he said. She had promised him help once before. Now let her deliver. But she had to volunteer.

"I know." She looked down at her hands, long skilled hands. "I put in the circuit. But I didn't choose you."

He began to understand part of it. The 'Medical Research' business was just a cover. The real work was done at the police emergency hospital. That was why she had no laboratory. And the raw material—

"Who did choose me?"

"The police. I have to take what they give me."

There were certain implications

in that statement he didn't like. "Have there been others?"

"Two before you."

"What happened to them?"

"They died."

He didn't like where this was taking him. His hand slid toward the tangle gun in his pocket. "Maybe I should die, too."

She nodded. "That would be one solution." She added harshly: "They shouldn't have taken you. Legally speaking, you're not a criminal. But I couldn't investigate you personally before I put the circuit in."

Why not? Was she an automaton that reacted in response to a button? In a way she was, but the button was psychological.

"That doesn't help me," he said tiredly. "The police wanted to catch Burlingame through me. That's right, isn't it?"

She indicated that it was.

"I did, without knowing what I was doing," he went on. "Now I want out. Even if I cooperated with the cops, which I'm not going to do, I'm of no further value to them. Every criminal on Venus knows about me by now."

"That's part of it," she said. "But there's more. You've tied up the machine and neither I nor the police can use it."

EXPLANATIONS were coming faster. It was no wonder the police wanted him badly. They had a perfect device to use against criminals, which was all they were concerned with, and they couldn't use it as long as the circuit was in him. It made sense, but that kind of logic was deadly —for him.

"I'll face it," he said. "I'll take whatever charge they hang on me. It shouldn't be more than a few years. You can use the time to take this damn thing out of me. Only I want a guarantee first."

She got up and stood with the light behind her. It was deliberately intended to distract him. Under other circumstances, it would have.

"If it were a small circuit, over just a fraction of your body, I could cut it out," she said. "But the way it is, I can't. It would kill you."

At least she was honest about it. And he still didn't know what she meant when she had written, with his hands in the apartment, that she would help him. He would have to find out.

"I can smash the machine," he said. "That's the other solution."

She leaned against the wall. "You can't. And neither can I, though it's technically my machine. It's in the police department with an armed guard around it at all times. Besides, the machine can defend itself."

He looked at her without un-

derstanding. It didn't sound right. He was sweating under the make-up and part of it was coming loose.

"Then what did you mean when you said you'd help?" he asked. "You promised, but what can you do?"

"I never promised to help." It was her turn not to understand. Her hand slipped down and so did the robe.

She was lying to him, had been lying all along. She never intended to help, though she said she would. The purpose? To lead him into a trap. She'd been successful enough. He looked up in anger, in time to see an object hurtling from her hand.

It struck him on the side of the head, hard. Some of the makeup chipped and fell off, but that was less important than yanking out the tangle gun. He fired twice, once at her feet and once at her shoulders. He had aimed at her head, but the shot went low.

Her face was still pretty, though no longer indifferent or so strong. "What do you want?" she screamed. "Why don't you leave me alone? I can't help you. Nobody can."

She was standing there rigid, not daring to move. The robe rippled in a breeze from the vent and the tangle stuff gripped it and the fabric tore. She'd stand there a few more hours and then topple over. They'd find her in the morning and remove the tangle with the special tongs.

As for himself, it was too late. He might have got off Venus at one time if he had concentrated on it. He hadn't tried harder because of Doumya Filone. He had *wanted* to believe her because—well, because.

"I told you I'd help, Jadiver. I will." The voice was distinct.

It wasn't Doumya Filone who'd said it. A tangle strand had worked up her throat and gripped her face. She couldn't speak if she tried. Her gray eyes weren't gray; they were the color of tears.

HE looked around. It wasn't Doumya Filone—and there wasn't any other person in the room.

"I've kept the police away," said the familiar voice. "I can protect you for a while longer. There's still time to save yourself. But you have to guess right. You can't make any more mistakes."

Strictly speaking, it wasn't a voice. Doumya Filone didn't hear it; that was obvious. It was the circuit then. Someone was making use of the machine to actuate the auditory nerve directly. That was what he seemed to hear.

Jadiver was tired and his body grimy, muscles twitching under

the tension. But if his unknown friend—real, after all—could outwit a room full of police and tinker with the mechanism which was supposed to spot him, he couldn't do less.

He grinned. "I'll make it this time. I know what to do."

"The police haven't given up," said the voice. "I'm going to be busy with them. Don't expect further communication from me."

He didn't know who the person was, in spite of the haunting familiarity of the voice. And he wasn't going to find out soon. Probably never. It was enough, however, to know that he had a friend.

He left Doumya Filone standing there, which was a mistake, he realized as he reached the front office. He should have fired once more at her hands. The screen was crackling; her hands had been free and she'd managed to turn the screen on before the tangle strands interfered with her movement.

He'd made a grave error, but not necessarily fatal. It would be some time before anyone got there. By then he hoped to be safe.

He slipped through the corridors, went out the rear of the building and looked around for an air cab. The place was deserted at this hour and no cabs were in the nearby sky.

He had to walk and he didn't have that much time. He headed toward the nearest main thoroughfare. It was in the opposite direction to his destination, but he should be able to find an air cab there. He was walking too fast, for a light flashed down on him. He wasn't presentable and his haste was suspicious.

"Stop," said the amplified voice. It was probably just a routine check, but he couldn't risk even that.

He dodged into a space between two buildings and began to run. In the center of town, this would be a blind alley, but in this section it wasn't. There was a chance he could lose them. The buildings were just high enough so that they couldn't use the air car and they'd have to follow on foot.

The patrol car alighted almost instantly and one of the policemen started after him. The man following him knew his business and was in good physical condition, better than Jadiver was after days of tension and little sleep.

Jadiver turned and snapped a half dozen shots at his pursuer. He was lucky, a couple were close enough. The policeman crashed to the ground and began to swear. His voice was choked off in seconds.

The other one got out of the

patrol car and let it stand. It was the principle of the thing: nobody did that to a policeman. Jadiver had a substantial lead and it was dark, but he didn't know the route. Jadiver was enormously tired and this was the policeman's regular beat. The gap between them closed rapidly.

Out of breath and time and space to move around in, Jadiver took the wrong turn because the man was so close—and found himself boxed in.

CROUCHING, Jadiver fired at the oncoming man, a dark shape he sensed rather than saw. The tangle gun clicked futilely, out of ammunition. He fumbled hastily for a clip; before he could reload, the policeman squeezed the trigger and held it down.

The bullets didn't hit him, they were set to detonate a fraction of an inch away. He gave up and awaited the constricting violence of the tangle strands.

The bullets detonated and the strands flashed out, glowing slightly in the darkness. They never touched him; instead, they bent into strange shapes and flipped away. The stickiest substance known, and one of the strongest, from which there was no escape, yet it would not adhere to him—was, in fact, forcefully repelled!

It was that skin, of course, the synthetic substance they had put on him over the circuit. They should have tested it under these conditions. They might not have been so anxious to boil men alive.

He felt that he was almost invincible. It was an exhilarating feeling. He stopped trying to reload the tangle gun and stood up. He sprinted at the policeman, who stood his ground, firing frantically at a target he could not miss and yet did not hit. The tangle strands shattered all around the target.

Jadiver swung the gun with his remaining strength; the butt connected with the policeman's forehead.

Jadiver scooped up the discarded tangle gun and fired twice at close range, in case the man should decide to revive too soon, which was doubtful. He went back and entered the idling patrol car. He hadn't lost much time, after all.

He sat the car down on top of a building near the edge of the rocketport, straightened his clothing and wiped the grime off his face. Some of the disguise went, too, but that no longer mattered much.

He stepped out of the elevator and walked casually along the street until he came to the interplanetary flight office. The same robot was there—would be there every hour, day and night, until the rocketport was expanded and

the building torn down and rebuilt, or the robot itself wore out and had to be replaced.

The clerk looked up eagerly. "You're back. I knew I could count on you."

"I'm interested in that flight you were telling me about," said Jadiver.

"We've changed rates," the robot clerk replied, beaming. "It was a bargain before, but just listen to the revised offer. "We pay you, on a per diem basis—subjective, of course. When you arrive, you actually have a bank account waiting for you."

Per diem, subjective—the time that *seemed* to elapse when the rocket was traveling near the speed of light. It wasn't as good as the robot made it sound.

"Never mind that," said Jadiver. "I'll take it if it's going far."

"Going far!" echoed the clerk.

A policeman sauntered by outside, just looking, but that was enough.

"I said I'd take it," Jadiver repeated in a loud voice.

The clerk deflated. "I wish I could go with you," it explained wistfully. It reached under the counter and pulled out a perforated tape. "This will get you on the ship, and it also constitutes the contract. Just present it at the other end and collect your money. You can send for your baggage after you're on board."

Jadiver opened his mouth and then closed it. His baggage was intangible, mostly experience, not much of it pleasant.

"I'll do that," he said.

The clerk came out from behind the counter and watched Jadiver leave. Lights from the rocketport glittered in its robot eyes.

JADIVER paced about the ship. It was not enough to be on it, for the police could still trace him. And if they did, they could get him off. It was not only himself, there was his unknown friend. They had ways to learn about that.

He passed a vision port on his way through the ship. It was night, but it didn't seem so on the vast, brightly lighted concrete plain. A strange vehicle streaked across the surface of the rocketport in defiance of all regulations and common sense.

It was coming his way. It dodged in and out of rockets landing and taking off, escaping blazing destruction with last minute, intricate maneuvers. The driver had complete control of the vehicle and was fantastically skillful.

It was a strange machine. Jadiver had never seen anything quite like it. As far as he knew, it resembled nothing the police used.

It didn't halt outside the ship.

The loading ramp was down and the machine came up without hesitation. The entrance was too narrow and the vehicle would never get through—that seemed evident. An instant later, he was not so sure. The ship quivered and groaned and vibrations ran throughout the structure.

He leaned over the railing and looked down. The machine was inside, dented and scraped.

"Captain," bellowed a voice from the vehicle. It was an authoritative voice and it puzzled Jadiver.

The captain came running, either in response to the command or to find out how much damage had been done in the crash and why.

"Take off, Captain," said the voice. "Take off at once."

The captain sputtered. "I give orders here. I'll take off when I get ready."

"You're ready when the ship reaches a certain mass. As soon as I came on board, you attained it. Check your mass gauges, Captain."

The captain hurried to the gauges and glanced at them. He stared back at the machine.

"Captain," purred the machine, "you have a little daughter. By the time you get back, she will be grown and will have children of her own. The sooner you leave, the sooner you will see her again. I will regard it as a personal favor if you see that we take off immediately."

The captain looked at the machine. Tentacles and eye stalks rose up out of the tip as he watched. It was a big machine, well put together, and it appeared quite capable of handling a roomful of armed men. As a matter of fact, it just had.

The captain shrugged and gave the order to lift ship.

IT was none too soon. Out of the visionport, Jadiver could see uniformed men edging up from the underground shelters. They backed out of sight when the rockets began to flame.

Faster the ship rose and higher. They were in the dense clouds and then through them, out in the clear black of space, away from Venus.

Jadiver looked down at the machine. It wasn't a vehicle. It was a robot, and it was familiar.

"It ought to be familiar," said the robot softly. That voice was for him alone, directly on the auditory nerve. "You designed most of it back on Earth, remember?"

He remembered. It was not a pretty imitation of a human—it was his perfect robot. And it was also his unknown friend, the one who had watched over him.

He walked slowly down the

stairs and stood beside it.

The robot switched to the regular speaking voice. "They built your design, after all. They needed a big and powerful mobile robot, one that could house, in addition to the regular functions, an extensive and delicate mechanism."

That was the voice that had haunted him so long and in so many situations. It was not Jadiver's own voice, but it resembled his. A third person might not recognize the difference.

"That other mechanism," said Jadiver. "Is that the one that monitors the circuit in my body?"

"That *parallels* the circuit in your body." Tentacles were busy straightening out the dents. "When I was built, they gave me a good mind, better than your own in certain respects. What I lacked was sensory perception. Eyes and ears, to be sure, good ones in a way, but without the delicate shadings a human has, particularly tactile interpretations. I didn't need better, they thought, because my function was to observe and report on the parallel circuit I mentioned.

"In the beginning, that circuit was a formless matrix and only faintly resembled your nervous system. As nerve data was exchanged back and forth, it began to resemble you more and more, especially your mind. Now, for practical purposes, it *is* you and I can look into it at will."

Jadiver stirred uneasily.

"Don't you understand?" asked the robot. "My mind isn't yours, and vice versa. But we do have one thing in common, a synthetic nervous system which, if you were killed, would begin to disintegrate slowly and painfully. And now that it's developed as much as it is, I would probably die, too, since that synthetic nervous system is an otherwise unused part of my brain."

"There were two other victims before me," said Jadiver.

"There were, but they were derelicts—dead, really, before the experiment got started. They lasted a few hours. I tried to help them, but it was too late. It was not pleasant for me."

NOT only was it a friend; it had a vital interest in keeping him alive. He could trust it, had to. After what had happened, doubt wasn't called for.

Jadiver rubbed his weary eyes. "That shield I used," he said. "Did it work?"

The robot laughed—Jadiver's laughter. It had copied him in many ways. "It worked to your disadvantage. The circuit signals got through to me, but I couldn't send any back until Doumya Filone chipped off part of your disguise. Then I spoke to you.

Before that, I had to misdirect the police. I built up a complete and false history for you and kept them looking where you weren't."

If he had thought, he would have known it had to be that way. The police were efficient; they could have taken him long ago without the aid of the circuit. But it had seemed so easy and they had trusted the robot—had to where the circuit was concerned. No man could sit in front of a screen and interpret the squiggles that meant his hand was touching an apple.

Jadiver sat down. The strain was over and he was safe, bound for some far-off place.

"The police used you, though not as much as you used them," he said. "Still, they didn't develop the theory."

"They didn't. There was a man on Earth, a top-notch scientist. He worked out the theory and set up the mechanism. He had a surgical assistant, a person who would never be more than that on Earth because she wasn't good on theory, though she was a whiz at surgery. She realized it and got his permission to build another machine and take it to Venus. Originally it was intended to accumulate data on the workings of the human nervous system.

"On Venus, things were different. Laws concerning the rights of individuals are not so strict.

She got the idea of examining the whole nervous system at once, not realizing what it meant because it had never been done that way. She discussed it with officials from the police department who saw instantly what she didn't—that once an extensive circuit was in a human, there was no way to get it out, except by death. They had no objections and were quite willing to furnish her with specimens, for their own purposes and only incidentally hers. Once the first man died, they had her and wouldn't let her back out, though she wanted to."

Specimen," repeated Jadiver. "Yeah, I was a specimen to her." His head was heavy. "Why didn't you tell me this in the beginning?"

"Would you have listened when I first contacted you?" asked the robot. "Later, perhaps. But once you put on the shield, I couldn't get in touch with you until you were with Doumya Filone."

WOULD Jadiver have listened? Not until it became a matter of raw survival. Even now he hated to leave Earth and what it meant for the unknown dangers and tedium of a planet circling an alien sun. It was more than that, of course. Just as he'd had a design for a perfect robot, he had in mind a perfect woman. He could recognize either when he saw it.

"Doumya Filone was the assistant?"

"She was." The robot was his now, Jadiver knew. Others had built it, but it belonged to him by virtue of a nervous system. It had as good a mind as his, but it wouldn't dispute his claim. "Like yourself," continued the robot, "in the Solar System she would never have been more than second rate, and she wanted to be first. Hardly anyone recognizes it, but the Solar System is not what it once was. It's like a nice neighborhood that decays so slowly that the people in it don't notice what it's become. There are some who can rise even in a slum, but they're the rare exceptions.

"Others need greater opportunity than slums offer. They have to leave if they expect to develop freely. But the hold of a whole culture is strong and it's hard to persuade them that they have to go." The robot paused. "Take a last look at a blighted area."

Outside planets glimmered in the distance.

Jadiver was tired and his eyes were closing. Now he could sleep safely, but not in peace.

"Don't regret it," advised the robot. "Where you're going, you'll have real designs to work on. No

more pretty robot faces."

"Where is it—Alpha Centauri?" Jadiver asked disinterestedly.

"That ship left yesterday. They got their quota and left within the hour, before any of the passengers could change their minds. We're going farther, to Sirius."

SIRIUS. A mighty sun, with planets to match. It was a place to be big. Big and lonely.

"I can't force you to do anything," said the robot. It sounded pleased. "But I have no inhibitions about others."

The robot flipped up its cowl. There was a storage space and a woman in it.

Except for her hands, she was bound tightly by tangle strands.

"I don't think she likes you at the moment," said the robot. "She'll tell you that as soon as she's able to speak. She may relent later, when she realizes what it's really like on Sirius. You've got the whole voyage to convince her."

The eye-stalks of the robot followed Jadiver interestedly. "Are you looking for the tongs? Remember that the tangle stuff is repelled by your skin."

Jadiver willingly used his hands and the tangle strands fell off.

As the robot had predicted, Doumya Filone was not silent—at first.

—F. L. WALLACE

the water eater

By WIN MARKS

Most experiments were dropped because they failed—and some because they worked too well!

Illustrated by BALBALIS

I JUST lost a weekend. I ain't too anxious to find it. Instead, I sure wish I had gone fishing with McCarthy and the boys like I'd planned.

I drive a beer truck for a living, but here it is almost noon Monday and I haven't turned a wheel. Sure, I get beer wholesale, and I have been known to take some advantage of my discount. But that wasn't what happened to this weekend.

Instead of fishing or bowling or poker or taking the kids down to the amusement park over Saturday and Sunday, I've been losing sleep over an experiment.

Down at the Elks' Club, the boys say that for a working stiff I have a very inquiring mind. I guess that's because they always see me reading *Popular Science* and *Scientific American* and such,

instead of heading for the stack of *Esquires* that are piled a foot deep in the middle of the big table in the reading room, like the rest of them do.

Well, it was my inquiring mind that lost me my wife, the skin of my right hand, a lot of fun and sleep—yeah, not a wink of sleep for two days now! Which is the main reason I'm writing this down now. I've read somewheres that if you wrote down your troubles, you could get them out of your system.

I thought I had troubles Friday night when I pulled into the driveway and Lottie yelled at me from the porch, "The fire's out! And it's flooded. Hurry up!"

Trouble, hah! That was just the beginning.

LOTTIE is as cute a little ex-waitress as ever flipped the suds off a glass of beer, but she just ain't mechanically minded. The day Uncle Alphonse died and left us $2500 and I went out and bought a kitchen and shed full of appliances for her, that was a sad day, all right. She has lived a fearful life ever since, too proud of her dishwasher and automatic this and that to consider selling them, but scared stiff of the noises they make and the vibrations and all the mysterious dials and lights, etc.

So this Friday afternoon when the oil-burner blew out from the high wind, she got terrified, sent the kids over to their grandmother's in a cab and sat for two hours trying to make up her mind whether to call the fire department or the plumber.

Meanwhile, this blasted oil stove was overflowing into the fire pot.

"Well, turn it off!" I yelled. "I'll be in right away!"

I ducked into the garage and got a big handful of rags and a hunk of string and a short stick. This I have been through before. I went in and kissed her pretty white face, and a couple of worry lines disappeared.

"Get me a pan or something," I said and started dismantling the front of the heater.

These gravity-flow oil heaters weren't built to make it easy to drain off excess oil. There's a brass plug at the inlet, but no one in history has been able to stir one, the oil man told me. I weigh 200 pounds stripped, but all I ever did was ruin a tool trying.

The only way to get out the oil was to open the front, stuff rags down through the narrow fire slot, sop up the stuff and fish out the rags with the string tied around one end of the bundle. Then you wring out the rags with your bare hands into a pan.

"Hey, Lottie," I yelled, "this

is your roaster! It'll be hard to clean out the oil smell!"

But, of course, it was too late. I had squeezed a half-pint of oil into it already. So I went on dunking and wringing and thinking how lousy my cigarettes were going to taste all evening and feeling glad that I delivered beer instead of oil for a living.

I GOT the stove bailed out and lit with only one serious blast of soot out the "Light Here" hole. Then I dumped the oil out in the alley and set the roaster pan in the sink. Lottie was peeling potatoes for dinner, and she snuggled her yellow curls on my shoulder kind of apologetically for the mess she had caused me. I scrubbed the soot and oil off my hands and told her it was all right, only next time, for gosh sakes, please turn the stove off at least.

The water I was splashing into the roaster gathered up in little shrinking drops and reminded me that the pig-hocks I brought home for Sunday dinner were going to rate throwing out unless we got the oil smell out of the pan.

"Tell you what you do," I said to Lottie. "Get me all your cleaning soaps and stuff and let's see what we got."

Lottie is always trying out some new handy-dandy little kitchen helper compound, so she hefted up quite an armload. Now, when I was in high school, I really liked chemistry. "Charlie, Boy Scientist," my pals used to sneer at me. But I was pretty good at it, and I been reading the science magazines right along ever since. So I know what a detergent is supposed to do, and all about how soaps act, and stuff that most people take the advertisers' word for.

"This one," I told Lottie, "has a lot of caustic in it, see?"

She nodded and said that's the one that ruined her aluminum coffee pot. She remembered it specially.

I poured some very hot tap water into the roaster and shook in the strong soap powder. "This is to saponify the oil," I explained.

"What's saponify?" Lottie asked.

"That means to make soap. Soap is mainly a mixture of some caustic with fat or oil. It makes sudsy soap."

"But we got soap," she said. "Why don't you just use the soap we got?"

We went into the business of soap-making pretty deep. Meanwhile, I read some more labels and added pinches of this and that detergent and a few squirts of liquid "wonder-cleaners" that didn't say what was in them.

In her crisp Scotch way, Lottie got across to me that she thought I was wasting soap powder and my time and cluttering up the sink while she was busy there, so I wound up with half a cup of Doozey soap flakes, filled the pan to the brim and set the concoction at the back of the drain board to do its business.

WHEN dinner was over, I was in the living room reading the paper when I heard Lottie muttering at the sink. Lottie doesn't usually mutter, so I went out to see what was wrong.

"Nice mess," she said and pointed at the roaster. The stuff had cooled and jelled into a half-solid condition.

"Hah!" I said. "We had a supersaturated solution. When it cooled off, it coagulated."

Lottie scowled. It makes her nervous when I use big words which I only do when I'm talking about chemistry and the like.

"Well, uncoogalate it and dump it out of my roaster," she told me.

My scientific inquiring mind was stirred as I lifted the pan over to the table under the center light. We had here a gelatin of various cleaners, and every one of them claiming to be best ever. What would this new combination do?

I grabbed a pan off the stove that had a mess of scorched carrot leavings in the bottom. Lottie had been soaking it with about a half inch of water. As I reached for a tablespoon, Lottie objected. "Look, now, if you are going to start another *experiment,* dump that mess out first and let me work on the roaster.

I saved about a cupful of the slimy gunk and she went back to her dishes.

"You'll be sorry," I said under my breath, "if this turns out to be the only batch of the finest cleaner in the whole world. And us with only a cupful."

A minute later, I was glad she hadn't heard me. When I dropped a little glob of the stuff into the carrot pan and stirred it around a bit, instead of dissolving and diluting in the extra water, the mixture seemed to stay the same density after swallowing up the water.

"Give me a pie tin," I demanded.

Lottie sighed, but she got a shallow pan out of the pantry and handed it to me. Then I poured the jelly out of the carrot pan and I made my first important discovery.

The stuff was not good for cleaning out scorched carrots.

The pot was bone-dry. So were the carrots. They had a desiccated look and were stuck worse than ever to the bottom. I brushed them with my finger and the

top layers powdered to dust. Then I noticed that not a droplet or smidgin of the jelly remained in the pot. When I had poured it out, it had gone out all at the same time, as if it was trying to hang together.

The carbonized carrots at the very bottom were hard and dry, too. A scrape job if I ever saw one.

THE pie tin was now full almost to the rim. The globby stuff sort of rolled around, trying to find a flat condition, which it finally did. The motion was not as startling as the sudden quiet that settled over the surface after a last ripple.

The stuff looked like it was waiting.

The temptation was worse than a park bench labeled "wet paint," so I stuck my finger in it. Right in the middle of it.

A ripple flashed out from the center like when you drop a pebble in a pool, and the ripple hit the brim and converged back to my finger. When it hit, the surface climbed up my finger about an eighth of an inch. Another ripple, another eighth of an inch, and about now I felt something like a gentle sucking sensation. Also, another feeling I can only tell you was "unclammy."

I jerked away fast and shook my finger hard over the pan, but it wasn't necessary. None of the stuff had stayed with me. In fact, my finger was dry—powdery dry!

Then I got the feeling that someone was staring over my shoulder. There was. It was Lottie, and she had a look of horror on her face that didn't help my nerves a bit.

"Get rid of it, Charlie!" she cried. "Get rid of it! Please throw it out!"

"Now, now, honey," I said. "It ain't alive."

"It is!" she insisted.

Lottie chatters quite a bit and pretty well speaks her mind. But she doesn't go around making assertions. When she does come out flat-footed with a serious statement, it is always from the bottom of her 22-carat womanly intuition, and she is practically always right.

"How could it be alive?" I argued. I often argue when I know I'm wrong. This time I argued because I wanted to wipe that awful look off my wife's face. "Come on in the living room and relax," I said.

AND then sweet-natured, honey-haired little Lottie did a violent thing. Still staring over my shoulder at the pie tin, she screamed wide-open and ran out of the house. A second later, I heard her start the car out the

driveway at 30 miles an hour in reverse. She burned rubber out in front and was gone.

I hadn't moved an inch. Because when she screamed, I looked back at the jelly to see why, and the stuff had oozed over the edge and was flowing slowly toward me.

I know a little about Korzybski and how he wanted everybody to make what he called a cortico-thalamic pause whenever they get scared as hell. So I was making this cortico-thalamic pause, which is really counting to ten before you do anything, while Lottie was leaving the house. When I got through with my pause, I jumped backward over my kitchen chair so hard that I must have knocked my head on the tile sink-board.

When I came to, it was after midnight. The kitchen light was still on. Lottie was still gone. I knew it. If she was here, she'd have had me in bed. No matter how much of my employer's product I have sampled, never has Lottie let me sleep it off on the kitchen floor. Her 110 pounds is a match for my 200 in more ways than one, and she takes good care of her man.

Then I realized that this was not a stag beer-bust. There was something about a pot of soap-jelly.

It was still there. A long slug of the half-transparent stuff had strung down off the edge of the table and still hung there like a nasty-looking icicle.

The knob on the back of my head throbbed so much that at first I couldn't figure what was wrong with the air. Then my aching dry throat told me what the matter was. The air was dry like the summer we spent at a dude ranch in Arizona. It made my nostrils crimp, and my tongue felt like a mouthful of wrinkled pepperoni.

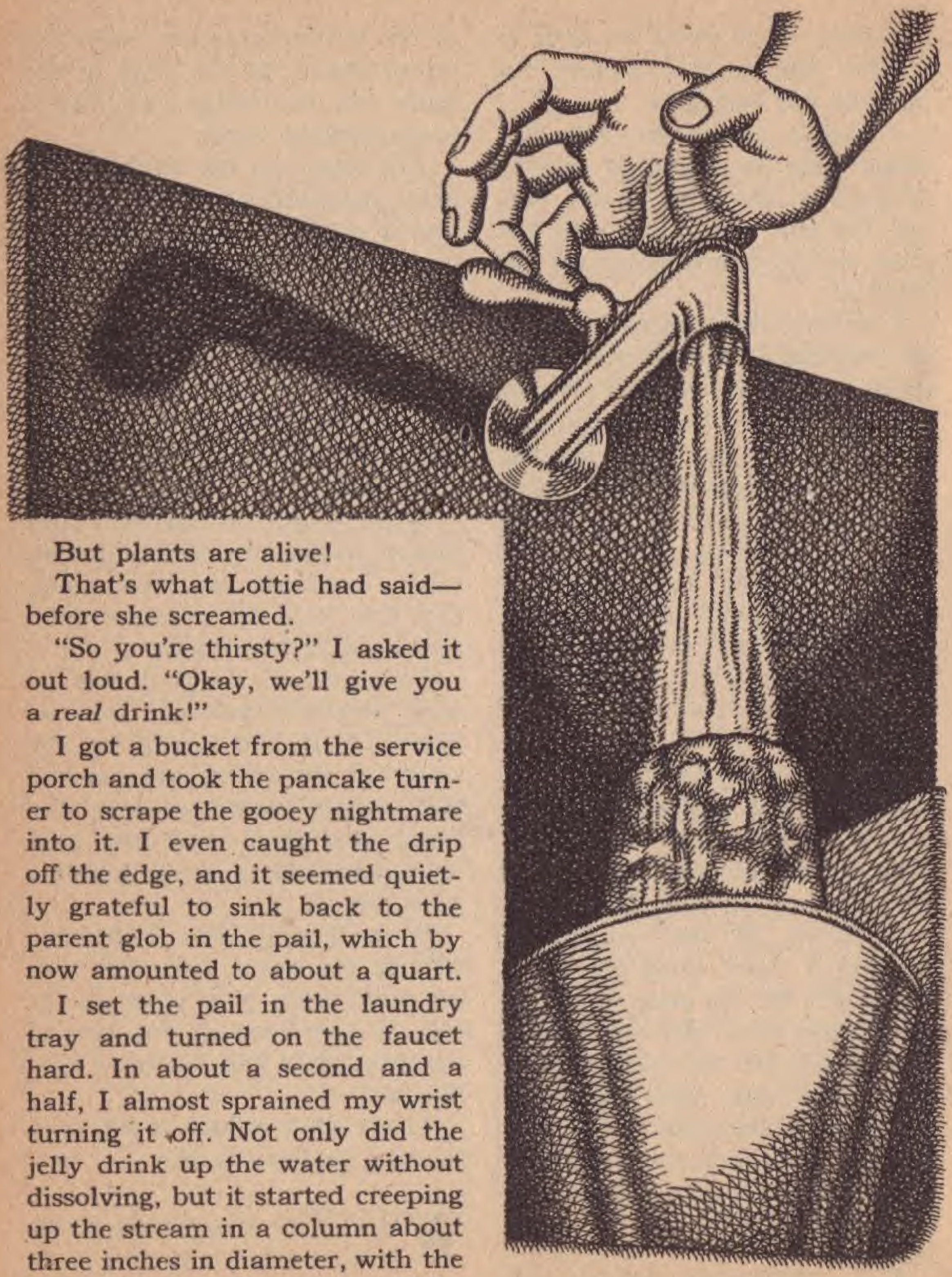
When I got to my feet and looked at the top of the kitchen table, I almost panicked again. But this time the pause worked and I got better results.

Alive or dead, the gunk was the most powerful desiccant I'd ever heard of. It had drunk up the water in the carrot pot, sucked the surface moisture from my finger and then spent the past few hours feeding on the humidity in the air.

It was thirsty. Like alcohol has affinity for water, this stuff was the same way, only more so. In fact, it even reached out toward anything that had water in it—like me.

That's why it had oozed over the pan the way it did.

WHAT'S so frightening about that, I asked myself. Plants grow toward water.



But plants are alive!

That's what Lottie had said—before she screamed.

"So you're thirsty?" I asked it out loud. "Okay, we'll give you a *real* drink!"

I got a bucket from the service porch and took the pancake turner to scrape the gooey nightmare into it. I even caught the drip off the edge, and it seemed quietly grateful to sink back to the parent glob in the pail, which by now amounted to about a quart.

I set the pail in the laundry tray and turned on the faucet hard. In about a second and a half, I almost sprained my wrist turning it off. Not only did the jelly drink up the water without dissolving, but it started creeping up the stream in a column about three inches in diameter, with the water pouring down its middle.

When I got the water shut off, the unholy jelly-spout slopped back disappointedly.

And now the bucket was over half full of the stuff.

I dropped in an ice-cube as an experiment. It didn't even splash. The surface pulled away, letting the cube make a pretty good dent in it, but then only gradually did the displaced goo creep back around it as if to sample it cautiously.

I couldn't stand the dry air any more, so I threw open the doors and windows and let the cool, damp night air come in. The ice-cube had disappeared without even a surface puddle. Now, as the humidity came back, I thought I noticed a restless shimmering in the jelly.

The phone rang. It was Lottie's mother wanting to know why Lottie had come over there in hysterics, and where had I been since seven o'clock. I don't remember what I answered, but it served the purpose. Lottie hasn't returned and they haven't called up any more.

When I returned to the bucket, it seemed that the stuff was deeper yet, but I couldn't tell because I hadn't marked the level. I got Lottie's fever thermometer out of the medicine chest and took the jelly's temperature. It read 58 degrees F. The wall thermometer read 58 degrees, too. Room temperature, with the windows open. What kind of "life" could this be that had no temperature of its own?

But then what kind of a fancy-pants metabolism could you expect out of an organism that fed on nothing but Lake Michigan water, right out of the reservoir?

I GOT a pencil and notebook out of Lottie's neat little desk and started making notes.

I wondered about the density of the stuff. Ice floated in it and the bucket seemed heavy. I broke the thermometer and tapped a drop of mercury onto the restless surface. The droplet sank slowly to the bottom with no apparent effect either way.

Heavier than water. Lighter than mercury.

I took a beer out of the refrigerator and swallowed it. The last drops I sprinkled into the pail. The drippings sizzled across the surface until only a fine dust was left. A tiny ripple flipped this dust over to the edge of the pail as if clearing the thirsty decks for action. But this drew my eyes to the rim of the liquid. There was no meniscus, either up or down.

Remembering back, I figured this meant there was no surface tension, which reminded me that part of this mixture was made of detergent.

But had I created a new form

of life? Like Lottie said, was it really alive? Certainly it could reproduce itself. It had brains enough to know the direction of more water, like when it took off after me on the table.

Not long ago, there was this important physicist who wrote about how life probably got started away back when the Earth was just forming. He argued that special creation was more or less a lot of hogwash, and that what actually took place was that as the Earth cooled, all the hot chemicals mixing around sort of stumbled onto a combination or two that took on the first characteristics of life.

In other words, this guy left off where Mr. Darwin began his theory of evolution.

Now me, I don't know. Lottie makes me go to church with the kids every Sunday and I like it. If this chemical theory about life getting started is right—well, then, a lot of people got the wrong idea about things, I always figured.

But how would I or this physicist explain this quivering mess of protoplasm I got on my hands by accident this particular Friday night?

I experimented some more. I got out the kids' junior encyclopedia and looked up some things I'd forgot, and some I had never learned in the first place.

SO it got to be Saturday morning. Fred and Claude phoned about the fishing trip and I made an excuse. No one else bothered me. All day Saturday, I studied. And all Saturday night and Sunday. But I couldn't figure out any sensible answers that would make peace with my minister.

It looked like I had created some form of life. Either that or some life-form in the stove oil that had been asleep a billion years had suddenly found a condition to its liking and had decided to give up hibernating in favor of reproduction.

What drove me on was the thought that I must have something here that was commercially important — a new culture of something that would revolutionize some branch of chemistry or biology. I wouldn't even stop to fry an egg. I chewed up some crackers and drank a few more bottles of beer when my stomach got too noisy. I wasn't sleepy, although my eyes felt like they were pushed four inches into my skull.

Junior's little chemistry set didn't tell me very much when I made the few tests I knew how. Litmus paper remained either red or blue when stuck into the jelly. This surprised me a little because this whole mass of desudsed washing compound mixture had started out with a

pretty good shot of lye in it.

So my notes grew, but my useful information didn't. By midnight Sunday, it appeared that my jelly invention had only one important talent: The ability to drink endlessly anything containing water. And only the water was used, it seemed. Dissolved solids were cast aside in the form of variously colored dusts.

By now, the goop had outgrown the pail and was two-thirds up in the laundry tub. A slow drip from the faucet kept the surface of my monster in a constant state of frenzy, like feeding a rumpot beer by the thimbleful.

It was fascinating to watch the little curleycues of jelly flip up after each drop, reaching for more, and then falling back with a cranky little lash.

AT two o'clock this morning, I began to get a little sense in me. Or maybe it was just the fear finally catching up again.

There was danger here.

I was too fuzzy to know exactly what the danger was, but I began to develop a husky hate for the whole project.

"Kill it!" came into my mind. "Get rid of it, Charlie!"

Lottie's scream shrilled back into my ears, and this command became very important to me. I became angry.

"Want a drink, do you?" I shouted out loud. I put on the tea kettle and when it was to full steam, I took it back to the tub. "I'll give you a drink with a kick in it!"

What happened, I would like to forget. Ten times as fast as it had climbed up the cold water spout, it ran up the boiling water stream, into the tea kettle, blew off the lid and swarmed over my hand with a scalding-dry slither that made me drop the kettle into the tub and scream with pain.

The jelly steamed and stuck to my flesh long enough to sear it half to the bone. Then it slopped back with the rest and left me grabbing my wrist and tearing at the flesh with my fingernails to stop the pain.

Then I got insane mad. I got my big blowtorch I use for peeling paint, and I lit it and pumped it up as high as it would go and aimed it down into that tub.

Not too much happened. The jelly shrank away from the roaring blast, but it didn't climb over the edge of the tub. It shrank some more and I poured the flame on.

It didn't burn. It just got to be less and less, and what was left began to get cloudy. And when I hit the bottom of the tub, the last glob moved around pretty active, trying to escape the.

heat, but I got it. Every damned last shred of it, and I was laughing and crying when I dropped the torch into the tub. I had been holding it with my scalded hand and I guess I fainted.

I wasn't out long. I got up and dressed my hand with lard, and it felt pretty good. Took a couple of aspirins and sat down at Lottie's typewriter. I know I won't sleep until I get this off my mind in about the way it happened, because I probably won't believe all of it myself when I get back to normal.

I just now went out and fished the blowtorch out of the laundry tub. All there was left in the bottom of the tub was maybe half a pound of singed-looking—soap flakes?

THERE, I've finished writing this all down. But I'm still not sleepy. I'm not worried about patching things up with Lottie. She's the most wonderful, understanding wife a guy ever had.

My hand feels real good now. I got it wrapped in lard and gauze, and I could drive the truck if I wanted to.

I'm not afraid of getting fired or bawled out for not coming to work on time this morning.

No, the reason I haven't turned a wheel on my beer truck today is something else.

Friday night, when Lottie wanted to wash the roaster, I saved only a cup of the jelly for my experiments. The rest she washed down the drain.

The sewer empties into Lake Michigan.

The brewery where I load up is right on the shore of Lake Michigan.

I'm afraid to drive down there and look.

—WIN MARKS

For Your Information

By WILLY LEY

THE INTRACTABLE PRIME NUMBER

JUST about two centuries ago there lived in my father's town of Koenigsberg a gentleman by the name of Christian Goldbach. He was a mathematician by profession and a good one, though not an outstanding genius or a great innovator in his science. When he died in 1764 he

left a theorem behind which is in itself simple enough to be understood by a school child. It does not even need to be expressed as a formula to be stated concisely.

It simply says that every even number can be written as the sum of two prime numbers.

Try it. Any two prime numbers from "3" on up will always result in an even number when added together. Nor will you be able to find an even number that cannot be expressed as the sum of two primes.

If the figure you pick is not too small, it can probably be expressed as the sum of two primes in a number of different ways. For example, 100 can be written as $3 + 97$, or as $11 + 89$, $17 + 83$, $41 + 59$, $47 + 53$, and a number of other ways.

The trouble with Goldbach's beautiful and simple theorem is that it cannot be proved. Trying it out on any number of figures is no proof, if only because the amount of even numbers is infinite. A proof would consist of a sentence, or a paragraph, or, if necessary, a book which shows why this *has* to be so. Goldbach himself could not furnish such proof and later mathematicians, both professional and amateur, who went after the problem had to give up sooner or later in total defeat.

WHEN attacking such a riddle, it is often useful to establish all the characteristics of the units involved. If we knew enough about the mathematical laws governing prime numbers, we might find the one which is responsible for the workability of Goldbach's theorem. That alone might be the reason why we can't prove it, for if there are specific laws governing the occurrence and structure of prime numbers, we haven't found them yet.

But let's go over the ground systematically and begin with the definition of a prime number. That's easy—a prime number is a whole number which does not have any divisors. Or to put it into the stricter language of number theory: "An integer p which is larger than 1 is called a prime number if the only divisors are the trivial ones $\pm$ 1 and $\pm$ p."

In this phraseology, the "1" is not considered a prime number, but many number theorists count "1" as a prime number, too. They are all agreed that "2" is a prime number, the only even prime number in existence. It is also the only prime which—for just this reason—must be left out when using Goldbach's theorem. The next number "3" is also a prime and so are "5," "7," and "11." After them follow "13," "17" and "19."

A method for establishing prime numbers has come down to us from antiquity and is known as the Sieve of Eratosthenes. To use it, you write down all the numbers in the interval you wish to investigate, say from "1" to "100." Then you cross out all even numbers except the "2," for all even numbers are divisible by "2" Next you cross out all remaining numbers which are divisible by "3," except the "3" itself. They are easy to recognize even when very large, because all you have to do is add their digits together.

If your number is 13,623, you form the sum 1 + 3 + 6 + 2 + 3 = 15, with "15" divisible by "3," which means that the figure itself is divisible by "3." Then you cross out all numbers ending with a "5" for they are divisible by "5" (the numbers ending in a "0" which are also divisible by "5" are already gone since they are also even) and then you proceed to those divisible by "7." It can easily be seen that you use successively larger primes, as you establish them, to knock out all the multiples of these primes. The process is tedious, but reliable.

The next question is how many prime numbers there are. By means of the Sieve of Eratosthenes, it has been established that there are 26 prime numbers in the first hundred; 168 in the first thousand; 303 in the first two thousand; 78,498 in the first million and 50,847,478 in the first thousand million. These figures show what one would suspect, anyway; namely, that the primes get rarer as we move up the ladder into larger and larger figures.

If we go sufficiently high, will we come to a point where there are no primes left?

THE answer is no and again the proof has come to us from antiquity. Euclid himself established it. Supposing somebody claimed that the figure Z were the largest and last of the prime numbers, we then take all the smaller primes and multiply them, beginning with 1 times 2 times 3 times 5 times 7 times 11 and we go through all of them until we have reached the prime below Z. Then we multiply the whole by Z, obtaining a much larger figure which we call P. Because of the way we constructed this figure, we can be certain that P is *not* a prime. But how about P + 1?

Well, P + 1 either is a prime or it isn't. If it is, we have a prime much bigger than Z. If P + 1 is not a prime, it can only be divisible by an unknown prime which must be smaller than P, *but larger than* Z. So whether P + 1 is a prime or not, it proves that Z cannot be the largest prime.

No matter how high we climb in the realm of numbers, every once in a while we are bound to encounter a prime.

This, of course, brings up the question about the largest prime actually known. It is a really monstrous figure, even though it can be written down in a simple form: $2^{127} - 1$. This, at any event, is easier to memorize than the same figure in arithmetic long hand where it reads:

170,141,183,460,469,231,731,687,-303,715,884,105,727.

How $2^{127} - 1$ was found is a small story in itself. At this point, it is important that this figure had to be found and then established as a prime. It could not be constructed, for there is no method of constructing large primes. Quite a number of mathematicians have tried to find such a method, partly because they might have been bored with the tedious Sieve of Eratosthenes; mostly, however, because a method of constructing primes would be a version of one of the mathematical laws governing prime numbers.

Probably the first attempt to find such a method was that of Pierre de Fermat, a Frenchman who lived from 1601 to 1665 and who, although technically an "amateur," was one of the great mathematicians of history.

Pierre de Fermat believed that the expression

$$2^{(2n)} + 1$$

where "n" successively assumes the value of 1, 2, 3, 4, etc., could be used for the construction of primes. Not of all primes, of course, but he thought that every figure constructed in accordance with that expression would be a prime. In action, it would look like this:

n=0, therefore $2^1 + 1 = 3$
n=1, " $2^2 + 1 = 5$
n=2, " $2^4 + 1 = 17$
n=3, " $2^8 + 1 = 257$
n=4, " $2^{16} + 1 = 65,537$
n=5, " $2^{32} + 1 = 4,294,967,297$

and up to 65,537 these figures actually are primes.

The figure for n=5 was also believed to be a prime for at least a hundred years. But then the great Leonhard Euler, who lived at about the same time as Goldbach, found this "prime" could be obtained by multiplying 6,-700,417 by 641.

FERMAT'S failure to find the limitation of his own method makes one wonder whether he and his compatriot and contemporary Marin Mersenne actually possessed a (lost) method for recognizing large primes instantly. The existence of such a method had been suspected because of the following:

One day, Fermat received a letter asking whether 100,895,-

598,169 was a prime. Reportedly, Fermat replied without hesitation that the figure was not a prime, but the product of two primes, 898,423 and 112,303. Nobody knows how he could tell so fast, but the assumption of a method for recognizing large primes is not convincing in the light of the breakdown of his own formula.

At this point I have to devote a few lines to Monsieur Marin Mersenne, who engaged in correspondence with all the mathematicians of his time and was practically a one-man mathematical clearing house. If he were alive now, he would undoubtedly be the editor of a mathematical journal. In one of his books there is a short paragraph about numbers of a certain kind which have come to be called "Mersenne's Numbers," even though most mathematicians suspect that they are really Fermat's. But since Fermat's name is associated with several other things, the designation with Mersenne's name is quite useful. The numbers in question are numbers of the form $2^p - 1$ and if this expression reminds you of the largest prime known, you are correct; it is one of "Mersenne's numbers."

Boiled down to a minimum of words, Mersenne's statement reads that numbers of the form $2^p - 1$ are primes if p is 1, 2, 3, 5, 7, 13, 17, 19, 31, 67, 127 or 257. In writing this down, Mersenne (or his printer) made an error — the figure 67 should read 61. Also, the two numbers 89 and 107 should have been included. Checking this statement was, of course, a terrible grind, especially in the higher numbers. The low ones are easy: M_1 (this is the way Mersenne's numbers are usually designated) is simply "1," M_2 is "3," M_3 is "7," M_5 is "31." As the rule says neither M_4 nor M_6 is a prime, the former is "15" and the latter "63," both divisible by "3."

M_7 is larger than a hundred, namely 127; M_{13} is 8,191, M_{17} is 131,071 and M_{19} is 524,287. All these numbers were established as early as 1600 by an Italian named Cataldi. The method he used was to divide the number to be checked by all prime numbers smaller than the square root of the number under investigation.

Leonhard Euler established that M_{31} is a prime — it is, of course, easy to find their numerical values, but hard to show what these numbers are once you have them. Two mathematicians, Pervouchine and Seelhoff, established the nature of M_{61} and incidentally that it should be M_{61} and not M_{67}, and the American mathematician R. E. Powers added M_{89} to the list (in 1911) and three years later M_{107}. The next

higher Mersenne prime is M_{127} or $2^{127} - 1$, the largest prime known and verified. The verification was done quite some time ago, by the French mathematician Lucas in 1876, but it was not written out numerically until the 1920's.

THOSE who have a lot of spare time and wish to amuse themselves by constructing a few large primes might work with two expressions which, within limits, can be used for this purpose. One reads $n^2 - n + 41$. Here n, as usual, is 1, 2, 3, 4, and so forth. It works for all values of n up to 40. When n grows to be 41, the expression defeats itself, for it then becomes $41^2 - 41 + 41$ which is obviously 41^2 and, being a square, cannot be a prime. Similarly, the expression $n^2 - 79n + 1601$ produces primes only if n equals 79 or less; it collapses when n reaches 80.

Let's see now how far we have progressed. All we really know is that there is no limit to the number of primes. Everywhere else we have failed — we don't have a method of constructing primes and we don't have a simple method of recognizing one when we find it. We can't even tell how many primes there must be between, say, 1111 and 8888.

A certain formula says that the number of primes between 1 and X resembles the figure you get when you divide X by its own "natural" (or basis e) logarithm. But the result only resembles the truth. For X = 100, the formula yields 21.7 instead of 26; for X = 1000, it produces 145 instead of 168, while for X = 1,000,000, the figure is 72,382 and should be 78,498. So the best you can expect is a general guess — all the hard work has to be done just as if that formula did not exist.

Now let's look at something else. Low in the realm of numbers you have quite an assortment of "pairs of primes." Typical examples are 11:13, 17:19, 29:31, 41:43 and 101:103, two primes separated by one (even) number only. We know that primes must occur, if rarely, no matter how large the figures. How about prime pairs? Nobody can tell; there is no proof either way.

Nor is there any rule for the interval between primes. Low down, between "1" and "23," the intervals are small. The first interval over five numbers occurs between "89" and "97," the first interval of more than ten numbers between "113" and "127." Naturally the intervals grow larger as the figures grow; the largest known interval occurs between 4,652,353 and 4,652,507, an interval of 154 numbers. It is almost needless to add that there is no known rhyme or reason to those intervals, either.

In short, in spite of centuries of mathematical effort, the prime numbers are still as intractable as they were in the time of Euclid.

As for Goldbach's theorem, I was still taught, some twenty-five years ago, that nobody had succeeded in doing anything about it. That has changed to some extent. According to George Gamow, two Russian mathematicians have made some inroads on the problem. One of them, Schnirelman, proved in 1931 that each even number is the sum of not more than 300,000 primes. Now this might be an interesting mathematical development, but the outsider has the distinct impression that "not more than 300,000 primes" isn't much help.

A dozen years or so after Schnirelman came Vinogradoff, proving that every even number can be expressed as the sum of four primes. But Goldbach's assertion that it can be done with two primes has been found correct for every case actually tried.

There are mathematical honors to be had for the man or woman who can do better than Vinogradoff and prove *why*.

ANTIKHTHON

PRESUMABLY prompted by a comic strip currently appearing in a number of newspapers, several letters ask whether it might not be possible that there is a planet circling the Sun in the same orbit as the Earth, in such a manner that the Sun is always between us and that other planet so that we'll never be able to discover it. These letters were answered as they came in. This item is intended to forestall those that haven't been written yet.

To begin with, the idea of a planet "at the other end" of Earth's orbit is not precisely new. It was invented more than two thousand years ago by the Pythagorean philosophers who saw an urgent mystical need for another body in the Solar System.

It has to be remarked first that they had something they called the "central fire" of which the Sun was said to be merely a reflection. Now if you counted the bodies in the "Universe" (Solar System to us), you had the "central fire," Sun, Moon, Mercury, Venus, Mars, Jupiter and Saturn —eight altogether. Adding the Earth made nine. But the figure nine was not acceptable to the Pythagoreans. There had to be ten bodies and the way out was to postulate the existence of a "counter-Earth" or *Antikhthon*. Needless to say, no other philosophical school paid the faintest attention to this innovation.

But somehow the idea seems to be intriguing.

For an answer, one could point

out that there is no "counter-Mars" and no "counter-Venus" or "counter-Jupiter." We could see those if they existed. But this, it must be admitted, is no logical proof. Saturn's rings are real even though no other planet in the Solar System has rings. So we are forced to approach this problem from a different angle.

If there were a planet like the ancient *Antikhthon,* we could never see it. This does not mean, however, that we could not detect its presence. Forever hidden in the glare of the Sun though it would be, the effects of its gravitational field would not stay hidden. It should influence the orbit of Venus.

Venus, if there were such an unknown planet, would "unaccountably" deviate from the orbit calculated for it. In fact, the behavior of Venus would enable us to calculate the mass of the unknown planet, especially since we would know its distance from the Sun, which would have to be 93 million miles, like our own.

But Venus fails to show any such "perturbations." As a result, we can take it for granted that the *Antikhthon* does not exist.

—WILLY LEY

ANY QUESTIONS?

Why does a full Moon look larger on the horizon than it does at its zenith? It seems the exact opposite should be true, as the Moon on the horizon is farther away than the Moon overhead.

Charles Tisinger
Bks. S-32, N.A.T.T.C.
Memphis 15, *Tennessee*

This question is a perennial —and let's admit it right in the first sentence—unsolved problem. It is not an astronomical problem, for, as reader Tisinger points out, the Moon overhead is closer to the observer. The difference is on the order of 4,000 miles which, compared to the Moon's distance of 240,000 miles, is so little that it would not be apparent to naked-eye observation.

The problem is somewhere in the realm of either physiology or psychology and probably a mixture of both.

Some have tried to explain it by saying that the phenomenon is caused by the position of the head. If you watch the Moon on the horizon, you look straight ahead, whereas, if you watch it near the zenith, you have to lean back. If that were the whole answer, the phenomenon should disappear by making both observations lying down. One man actually claims that it did disappear under these circumstances. Maybe it worked for him, but it does not work for me.

Another explanation says that you have nothing with which to compare the size of the Moon when it is high in the sky, while you do have objects (trees, buildings, hills) for comparison near the horizon. In my opinion, this should tend to make it look smaller at the horizon, but I know the Moon looks bigger.

In short: explanation unsatisfactory.

I have read that so-called shooting stars are new comets passing through our solar system. If this isn't true, what are they?

Larry Willey
55 Dawson Avenue
Mansfield, Ohio

Shooting stars are tiny particles entering our atmosphere from space, at speeds ranging anywhere from 7 to 45 miles per second. They are so tiny that you could not feel them if you held some in the palm of your hand. Compressing the atmosphere in their paths, they are heated to such an extent that the vast majority of them vaporize. Only a small fraction of their number reach the ground at all.

Far from being "new comets," they are most likely debris of very old comets which slowly disintegrated in their orbits many thousands of years ago.

How did Halley know the time of his comet's return on a 75-year schedule? Did he live to see his comet appear twice? And how is it that comets have never collided with the planets?

Shaler Morris
Veteran's Home, Calif.

Dr. Edmond Halley saw "his" comet only once, in 1682, when he was about 26 years old. He had just gone over a list of comet observations and, while there had been many comets at unpredictable intervals, his suspicion was aroused by the fact that a large and bright comet had been seen at 75-year intervals. There had been one in 1531, one in 1607 and his own observation in 1682. He felt confident that this was the same comet, moving in a closed orbit, and predicted its return for the year 1758. Incidentally, the comet was not labeled "Halley's Comet" until the prediction was verified by actual observation.

As for the third question, the answer is that we do not know whether a comet has ever collided with a planet. We know it has not happened during the last few centuries, but we cannot be positive about the past.

warm

By ROBERT SHECKLEY

It was a joyous journey Anders set out on . . . to reach his goal . . . but look where he wound up!

Illustrated by EMSH

ANDERS lay on his bed, fully dressed except for his shoes and black bow tie, contemplating, with a certain uneasiness, the evening before him. In twenty minutes he would pick up Judy at her apartment, and that was the uneasy part of it.

He had realized, only seconds ago, that he was in love with her.

Well, he'd tell her. The evening would be memorable. He would propose, there would be kisses, and the seal of acceptance would, figuratively speaking, be stamped across his forehead.

Not too pleasant an outlook, he decided. It really would be

much more comfortable not to be in love. What had done it? A look, a touch, a thought? It didn't take much, he knew, and stretched his arms for a thorough yawn.

"Help me!" a voice said.

His muscles spasmed, cutting off the yawn in mid-moment. He sat upright on the bed, then grinned and lay back again.

"You must help me!" the voice insisted.

Anders sat up, reached for a polished shoe and fitted it on, giving his full attention to the tying of the laces.

"Can you hear me?" the voice asked. "You can, can't you?"

That did it. "Yes, I can hear you," Anders said, still in a high good humor. "Don't tell me you're my guilty subconscious, attacking me for a childhood trauma I never bothered to resolve. I suppose you want me to join a monastery."

"I don't know what you're talking about," the voice said. "I'm no one's subconscious. I'm *me*. Will you help me?"

Anders believed in voices as much as anyone; that is, he didn't believe in them at all, until he heard them. Swiftly he catalogued the possibilities. Schizophrenia was the best answer, of course, and one in which his colleagues would concur. But Anders had a lamentable confidence in his own sanity. In which case—

"Who are you?" he asked.

"I don't know," the voice answered.

Anders realized that the voice was speaking within his own mind. Very suspicious.

"You don't know who you are," Anders stated. "Very well. *Where* are you?"

"I don't know that, either." The voice paused, and went on. "Look, I know how ridiculous this must sound. Believe me, I'm in some sort of limbo. I don't know how I got here or who I am; but I want desperately to get out. Will you help me?"

STILL fighting the idea of a voice speaking within his head, Anders knew that his next decision was vital. He had to accept—or reject—his own sanity.

He accepted it.

"All right," Anders said, lacing the other shoe. "I'll grant that you're a person in trouble, and that you're in some sort of telepathic contact with me. Is there anything else you can tell me?"

"I'm afraid not," the voice said, with infinite sadness. "You'll have to find out for yourself."

"Can you contact anyone else?"

"No."

"Then how can you talk with me?"

"I don't know."

Anders walked to his bureau mirror and adjusted his black bow tie, whistling softly under his breath. Having just discovered that he was in love, he wasn't going to let a little thing like a voice in his mind disturb him.

"I really don't see how I can be of any help," Anders said, brushing a bit of lint from his jacket. "You don't know where you are, and there don't seem to be any distinguishing landmarks. How am I to find you?" He turned and looked around the room to see if he had forgotten anything.

"I'll know when you're close," the voice said. "You were warm just then."

"Just then?" All he had done was look around the room. He did so again, turning his head

The room, from one angle, slowly. Then it happened.
looked different. It was suddenly a mixture of muddled colors, instead of the carefully blended pastel shades he had selected. The lines of wall, floor and ceiling were strangely off proportion, zigzag, unrelated.

Then everything went back to normal.

"You were *very* warm," the voice said. "It's a question of seeing things correctly."

Anders resisted the urge to scratch his head, for fear of disarranging his carefully combed hair. What he had seen wasn't so strange. Everyone sees one or two things in his life that make him doubt his normality, doubt sanity, doubt his very existence. For a moment the orderly Universe is disarranged and the fabric of belief is ripped.

But the moment passes.

Anders remembered once, as a boy, awakening in his room in the middle of the night. How strange everything had looked. Chairs, table, all out of proportion, swollen in the dark. The ceiling pressing down, as in a dream.

But that had also passed.

"Well, old man," he said, "if I get warm again, let me know."

"I will," the voice in his head whispered. "I'm sure you'll find me."

"I'm glad you're so sure," Anders said gaily, switched off the lights and left.

LOVELY and smiling, Judy greeted him at the door. Looking at her, Anders sensed her knowledge of the moment. Had she felt the change in him, or predicted it? Or was love making him grin like an idiot?

"Would you like a before-party drink?" she asked.

He nodded, and she led him across the room, to the improbable green-and-yellow couch. Sitting down, Anders decided he would tell her when she came

back with the drink. No use in putting off the fatal moment. A lemming in love, he told himself.

"You're getting warm again," the voice said.

He had almost forgotten his invisible friend. Or fiend, as the case could well be. What would Judy say if she knew he was hearing voices? Little things like that, he reminded himself, often break up the best of romances.

"Here," she said, handing him a drink.

Still smiling, he noticed. The number two smile—to a prospective suitor, provocative and understanding. It had been preceded, in their relationship, by the number one nice-girl smile, the don't-misunderstand-me smile, to be worn on all occasions, until the correct words have been mumbled.

"That's right," the voice said. "It's in how you look at things."

Look at what? Anders glanced at Judy, annoyed at his thoughts. If he was going to play the lover, let him play it. Even through the astigmatic haze of love, he was able to appreciate her blue-gray eyes, her fine skin (if one overlooked a tiny blemish on the left temple), her lips, slightly reshaped by lipstick.

"How did your classes go today?" she asked.

Well, of course she'd ask that, Anders thought. Love is marking time.

"All right," he said. "Teaching psychology to young apes—"

"Oh, come now!"

"Warmer," the voice said.

What's the matter with me, Anders wondered. She really is a lovely girl. The *gestalt* that is Judy, a pattern of thoughts, expressions, movements, making up the girl I—

I what?

Love?

Anders shifted his long body uncertainly on the couch. He didn't quite understand how this train of thought had begun. It annoyed him. The analytical young instructor was better off in the classroom. Couldn't science wait until 9:10 in the morning?

"I was thinking about you today," Judy said, and Anders knew that she had sensed the change in his mood.

"Do you see?" the voice asked him. "You're getting much better at it."

"I don't see anything," Anders thought, but the voice was right. It was as though he had a clear line of inspection into Judy's mind. Her feelings were nakedly apparent to him, as meaningless as his room had been in that flash of undistorted thought.

"I really was thinking about you," she repeated.

"Now look," the voice said.

ANDERS, watching the expressions on Judy's face, felt the strangeness descend on him. He was back in the nightmare perception of that moment in his room. This time it was as though he were watching a machine in a laboratory. The object of this operation was the evocation and preservation of a particular mood. The machine goes through a searching process, invoking trains of ideas to achieve the desired end.

"Oh, were you?" he asked, amazed at his new perspective.

"Yes . . . I wondered what you were doing at noon," the reactive machine opposite him on the couch said, expanding its shapely chest slightly.

"Good," the voice said, commending him for his perception.

"Dreaming of you, of course," he said to the flesh-clad skeleton behind the total *gestalt* Judy. The flesh machine rearranged its limbs, widened its mouth to denote pleasure. The mechanism searched through a complex of fears, hopes, worries, through half-remembrances of analogous situations, analogous solutions.

And this was what he loved. Anders saw too clearly and hated himself for seeing. Through his new nightmare perception, the absurdity of the entire room struck him.

"Were you really?" the articulating skeleton asked him.

"You're coming closer," the voice whispered.

To what? The personality? There was no such thing. There was no true cohesion, no depth, nothing except a web of surface reactions, stretched across automatic visceral movements.

He was coming closer to the truth.

"Sure," he said sourly.

The machine stirred, searching for a response.

Anders felt a quick tremor of fear at the sheer alien quality of his viewpoint. His sense of formalism had been sloughed off, his agreed-upon reactions bypassed. What would be revealed next?

He was seeing clearly, he realized, as perhaps no man had ever seen before. It was an oddly exhilarating thought.

But could he still return to normality?

"Can I get you a drink?" the reaction machine asked.

At that moment Anders was as thoroughly out of love as a man could be. Viewing one's intended as a depersonalized, sexless piece of machinery is not especially conducive to love. But it is quite stimulating, intellectually.

Anders didn't want normality. A curtain was being raised and he wanted to see behind it. What was it some Russian scientist—

Ouspensky, wasn't it—had said?

"*Think in other categories.*"

That was what he was doing, and would continue to do.

"Good-by," he said suddenly.

The machine watched him, open-mouthed, as he walked out the door. Delayed circuit reactions kept it silent until it heard the elevator door close.

"YOU were very warm in there," the voice within his head whispered, once he was on the street. "But you still don't understand everything."

"Tell me, then," Anders said, marveling a little at his equanimity. In an hour he had bridged the gap to a completely different viewpoint, yet it seemed perfectly natural.

"I can't," the voice said. "You must find it yourself."

"Well, let's see now," Anders began. He looked around at the masses of masonry, the convention of streets cutting through the architectural piles. "Human life," he said, "is a series of conventions. When you look at a girl, you're supposed to see—a pattern, not the underlying formlessness."

"That's true," the voice agreed, but with a shade of doubt.

"Basically, there is no form. Man produces *gestalts,* and cuts form out of the plethora of nothingness. It's like looking at a set of lines and saying that they represent a figure. We look at a mass of material, extract it from the background and say it's a man. But in truth there is no such thing. There are only the humanizing features that we—myopically—attach to it. Matter is conjoined, a matter of viewpoint."

"You're not seeing it now," said the voice.

"Damn it," Anders said. He was certain that he was on the track of something big, perhaps something ultimate. "Everyone's had the experience. At some time in his life, everyone looks at a familiar object and can't make any sense out of it. Momentarily, the *gestalt* fails, but the true moment of sight passes. The mind reverts to the superimposed pattern. Normalcy continues."

The voice was silent. Anders walked on, through the *gestalt* city.

"There's something else, isn't there?" Anders asked.

"Yes."

What could that be, he asked himself. Through clearing eyes, Anders looked at the formality he had called his world.

He wondered momentarily if he would have come to this if the voice hadn't guided him. Yes, he decided after a few moments, it was inevitable.

But who was the voice? And what had he left out?

"Let's see what a party looks like now," he said to the voice.

THE party was a masquarade; the guests were all wearing their faces. To Anders, their motives, individually and collectively, were painfully apparent. Then his vision began to clear further.

He saw that the people weren't truly individual. They were discontinuous lumps of flesh sharing a common vocabulary, yet not even truly discontinuous.

The lumps of flesh were a part of the decoration of the room and almost indistinguishable from it. They were one with the lights, which lent their tiny vision. They were joined to the sounds they made, a few feeble tones out of the great possibility of sound. They blended into the walls.

The kaleidoscopic view came so fast that Anders had trouble sorting his new impressions. He knew now that these people existed only as patterns, on the same basis as the sounds they made and the things they thought they saw.

Gestalts, sifted out of the vast, unbearable real world.

"Where's Judy?" a discontinuous lump of flesh asked him. This particular lump possessed enough nervous mannerisms to convince the other lumps of his reality. He wore a loud tie as further evidence.

"She's sick," Anders said. The flesh quivered into an instant sympathy. Lines of formal mirth shifted to formal woe.

"Hope it isn't anything serious," the vocal flesh remarked.

"You're warmer," the voice said to Anders.

Anders looked at the object in front of him.

"She hasn't long to live," he stated.

The flesh quivered. Stomach and intestines contracted in sympathetic fear. Eyes distended, mouth quivered.

The loud tie remained the same.

"My God! You don't mean it!"

"What are you?" Anders asked quietly.

"What do you mean?" the indignant flesh attached to the tie demanded. Serene within its reality, it gaped at Anders. Its mouth twitched, undeniable proof that it was real and sufficient. "You're drunk," it sneered.

Anders laughed and left the party.

"THERE is still something you don't know," the voice said. "But you were hot! I could feel you near me."

"What are you?" Anders asked again.

"I don't know," the voice admitted. "I am a person. I am I. I am trapped."

"So are we all," Anders said. He walked on asphalt, surrounded by heaps of concrete, silicates, aluminum and iron alloys. Shapeless, meaningless heaps that made up the *gestalt* city.

And then there were the imaginary lines of demarcation dividing city from city, the artificial boundaries of water and land.

All ridiculous.

"Give me a dime for some coffee, mister?" something asked, a thing indistinguishable from any other thing.

"Old Bishop Berkeley would give a nonexistent dime to your nonexistent presence," Anders said gaily.

"I'm really in a bad way," the voice whined, and Anders perceived that it was no more than a series of modulated vibrations.

"Yes! Go on!" the voice commanded.

"If you could spare me a quarter—" the vibrations said, with a deep pretense at meaning.

No, what was there behind the senseless patterns? Flesh, mass. What was that? All made up of atoms.

"I'm really hungry," the intricately arranged atoms muttered.

All atoms. Conjoined. There were no true separations between atom and atom. Flesh was stone, stone was light. Anders looked at the masses of atoms that were pretending to solidity, meaning and reason.

"Can't you help me?" a clump of atoms asked. But the clump was identical with all the other atoms. Once you ignored the superimposed patterns, you could see the atoms were random, scattered.

"I don't believe in you," Anders said.

The pile of atoms was gone.

"Yes!" the voice cried. "Yes!"

"I don't believe in any of it," Anders said. After all, what was an atom?

"Go on!" the voice shouted. "You're hot! Go on!"

What was an atom? An empty space surrounded by an empty space.

Absurd!

"Then it's all false!" Anders said. And he was alone under the stars.

"That's right!" the voice within his head screamed. "Nothing!"

But stars, Anders thought. How can one believe—

The stars disappeared. Anders was in a gray nothingness, a void. There was nothing around him except shapeless gray.

Where was the voice?

Gone.

Anders perceived the delusion behind the grayness, and then there was nothing at all.

Complete nothingness, and himself within it.

WHERE was he? What did it mean? Anders' mind tried to add it up.

Impossible. *That* couldn't be true.

Again the score was tabulated, but Anders' mind couldn't accept the total. In desperation, the overloaded mind erased the figures, eradicated the knowledge, erased itself.

"Where am I?"

In nothingness. Alone.

Trapped.

"Who am I?"

A voice.

The voice of Anders searched the nothingness, shouted, "Is there anyone here?"

No answer.

But there was someone. All directions were the same, yet moving along one he could make contact : . . . with someone. The voice of Anders reached back to someone who could save him, perhaps.

"Save me," the voice said to Anders, lying fully dressed on his bed, except for his shoes and black bow tie.

—ROBERT SHECKLEY

Forecast

Next month's lead, KINDERGARTEN by Clifford D. Simak, is *almost* long enough to be called a novella. However, it would take some term-stretching, which we won't do, so it's a novelet. A strong and emotionally urgent one, too, with the sort of alarming problem that somebody once stated as: "Beware of Greeks bearing gifts." That warning is no solution at all, of course—especially when the gifts are so desperately needed and seem to have no strings attached. Yet there must be strings! What are they and how much they will cost?

On the other hand, William Morrison's THE WEATHER ON MERCURY seems to be a rollicking novelet . . . only it isn't. The trouble is that there are two practical jokers in it. One is a man and the other—well, when a planet turns practical joker, the gags are likely to be cosmic rather than comic.

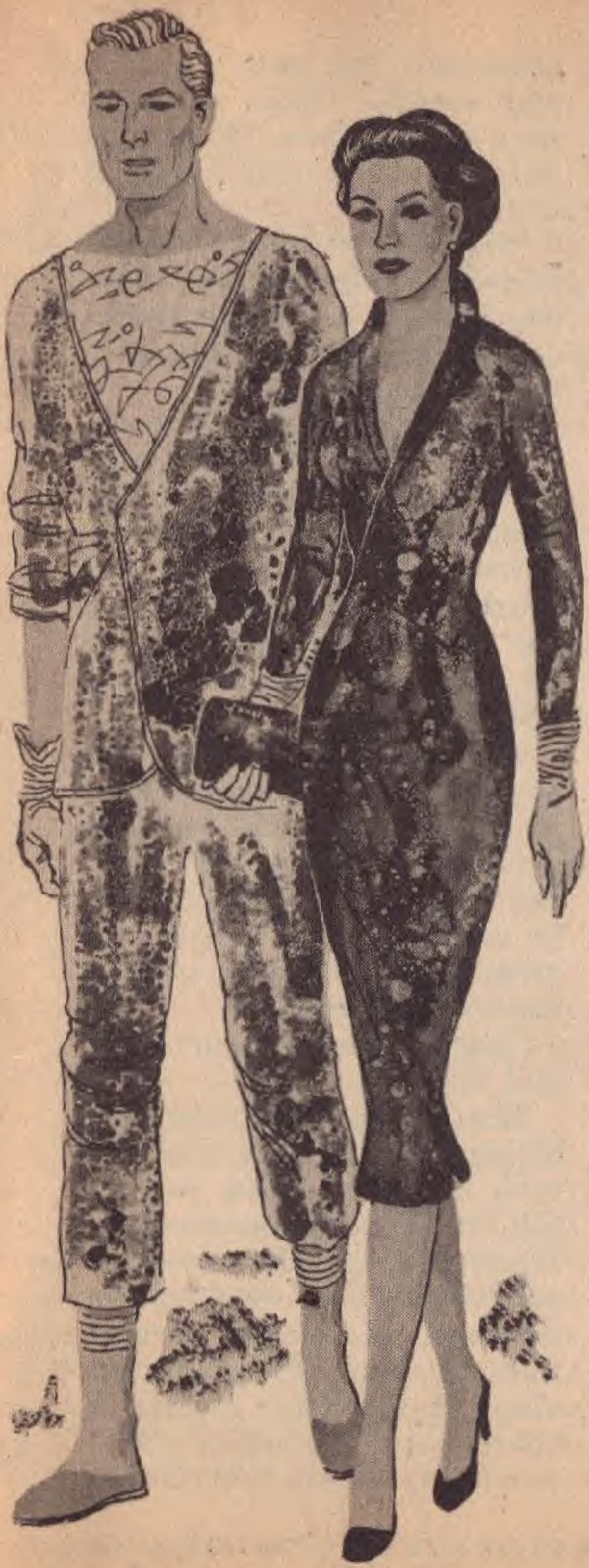
In SOLDIER BOY, Michael Shaara proves that it's one thing to laugh at a man whose occupation is useless and outmoded . . . and another thing when it suddenly isn't!

FIRST LADY

By J. T. M'INTOSH

Terran Control specialized in nasty jobs, but the nastiest was taking a dazed young girl out to rule over an all-male planet!

Illustrated by EMSH



WE were just a few hours from Lotrin, and I looked at Shirley and Ellen and wondered how we were going to settle the problem in time. It wasn't a life-and-death matter; probably none of us was going to die, whatever happened. It would be one way out, of course, for us all to commit suicide. But I couldn't see any of us doing that, including Shirley, even if she knew what we knew. Suicide is never the answer to a problem, it's only at best a compromise with it.

We weren't just looking at each other. We were talking, arguing, ranting, dramatizing. Ellen was doing the talking, arguing, ranting and dramatizing, now that she had to take an interest again in what was going on. Shirley was never a talker, and I'm a good listener. Besides, the problem was less Ellen's than it was Shirley's and mine, and often the people who talk most are those who are least involved.

I'm one of those people who always have an unconcerned, mildly interested alter ego, observing what's going on, sifting it, hauling up memories and comparing the present with the past. I found it quite easy, while Ellen talked, to run rapidly through our whole association with Shirley, right from the beginning back on Earth.

SHE was expecting us, actually waiting for us, so there wasn't much chance of our getting an informal look at her. On the way, Ellen was irritated, as usual. Being Ellen, she was keeping me informed on her view of the situation. She drove, keeping her eyes on the road, but throwing out occasional asides.

"We aren't just messengers," she muttered.

"Anyone at all would have done," she grumbled.

"We've never had to do anything I liked less," she complained.

Silently, I agreed with that, at least.

We were Terran Control agents and we were doing a job that someone had to do. In itself, it was simple and rather boring, which was behind Ellen's complaint that we weren't just messengers. But there was more than simplicity and boredom in it. Much more. The trouble was that we knew exactly what *was* in it. Sometimes we had been sent out, blind, to do very different jobs for TC, and we hadn't liked that. This time we knew what we were doing and, if anything, we liked it less.

"There are more important things we might be doing than escorting an overgrown schoolgirl to Lotrin," Ellen beefed.

I quoted ironically from the newscasts. "But what a girl," I said nasally. "What a history she's going to have. What a life story she will one day be able to write."

"Save that for the great galactic public," Ellen snapped. "Anyway, this girl is ordinary. Picked out because she's ordinary, normal, average, typical."

She drew up outside the small-town maisonette where the future First Lady of Lotrin lived. She stopped in her usual way, with a furious jerk of four locked wheels. She didn't wait for me, but was out and crunching up the gravel path while the car was still rocking.

We thought at first there was nobody home, and Ellen sneered something about cold feet. But when we went around the back, there was the girl, pretending not to see us. She was draped on a garden seat, wearing a playsuit and reading a book.

"Just to show she doesn't care," said Ellen.

Ellen, this once, was dead right. Shirley Judson—we'd seen pictures of her, and this was the girl, all right—was good-looking. Where she was just attractive, not beautiful, was where current standards of beauty deviated from the norm. Make no mistake about it, there was nothing in Shirley's looks to stop a million men from falling in love with her.

Yet Ellen muttered: "Not chosen for her looks, anyway."

I threw an expressive glance at her. Why will women insist on giving their worthless opinions of other women's attractiveness or homeliness? It wasn't a million *women* who were supposed to fall in love with Shirley.

WE moved over to her and introduced ourselves. Shirley didn't notice exactly when it became impossible to pretend any more that she hadn't seen us, and give up the pretense, so I suppose technically it's still going on yet.

There was casual, pointless conversation—*not* about Lotrin. We didn't bow and express our pleasure to meet the First Lady of Lotrin. In fact, just to make sure there was no misunderstanding, we put her very much in her place. At any rate, Ellen did. At first.

Ellen always looks like something straight out of *Vogue,* and in all modesty I can say I have seen worse-looking men of thirty-five than me. Shirley was a very young twenty-one, and her playsuit, as Ellen soon demonstrated to her without saying a word, was two mistakes. Wearing a playsuit was wrong, and wearing that particular playsuit was wronger.

Shirley was keyed up almost to breaking-point, naturally enough. Her nostrils were white, she was breathing quickly and shallowly, and somehow one knew her voice was coming out two tones higher than usual. But that couldn't be helped; the playsuit could. It had been meant to show she was completely at her ease, unimpressed by the solemnity of the occasion, and not in the least scared of us. It did pretty much the opposite.

Instead of seeing the nervousness of her hands and face, four curious eyes noted the nervousness of her whole body. And the white frilly rompers suggested child when she wanted to be mature and at no disadvantage with us. And if we wanted to be nasty, which Ellen nearly always does with other women, it was only necessary to look at Shirley's legs or shoulders and then away, with faint distaste, to make it obvious that there was something wrong with the legs, or the display of them, without giving the girl anything she could answer.

I haven't covered everything, but you can imagine the general lines of the situation. Anyway, Ellen made the most of it. I tried to counteract the effect a little, but no one has ever been able to counteract Ellen.

Then suddenly, just as the girl was about to cry, Ellen said, "Joe, take a walk," in an unexpectedly

brisk tone, and jerked her head.

Meekly, I went up the garden.

I stopped where I could still see them, but not hear what they said. The funny thing about Ellen is that people don't hate her the way they should. Other people strive hard for affection and don't get it; Ellen seems to put in a lot of good solid work to be hated, only it doesn't turn out that way.

She was very careful with Shirley, I saw, not even touching her at first. Then they were all over each other in that curious way women have. Shirley was crying by this time, of course. Her white shoulders and chestnut hair were mixed up with Ellen's blue frock, and there was a tangle of bare arms and chic elbow-length gloves.

And for some reason I had a lump in my throat.

I WASN'T in the next part much. I wasn't around because Shirley spent most of the next two months in bra and panties or less, being poked and tapped by doctors, getting massages, doing violent exercises and being checked and doublechecked, slipping in and out of dresses, blouses, skirts, slacks and almost every other form of feminine attire.

One might have thought that clothes wouldn't matter much to the First Lady of Lotrin, who would be literally the first woman to set foot on the planet, certainly the last for a long time, and possibly the last ever. But Shirley was going to represent her whole sex on Lotrin. She would have to be supremely feminine, and a few crates of clothes, even if they had to be transported hundreds of light-years at fabulous cost, as these would be, were not regarded by Terran Control as a luxury. They really weren't for Shirley. They were for Lotrin.

I wasn't there, but Ellen was, so I naturally heard all about it. I heard the story of every examination, every test, every checkup, every experiment; the details of Shirley's trousseau were inflicted on me, down to the last clip and lace curlicue. Ellen was bored with the whole business and she didn't see why my being a man should excuse me from being bored with them, too.

So if anyone wants to know anything at all about what happens to a First Lady—any First Lady—before she leaves the New York TC center, just ask me. Nothing too minute, too intimate. The story of the testing and preparation and coaching and beautifying and swearing in and final passing of a First Lady is yours for the asking.

Of course it isn't very interesting.

I haven't said much about Ter-

ran Control. First of all, the name —it means control of everything from and by Earth. Some say it's a clumsy and unworkable system, bound to fall apart eventually. Maybe it is, but it won't collapse during this generation or the next. Meantime, what TC says goes. And as far as Shirley was concerned, Ellen and I were TC; we represented it.

I always say as little for or against TC as possible. This isn't because my job depends on keeping my mouth shut. TC is an autocracy, but not that kind.

When you've got a big job in hand, like, say, colonizing a galaxy, there's only one good way of doing it. Before you start, there may be plenty of ways. Again, if you start and fail, you may try another way. But, if you start and don't fail, you have to keep on the way you began. I'm not going to argue about it; I'm just saying what I believe.

ONE of the points of TC's way was this: the human race must stay human. There have been enough civil wars without creating new races so that there can be new race wars. The Martian War showed what can happen when men become not-men and somewhere else men stay men. As it happened, the men won—there are no Martians left. There never will be Martians again while TC rules colonization. Humans can't live on Mars and stay human. Mars is a plague spot, and the ruins of human habitation on the red planet crumble to dust.

Venus is another matter. So are the Aldebaran worlds, and the other scattered worlds named for themselves, not their suns—Jenta, Smith, Babylon, Eyrie, Nostral, Hover, Gluckstein, Fortan, Jissel, Maple. Others, like Mars—Robinson, Dahlia, Mantor, Arka—are crossed out, forgotten names. Just plague spots. Dead, most of them. Some, unfortunately, are only dying.

Others still—Civnet, Lotrin, Martin, Beckland, Everest, Red Dawn—have question marks after them. It takes a long time to remove a question mark. But, broadly, the query begins to fade at a set point. After that a world may still turn out to be a plague spot, but that's liable to be a gradual business. People can be taken out and settled elsewhere. Their strain will be watched, they may even be sterilized, but they will still be regarded as men.

The set point is the birth of the first child conceived and delivered on the world under study. Scientists and doctors do everything but take the poor kid to pieces. Then they deliver their verdict. They say go ahead, or go ahead cautiously, or wait a while,

or hold everything, or stop, or . . .

But no one likes to examine that end of the scale too closely.

And that's the main reason why the First Lady is so important. She's the chosen mother of that first child. The father is chosen, too, of course.

TC is matchmaker as well as godfather.

Shirley and some Lotrin settler whose name I didn't know were the future of Lotrin. The shape of Shirley's life, and the destiny of a whole world, depended on a child she would have by a man she was going out to marry, but had never met.

It was a queer situation, though not new any longer. The First Lady of Jenta was dead a long while; so was the First Lady of Smith. The First Lady of Babylon was over a hundred, and still, it was said, went for a swim in a mountain stream every morning. Eyrie's First Lady was ninety-three. Nostral's was not only First Lady, but President of Nostral as well. So on down to Maple's First Lady, who could still wear a playsuit like Shirley's, and to better effect, from what I'd been told.

I'm not, if I can help it, going to say anything about the First Ladies of Robinson, Dahlia, Mantor or Arka.

I told you those places are plague spots.

IT must have been that curious power of divination they call feminine intuition that made Ellen call Shirley an overgrown schoolgirl before she had even met her, when she had only seen a photograph or two of the girl. For that's what Shirley was. I don't know whether TC has a definite pattern for the choice of First Ladies which includes an emotional maturity index; I haven't met many First Ladies. But if there is a pattern, and Shirley fitted it, a First Lady must be rather shy, quiet, inexperienced, above all virginal—an overgrown schoolgirl, as a matter of fact.

One might have thought a First Lady should be dynamic, reckless, or a hundred per cent glamor. TC apparently didn't agree. I don't mean that Shirley was timid, incapable of recklessness, and sexless. She was—homy. One could see her as somebody's sister, somebody's girl friend, somebody's wife. Not as an official, a TC agent like Ellen and me, a dancehall girl, an athlete. Not as anything that needed drive or responsibility or amorality.

It's difficult to describe Shirley at all, because anything you say about her, you have to qualify. If you say she was shy, you have to add that she wasn't *very* shy. And if she wasn't brilliant,

you couldn't describe her as stupid.

Likewise, when she insisted on traveling incognito to avoid a great sendoff at New York, she could have been persuaded, and when the time came, I think she wished we hadn't given in so easily. She would never seek the limelight, but when she found herself in it, she would be capable of enjoying it.

There were no cheering crowds and reporters and photographers when we left from New York spaceport. Shirley was traveling as Ellen's sister. She seemed to like the part. She had a crush on Ellen good and hard.

TC was used to misleading the press. One might have thought some smart newsman would put two and two together and work out that since Lotrin's First Lady was about due to go out, and since this ship, in the course of its four-month tour, was going to touch Lotrin, and since Shirley had most of the hallmarks of a First Lady, it might be worth investigating her a little. But TC announced officially that the First Lady wasn't chosen yet, and circulated privately a rumor that she *was* chosen and would go on the next ship.

The newspapermen rejected the statement and accepted the rumor. And if anyone checked over the passenger list of the *Sardonia,* he would have seen that we were going out to settle the Aldebaran section.

SHIRLEY looked around with interest. "It's a wonderful ship," she said, gazing up at the smooth hull.

"Is it?" murmured Ellen, obviously surprised that anyone should think it was wonderful. "Just wait till you get inside. You'll find that every foot has only nine inches. You'll get used to that, but when you reach the Moon, you'll discover the foot has shrunk to seven inches. On the next tender it'll be five, and when you're on the liner it'll come down to four."

Shirley stared at her. "Isn't this the *Sardonia?*"

"Sometimes I wonder where you've been living these last twenty-one years. Tell her, Joe."

Pencil skirts were in again; Ellen hobbled toward the tender. She could talk like that to Shirley. If I tried it, the tears would come. I wondered how many gallons Shirley had wept since TC first found her. Most of them, according to Ellen, were about her mother, and they were usually down Ellen's dress.

"This is only a tender to take us to the Moon, Shirley," I said. "Curiously, its power-to-weight ratio is much higher than that of the ship that will take us all those

light-years. On the Moon there'll be another check and another tender will take us to the *Sardonia,* which by that time will be orbiting around the Moon."

I took Shirley's arm and steered her after Ellen. No one had any time for us; spaceships have no room for flunkeys.

"The starships never land anywhere," I went on. "They're assembled in space, and when, despite all the safeguards, they're eventually saturated with radiation leakage, they're destroyed in space."

"I can't make you and Ellen out," said Shirley suddenly, showing how much good my lecturette for children had done. "Do you love her, Joe?"

I grinned wryly. "Shirley, sometimes you're too shy to say perfectly ordinary things, and other times you're a little too frank. Outside of novels, people don't go around asking people if they love other people."

"But do you," she insisted, "since I've asked it?"

"First define love," I said. When you've done that to my satisfaction, ask me again. Then if you get an answer in the morning, see if it's the same answer in the afternoon, and the next day, and next week."

"You're married, I suppose?"

"Why should you suppose that?"

She seemed taken back. "You are living together," she said. "Aren't you?"

"We certainly work together, but that doesn't mean we're married."

SHE was silent while we climbed to the airlock and began to sidle along the narrow passage.

"I think I know what you are," she said. "You're secret agents. The way you don't answer questions shows you're used to it."

"That's a point," I said agreeably.

A few minutes later—it was a slow business moving along that passage—Shirley stated emphatically from behind me: "You're Joe Dell and she's Ellen Dell."

"That settles it, then," I observed. "We must be married."

"Don't you ever give a fact away, free?"

I half turned and looked down at her reprovingly. "Weren't you listening? I told you about the tenders and the *Sardonia*—"

"Which I could have got from the steward. He can't tell me if you love Ellen."

"Well, that makes two of us," I said easily. "Neither can I."

"You *won't,* anyway."

We had almost caught up with Ellen, and she stopped at that and waited.

"He won't what?" she asked.

I was between them, so they

could hardly see each other at all. Corridors on spaceships have to be seen to be believed. Ellen and Shirley might have passed each other, but only at the cost of buttons and tears and bruises, and that's no exaggeration. If I had to pass anyone, we could only do it by climbing over each other.

Shirley was silent. She was ready to ask questions of me, but not of Ellen. Not that kind of question.

"It doesn't matter," I said, "since it's settled that I *won't*."

Ellen accepted that, for the moment. She had found our room.

"Yours is around the corner, Shirley," she said. "Come and I'll show you how things work."

I backed into the cabin to get out of the way, and they went past. Shirley gave me a last searching, puzzled glance.

FITTING into the routine of space travel again is always pretty much the same. Ellen made the same grumbles, phrased differently. This time she wondered ironically why they didn't feed us on condensed milk and shortbread and make sure we starved. Remarked that you rubbed your head before you got up in anticipation of the bump. Said she realized at last why spacegirls on magazine covers wore tights — they couldn't squeeze through spaceship doors wearing anything else. Suggested we come to some arrangement whereby I breathed out when she breathed in.

Shirley, to whom it was all new, took it very much for granted. That is, she noticed with surprise how little room there was, adjusted herself to the new conditions and forgot the whole thing.

When we were on the second tender, taking us out to the *Sardonia*, I asked Ellen: "How much does Shirley know?"

She didn't feel like being sarcastic, for once, so she cut out everything but what I wanted to know.

"Not much," she said. "Shirley doesn't know she's got to marry this character—let's call him Bill. She thinks she does, but she doesn't realize how absolutely inescapable it is that she must marry him and no one else. She doesn't know that she must be kind—but not too kind—to the million others. No doubt she has her own ideas on that. What she doesn't realize is that she must be the perfect, flawless figurehead, the dreamgirl, the model for all women, at once the vestal virgin, the perfect wife, everybody's sister, everybody's sweetheart and everybody's mother."

"I know what you mean," I said. "Not everyone would."

"One thing," Ellen observed,

"she probably does realize. She knows about the baby."

I pressed my foot urgently against hers.

"I suppose she knows," Ellen went on reflectively, "that if it's a monster, her whole future and Bill's and Lotrin's collapses. And not only collapses, but into a rather nasty little puddle. Yes, she probably knows that. I don't think she's really faced it, but who could? Certainly not me. I'll stay in TC and be asked to do the impossible and get shot at and maybe beaten up occasionally. But I'm glad I'm a few years too old to be asked to be a First Lady."

Shirley came right into the room. It had been a good touch on Ellen's part to drop these hints about our normal employment. Since neither of us had done anything of the sort before, it would convince Shirley that Ellen didn't know she was there.

Shirley was white, but strictly under control.

"So you're taking me to Lotrin" she said clearly, "to do something you wouldn't do yourself?"

Ellen turned and met her gaze. She didn't look startled that Shirley had heard her; it would have been out of character, anyway.

"That's right, Shirley," she said quietly.

I REALLY thought there was going to be a scene. It was all between Ellen and Shirley. It was Ellen whom Shirley worshiped, not me. I could see Shirley deciding that Ellen was false and everything was, too, and you couldn't trust anyone or anything. I saw her being ashamed of all the times she had cried before Ellen, who all the while had been thinking she was mad and a fool to be doing what she was doing.

Then Shirley whirled and went out.

"Better go after her, hadn't you?" I said.

"I've gone after her often enough."

"But she may . . ."

"She may do what?"

"Anything. Kill herself."

"If she's going to kill herself, she'd better do it now, not when she's reached Lotrin and has actually been installed."

I was silent, thinking. Shirley wouldn't kill herself, of course. Girls as delicately balanced as that would never be chosen as First Ladies. She would have much worse things to face than Ellen's defection.

I knew why Ellen had spoken as she had. Ellen was no part of Shirley's life on Lotrin. If Shirley was pinning a lot on Ellen and Ellen's opinion of her and First Ladies in general, the sooner it was unpinned, the better. So

Ellen tore it off.

Besides, of course, Ellen was fed up playing nursemaid.

"Just for curiosity," I said, "when were you shot at in the line of duty?"

"On Maple, fool. Don't you remember?"

"Oh, that. But the shot was meant for me."

"A lot of difference that would have made to me if it killed me."

"And when were you last beaten up?"

"Nostral. When you were looking for the house."

I didn't pursue that. On that occasion, Ellen certainly ran into my arms as she had never done before or since, and had stayed in bed for days afterward alleging nervous exhaustion. The thing about Ellen is that if she was *nearly* beaten up, she would talk about it at every opportunity, with all the details of what did happen and what might have happened, but if she *was* beaten up, she would shut up like a clam.

I filed away the conclusion that she had probably had a tough time on Nostral, and I hadn't known about it before—it had happened two years ago—meant nothing. Not when you know the first thing about Ellen.

I came back to what I thought was safer ground: "A few years too old?"

"I'm twenty-five," Ellen remarked calmly.

It wasn't impossible, though that meant she was only eighteen when I first met her. Just unlikely. So I left it at that. It was unlike Ellen to give away even that much. Twenty years hence, I could say that according to her own figures she was now forty-five.

But this isn't the story of Ellen. Not directly, at any rate.

WE hardly saw Shirley when we were changing over to the *Sardonia*. Ellen's attitude was that she had seen Shirley through the first part, and it was my turn now. She might have to take over again just before we reached Lotrin and clear up the mess I had made, but meantime she was going to have a rest from Shirley Judson.

That's Ellen.

If anything was to be done about Shirley, I would have to do it. I waited until the ship was well clear of the Moon and then went to look for Shirley, whom we had only seen at mealtimes.

The *Sardonia* was nosing about, stopping and darting like a fish. Passengers weren't supposed to walk about at this stage. They were told to lie down or at least sit down. For the effect of the ship's motion was that, one moment, "down" was the floor, the next the left-hand wall, then the

wall in front, then the wall behind. Of course it was never a full gravity; if you liked to take a chance, you could drop lightly on your feet on floor, walls and ceiling. The beds all swiveled with the changes in equilibrium.

Apparently Shirley was taking her chance with the gravity, because she wasn't in her cabin.

There was no room for social life on the *Sardonia*. The only place that held a fair number of people was the dining room, and, as the ship carried four hundred people, the dining room was on shift duty twenty-four hours a day. So, if Shirley wasn't in her own room, she was in someone else's.

I considered the matter. Shirley had had a shock. Torn from the life she had grown used to in twenty-one years, she had set up Ellen as her model and guide. Ellen had allowed this until we were irrevocably on our way, then abdicated. What she had said was nothing; she could have won back Shirley's adoration any time she cared, but she hadn't bothered.

What would Shirley do? She would feel nothing mattered. Nobody cared. She might as well enjoy herself — show Ellen she didn't care, either. In the limited field offered by the *Sardonia*, there was only one thing she could do.

I considered some more. If Shirley was going to throw herself at some man's head, the likelihood was that it would be someone on the same meal shift, someone she had at least seen and talked to. I picked Glen Mavor. Mavor was a shy youngster going out to Civnet to settle. Civnet, right on the outposts of Terran settlement, wasn't near the First Lady stage yet.

I sought out Mavor. I tapped on his door, but walked right in. I was right. Shirley was there, lounging against a wall. Mavor was sitting on the bed. When I came in, the place was crowded.

"Hallo, Shirley," I said. "I thought you might be here."

THE SHIP made one of its sudden darts and Shirley and I somersaulted and landed on the ceiling, Shirley in a swirl of legs and skirt. She laughed. Mavor didn't have to move, because the bed kept its equilibrium.

I saw the situation. Shirley was unconcerned, happy in a reckless way. Mavor was interested, excited, but very nervous. He might not know the intracacies of the situation, but he knew he was going to a world which wouldn't see a woman for a long time, and that Shirley was ready and willing to offer consolation in advance.

This wasn't the Shirley Judson we had met in the garden. This

Shirley was more vital, and about twenty times as attractive, because now she was trying to be attractive.

Innocence is an attitude of mind, not mere absence of experience. Shirley now, arms behind her and head thrown back against the wall, was far from innocent. Nothing much had happened to her experience, but a lot to her attitude of mind. She had chosen a thin canary-yellow blouse for two obvious reasons, and her scarlet skirt hugged her waist and hips and then flared carelessly, its work done.

Shirley couldn't go around like that for long looking for trouble without finding it. Something had to be done.

"Mavor," I said quietly, "I'm going to tell you a secret."

Mavor, a good-looking young fellow, glanced at Shirley, but she only smiled and surveyed her ankles. He turned back to me.

"I don't know if I want to hear any secrets," he said.

"This one you hear all the same. And you keep it. It doesn't really matter now whether you keep it or not, but it would be more convenient if everyone on the ship didn't know it just yet. Shirley, you see, is the First Lady of Lotrin."

I knew I had been right to tell him when I saw his expression.

"I only mention it," I said casually, "because when people are playing with dynamite, they at least ought to know it's dynamite. Coming, Shirley?"

There was another upheaval. This time Shirley landed on top of Mavor, her arms round his neck. It might have been an accident, but it was no accident when she pulled his face to hers and kissed him. That wasn't for Mavor's benefit at all, but for mine.

She disentangled herself at her leisure and followed me. I took her to her own room.

"Why did you tell him that?" she asked. She didn't mind; she was just curious.

"To keep him out of your way," I said grimly. "He won't touch you with a grappling pole now. He's scared."

"Why?"

"You don't know much about TC, do you? It carries a lot of guns of different calibers. No one twists TC's tail for fun."

"You mean Terran Control would victimize Glen?"

"What for?"

IT was a good question. It upset even the new, more confident Shirley. "I mean if . . ."

"If what?" I demanded.

"Why shouldn't I have a good time while I can, before I get to my prison?"

"Nothing against having a good time. Unless the form it takes might have an adverse effect on the future."

"I don't care about the future. There may be no future."

We had reached her room. I passed it, pushed her inside and followed her in. We sat on the bed, where we could watch the gyrations of the walls with indifference.

"What's the ship doing?" she abruptly wanted to know.

"Looking for the rails," I told her. I didn't want to talk about the ship, but I was ready to play along with Shirley to a certain extent.

"The *rails?*"

"Sure. You know space travel is composed of two very different parts. Hoisting yourself free of a planet and then of a satellite of some kind, and then maneuvering about clumsily like this. The other part is as slick and wonderful as this is primitive and slow. At this rate, you'd take twenty thousand years to reach Aldebaran, let alone Lotrin."

"But it only takes a few weeks!"

"That's what I'm telling you," I said patiently. "It's slick and wonderful. There aren't really any rails, of course, but it's something like that. We're looking for a field that starts about here and stretches all the way to Aldebaran. A beam. The Catterick Field, they call it. We've passed through it several times already—why we keep nosing about like this is that we have to be fair and square in the middle of it, and it's pretty tight. Only a few miles across."

"The ship isn't a mile wide."

"No. But if there was the slightest error, how many million miles would be needed to show it up? Ever hear of inertia, Shirley?"

"That's laziness."

"You can put it that way. The laziness of matter. When it's still, matter can't be bothered to move, and it's a devil of a job to make it. And, when it's moving, it can't be bothered to make any effort to stop, and you have the same job all over again stopping it.

"Now the *Sardonia*'s engines generate enough power to take us to Lotrin in a few weeks without the Catterick Field—only the ship wouldn't go with the engines at that acceleration. It would disintegrate. And at a fraction of that speed, we'd all be crushed to pulp. Just now, no acceleration of more than ten feet a second is being put on."

FOR demonstration purposes, I caught her by the waist, raised her against about a third Earth gravity and pushed her

into the center of the room just as the ship shot one way and then another.

"And that can be quite hectic," I remarked, as Shirley bounced and somersaulted to the opposite wall.

She had dressed for this sort of thing, I observed, with canary lingerie which was meant to make an interesting flurry as her legs thrashed about. I caught her unceremoniously by the waistband and hauled her back on the bed beside me.

"Imagine what it would be like if the acceleration were ten *miles* a second," I went on. "Or a thousand miles. Or ten thousand."

"I can't," she said truthfully.

"Obviously, if you're going to travel hundreds of light-years at a time, you've got to do something about inertia. Suppose there were no inertia on Earth. That's impossible actually, because the field only operates in a vacuum. But if it wasn't, and gravity and air resistance remained the same, you could run at top speed from a standing start. If you wanted to turn and go back, you'd do it in one stride."

"Nonsense," said Shirley, "you would strain a muscle or something."

"No. That's inertia. If you're running at fifteen miles an hour and try to make your muscles stop you dead, certainly you'll tear something. But if there's no inertia, you could turn with one toe and be running the other way. Gravity and air resistance would not matter much. It's inertia you've got to counter."

Shirley was tired of the whole subject and showed it.

I went on grimly: "When we're firmly in the center of this field, which is maintained from the Moon, by the way, we'll start off with the Catterick Field energized. Then there won't be any gravity. No inertia. Only a trickle let through so that we can still walk about, not a millionth of the real force. The ship will be able to start and stop in a split second. It won't do more than a few hundred miles an hour at first, because we may still not be properly on the rails. When the captain's satisfied we are, we'll be off at the speed of light. Then bigger and bigger multiples of that till we reach Aldebaran. Then dead stop. We—"

"I'm going to have a shower," Shirley announced.

"You mean you want me to leave?"

"Stay if you like, as long as you don't go on gabbing about the Cat-whatever-it-is Field."

The shower was a minute cubicle in the opposite wall. There was no sink; if you wanted to wash, you had to take a whole shower.

I might have told Shirley that I had seen and read and done a lot more than she had, and that if she really wanted to shock or upset me, she would have to go much further than she was ready to do—go around shooting people, for instance, or tampering with the engines, or trying to climb out into space.

But that might give her ideas, and anyway she wanted me to protest. So I hoisted myself up and made for the door, knowing she didn't really want to be left alone, with Glen Mavor almost certainly crossed off from now on.

"See you later," I said.

SHIRLEY'S reckless phase fizzled out. Glen Mavor *was* crossed off and she wasn't really sorry. She was fundamentally level-headed. She started speaking to Ellen again instead of ignoring her when we ate. Ellen took her tentative advances as she had taken her resentment, calmly and without reference to the past. But the old adoration was gone. It was me Shirley addressed most of her attention to, not Ellen.

Time passes quickly when every day is the same, even more quickly when there is no day. We all slept about twelve hours out of twenty-four. Sustained exercise was almost impossible, and Ellen again had her usual worry about putting on weight. She did the usual thing about it—shut me out of the cabin and exercised grimly, deliberately, systematically. She wouldn't let anyone see her swinging her arms and pedaling on her back. Shirley was politely shown out, too, once or twice.

"She saw me doing that sort of thing often enough," Shirley objected once. "Is she made differently from other women, or what?"

This was a far cry from her earlier worship of Ellen, which I thought was not a bad thing.

"Oh, no," I said.

"She couldn't have knock knees or a pot belly or anything?"

"Nothing like that. She'll sunbathe in a swimsuit in the right surroundings, but only when she can be perfect. Ellen is the one perfect thing in a lot of imperfect worlds."

"Do *you* think she's perfect?"

"What I think doesn't count. I meant can you imagine seeing Ellen touching her toes and swinging over to try to do it backward? You may know she's doing it, but can you imagine *seeing* it?"

She couldn't.

Shirley and I were thus thrown in each other's company a lot. But we discovered a certain similarity in temperament with re-

gard to passing time together which Ellen would never have understood. We would lounge comfortably in Shirley's room reading or considering life or even dozing, without saying a word. We each had company, but we didn't have to talk.

And then Shirley finished that phase, too. I was reading a novel when she put her head between me and the book and kissed me.

It may sound like a confession, but that really did startle me. Because when she did that, a lot of other things slipped into place.

She had wanted to know, when we were just on our way, whether I loved Ellen. Whether we were married. She had quarreled with Ellen. She had let me stop an affair with Glen Mavor, and hadn't seemed to care. She had tried to upset me, put me off stroke. She became catty about Ellen. She spent nearly all her waking hours in my company.

JUST when my brain was about to take over once more, it was sent reeling again by the realization that Shirley wasn't any more ready for this clinch than I was.

That's what they mean when they talk about love as a little-understood though prevalent disease. I had no possible reason or excuse for falling for Shirley, I hadn't meant to do it, it had never occurred to me that I *could* do it. And here we were. With Shirley in my arms, I wasn't going to move or think, if I could help it, because, once the moment ended, I was going to have to face a lot of things I didn't want to face. Shirley probably felt exactly the same. So we clung and felt our hearts beating together and tried to stop time.

We succeeded no better than anyone ever has. I felt I was hurting Shirley and released my grip slightly. In turn, she took one arm from my neck and dropped it to my side. So, a little at a time, we broke it up.

We pretended it was just one of those things that happen when you don't actually take steps to prevent it, meaning little or nothing. We didn't talk about it at all, and went on acting exactly as before.

Except — perhaps I'm biased, but Shirley really seemed to become a hundred per cent prettier. I don't think that's bias, for Ellen remarked one day that she didn't know why she'd once said Shirley wasn't chosen for her looks, anyway. But it must have been bias that made me think Shirley was really quite intelligent and had good taste and could make a good TC agent.

Still Shirley and I never talked about Lotrin. Until the very last day when the bubble burst.

We were still untold light-years

from Lotrin, but only a few hours. We had not, of course, landed anywhere; we stopped several times and tenders came out to the *Sardonia,* but that affected us not at all except that there were different faces at mealtimes.

Someone once said that the poor have large families because, cooped up in a small space, they haven't much else to do. But Shirley and I, despite that one lapse, were so sure of ourselves that we spent nearly all our time together in a space no larger than a big cupboard. There was nothing of sex in our talk, and, though we couldn't avoid touching each other accidentally, there was never a hint of sensuality in the contact between Shirley and me.

THAT day, Shirley was reading and I was sitting on the floor wondering what assignment Ellen and I would be given next—still in the determined pretense that this was just a job which would be over and all but forgotten very soon. I wondered again why TC had given us the job of taking Shirley out to Lotrin. But that was a train of thought that led in a direction I didn't like, and I jerked my head as one does when in search of distraction—any distraction.

Shirley's red slipper caught my eye, which then drifted up her legs. Shirley had good legs, but

her skirt was tucked modestly under her and I couldn't even see to the knee. I was unreasonably irritated. Why did she have to pull her skirt about her like that? It was like shielding a letter from you as you passed, as if you were trying to read it. Uncalled for. I wasn't sitting on the floor so that I could see her legs. I hadn't even thought of her legs until I saw she was hiding them primly like a spinster.

I reached out and touched Shirley's ankle, but, at the touch, anything I'd had in mind went away abruptly. She threw aside her book and slid down into my arms.

We petted like teen-age lovers, just as nervous and excited. Suddenly Shirley threw herself back, eyes closed, waiting.

And it had exactly the opposite effect on me of what it was supposed to have.

"Look, Shirley," I said harshly. "This is an impossible situation."

She sat up, her back against the bed.

"Don't you know what a First Lady is?" I demanded. "She's a symbol. A goddess. A whole new world depends on her, loves her and would die for her. She's more of a sovereign than any queen in history."

"Lotrin can have another First Lady," said Shirley sharply. "I'm going to abdicate right away."

"You can't. Weeks ago, it was disclosed on Earth that the First Lady of Lotrin was Shirley Judson, who was on her way there. It hasn't anything like the importance to Earth that it has to Lotrin, but it's known. It can't be hushed up. Suppose you go back. Lotrin will hear the story eventually. Some other girl goes —a second-best, not the real First Lady, a substitute for a failure or a coward. What chance will she have? Suppose TC covers up and sends out another girl as Shirley Judson with some story to explain the delay. *She'll* know. She'd have to be the best actress in the Galaxy to keep up the pretense all the rest of her life."

"Why didn't you think of that before?"

"I knew it all along."

"Nobody can make me be a good First Lady. I can ruin Lotrin. I would."

"Ruin a world because you didn't get your own way? Because you went back on your word?"

WE were both being unfair, of course. We went around in circles for a while longer, blaming everything on each other, but not in hot anger—rather with a sort of hopeless knowledge that what I had said was true.

The TC colonization system is all built into a solid pyramid. At

the bottom are the real pioneers, the men who take a chance on death or glory, poverty or fabulous wealth. They go to a world and shape it into a place for men to live. As time goes by and they prosper, there are more and more of them. A hundred men, a thousand, a hundred thousand. But no women. Everybody knows that. It's accepted.

Every new world may be lifeblood or canker. If the canker ever has to be cut out, it must be possible to do it cleanly and completely. No women. The world settled, examined, explored, tested, tried out in every way. Early diseases and allergies and maladies conquered. Five hundred thousand men, a million.

And no women. TC controls all space travel, not only interstellar travel. No woman can possibly reach a virgin world.

Then the First Lady. The real beginning. Recognition. Reward. Promise. Hope.

That's one side.

The other side is that if the world turns out to be canker, the First Lady can easily be sterilized, along with the unfortunate child, if it happens to be female. That's the end. The world must die, for there are no more women. Everybody knows and accepts that, too.

It's a crazy structure of luck and fear and wild hope, but a solid structure. I could no more buck it than Shirley could. She was Lotrin's First Lady and there was no escape.

But Shirley and I weren't really considering the issues, only toying with them. When I saw that, I said: "Let's get Ellen in on this."

Shirley jumped. "Are you mad?"

When we had been pretending to ourselves and to each other that we had merely been carried away once by the heat of the moment, we had naturally pretended very hard to Ellen that not even that had ever happened.

"She's got to come into this," I said, "unless we can decide here and now that you and I are finished with each other."

I hoped Shirley would say we could. I was afraid she might say it. She said nothing.

So I said, "Stay here," and went for Ellen.

I DIDN'T even knock. Ellen's arms were above her head, swinging one way and then the other. She dropped her arms and looked at me in fury.

"It's important," I said. "Shirley and I need your help. Never mind making yourself smart. Just come."

I didn't tell her anything until we were wedged in Shirley's room. Then I told her that Shirl-

ey and I were in love. Ellen's frown cleared away as if by magic. This was interesting. It was a break in routine. It was a problem, a challenge.

But she couldn't help sighing and saying: "I knew something would happen when I stopped running the show. I didn't know it would be this. I don't know everything."

"You think you do," Shirley flashed.

Ellen turned a cold eye on her. "Is that attitude going to help?" she asked. "Aren't you just putting it on to show you've outgrown your childish crush on me?"

That was meant to make Shirley about two inches high. It failed because Shirley knew she was somebody. Merely being a First Lady was nothing, but now she had someone in love with her.

"I'm not ashamed that I once thought you were wonderful," she retorted. "You're a great actress. You can even act the part of a decent human being."

Ellen smiled. That smile showed Ellen's real talent. Come to think of it, Shirley was right. That's what Ellen is above all else—an actress—the kind I'd been talking about.

"That's not hard." she said quietly. "Honestly, Shirley, have you ever met anyone who wasn't basically a decent human being?"

Shirley hadn't. That was her good luck; it was like Ellen to play on it.

"Now let's get the position clear," Ellen went on. "Is it settled that Shirley isn't going to be Lotrin's First Lady, and what we're looking for is some way out of it?"

NOBODY spoke. "Well, let's make up our minds," Ellen insisted pleasantly, after a long pause. "Shirley, think about your mother."

"That's you all over!" Shirley burst out. "Any weapon—anything's fair to you! It's not safe for anyone to have feelings, because you'll twist them and use them against them—"

"All right, don't think about your mother. Count her out of it. You've already made up your mind that you'll probably never see her again, anyway."

There was another long silence. Then Shirley said: "Suppose I think about her. What am I supposed to think?"

"You were an ordinary girl, quite happy on Earth, content to stay there. Some TC men came along and talked to you, persuaded you to take a few tests, and then threw their bombshell. You could be important. You could rule a whole planet of men. Only it meant leaving Earth, leaving your mother, and the

answer had to be yes or no, not maybe."

"They made me go!"

"They would be persistent, I admit. First Ladies don't grow on trees. But did you really believe you couldn't say no?"

No answer.

"Well, you could be somebody," Ellen continued reflectively, "or you could give up the chance. You love your mother. You didn't want to leave her. You thought of giving it up. You didn't, as history will bear out, really care about space and progress and mankind and all the big things like that. People don't, though it makes a good story. The real question was, could you give up an opportunity like that?"

In case by any chance I haven't said so before—Ellen has personality. She had both of us hanging on her words. Me a little less than Shirley, of course, but still enough.

"You couldn't," said Ellen, "There were things you had to give up, a lot of things. Things I don't know about. Things no one but you will ever know about."

I saw what was coming. I had been long enough seeing it; but, then, I had been pretty unreasonable in a lot of ways lately.

"Never mind whether it's possible or not," said Ellen.

"The question's still the same. Are you going to give up the things you have to give up to be a First Lady? Or are you going to give up being a First Lady?"

"I'm not going to give up Joe," declared Shirley defiantly.

Ellen nodded as if that was perfectly reasonable. "All right. The question is, then, have you got Joe?" She looked at me.

I avoided her eye. "You won't understand this," I said, "but I have really fallen for Shirley."

"Oh, I understand that, all right. Do you see any future in it?"

"I've already told Shirley that I don't."

"I've tried to be fair to Shirley," Ellen said, "but I can be a lot tougher with you and still be fair. You know better."

I might have known that when I went to Ellen with a problem, she would throw it right back in my lap.

THE real difference between Shirley and me wasn't age or sex, but the fact that I knew TC. I wanted Shirley and I'd have moved Heaven and Earth for her. But I knew I couldn't move TC.

I had one last doomed try. "You talk about Shirley giving up a chance, Ellen. A chance to be a tragic queen? Suppose Lotrin won't support human life and let it stay human. Wouldn't she

be better off—if she—"

"Cut it out," retorted Ellen. She turned to Shirley. "Listen, Shirley, Joe's doing this because he's a fool. He can't help that. It's too late to do anything about Joe. But you're doing it because you're afraid. At the last moment, only a few hours from Lotrin, you suspect you can't face what may happen there."

"You admitted you couldn't either," said Shirley.

"I didn't say I could. You did, so leave me out of it. Knowing you're alone, you turned to Joe, who's a fool, and made your problem his. I'm a woman, too, remember—I know the technique. You were afraid and Joe was around and, after all, you were picked out for a whole world to fall in love with—not only Joe, who's a fool. I don't blame you. You did a good job, helped by the fact that I was too busy with something else to have any time for either of you. And it was left to Joe, who's a fool, to find a way out for both of you. Joe—"

"Who's a fool," I supplied.

Ellen made an impatient gesture. "Joe should have told you something. TC should have told you. But now I'll tell you.

"Shirley, TC has the best brains of all humanity. Not running things, but finding out facts. The best scientific brains.

"Listen, Shirley, this is important. In a sense, nearly every First Lady is a sham. Yes, you're meant to go to Lotrin and have a baby, and doctors and scientists and psychologists will very honestly and thoroughly test it for any deviation from the human norm. But do you really think TC needs that?"

This, as they say, was the payoff. At the back of my mind, I had known when I went for Ellen that she would tell Shirley at least some of the truth. But I had hoped that the thing could be worked out some other way.

Ellen didn't need to play for effect now. Shirley was rigid with attention.

Ellen shook her head. "No, Shirley, the people who examine the world before it's colonized may not be sure what it will do to men, but after a few thousand have lived on a world for a year, and a hundred thousand or so for years, and a million are finally settled there, the scientists know a lot more about the place and its effect on human physical structure than any single experiment can tell them. You know a First Lady is a symbol. Well, that also applies to the test. The first birth.

"TC knows already what it's going to show. TC always knows. But, so long as people are unreasonable and superstitious and unscientific and emotionally immature, this symbolic test will

be needed. The proof that a world is safe or unsafe.

"But it isn't proof to TC. It's confirmation of more than a ninety per cent probability, which is reasonable certainty in your language and mine. You can see that, can't you? Doesn't it make sense?"

"Yes," Shirley grudgingly admitted.

"And you want to know about Lotrin. Well, even you couldn't be told. And, now that I'm telling you, listen and keep it to yourself. The whole TC system is built on the First Ladies. Don't even tell Bill, or whatever his name turns out to be. He doesn't know. Nobody knows but TC.

"You were never in any danger, Shirley. Lotrin is safe. Your child will be like any other woman's child on any human world. I tell you TC *knows*. Now are you going to cling to Joe?"

I actually landed with Shirley. Ellen couldn't because the First Lady regulations were inflexible. No woman could even visit a world like Lotrin for as much as five minutes, except the First Lady.

I saw what Shirley's arrival did to the place. Alextown was the main population center of Lotrin, and literally every inhabitant was there to welcome her. I can't describe the scene — you would think I was mad.

Have you ever seen or heard what a flag or a cross or just a sign can do to people living in the valley between life and death?

Well, imagine the symbol isn't a flag or a cross or just a sign, but a living, breathing, beautiful girl in a world which no woman has ever trod.

And still you won't be within light-years of the reality.

When I said good-by to her, she had to make an obvious effort to bring her attention back to me. It wasn't that her thinking herself in love with me had been as light and casual and false as all that. I was already just an episode in an entirely irrelevant past, and it didn't matter in the least how important an episode I had been.

Ellen was waiting when I got back to the *Sardonia* — waiting, apparently, to look into my eyes.

"I don't know how I got through it," I said dully.

"I don't know, either," Ellen confessed with that incredible sympathy of hers which had won Shirley twice. "Let me say it first, Joe. This is the last time we ever do anything like this."

"It's the last time for everyone. That's why we got the job, because no one will ever do it twice. And there can only be a few human beings in any generation foul enough to do it once."

All of what Ellen had told

Shirley was true except the end.

TC naturally did know what was going to happen before the First Lady went out. Not long before—not until the world was pretty fully colonized and there was a lot of data to work on. We knew before we saw Shirley. We hadn't like the job, but we agreed it was necessary. Lotrin still had to have a First Lady. Colonists who had worked and sweated and slaved to build a new world wouldn't believe a test tube. They wouldn't listen calmly when they were told there could be no more colonists and their world was condemned without the real test.

But they would believe their own eyes when they saw Shirley's child. Ellen had told it the wrong way around.

SHIRLEY had believed I had fallen in love with her because a woman is always ready to believe that of any man. She couldn't guess that the real reason was that I couldn't go on spending so much time with her and getting to know her without being so damn sorry for her that—

No, Ellen was no worse than me. She told the lie, but I acted it.

"It isn't ninety per cent, of course," Ellen reminded me. "Only about seventy-five. There is a chance . . ."

I nearly demanded, "Would you take it?" But I didn't. She would. Yes, Ellen would take one chance in four, for a world. It had been another lie when she told Shirley she wouldn't — a devious lie to rid Ellen of Shirley's affection before Ellen had to return it.

So it wasn't too bad really, I tried to convince myself. Ellen would do it. Ellen, my wife.

I also tried to interest myself again in the fact that Ellen was one of the most beautiful women ever born. That was why people loved her against all reason, I told myself. I didn't often admit it, but Ellen was . . .

When I looked at Ellen, though, gazing silently at me, all I could see was Shirley's face.

—J. T. M'INTOSH

What chance can you possibly have of whipping an enemy who insists on joining your side?

We Don't Want Any Trouble

By JAMES H. SCHMITZ

Illustrated by EMSH

"WELL, that wasn't a very long interview, was it?" asked the professor's wife. She'd discovered the professor looking out of the living room window when she'd come home from shopping just now. "I wasn't counting on having dinner before nine," she said, setting her bundles down on the couch. "I'll get at it right away."

"No hurry about dinner," the

professor replied without turning his head. "I didn't expect we'd be through there before eight myself."

He had clasped his hands on his back and was swaying slowly, backward and forward on his feet, staring out at the street. It was a favorite pose of his, and she never had discovered whether it indicated deep thought or just daydreaming. At the moment, she suspected uncomfortably it was very deep thought, indeed. She took off her hat.

"I suppose you could call it an interview," she said uneasily. "I mean you actually talked with it, didn't you?"

"Oh, yes, we talked with it," he nodded. "Some of the others did, anyway."

"Imagine *talking* with something like that! It really *is* from another world, Clive?" She laughed uneasily, watching the back of his head with frightened eyes. "But, of course, you can't violate the security rules, can you? You can't tell me anything about it at all . . ."

HE shrugged, turning around. "There'll be a newscast at six o'clock. In ten minutes. Wherever there's a radio or television set on Earth, everybody will hear what we found out in that interview. Perhaps not quite everything, but almost everything."

"Oh?" she said in a surprised, small voice. She looked at him in silence for a moment, her eyes growing more frightened. "Why would they do a thing like that?"

"Well," said the professor, "it seemed like the right thing to do. The best thing, at any rate. There may be some panic, of course." He turned back to the window and gazed out on the street, as if something there were holding his attention. He looked thoughtful and abstracted, she decided. But then a better word came to her, and it was "resigned."

"Clive," she said, almost desperately, "what happened?"

He frowned absently at her and walked to the radio. It began to make faint, humming noises as the professor adjusted dials unhurriedly. The humming didn't vary much.

"They've cleared the networks, I imagine," he remarked.

The sentence went on repeating itself in his wife's mind, with no particular significance at first. But then a meaning came into it and grew and swelled swiftly, until she felt her head would burst with it. They've cleared the networks. All over the world this evening, they've cleared the networks. Until the newscast comes on at six o'clock . . .

"As to what happened," she heard her husband's voice saying, "that's a little difficult to under-

stand or explain. Even now. It was certainly amazing—" He interrupted himself. "Do you remember Milt Caldwell, dear?"

"Milt Caldwell?" She searched her mind blankly. "No," she said, shaking her head.

"A rather well-known anthropologist," the professor informed her, with an air of faint reproach. "Milt got himself lost in the approximate center of the Australian deserts some two years ago. Only we have been told he didn't get lost. They picked him up—"

"*They?*" she said. "You mean there's more than one?"

"Well, there would be more than one, wouldn't there?" he asked reasonably. "That explains, at any rate, how they learned to speak English. It made it seem a little more reasonable, anyhow," he added, "when it told us that. Seven minutes to six . . ."

"What?" she said faintly.

"Seven minutes to six," the professor repeated. "Sit down, dear. I believe I can tell you, in seven minutes, approximately what occurred . . ."

THE Visitor from Outside sat in its cage, its large gray hands slackly clasping the bars. Its attitudes and motions, the professor had noted in the two minutes since he had entered the room with the other men, approximated those of a rather heavily built ape. Reporters had called it "the Toad from Mars," on the basis of the first descriptions they'd had of it—the flabby shape and loose, warty skin made that a vaguely adequate identification. The round, horny head almost could have been that of a lizard.

With a zoologist's fascination in a completely new genus, the professor catalogued these contradicting physical details in his mind. Yet something somewhat like this might have been evolved on Earth, if Earth had chosen to let the big amphibians of its Carboniferous Period go on evolving.

That this creature used human speech was the only almost-impossible feature.

It had spoken as they came in. "What do you wish to know?" it asked. The horny, toothed jaws moved, and a broad yellow tongue became momentarily visible, forming the words. It was a throaty, deliberate "human" voice.

For a period of several seconds, the human beings seemed to be shocked into silence by it, though they had known the creature had this ability. Hesitantly, then the questioning began.

The professor remained near the back of the room, watching. For a while, the questions and replies he heard seemed to carry no meaning to him. Abruptly he realized that his thoughts were

fogged over with a heavy, cold, physical dread of this alien animal. He told himself that under such circumstances fear was not an entirely irrational emotion, and his understanding of it seemed to lighten its effects a little.

But the scene remained unreal to him, like a badly lit stage on which the creature in its glittering steel cage stood out in sharp focus, while the humans were shadow-shapes stirring restlessly against a darkened background.

"This won't do!" he addressed himself, almost querulously, through the fear. "I'm here to observe, to conclude, to report—I was selected as a man they could trust to think and act rationally!"

He turned his attention deliberately away from the cage and what it contained, and directed it on the other human beings, to most of whom he had been introduced only a few minutes before. A young, alert-looking Intelligence major who was in some way in charge of this investigation; a sleepy-eyed general; a very pretty Wac captain acting as stenographer, whom the major had introduced as his fiancee. The handful of other scientists looked for the most part like brisk business executives, while the two Important Personages representing the Government looked like elderly professors.

He almost smiled. They were real enough. This was a human world. He returned his attention again to the solitary intruder in it.

"WHY shouldn't I object?" the impossible voice was saying with a note of lazy good-humor. "You've caged me like—a wild animal! And you haven't even informed me of the nature of the charges against me. Trespassing, perhaps—eh?"

The wide mouth seemed to grin as the thing turned its head, looking them over one by one with bright black eyes. The grin was meaningless; it was the way the lipless jaws set when the mouth was closed. But it gave expression to the pleased malice the professor sensed in the voice and words.

The voice simply did not go with that squat animal shape.

Fear surged up in him again. He found himself shaking.

If it looks at me now, he realized in sudden panic, I might start to scream!

One of the men nearest the cage was saying something in low, even tones. The Wac captain flipped over a page of her shorthand pad and went on writing, her blonde head tilted to one side. She was a little pale, but intent on her work. He had a moment of bitter envy for their

courage and self-control. But they're insensitive, he tried to tell himself; they don't know Nature and the laws of Nature. They can't feel as I do how *wrong* all this is!

Then the black eyes swung around and looked at him.

Instantly, his mind stretched taut with blank, wordless terror. He did not move, but afterward he knew he did not faint only because he would have looked ridiculous before the others, and particularly in the presence of a young woman. He heard the young Intelligence officer speaking sharply; the eyes left him unhurriedly, and it was all over.

"YOU indicate," the creature's voice was addressing the major, "that you can force me to reveal matters I do not choose to reveal at this time. However, you are mistaken. For one thing, a body of this type does not react to any of your drugs."

"It will react to pain!" the major said, his voice thin and angry.

Amazed by the words, the professor realized for the first time that he was not the only one in whom this being's presence had aroused primitive, irrational fears. The other men had stirred restlessly at the major's threat, but they made no protest.

The thing remained silent for a moment, looking at the major.

"This body will react to pain," it said then, "only when I choose to let it feel pain. Some you here know the effectiveness of hypnotic blocks against pain. My methods are not those of hypnosis, but they are considerably more effective. I repeat, then, that for me there is no pain, unless I choose to experience it."

"Do you choose to experience the destruction of your body's tissues?" the major inquired, a little shrilly.

The Wac captain looked up at him quickly from the chair where she sat, but the professor could not see her expression. Nobody else moved.

The thing, still staring at the major, almost shrugged.

"And do you choose to experience death?" the major cried, his face flushed with excitement.

In a flash of insight, the professor understood why no one was interfering. Each in his own way, they had felt what he was feeling: that here was something so outrageously strange and new that no amount of experience, no rank, could guide a human being in determining how to deal with it. The major was dealing with it—in however awkward a fashion. With no other solution to offer, they were, for the moment, unable or unwilling to stop him.

The thing then said slowly and flatly, "Death is an experience I

shall never have at your hands. That is a warning. I shall respond to no more of your threats. I shall answer no more questions.

"Instead, I shall tell you what will occur now. I shall inform my companions that you are as we judged you to be—foolish, limited, incapable of harming the least of us. Your world and civilization are of very moderate interest. But they are a novelty which many will wish to view for themselves. We shall come here and leave here, as we please. If you attempt to interfere again with any of us, it will be to your own regret."

"Will it?" the major shouted, shaking. "Will it now?"

The professor jerked violently at the quick successive reports of a gun in the young officer's hand. Then there was a struggling knot of figures around the major, and another man's voice was shouting hoarsely, "You fool! You damned hysterical fool!"

The Wac captain had dropped her notebook and clasped her hands to her face. For an instant, the professor heard her crying, "Jack! Jack! Stop—don't—"

But he was looking at the thing that had fallen on its back in the cage, with the top of its skull shot away and a dark-brown liquid staining the cage floor about its shoulders.

What he felt was an irrational satisfaction, a warm glow of pride in the major's action. It was as if he had killed the thing himself.

For that moment, he was happy.

BECAUSE he stood far back in the room, he saw what happened then before the others did.

One of the Personages and two of the scientists were moving excitedly about the cage, staring down at the thing. The others had grouped around the chair into which they had forced the major. Under the babble of confused, angry voices, he could sense the undercurrent of almost joyful relief he felt himself.

The Wac captain stood up and began to take off her clothes.

She did it quickly and quietly. It was at this moment, the professor thought, staring at her in renewed terror, that the height of insanity appeared to have been achieved in this room. He wished fervently that he could keep that sense of insanity wrapped around him forevermore, like a protective cloak. It was a terrible thing to be rational! With oddly detached curiosity, he also wondered what would happen in a few seconds when the others discovered what he already knew.

The babbling voices of the group that had overpowered the major went suddenly still. The

three men at the cage turned startled faces toward the stillness. The girl straightened up and stood smiling at them.

The major began screaming her name.

There was another brief struggling confusion about the chair in which they were holding him. The screaming grew muffled as if somebody had clapped a hand over his mouth.

"I warned you," the professor heard the girl say clearly, "that there was no death. Not for us."

Somebody shouted something at her, like a despairing question. Rigid with fear, his own blood a swirling roar in his ears, the professor did not understand the words. But he understood her reply.

"It could have been any of you, of course," she nodded. "But I just happened to like *this* body."

After that, there was one more shot.

THE professor turned off the radio. For a time, he continued to gaze out the window.

"Well, they know it now!" he said. "The world knows it now. Whether they believe it or not—At any rate . . ." His voice trailed off. The living room had darkened and he had a notion to switch on the lights, but decided against it. The evening gloom provided an illusion of security.

He looked down at the pale oval of his wife's face, almost featureless in the shadows.

"It won't be too bad," he explained, "if not too many of them come. Of course, we don't know how many there are of them, actually. Billions, perhaps. But if none of our people try to make trouble—the aliens simply don't want any trouble."

He paused a moment. The death of the young Intelligence major had not been mentioned in the broadcast. Considering the issues involved, it was not, of course, a very important event and officially would be recorded as a suicide. In actual fact, the major had succeeded in wresting a gun from one of the men holding him. Another man had shot him promptly without waiting to see what he intended to do with it.

At all costs now, every rational human being must try to prevent trouble with the Visitors from Outside.

He felt his face twitch suddenly into an uncontrollable grimace of horror.

"But there's no way of being absolutely sure, of course," he heard his voice tell the silently gathering night about him, "that they won't decide they just happen to like *our* kind of bodies."

—JAMES H. SCHMITZ

GALAXY'S 5 Star Shelf

STAR SCIENCE FICTION, edited by Frederik Phol. Ballantine Books, Inc., New York, 1953. 216 *pages,* 35¢ *paper,* $1.50 *cloth*

HERE, friends, is science fiction's World of Tomorrow in publishing: an original 35-cent paper-backed anthology of 15 first-rate short stories never before published in any form, magazine or book! True, it's not "reading tapes," such as we old s.f. fans have been promised in the W. of T., but it's the next best thing.

Ballantine Books can be congratulated on selecting an editor who knows good science fiction, too. Mr. Pohl has chosen well, even though, for my taste, the opener by William Morrison is a bit on the ghastly side, despite a fresh idea and good handling.

On the other hand, we have Henry Kuttner and C. L. Moore (husband and wife) with a magnificent farce-fantasy on psychoanalysis; and we also have A-class stories by Leinster, Clarke, Kornbluth, del Rey, Leiber (with a bit about "Slickie Millane" that should make a Certain Novelist want to sue for ego-damages!), Simak, John Wyndham, Tenn., H. L. Gold (what a sock end-

ing!) Bradbury (exquisite tale!), and Asimov. (He's going fantasy, too!) . . .

Only a couple of items fell flat on my ear, besides the Morrison. Judith Merril's seemed in need of cutting, I thought, and Robert Sheckley's Mars was a bit too much like Bradbury's Mars.

All in all, though, a magnificent collection. If your newsdealer doesn't have it, make him get it for you.

IN THE NAME OF SCIENCE by Martin Gardner, G. P. Putnam's Sons, New York, 1952. 320 *pages,* $4.00

ASK the average man in the street what he thinks about science fiction and he probably will say, "Oh, you mean flying saucers and all that?" Completely unfair for serious writers and appreciative readers of good science fiction!

Willy Ley, both in his column in *Galaxy* and elsewhere, is always attacking this false concept, and now Martin Gardner has written a fascinating, documented study of phony science from Wilbur Glenn Voliva, the flat-Earth man, to the spiritualists who take off where Dr. Joseph Rhine stops in his study of parapsychological phenomena.

In between, Gardner covers every important crank and fraud in modern times, and does so with a care for accuracy, a thoroughness of research, and an open-mindedness that make the book essential reading.

There are chapters on everything from Velikovsky to Reich's orgone boxes, from Forteanism to Lysenkoism, from Babson on gravity to Father Callahan on Einstein ("There is no use expecting Einstein to reason"), from dowsing to dianetics, and from Korzybski to Joseph Rhine, who Gardner feels may have something, but not as much as his supporters claim for him.

Nothing important has been omitted, as far as I know. It's a rich gallery of cracks and quacks, visionaries, psychotics and charlatans, full of answers to those who may have fallen for one or another of their lines of gab.

Just about the most stimulating science book of the year.

THE PETRIFIED PLANET by Fletcher Pratt, H. Beam Piper and Judith Merril. Introduction by John D. Clark. Twayne Publishers, Inc., New York, 1952. 263 *pages,* $2.95

THE best part of this "idea" book is Dr. Clark's very circumstantial description of a planet with a silicone life form ("Uller") and another with a fluorine atmosphere ("Niflheim").

The three novelets written about these planets are readable, even though not in science fiction's upper class.

Fletcher Pratt's "The Long View" is the best, with some good imagination, a certain sophistication, and a clear understanding of the possible varieties of tomorrow's sociologies, the complexities of interstellar governments, and the eternal unpredictabilities of people in love.

Judith Merril's "Daughters of Earth" is a bit too feminist for my taste, and mushy and in need of cutting, but appealing nevertheless.

Piper's novel-length "Uller Uprising" is just a huge dithyramb in praise of war, the necessity of war and the strategy and tactics of war. It assumes that tomorrow's Terran civilization is controlled by the descendants of Nazi generals, French collaborationists and the like, who lived safe in Latin America and elsewhere while World War Three decimated the rest of the world. Like any history of battle written without understanding or warmth, it bores and repels.

Not a terribly inspiring book, on the whole.

IT looks as if it has been decided that the next war will eliminate most if not all of the U.S.A., Russia and Europe.

As noted below, Sprague de Camp makes Brazil the center of his new era. Piper, in his novelet in *The Petrified Planet* (above), believes that South America, Africa and Australia will be the scenes of future greatness. In John MacDonald's new one, India is the "new colossus," the rich and arrogant "U.S.A. of tomorrow," with the original U.S.A. nothing but a rundown tourist trap.

Pessimism or prophecy? Who knows?

Ballroom is an exciting and effective alien invasion novel, a bit reminiscent of Eric Russell's *Sinister Barrier*. The problem: why is Earth always warring? Why do the "good people" never take control? The answer, when it comes, is both silly and defeatist; but in the process of getting there, MacDonald unreels an enthralling tale, full of parapsychological gadgetry and wonderful supermen from another galaxy in our midst, etc.

Worthwhile, despite the unsatisfactory ending.

BALLROOM OF THE SKIES
by John D. MacDonald. Greenberg, Publisher, New York, 1953.
206 *Pages,* $2.75

THE CONTINENT MAKERS
by L. Sprague de Camp. Twayne Publishers, Inc., New York, 1953.
272 *pages,* $2.95

"AS a result of the Third World War," says de Camp, "the United States was reduced to a second-class power and the U.S.S.R. ceased to be a power at all. World Leadership was taken over by fast-growing Brazil." The "Viagens Interplanetarias" is the "government-owned space transport system" that performed the "early spatial exploration."

And that's all there is of solemn import in this otherwise cream-puff-light book of space opera. The eight tales deal mostly with the efforts of Terrans to make money off the "savages" of distant plants, and the way these savages often get back their own with interest.

Fine stuff for bedtime, but I do feel that the stories were written with the left hind paw of an immensely brilliant fellow who just wasn't trying hard. Perhaps we should call it "relentlessly light reading!"

OUR WORLD FROM THE AIR by E. A. Gutkind. Doubleday & Co., Inc., 1952. 400 *photographic plates*, $7.50. (*unpaged*)

THIS masterwork of "aviation geography" is one of the most intellectually exciting photograph books ever published. A British reviewer referred to it as "a new kind of book . . . like something out of a fairy story." What he really meant was "like something out of science fiction," which is just what it *is* like.

Maps, geographies of the standard types, even on-the-ground photographs—none can make us feel what the Earth is really like.

The air view is the only thing that does it—and it does it with often devastating results. Compare, in this book, the air photo of Pompeii and that of New York. The parallels are odd and uncomfortable. The photos of Krakatoa and the Arizona meteor crater are more typically science fictional, but actually they are not half as revealing of Man's patterns of error, his persistence in repeating old mistakes.

With this book, the phrase "bird's-eye view" at last takes on meaning. And the view is amazingly evocative. Don't miss it!

FUTURE TENSE, edited by Kendell Foster Crossen. Greenberg, Publishers, New York, 1952. 364 *pages*, $3.50

WITH 7 reprints and 7 original stories, 14 in all—or 25¢ per story—plus a pseudo-philosophical introduction by the editor, this could hardly be called a bargain.

Of the reprints, the tales by Phillips, Boucher and deFord are B or better. Of the originals, those by Heard, Martin Gardner (de-

lightful!), Rose Elliott, Blish, and John MacDonald are ditto—in all, 8 out of 14. The other 6 vary from routine to awful.

SPACE SERVICE, edited by Andre Norton. World Publishing Co., New York, 1953. 277 *pages,* $2.50

HERE are ten average-quality space opera for adventure-minded kids, at a quarter per opera. H. B. Fyfe has two tales, including his fine "Star Linked," and Bernard Kahn two, both infantile. Cogswell's effective "Specter General" is there, and so is Kornbluth's Machiavellian "That Share of Glory." Items by Gordon Dickson, Walt Sheldon, J. A. Winter, M.D., and Raymond Z. Gallun complete the slender roster.

WORLDS OF TOMORROW, edited by August Derleth. Pellegrini and Cudahy, New York, 1953. 351 *pages,* $3.95

NINETEEN tales at about 20¢ each in this, Derleth's 12th anthology. The best way to take the book is at the editor's own valuation as "off-trail science fiction." The liberal sprinkling of the weird, the supernatural and the impossible justifies the odd label.

Like all of Derleth's collections, this one is almost unbelievably uneven. There are top-level items by Theodore Sturgeon (from *Weird Tales!*) William Tenn, Ray Bradbury, Margaret St. Clair, and Arthur C. Clarke (who has two stories, one of which appeared before in another anthology), ordinary ones by Fritz Leiber, Lewis Padgett, and Mack Reynolds, and a clutch of others I can't even arouse enough energy to try to grade.

—GROFF CONKLIN

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Most love stories are about people. But not this story.

By RICHARD WILSON

THEY had made the two robots, and then stopped. The war had come along and they'd had to convert Electronicorp to the new economy. Malley, the chief scientist, tried to interest the government in the robots. He had a meeting with Boardman of the CIA and said they might be useful as spies, saboteurs or fifth columnists but Boardman said no; men still were best for that sort of thing. He'd bet on a trained agent's ingenuity over a robot's wiring any day. Besides, he said, a robot was expected to serve man. Wouldn't it be too much to ask it to make the fine distinction between a man it was expected to serve and a man it was expected to destroy?

Malley was rather glad the robots had been turned down. They were the first the plant had ever

Illustrated by CONNELL

made in human form and he was rather fond of them. They were the first of their kind in the world, as far as he knew. Experimental models X-1 and X-2 was the way the records showed them. One masculoid and one feminoid. Alpha and Beta, one of the men in the lab named them, and, of course, they came to be known as Al and Betty.

They were pretty gorgeous-looking creations, these robots. For one thing, they were physically perfect. Artists and anatomists had been among the consultants in their production. The two sets of experts finally had been persuaded to compromise on two life-size statues, which became the pilot models.

The technicians had to use all their ingenuity to get their miles of wires and gadgets inside a casing the size of a human body.

"Give this guy one more inch around the waist," one of them said, "and we'll have no problem. Otherwise we're going to have to detour this circuit by way of his left instep." But the waistline remained trim and a way was found.

Betty, the female, was less of a problem. Her generously rounded dimensions—here the anatomist had conceded more than the artist—provided ample room for the stowing away of her intricate mechanisms.

AT last they were finished. The last weld had been covered with plastic skin and the last hair had been needled into its proper place.

The technicians had a party in the lab that night. There was liquor and Gordon, one of the younger men, had too much of it. He became maudlin about Betty. He sat on the edge of the pedestal where she stood, nude and deactivated, and he stroked her leg gently. All of them knew how he felt; each of them also loved Betty in a special way. She was a combination of a daughter they had helped bring into the world, and the ideal woman, perfect and unattainable.

Gordon was led away, sobbing, "I can't help it; I love her."

And when they said, "Yes, but you mustn't let it affect you," he said, "No other girl will be good enough now."

"But she's *not* a girl," they said, "and you mustn't think of her in that way."

"I don't care, I don't care," he sobbed, "I love her, don't you understand?"

Al, the masculoid, had a less obvious effect. A few of the technicians were women. They were pretty worldly gals, tough-talking and not usually susceptible, but it was noticeable that the male robot received only swift, indirect glances from them, as if they were

afraid he would catch them in a spell if they looked at him directly.

The next day Electronicorp chastely dressed Al and Betty in evening clothes and held a reception to which the board of directors and their wives and other business leaders and their wives were invited. The reason for the gathering was kept a secret while the guests chatted in groups in the lounge. Malley went from group to group and solemnly introduced "Mr. Alpha, one of our consulting engineers, and his wife, Betty."

The masquerade went off perfectly. The robots sipped cocktails, exchanged small talk and charmed the guests with their grace and modesty.

Even when the after-dinner speaker introduced them later as robots, many of the guests refused to believe they were not human. The demonstration that followed divided them still more firmly into two camps—those who believed, and marveled at the built-in perfection of the humanoids, and those who were amused by the thought that Electronicorp had brought in two skilled entertainers, graduates, perhaps, of the school of pseudomechanical people once hired as traffic-stoppers for department store windows.

There was a slight stiffness about Al and Betty that lent weight to this belief. It was barely noticeable, and Malley was sure it could be worked out in later models—if not in X-3 and X-4, then certainly in X-5 and X-6.

THE demonstration was both amusing and touching, the guests thought. The robots' social graces had been proved during cocktails. Now, seated on the speakers' dais, they were tested by a series of contrived little accidents, such as the dropping of an ice cube down the front of Betty's gown by the master of ceremonies. She shrieked and Al stood up threateningly. He made a fist and might have gone even further except for Malley's quick explanation.

The m.c. looked genuinely scared. When Al sat down again he seemed to do it with bad grace, as if he knew he was a robot and didn't like the restrictions this imposed on him.

That was the last public appearance of X-1 and X-2. The war took a turn for the worse, there at the start, and Electronicorp had no time for sidelines.

Malley sent back the rented evening clothes and put the robots away at the back end of a basement storeroom at the plant. He deactivated them, of course, and he could have just slung them in a corner. But he did a peculiar thing. He had twin beds

taken in and made up with sheets and blankets, and he personally tucked each robot away before he locked up the storeroom and left them.

It wasn't a long war, as wars had been going. But it was intense and Electronicorp was kept humming around the clock. The personnel gradually forgot about the robots, or moved on to other war jobs. Malley was so busy consulting with people in Washington, Detroit, Ottawa and sometimes Mexico City that he had no time to look in on the robots.

And so, a year later they still were there, stiff in their beds in the gloomy storeroom, gathering dust with the rest of the forgotten equipment.

Even young Gordon, the technician who had professed his love for Betty, seemed to have forgotten them. He'd found a real girl.

But one day Gordon came to work surrounded by the fragrance of alcohol. He had the bottle with him and he referred to it from time to time as he told anyone who would listen how his girl had thrown him over.

"She gave me the big goodby and went off with one of those uniformed yoyos from the Technicorps," he said, sniffling a little. "It's fantastic. In fact, it's revolting. Enough to drive a man to drink. Here, have one—I've got more—enough for everyone."

And so Gordon drank at his bench and naturally no one expected him to do any work that day, war or no war. When he disappeared, no one thought very much about it.

THIS is what happened then, as Malley was able to piece it together later:

Gordon went down to the basement, maybe half-remembering his old infatuation for Betty, and found the storeroom. It was locked, of course, but he made short work of the combination—a simple, presonic one—and the door swung open.

It was a gloomy, windowless place. The only light, from a medium-intensity Everglo in the ceiling, cast stark shadows from the haphazard piles of crates and outmoded machine parts.

Gordon let the door slip closed behind him. He saw the beds in the far corner, dimly. He shivered a bit and took a quick drink. He wiped his mouth on his sleeve, hesitated, took another drink, and went over to them.

The robots were lying absolutely still, on their backs, the eyes closed, the covers drawn up to the chin. The beds were about three feet apart. There was a film of gray dust over everything.

Gordon knelt between the beds, his back to Al, and stared at

Betty's perfect face. He took out his handkerchief and tenderly flicked away the dust. He stroked her hair, gently.

She was like a giant doll.

Then he bent down and his warm lips touched hers. Her lips were cold, and hard. Gordon drew himself back, feeling self-conscious and a bit stupid. He realized that somewhere in his mind had been the story of Sleeping Beauty. But he, drunk and a little crazy, was hardly Prince Charming.

He glanced quickly around. Al was just lying there, under his film of dust. What else would he be doing?

Gordon took another drink. It was absolutely still in the big room and the gurgle of liquor made an indecent sound. The cap clanked as he screwed it back on the bottle. Gordon sat back on the dusty floor and slapped his pockets. No cigarettes. Damn.

Now what? Leave quietly? Best thing, of course. Sensible thought. But who's sensible? He laughed, and the sound echoed around the room. That scared him and he had to have another drink.

HE was careful this time; there was almost no gurgle and absolutely no *clank*. Just the tiniest *clink*. He chuckled softly. Good man.

He kicked the leg of the male robot's bed. The bed was on wheels and it spun around and away so that the headboard hid Al from his sight.

"Okay," Gordon said aloud. The sound of his voice didn't frighten him now. He said it again. "Okay!"

He got to his feet.

"We'll activate you, Beauty," he said. "That's what I came down here for, I guess. Little nodule. Base of the skull. Under the hair. No secrets from ol' Gordie."

He knelt again at the side of the bed. He reached under her hair. The neck was cold in his palm. His fingers found the little bump. He pressed it, breathing heavily as he watched her closed eyes.

Nothing happened.

He waited a moment, tried again.

Still nothing.

"Damn that Malley. Changed the combination, that's what he did."

Gordon knelt there, cursing Malley. But then he bent down over the robot's face and again kissed the cold lips. As he leaned back, the eyes opened.

There was no expression in them, yet.

"Good hunch, eh?" he said. "That Malley's a clever lad with his fairy-tale mind. Beds for robots! So what's more natural—if that's the word for it—than a

caress *plus* a kiss?"

The robot's eyes blinked and the head turned so she was looking at him.

"Only in this case the kiss is just carbon dioxide—an exhale. Good old carbon, the basis of life. Like priming a pump." He laughed. "But I'll bet Malley planned to do it antiseptically—with an atomizer, maybe."

The robot began to breathe, almost imperceptibly at first, then more strongly. Her breath smelled slightly of lubricating oil as her various mechanisms began to operate. In the stillness of the big room Gordon could hear them rumble into action.

The eyes came alive. They focused on his and a puzzled frown came to her forehead.

"HELLO, Betty," he said. "You're awake now, aren't you? Wide awake. Now we can have some fun."

She sat up in alarm. The bedclothes fell away from her naked body.

His eyes shifted and he said, "Boy, what a mechanism!"

"Who are you?" Her speech came haltingly.

"Me? I'm one of the guys that built you, that's who."

"I don't know you."

"Well, I know you, baby, believe me. I know who you are and what you are. You're a robot and I'm your master. Your function is to serve man, as you realize, of course, and—well, I'm a man."

"No!" The exclamation came sharply.

He laughed humorlessly. "Robots don't disobey. I say yes. Come here!"

He grabbed her by the shoulder but she broke away from him and scrambled out of the bed, clutching the sheet around her. She stood there, trembling, her eyes darting around the gloomy cavern of a room.

"Al!" she cried.

Gordon got drunkenly to his feet at the other side of the bed.

"Al, is it? He can't help you; he's sound asleep."

Gordon circled around the bed, clumsily. He was having trouble with his feet. She stepped back.

"Damn you, come here!" he shouted. "You can't act like this with me." He made a lunge at her and she fled from him, one end of the sheet trailing behind her. He stumbled after her. His heavy foot came down on the end of the sheet and it was torn from her grasp as she ran on, dodging between tall packing cases and around the piles of machinery.

Gordon wavered after her, leering, his eyes fixed on her. He tripped over a coil of wire and fell. His head struck the con-

crete floor and he lay motionless.

Betty circled back, past the limp body, and threw herself across the chest of the male robot, lying stiff in his bed.

"Al," she cried. "Wake up, please! That horrible man!"

The masculoid was silent and unmoving.

She cradled his head in her arms and kissed the dusty lips.

There was no response.

"You must wake up! You must!"

He was stiff and cold.

HER intricate pseudobrain pulsed as it chose among the data, old and new, that had been fed into it. The nodule at the back of the head—not enough. The carbon dioxide—yes, that was the other part of it. But she had none of her own. She had been indoctrinated as a female and so she shuddered at the recollection of how she had been awakened by Gordon—and what she must do now to awaken Al.

Reluctantly she went back to Gordon's prone body. He was breathing heavily, great gasps of air being sucked into the flaccid mouth and being expelled.

She picked him up with revulsion but without difficulty. He seemed light enough to her. She carried the unconscious man to the bed, shifting him so she was able to hold him against her body with one arm, his head hanging down limply, his face close to that of the deactivated robot. With the other hand she pressed the nodule at the back of the robot's skull.

Al's eyes opened.

With a cry of relief, she swung Gordon's body away and dropped him on the floor. She knelt and used a corner of the sheet to brush the dust from the face of the waking robot.

"Al, oh, Al," she said softly.

The masculoid began to breathe. He became aware of her.

"Betty!" he said. "What's happened? What is this place?"

Built-in tears came to her eyes now. She didn't know, she told him, explaining the manner of her awakening and the terror of the past several minutes.

He sat up as he listened to her and he saw Gordon lying on the floor. Before she had finished he threw the covers aside and leaped from the bed. He lifted the unconscious body into the air and hurled it from him.

GORDON crashed into a concrete wall. He moaned once as he crumpled to the floor. His body convulsed and he was still now, in a new way.

"I'll put this disgusting thing out of our sight," Al said.

He dragged the corpse to a far corner and pushed it behind a

crate out of sight.

The masculoid was smiling as he returned to the feminoid.

"I feel fine," he said.

"I'm glad."

"And yet I have a doubt. We're strangely made, we two."

"We must tell Mr. Malley," she said. "He made us the way we are. He'll know."

"We're contradictory," he said. "We know we're robots, but we've been taught that there are limits to our subservience. Our loyalty is to men—but not to all men. To certain individuals, like Mr. Malley, and to each other."

"But not to . . . him," said Betty. "That Gordon."

"Forget him," Al said, and then he laughed. "That's an idiom. We're built to forget nothing, of course. But omit him from your surface thought. He must have been like the evil ones Mr. Malley told us we might be called on to help destroy, one day."

"I'll 'forget' him," she said, smiling.

"Good," he said. He looked at her, as she stood close to him in the dusty underground vault, from her smiling face to her perfectly-formed toes. "You're beautiful," he said.

"You are, too," she said, looking at him as frankly.

"No, I'm handsome," he said naively. "A difference in sex predicates a difference in terminology. You remember."

"I do now," she said. "I had a harder time with my lessons than you did. I think Mr. Malley did that deliberately. He said once that we'd get along better—we two—if you knew more than I did. Where is Mr. Malley, Al? Shall we find him?"

"Yes, but we must clothe ourselves first."

"Why?" she asked innocently. "You just said we're beautiful and handsome as we are."

"I think it's a custom for when you visit a person. There was that reception cocktail, when we visited among all those human ones. I will have to wear a black suit with a black tie and a white shirt and you will have to wear a gown that reaches from your feet to the center of your breasts. Then we will be proper."

"I see," she said.

And so the robots began a search for clothing in which to call on Malley. It was in the course of this futile exploration of the big room that they discovered it was a prison. The only entrance was the one Gordon had used and the door to it had automatically locked behind him. Even Al's great strength could not force it open.

There was no way out and no way of communicating with the outside.

They were trapped.

THEY walked slowly back to the corner of the room that was theirs, hand in hand, and sat on the edge of her bed.

"If we're going to be here for a while, at least I could tidy up the place," Betty said finally.

"It is rather bleak," Al replied. "But that shouldn't make any difference to us. We're just machines."

"Not 'just,'" she objected. "We're more than 'just.'"

"I speak ironically," he said. "That's a human trait. It seems to me that we're more human than we were meant to be. I wonder if Mr. Malley knows as much about us as we do."

"More, probably."

"That's a feminine viewpoint, if I ever heard one."

"You sound as if you'd heard a lot of them," she said.

He laughed. "Here we go—bickering, just like people. That supports my theory that there's more to us than was put into us."

"Of course I don't know, only being a female," she said, "but wouldn't that be against nature? I mean—blasphemous, sort of?"

"Making us creations of the Devil?" he asked. "No. we're machines, all right. Intricate, carefully-planned machines, made by the mind of man, with certain mechanical advantages over man. We don't get hungry, for instance. Which is a comfort in our present circumstances."

"We ate at that dinner thing, though," she pointed out.

"Special adaptation," he said, "to help the deception along. We drank, too. They drained it all out of us later."

She sighed. "The more I think of that time, the more this place depresses me. I've got to do something about it. Will you help me, Al? Look into those crates and see if there's anything we can use. Mr. Malley's bound to come back for us one day and we want our home to be nice for him, don't we?"

"The little woman," he laughed. "You get more human every minute. I imagine Mr. Malley'd be just as happy if he found us tucked into bed where he put us. But all right; if it will please you, ma'am, I'll see what I can do."

He bowed, as if he were in full formal regalia instead of naked, and kissed her hand. She giggled.

"There you go again," he said. "If I didn't know for sure that you were ticking away inside, just like me, I'd suspect you of having been born."

THEY went to work. In one crate Al found carpenter's tools and, by combining a few vague built-in memories with trial and error, he learned how to use them. In another crate was a bolt of linen-like plastic. A third

yielded only books.

Working indefatigably, as robots could, they soon had fashioned an apartment which wouldn't have won any decorating prizes but which was a vast improvement over the previous bleakness. Al had put together rough but sturdy chairs and a table and thrown up a partition which hid the rest of the storeroom from view. With an adze from the tool chest, he cut the plastic into lengths that Betty used to drape their new walls. Every bit of dust had been removed. They'd wheeled out the beds, cleaned them and shaken the bedclothes and wheeled them back. A stand between them held a conglomeration of radio parts Al had found and which he planned to try to put together into a receiver.

It was a pity about the books. Neither of the robots had been taught to read. They'd learned by more direct methods. But the books had many diagrams. Perhaps in time they could find a link between them and the words. Al built a bookcase.

He found wiring and spare Everglos and banished the gloom from their corner.

Time fled by. They were busy together and so they were happy together. There were improvements and refinements to be made constantly. Al worked at the receiving set and, after much experimentation, he built a monstrosity of wiring and tubing which succeeded in bringing in signals. They seemed to be the audio signals of audio-video programs and the robots listened half-comprehendingly to an imperfect reflection of a world they had known only fleetingly.

They spent hours listening, learning about that world. The radio gave them bits and pieces of knowledge, now and again providing them with an insight that filled in vast areas for them.

The radio also made them conscious of time. There was no day or night in their subterranean world, but the radio provided the division for them. They were told constantly what time it was; there was a special emphasis on time in the morning. This seemed to be the busiest part of the day and the robots adjusted their schedule accordingly, making these hours span the peak of their activity. There was a time of relaxation in the afternoon, it appeared, when people listened to stories played out for them. They were rather stupid stories, the robots decided, and perhaps they were planned that way—dull and monotonous—to lull people to sleep. Then, after resting, they would be refreshed for the new round of activity that began at supper time.

This was news time. Here they learned of the mighty events taking place in the world above. Mostly it was the war, which was being won, but slowly, as the enemy retreated, preserving an unbroken circle about his land, but seeing his industry and airfields and cities pounded to pieces.

THE more they listened to the radio, the more restless they became. They wanted to be out, helping, or at least participating in this valiant activity on behalf of their land.

Again they made the rounds of the storeroom, seeking an exit they might have missed. There was none.

One part of the storeroom was fetid now with the odor of Gordon's corpse.

Time was beginning to drag. Conscious of what days were, they began to count them, and the counting was slow. The radio programs now were more frustrating than enlightening and they did not listen as often. The books were too much for them; they were weighty technical volumes—no primers even for robots.

Even their conversation flagged. At first each had been delighted with the other's mind. His was sharp and knowledgable, hers wise and intuitive. But, with no stimulus except the radio and the too-familiar apartment and the drab gray storeroom beyond, they became dull. For hours at a time, they didn't speak.

Their physical attraction for each other dimmed, too. They experimented with sex, having had it suggested to them obliquely on the radio, but there was no enjoyment in it for them; they felt awkward and ashamed.

Moreover, they were dirty. The dust and grime of the storeroom crept in on them despite their efforts and they could do no more than try to brush it away. There was no place to wash. Their bodies grayed and the soles of their feet became black.

THEY were sitting, one day, looking at nothing, the radio silent, the odor of the decaying Gordon beginning to creep into their corner of the basement, when Betty cried out. It was a wordless sound, of anguish and despair.

Al looked at her almost without curiosity.

"I wish we'd never been made," she said.

He grunted in token reply.

"It's cruel," she said. "It's unfair."

"Inhuman," he agreed sardonically.

"We belong up there," she said, "even if they don't think so. They've designed us to belong

and they have a responsibility, even to robots."

"Sure," he said impatiently. "Only nobody expected us to wake up so early."

"That stinking Gordon!" she said literally.

"I'm sure Mr. Malley will be back for us one day," Al said almost to himself. "But what will we be like when he comes? He made us in the image of man, but we'll be more like beasts if he doesn't come soon. We're getting filthy and careless and I, for one, don't think I can stand much more of it. I think my mind is beginning to be affected—it doesn't take much to unbalance a sensitive mechanism."

"I know," she said. "And I've been thinking. Shouldn't we preserve ourselves as we are, before we deteriorate completely? Couldn't we—?"

"What?" he asked. "Commit suicide?"

"Yes, or the equivalent. If we broke down gradually we'd be thrown out of balance all through our systems and nobody would take the trouble—or take a chance with a couple of mad robots. They'd just junk us. But if we stopped ourselves suddenly . . ."

"They could repair us," Al said. "Yes. We know we can't deactivate each other—but we could 'kill' ourselves."

They were silent at the thought.

"Let's do that," Betty said finally, in a quiet voice.

HE looked across at the feminoid, sitting despairingly in the rude chair on the concrete floor. He saw the tangled, dirtied blonde hair, the gray unhappy face, the ideally feminine body now become a travesty under its caked dirt. He felt himself filthy also and imagined how he looked to her.

"All right," he said.

"Good," she said. Then she smiled crookedly. "But let's not be messy about it, please."

"Feminoid vanity?" he said. "All right. That eliminates butting our heads against the wall. There are dozens of other ways, according to the crime programs on the radio, but most of them are impracticable for us. And most of them are messy, besides. I think there's really only one way."

"What's that?" she asked.

"Electricity. There's enough equipment around to do it and it should be no problem at all to feed ourselves a power overload. Just enough to burn out one strategic set of wires."

He stood up. "I'll go see about it now."

"I'll come help," she said.

Betty got to her feet. But then she faltered and put out a hand.

"What is it?" he asked.

"I feel so—funny. So weak, suddenly."

He held her in his arms and a wave of tenderness swept over him. "Poor baby," he said.

She looked up into his eyes and her forehead wrinkled into a frown.

"Al," she said. Her voice was a whisper. "Al . . . I think I'm—running down."

HE held her tightly. A tear welled out of the corner of one eye and made a wet track down her dirty cheek.

"Is it so sad?" he asked. "You're running down. You'll go back to sleep—normally. That solves the problem without 'suicide.'"

"I'm not crying for me, silly," she said. "I'm thinking of you here all alone after I'm gone. I know how awful it would be for me in this horrible place."

Her voice was becoming fainter.

"I'll be going along soon after you," he said. "You woke up just a few minutes before I did. I'm sure we were given approximately the same charge."

"I can't see so well now," she said. "Your face is just a blur."

He picked her up in his arms and carried her to her bed. He put her in it and gently brought the covers up to her chin.

"Somehow," she said, "I don't want to go—now. Isn't that silly? But little as we had, it was ours—a world we made for ourselves. And I'm worried about later—when Mr. Malley comes back for us." She lifted her head in urgency. "He will come back, won't he? He'll wake us—and I'll be seeing you again? Won't I . . . darling?"

"Yes, of course."

"And we'll be all right? It won't be too much for us— that world up there—full of people?"

"We'll be all right," he said.

"I believe you," she said. A smile came over the grimy face. "I feel . . . very . . . sleepy . . ."

She closed her eyes. The smile remained when the breathing stopped.

Al kissed the cold lips. He arranged the straggly hair more neatly on the pillow. He touched the still face, gently.

Then he drew his bed close to hers. He slipped under the covers and waited, looking across at her with a smile of his own.

Soon he, too, began to feel weak. It was a strange but delicious sensation. His eyes became heavy and he stretched out comfortably. He looked once more at Betty.

"Goodnight, my darling," the robot said. "See you . . . in the morning."

He closed his eyes.

—RICHARD WILSON

Colony

By PHILIP K. DICK

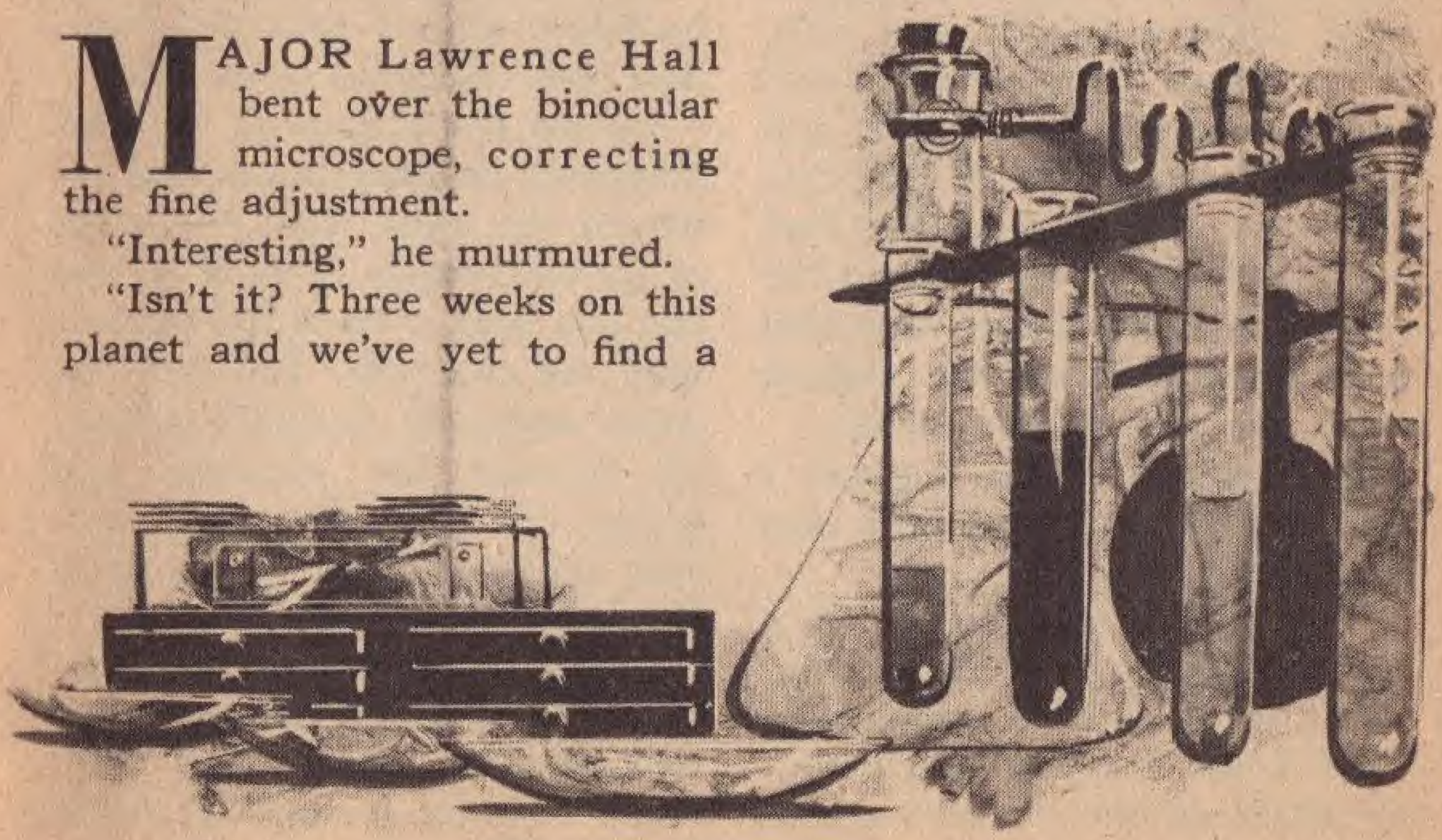
The worst part of having an alien enemy is that you can't always be sure whether it's an enemy—especially if you can't find it.

Illustrated by EMSH

MAJOR Lawrence Hall bent over the binocular microscope, correcting the fine adjustment.

"Interesting," he murmured.

"Isn't it? Three weeks on this planet and we've yet to find a



harmful life-form." Lieutenant Friendly sat down on the edge of the lab table, avoiding the culture bowls. "What kind of place is this? No disease germs, no lice, no flies, no rats, no—"

"No whiskey or red light districts." Hall straightened up. "Quite a place. I was sure this brew would show something along the lines of Terra's *eberthella typhi*. Or the Martian sand rot corkscrew."

"But the whole planet's harmless. You know, I'm wondering whether this is the Garden of Eden our ancestors fell out of."

"Were pushed out of."

HALL wandered over to the window of the lab and contemplated the scene beyond. He had to admit it was an attractive sight. Rolling forests and hills, green slopes alive with flowers and endless vines; waterfalls and hanging moss; fruit trees, acres of flowers, lakes. Every effort had been made to preserve intact the surface of Planet Blue—as it had been designated by the original scout ship, six months earlier.

Hall sighed. "Quite a place. I wouldn't mind coming back here again some time."

"Makes Terra seem a little bare." Friendly took out his cigarettes; then put them away again. "You know, the place has a funny effect on me. I don't smoke any more. Guess that's because of the way it looks. It's so—so damn pure. Unsullied. I can't smoke or throw papers around. I can't bring myself to be a picnicker."

"The picnickers'll be along soon enough," Hall said. He went back to the microscope. "I'll try a few more cultures. Maybe I'll find a lethal germ yet."

"Keep trying." Lieutenant Friendly hopped off the table. "I'll see you later and find out if you've had any luck. There's a big conference going on in Room One. They're almost ready to give the go-ahead to the E.A. for the first load of colonists to be sent out."

"Picnickers!"

Friendly grinned. "Afraid so."

The door closed after him. His bootsteps echoed down the corridor. Hall was alone in the lab.

He sat for a time in thought. Presently he bent down and removed the slide from the stage of the microscope, selected a new one and held it up to the light to read the marking. The lab was warm and quiet. Sunlight streamed through the windows and across the floor. The trees outside moved a little in the wind. He began to feel sleepy.

"Yes, the picnickers," he grumbled. He adjusted the new slide into position. "And all of them ready to come in and cut down

the trees, tear up the flowers, spit in the lakes, burn up the grass. With not even the common cold virus around to—"

He stopped, his voice choked off—

—Choked off, because the two eyepieces of the microscope had twisted suddenly around his windpipe and were trying to strangle him. Hall tore at them, but they dug relentlessly into his throat, steel prongs closing like the claws of a trap.

Throwing the microscope onto the floor, he leaped up. The microscope crawled quickly toward him, hooking around his leg. He kicked it loose with his other foot, and drew his blast pistol.

The microscope scuttled away, rolling on its coarse adjustments. Hall fired. It disappeared in a cloud of metallic particles.

"Good God!" Hall sat down weakly, mopping his face. "What the—?" He massaged his throat. "What the hell!"

THE council room was packed solid. Every officer of the Planet Blue unit was there. Commander Stella Morrison tapped on the big control map with the end of a slim plastic pointer.

"This long flat area is ideal for the actual city. It's close to water, and weather conditions vary sufficiently to give the settlers something to talk about. There are large deposits of various minerals. The colonists can set up their own factories. They won't have to do any importing. Over here is the biggest forest on the planet. If they have any sense, they'll leave it. But if they want to make newspapers out of it, that's not our concern."

She looked around the room at the silent men.

"Let's be realistic. Some of you have been thinking we shouldn't send the okay to the Emigration Authority, but keep the planet our own selves, to come back to. I'd like that as much as any of the rest of you, but we'd just get into a lot of trouble. It's not *our* planet. We're here to do a certain job. When the job is done, we move along. And it is almost done. So let's forget it. The only thing left to do is flash the go-ahead signal and then begin packing our things."

"Has the lab report come in on bacteria?" Vice-Commander Wood asked.

"We're taking special care to look out for them, of course. But the last I heard nothing had been found. I think we can go ahead and contact the E.A. Have them send a ship to take us off and bring in the first load of settlers. There's no reason why—" she stopped.

A murmur was swelling through the room. Heads turned

toward the door.

Commander Morrison frowned. "Major Hall, may I remind you that when the council is in session no one is permitted to interrupt!"

HALL swayed back and forth, supporting himself by holding onto the doorknob. He gazed vacantly around the council room. Finally his glassy eyes picked out Lieutenant Friendly, sitting halfway across the room.

"Come here," he said hoarsely.

"Me?" Friendly sank further down in his chair.

"Major, what is the meaning of this?" Vice-Commander Wood cut in angrily. "Are you drunk or are—?" He saw the blast gun in Hall's hand. "Is something wrong, Major?"

Alarmed, Lieutenant Friendly got up and grabbed Hall's shoulder. "What is it? What's the matter?"

"Come to the lab."

"Did you find something?" the Lieutenant studied his friend's rigid face. "What is it?"

"Come on." Hall started down the corridor, Friendly following. Hall pushed the laboratory door open, stepped inside slowly.

"What is it?" Friendly repeated.

"My microscope."

"Your microscope? What about it?" Friendly squeezed past him into the lab. "I don't see it."

"It's gone."

"Gone? Gone where?"

"I blasted it."

"You blasted it?" Friendly looked at the other man. "I don't get it. Why?"

Hall's mouth opened and closed, but no sound came out.

"Are you all right?" Friendly asked in concern. Then he bent down and lifted a black plastic box from a shelf under the table. "Say, is this a gag?"

He removed Hall's microscope from the box. "What do you mean, you blasted it? Here it is, in its regular place. Now, tell me what's going on? You saw something on a slide? Some kind of bacteria? Lethal? Toxic?"

Hall approached the microscope slowly. It was his, all right. There was the nick just above the fine adjustment. And one of the stage clips was slightly bent. He touched it with his finger.

Five minutes ago this microscope had tried to kill him. And he knew he had blasted it out of existence.

"You sure you don't need a psych test" Friendly asked anxiously. "You look like post-trauma to me, or worse."

"Maybe you're right," Hall muttered.

THE robot psyche tester whirred, integrating and gestalting. At last its color code lights

changed from red to green.

"Well?" Hall demanded.

"Severe disturbance. Instability ratio up above ten."

"That's over danger?"

"Yes. Eight is danger. Ten is unusual, especially for a person of your index. You usually show about a four."

Hall nodded wearily. "I know."

"If you could give me more data—"

Hall set his jaw. "I can't tell you any more."

"It's illegal to hold back information during a psyche test," the machine said peevishly. "If you do that you deliberately distort my findings."

Hall rose. "I can't tell you any more. But you do record a high degree of unbalance for me?"

"There's a high degree of psychic disorganization. But what it means, or why it exists, I can't say."

"Thanks." Hall clicked the tester off. He went back to his own quarters. His head whirled. Was he out of his mind? But he had fired his blast gun at *something*. Afterward, he had tested the atmosphere in the lab, and there were metallic particles in suspension, especially near the place he had fired his blast gun at the microscope.

But how could a thing like that be? A microscope coming to life, trying to kill him!

Anyhow, Friendly had pulled it out of its box, whole and sound. But how had it gotten back in the box?

He stripped off his uniform and entered the shower. While he ran warm water over his body he meditated. The robot psyche tester had showed his mind was severely disturbed, but that could have been the result, rather than the cause, of the experience. He had started to tell Friendly about it but he had stopped. How could he expect anyone to believe a story like that?

He shut off the water and reached out for one of the towels on the rack.

The towel wrapped around his wrist, yanking him against the wall. Rough cloth pressed over his mouth and nose. He fought wildly, pulling away. All at once the towel let go. He fell, sliding to the floor, his head striking the wall. Stars shot around him; then violent pain.

SITTING in a pool of warm water, Hall looked up at the towel rack. The towel was motionless now, like the others with it. Three towels in a row, all exactly alike, all unmoving. Had he dreamed it?

He got shakily to his feet, rubbing his head. Carefully avoiding the towel rack, he edged out of the shower and into his room. He

pulled a new towel from the dispenser in a gingerly manner. It seemed normal. He dried himself and began to put his clothes on.

His belt got him around the waist and tried to crush him. It was strong — it had reinforced metal links to hold his leggings and his gun. He and the belt rolled silently on the floor, struggling for control. The belt was like a furious metal snake, whipping and lashing at him. At last he managed to get his hand around his blaster.

At once the belt let go. He blasted it out of existence and then threw himself down in a chair, gasping for breath.

The arms of the chair closed around him. But this time the blaster was ready. He had to fire six times before the chair fell limp and he was able to get up again.

He stood half-dressed in the middle of the room, his chest rising and falling.

"It isn't possible," he whispered. "I must be out of my mind."

Finally he got his leggings and boots on. He went outside into the empty corridor. Entering the lift, he ascended to the top floor.

Commander Morrison looked up from her desk as Hall stepped through the robot clearing screen. It pinged.

"You're armed," the Commander said accusingly.

Hall looked down at the blaster in his hand. He put it down on the desk. "Sorry."

"What do you want? What's the matter with you? I have a report from the testing machine. It says you've hit a ratio of ten within the last twenty-four hour period." She studied him intently. "We've known each other for a long time, Lawrence. What's happening to you?"

Hall took a deep breath. "Stella, earlier today my microscope tried to strangle me."

Her blue eyes widened. "What!"

"Then, when I was getting out of the shower, a bath towel tried to smother me. I got by it, but, while I was dressing, my belt—" he stopped. The Commander had gotten to her feet.

"Guards!" she called.

"Wait, Stella." Hall moved toward her. "Listen to me. This is serious. There's something wrong. Four times things have tried to kill me. Ordinary objects suddenly turned lethal. Maybe it's what we've been looking for. Maybe this is—"

"Your microscope tried to kill you?"

"It came alive. Its stems got me around the windpipe."

There was a long silence. "Did anyone see this happen besides you?"

"No."

"What did you do?"

"I blasted it."

"Are there any remains?"

"No," Hall admitted reluctantly. "As a matter of fact, the microscope seems to be all right, again. The way it was before. Back in its box."

"I see." The Commander nodded to the two guards who had answered her call. "Take Major Hall down to Captain Taylor and have him confined until he can be sent back to Terra for examination."

She watched calmly as the two guards took hold of Hall's arms with magnetic grapples.

"Sorry, Major," she said. "Unless you can prove any of your story, we've got to assume it's a psychotic projection on your part. And the planet isn't well enough policed for us to allow a psychotic to run around loose. You could do a lot of damage."

The guards moved him toward the door. Hall went unprotestingly. His head rang, rang and echoed. Maybe she was right. Maybe he *was* out of his mind.

THEY came to Captain Taylor's offices. One of the guards rang the buzzer.

"Who is it?" the robot door demanded shrilly.

"Commander Morrison orders this man put under the Captain's care."

There was a hesitant pause, then: "The Captain is busy."

"This is an emergency."

The robot's relays clicked while it made up its mind. "The Commander sent you?"

"Yes. Open up."

"You may enter," the robot conceded finally. It drew its locks back, releasing the door.

The guard pushed the door open. And stopped.

On the floor lay Captain Taylor, his face blue, his eyes gaping. Only his head and his feet were visible. A red and white scatter rug was wrapped around him, squeezing, straining tighter and tighter.

Hall dropped to the floor and pulled at the rug. "Hurry!" he barked. "Grab it!"

The three of them pulled together. The rug resisted.

"Help," Taylor cried weakly.

"We're trying!" They tugged frantically. At last the rug came away in their hands. It flopped off rapidly toward the open door. One of the guards blasted it.

Hall ran to the vidscreen and shakily dialed the Commander's emergency number.

Her face appeared on the screen.

"See!" he gasped.

She stared past him to Taylor lying on the floor, the two guards kneeling beside him, their blasters still out.

"What — what happened?"

"A rug attacked him." Hall grinned without amusement. "Now who's crazy?"

"We'll send a guard unit down." She blinked. "Right away. But how—"

"Tell them to have their blasters ready. And better make that a general alarm to *everyone*."

Hall placed four items on Commander Morrison's desk: a microscope, a towel, a metal belt, and a small red and white rug.

She edged away nervously. "Major, are you sure—?"

"They're all right, *now*. That's the strangest part. This towel. A few hours ago it tried to kill me. I got away by blasting it to particles, But here it is, back again. The way it always was. Harmless."

Captain Taylor fingered the red and white rug warily. "That's my rug. I brought it from Terra. My wife gave it to me. I—I trusted it completely."

They all looked at each other.

"We blasted the rug, too," Hall pointed out.

There was silence.

"Then what was it that attacked me?" Captain Taylor asked. "If it wasn't this rug?"

"It looked like this rug," Hall said slowly. "And what attacked me looked like this towel."

Commander Morrison held the towel up to the light. "It's just an ordinary towel! It couldn't have attacked you."

"Of course not," Hall agreed. "We've put these objects through all the tests we can think of. They're just what they're supposed to be, all elements unchanged. Perfectly stable nonorganic objects. It's impossible that *any* of these could have come to life and attacked us."

"But something did," Taylor said. "Something attacked me. And if it wasn't this rug, what was it?"

LIEUTENANT Dodds felt around on the dresser for his gloves. He was in a hurry. The whole unit had been called to emergency asembly.

"Where did I—?" he murmured. "What the hell!"

For on the bed were *two* pairs of identical gloves, side by side.

Dodds frownéd, scratching his head. How could it be? He owned only one pair. The others must be somebody else's. Bob Wesley had been in the night before, playing cards. Maybe he had left them.

The vidscreen flashed again. "All personnel, report at once. All personnel, report at once. Emergency assembly of all personnel."

"All right!" Dodds said impatiently. He grabbed up one of the pairs of gloves, sliding them

onto his hands.

As soon as they were in place, the gloves carried his hands down to his waist. They clamped his fingers over the butt of his gun, lifting it from his holster.

"I'll be damned," Dodds said. The gloves brought the blast gun up, pointing it at his chest.

The fingers squeezed. There was a roar. Half of Dodds' chest dissolved. What was left of him fell slowly to the floor, the mouth still open in amazement.

CORPORAL Tenner hurried across the ground toward the main building, as soon as he

heard the wail of the emergency alarm.

At the entrance to the building he stopped to take off his metal-cleated boots. Then he frowned. By the door were two safety mats instead of one.

Well, it didn't matter. They were both the same. He stepped onto one of the mats and waited. The surface of the mat sent a flow of high-frequency current through his feet and legs, killing any spores or seeds that might have clung to him while he was outside.

He passed on into the building.

A moment later Lieutenant Fulton hurried up to the door. He yanked off his hiking boots and stepped onto the first mat he saw.

The mat folded over his feet.

"Hey," Fulton cried. "Let go!"

He tried to pull his feet loose, but the mat refused to let go. Fulton became scared. He drew his gun, but he didn't care to fire at his own feet.

"Help!" he shouted.

Two soldiers came running up. "What's the matter, Lieutenant?"

"Get this damn thing off me."

The soldiers began to laugh.

"It's no joke," Fulton said, his face suddenly white. "It's breaking my feet! It's—"

He began to scream. The soldiers grabbed frantically at the mat. Fulton fell, rolling and twisting, still screaming. At last the soldiers managed to get a corner of the mat loose from his feet.

Fulton's feet were gone. Nothing but limp bone remained, already half-dissolved.

"NOW we know," Hall said grimly. "It's a form of organic life."

Commander Morrison turned to Corporal Tenner. "You saw two mats when you came into the building?"

"Yes, Commander. Two. I stepped on—on one of them. And came in."

"You were lucky. You stepped on the right one."

"We've got to be careful," Hall said. "We've got to watch for duplicates. Apparently *it*, whatever it is, imitates objects it finds. Like a chameleon. Camouflage."

"Two," Stella Morrison murmured, looking at the two vases of flowers, one at each end of her desk. "It's going to be hard to tell. Two towels, two vases, two chairs. There may be whole rows of things that are all right. All multiples legitimate except one."

"That's the trouble. I didn't notice anything unusual in the lab. There's nothing odd about another microscope. It blended right in."

The Commander drew away from the identical vases of flowers. "How about those? Maybe one is—whatever they are."

"There's two of a lot of things. Natural pairs. Two boots. Clothing. Furniture. I didn't notice that extra chair in my room. Equipment. It'll be impossible to be sure. And sometimes—"

The vidscreen lit. Vice-Commander Wood's features formed. "Stella, another casualty."

"Who is it this time?"

"An officer dissolved. All but a few buttons and his blast pistol —Lieutenant Dodds."

"That makes three," Commander Morrison said.

"If it's organic, there ought to be some way we can destroy it," Hall muttered. "We've already blasted a few, apparently killed them. They *can* be hurt! But we don't know how many more there are. We've destroyed five or six. Maybe it's an infinitely divisible substance. Some kind of protoplasm."

"And meanwhile—?"

"Meanwhile we're all at its mercy. Or *their* mercy. It's our lethal life form, all right. That explains why we found everything else harmless. Nothing could compete with a form like this. We have mimic forms of our own, of course. Insects, plants. And there's the twisty slug on Venus. But nothing that goes this far."

"It can be killed, though. You said so yourself. That means we have a chance."

"If it can be found." Hall looked around the room. Two walking capes hung by the door. Had there been *two* a moment before?

He rubbed his forehead wearily. "We've got to try to find some sort of poison or corrosive agent, something that'll destroy them wholesale. We can't just sit and wait for them to attack us. We need something we can spray. That's the way we got the twisty slugs."

The Commander gazed past him, rigid.

He turned to follow her gaze. "What is it?"

"I never noticed two briefcases in the corner over there. There was only one before—I think." She shook her head in bewilderment. "How are we going to know? This business is getting me down."

"You need a good stiff drink."

She brightened. "That's an idea. But—"

"But what?"

"I don't want to touch anything. There's no way to tell." She fingered the blast gun at her waist. "I keep wanting to use it, on everything."

"Panic reaction. Still, we are being picked off, one by one."

CAPTAIN Unger got the emergency call over his headphones. He stopped work at once, gathered the specimens he had

collected in his arms, and hurried back toward the bucket.

It was parked closer than he remembered. He stopped, puzzled. There it was, the bright little cone-shaped car with its treads firmly planted in the soft soil, its door open.

Unger hurried up to it, carrying his specimens carefully. He opened the storage hatch in the back and lowered his armload. Then he went around to the front and slid in behind the controls.

He turned the switch. But the motor did not come on. That was strange. While he was trying to figure it out, he noticed something that gave him a start.

A few hundred feet away, among the trees, was a second bucket, just like the one he was in. And that *was* where he remembered having parked his car. Of course, he was in the wrong bucket. Somebody else had come looking for specimens, and this bucket belonged to him.

Unger started to get out again.

The door closed around him. The seat folded up over his head. The dashboard became plastic and oozed. He gasped—he was suffocating. He struggled to get out, flailing and twisting. There was wetness all around him, a bubbling, flowing wetness, warm like flesh.

"Glub." His head was covered. His body was covered. The bucket was turning to liquid. He tried to pull his hands free but they would not come.

And then the pain began. He was being dissolved. All at once he realized what the liquid was.

Acid. Digestive acid. He was in a stomach.

"DON'T look!" Gail Thomas cried.

"Why not?" Corporal Hendricks swam toward her, grinning. "Why can't I look?"

"Because I'm going to get out."

The sun shone down onto the lake. It glittered and danced on the water. All around huge moss-covered trees rose up, great silent columns among the flowering vines and bushes.

Gail climbed up on the bank, shaking water from her, throwing her hair back out of her eyes. The woods were silent. There was no sound except the lapping of the waves. They were a long way from the unit camp.

"When can I look?" Hendricks demanded, swimming around in a circle, his eyes shut.

"Soon." Gail made her way into the trees, until she came to the place where she had left her uniform. She could feel the warm sun glowing against her bare shoulders and arms. Sitting down in the grass, she picked up her tunic and leggings.

She brushed the leaves and bits

of tree bark from her tunic and began to pull it over her head.

In the water, Corporal Hendricks waited patiently, continuing in his circle. Time passed. There was no sound. He opened his eyes. Gail was nowhere in sight.

"Gail?" he called.

It was very quiet.

"Gail!"

No answer.

Corporal Hendricks swam rapidly to the bank. He pulled himself out of the water. One leap carried him to his own uniform, neatly piled at the edge of the lake. He grabbed up his blaster.

"*Gail!*"

The woods were silent. There was no sound. He stood, looking around him, frowning. Gradually, a cold fear began to numb him, in spite of the warm sun.

"*Gail!* GAIL!"

And still there was only silence.

COMMANDER Morrison was worried. "We've got to act," she said. "We can't wait. Ten lives lost already from thirty encounters. One-third is too high a percentage."

Hall looked up from his work. "Anyhow, now we know what we're up against. It's a form of protoplasm, with infinite versatility." He lifted the spray tank. "I think this will give us an idea of how many exist."

"What's that?"

"A compound of arsenic and hydrogen in gas form. Arsine."

"What are you going to do with it?"

Hall locked his helmet into place. His voice came through the Commander's earphones. "I'm going to release this throughout the lab. I think there are a lot of them in here, more than anywhere else."

"Why here?"

"This is where all samples and specimens were originally brought, where the first one of them was encountered. I think they came in with the samples, or *as* the samples, and then infiltrated through the rest of the buildings."

The Commander locked her own helmet into place. Her four guards did the same. "Arsine is fatal to human beings, isn't it?"

Hall nodded. "We'll have to be careful. We can use it in here for a limited test, but that's about all."

He adjusted the flow of oxygen inside his helmet.

"What's your test supposed to prove?" she wanted to know.

"If it shows anything at all, it should give us an idea of how extensively they've infiltrated. We'll know better what we're up against. This may be more serious than we realize."

"How do you mean?" she ask-

ed, fixing her own oxygen flow.

"There are a hundred people in this unit on Planet Blue. As it stands now, the worst that can happen is that they'll get all of us, one by one. But that's nothing. Units of a hundred are lost every day of the week. It's a risk whoever is first to land on a planet must take. In the final analysis, it's relatively unimportant."

"Compared to what?"

"If they *are* infinitely divisible, then we're going to have to think twice about leaving here. It would be better to stay and get picked off one by one than to run the risk of carrying any of them back to the system."

SHE looked at him. "Is that what you're trying to find out —whether they're infinitely divisible?"

"I'm trying to find out what we're up against. Maybe there are only a few of them. Or maybe they're everywhere." He waved a hand around the laboratory. "Maybe half the things in this room are not what we think they are . . . It's bad when they attack us. It would be worse if they didn't."

"Worse?" The Commander was puzzled.

"Their mimicry is perfect. Of inorganic objects, at least. I looked through one of them, Stella, when it was imitating my microscope. It enlarged, adjusted, reflected, just like a regular microscope. It's a form of mimicry that surpasses anything we've ever imagined. It carries down below the surface, into the actual elements of the object imitated."

"You mean one of them could slip back to Terra along with us? In the form of clothing or a piece of lab equipment?" She shuddered.

"We assume they're some sort of protoplasm. Such malleability suggests a simple original form —and that suggests binary fission. If that's so, then there may be no limit to their ability to reproduce. The dissolving properties make me think of the simple unicellular protozoa."

"Do you think they're intelligent?"

"I don't know. I hope not." Hall lifted the spray. "In any case, this should tell us their extent. And, to some degree, corroborate my notion that they're basic enough to reproduce by simple division—the worst thing possible, from our standpoint.

"Here goes," Hall said.

He held the spray tightly against him, depressed the trigger, aimed the nozzle slowly around the lab. The Commander and the four guards stood silently behind him. Nothing moved. The sun shone in through the windows,

reflecting from the culture dishes and equipment.

After a moment he let the trigger up again.

"I didn't see anything," Commander Morrison said. "Are you sure you did anything?"

"Arsine is colorless. But don't loosen your helmet. It's fatal. And don't move."

They stood waiting.

For a time nothing happened. Then—

"Good God!" Commander Morrison exclaimed.

AT the far end of the lab a slide cabinet wavered suddenly. It oozed, buckling and pitching. It lost its shape completely—a homogenous jellylike mass perched on top of the table. Abruptly it flowed down the side of the table onto the floor, wobbling as it went.

"Over there!"

A bunsen burner melted and flowed along beside it. All around the room, objects were in motion. A great glass retort folded up into itself and settled down into a blob. A rack of test tubes, a shelf of chemicals . . .

"Look out!" Hall cried, stepping back.

A huge bell jar dropped with a soggy splash in front of him. It was a single large cell, all right. He could dimly make out the nucleus, the cell wall, the hard vacuoles suspended in the cytoplasm.

Pipettes, tongs, a mortar, all were flowing, now. Half the equipment in the room was in motion. They had imitated almost everything there was to imitate. For every microscope there was a mimic. For every tube and jar and bottle and flask . . .

One of the guards had his blaster out. Hall knocked it down. "Don't fire! Arsine is inflammable. Let's get out of here. We know what we wanted to know."

They pushed the laboratory door open quickly and made their way out into the corridor. Hall slammed the door behind them, bolting it tightly.

"Is it bad, then?" Commander Morrison asked.

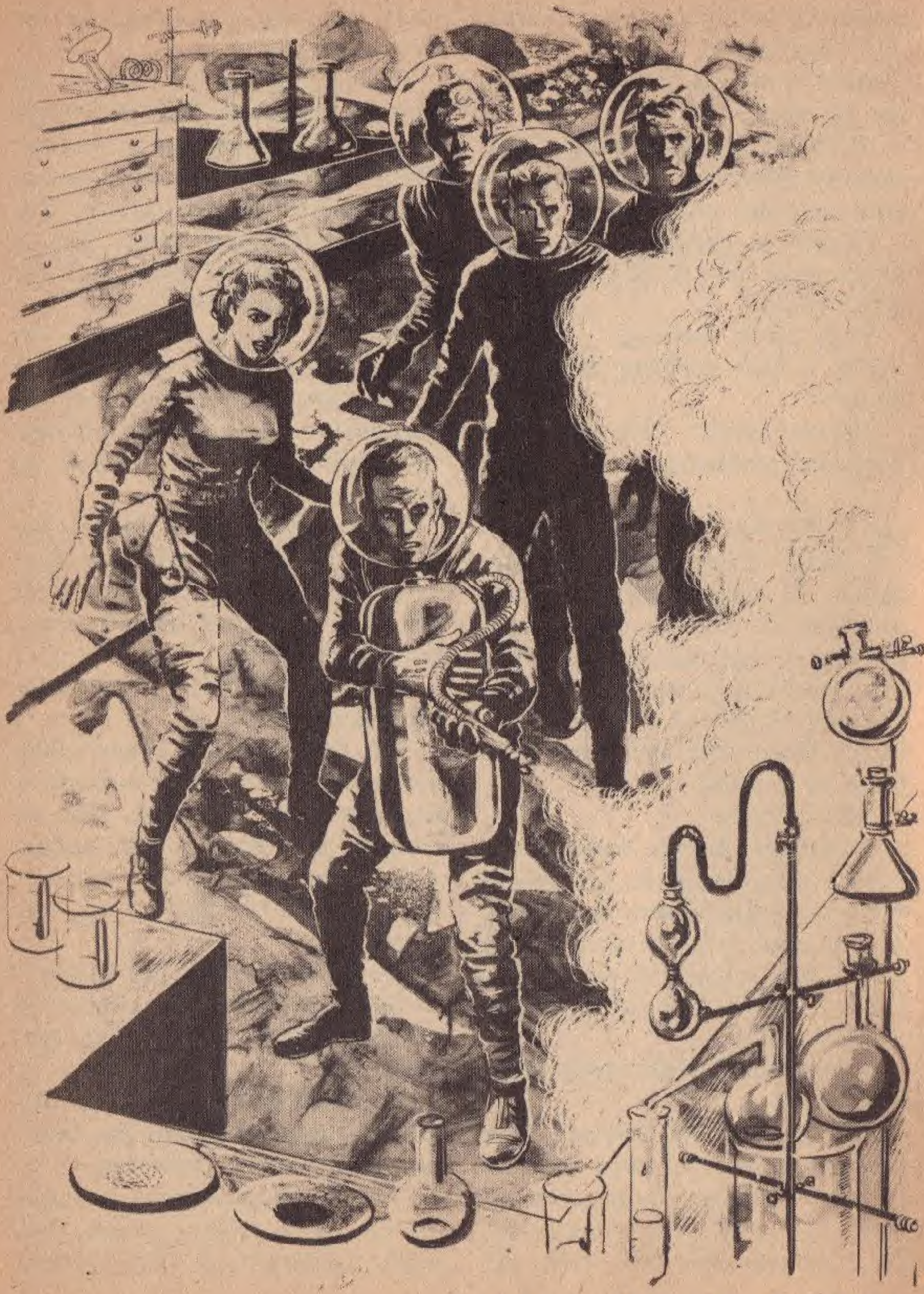
"We haven't got a chance. The arsine disturbed them; enough of it might even kill them. But we haven't got that much arsine. And, if we could flood the planet, we wouldn't be able to use our blasters."

"Suppose we left the planet."

"We can't take the chance of carrying them back to the system."

"If we stay here we'll be absorbed, dissolved, one by one," the Commander protested.

"We could have arsine brought in. Or some other poison that might destroy them. But it would



destroy most of the life on the planet along with them. There wouldn't be much left."

"Then we'll have to destroy all life-forms! If there's no other way of doing it we've got to burn the planet clean. Even if there wouldn't be a thing left but a dead world."

They looked at each other.

"I'm going to call the System Monitor," Commander Morrison said. "I'm going to get the unit off here, out of danger—all that are left, at least. That poor girl by the lake . . ." She shuddered. "After everyone's out of here, we can work out the best way of cleaning up this planet."

"You'll run the risk of carrying one of them back to Terra?"

"Can they imitate us? Can they imitate living creatures? Higher life-forms?"

Hall considered. "Apparently not. They seem to be limited to inorganic objects."

The Commander smiled grimly. "Then we'll go back without any inorganic material."

"But our clothes! They can imitate belts, gloves, boots—"

"We're not taking our clothes. We're going back without anything. And I mean without anything *at all*."

Hall's lips twitched. "I see." He pondered. "It might work. Can you persuade the personnel to—to leave all their things behind? Everything they own?"

"If it means their lives, I can *order* them to do it."

"Then it might be our one chance of getting away."

THE nearest cruiser large enough to remove the remaining members of the unit was just two hours distance away. It was moving Terra-side again.

Commander Morrison looked up from the vidscreen. "They want to know what's wrong here."

"Let me talk." Hall seated himself before the screen. The heavy features and gold braid of a Terran cruiser captain regarded him. "This is Major Lawrence Hall, from the Research Division of this unit."

"Captain Daniel Davis." Captain Davis studied him without expression. "You're having some kind of trouble, Major?"

Hall licked his lips. "I'd rather not explain until we're aboard, if you don't mind."

"Why not?"

"Captain, you're going to think we're crazy enough as it is. We'll discuss everything fully once we're aboard." He hesitated. "We're going to board your ship naked."

The Captain raised an eyebrow. "Naked?"

"That's right."

"I see." Obviously he didn't.

"When will you get here?"

"In about two hours, I'd say."

"It's now 13:00 by our schedule. You'll be here by 15:00?"

"At approximately that time," the captain agreed.

"We'll be waiting for you. Don't let any of your men out. Open one lock for us. We'll board without any equipment. Just ourselves, nothing else. As soon as we're aboard, remove the ship at once."

Stella Morrison leaned toward the screen. "Captain, would it be possible for—for your men to—?"

"We'll land by robot control," he assured her. "None of my men will be on deck. No one will see you."

"Thank you," she murmured.

"Not at all." Captain Davis saluted. "We'll see you in about two hours then, Commander."

"Let's get everyone out onto the field," Commander Morrison said. "They should remove their clothes here, I think, so there won't be any objects on the field to come in contact with the ship."

Hall looked at her face. "Isn't it worth it to save our lives?"

"I suppose so," she said.

LIEUTENANT Friendly bit his lips. "I won't do it. I'll stay here."

"You have to come."

"But, Major—"

Hall looked at his watch. "It's 14:50. The ship will be here any minute. Get your clothes off and get out on the landing field."

"Can't I take anything at *all*?"

"Nothing. Not even your blaster . . . They'll give us clothes inside the ship. Come on! Your life depends on this. Everyone else is doing it."

Friendly tugged at his shirt reluctantly. "Well, I guess I'm acting silly."

The vidscreen clicked. A robot voice announced shrilly: "Everyone out of the buildings at once! Everyone out of the buildings and on the field without delay! Everyone out of the buildings at once! Everyone—"

"So soon?" Hall ran to the window and lifted the metal blind. "I didn't hear it land."

Parked in the center of the landing field was a long gray cruiser, its hull pitted and dented from meteoric strikes. It lay motionless. There was no sign of life about it.

A crowd of naked people was already moving hesitantly across the field toward it, blinking in the bright sunlight.

"It's here!" Hall started tearing off his shirt. "Let's go!"

"Wait for me!"

"Then hurry." Hall finished undressing. Both men hurried out into the corridor. Unclothed guards raced past them. They padded down the corridors, through the long unit building,

to the door. They ran downstairs, out on the field. Warm sunlight beat down on them from the sky overhead. From all the unit buildings, naked men and women were pouring silently toward the ship.

"What a sight!" an officer said. "We'll never be able to live it down."

"But you'll live, at least," another said.

"Lawrence!"

Hall half-turned.

"Please don't look around. Keep on going. I'll walk behind you."

"How does it feel, Stella?" Hall asked.

"Unusual."

"Is it worth it?"

"I suppose so."

"Do you think anyone will believe us?"

"I doubt it," she said. "I'm beginning to wonder myself."

"Anyhow, we'll get back alive."

"I guess so."

HALL looked up at the ramp being lowered from the ship in front of them. The first people were already beginning to scamper up the metal incline, into the ship, through the circular lock.

"Lawrence—"

There was a peculiar tremor in the Commander's voice. "Lawrence, I'm—"

"You're what?"

"I'm scared."

"Scared!" He stopped. "Why?"

"I don't know," she quavered.

People pushed against them from all sides. "Forget it. Carry-over from your early childhood." He put his foot on the bottom of the ramp. "Up we go."

"I want to go back!" There was panic in her voice. "I—"

Hall laughed. "It's too late now, Stella." He mounted the ramp, holding on to the rail. Around him, on all sides, men and women were pushing forward, carrying them up. They came to the lock. "Here we are."

The man ahead of him disappeared.

Hall went inside after him, into the dark interior of the ship, into the silent blackness before him. The Commander followed.

AT exactly 15:00 Captain Daniel Davis landed his ship in the center of the field. Relays slid the entrance lock open with a bang. Davis and the other officers of the ship sat waiting in the control cabin, around the big control table.

"Well," Captain Davis said, after a while, "where are they?"

The officers became uneasy. "Maybe something's wrong."

"Maybe the whole damn thing's a joke!"

They waited and waited.

But no one came.

—PHILIP K. DICK

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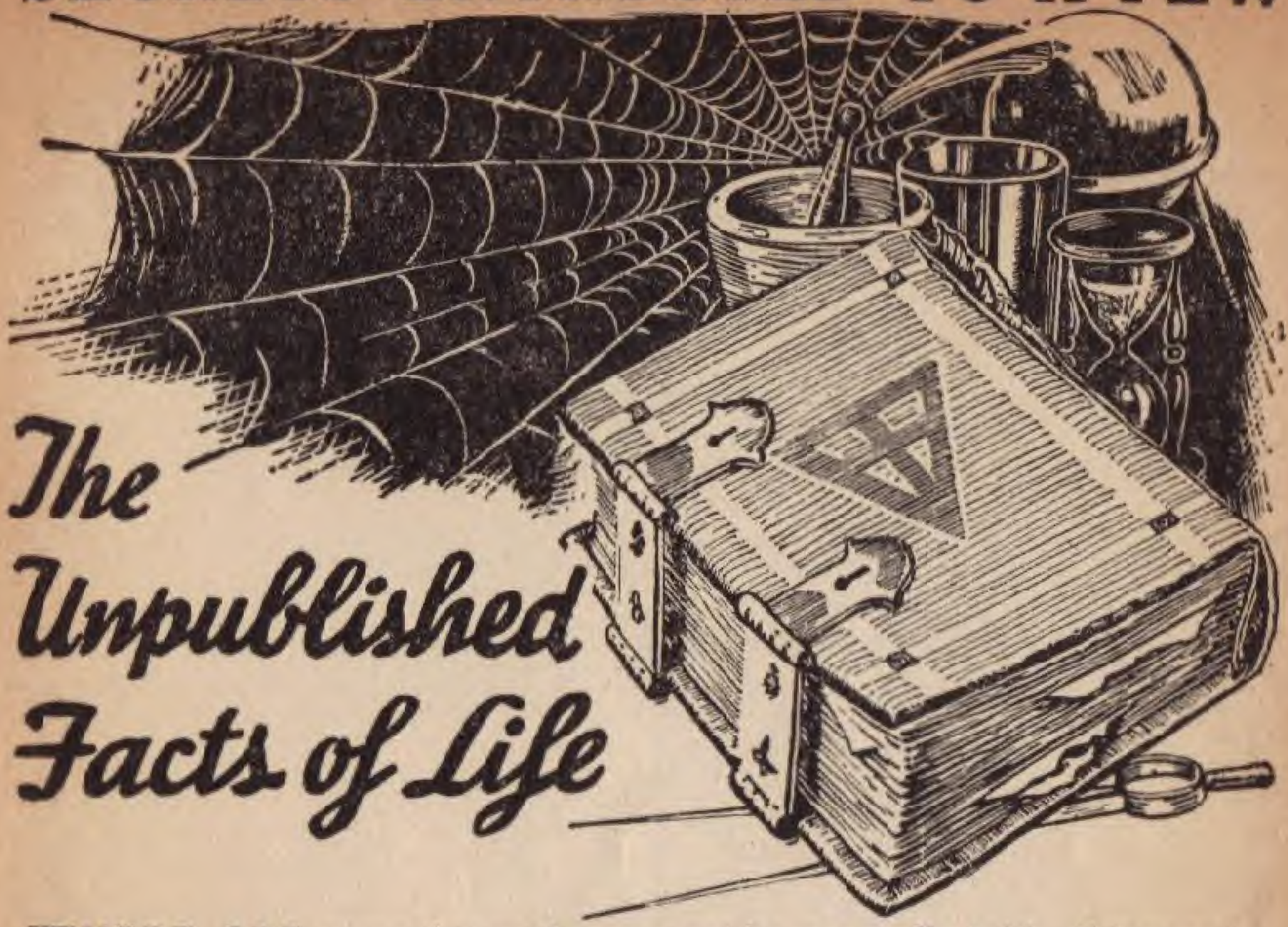

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