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WORLDS of SCIENCE FICTION
JUNE 1954 35 CENTS
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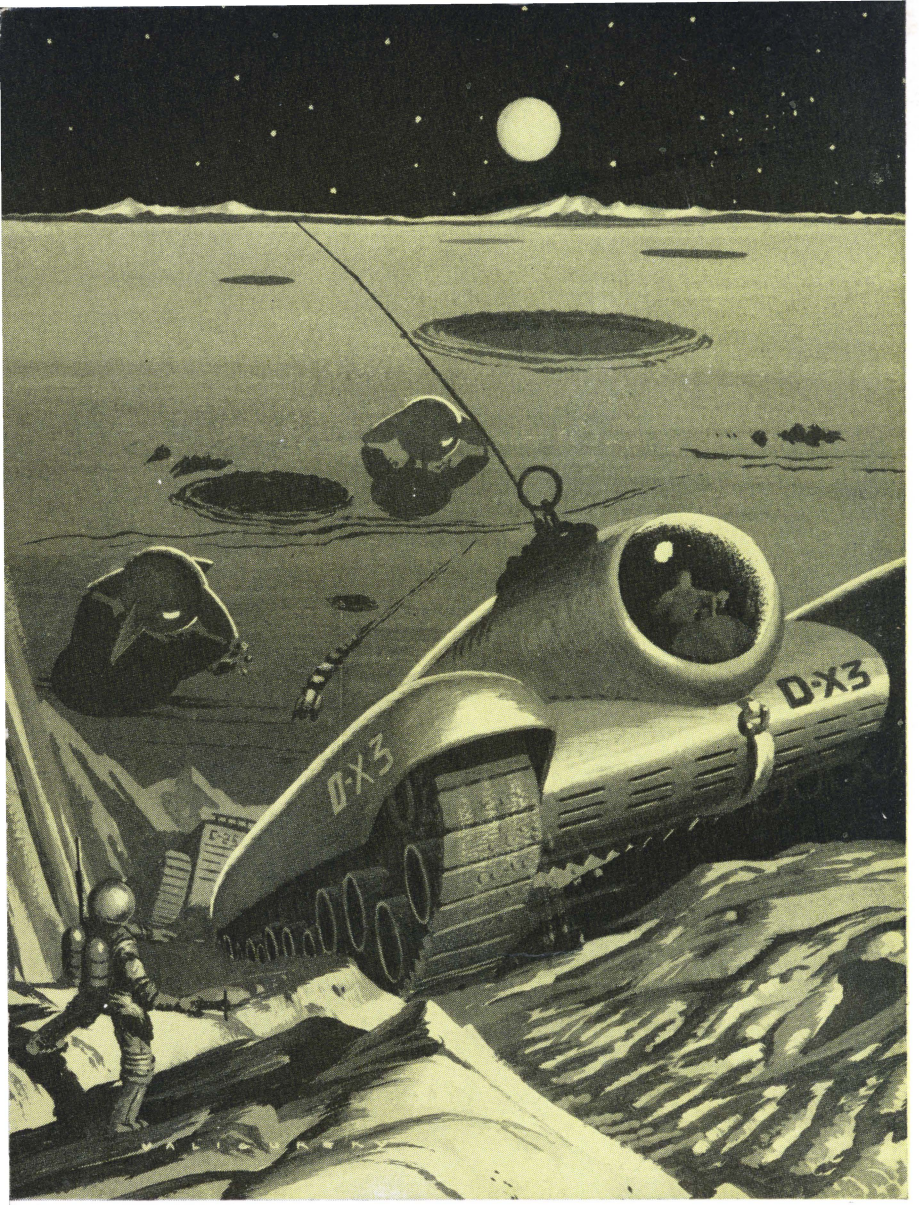
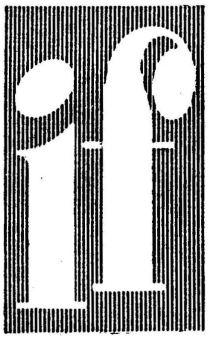


SUPPLY TRAIN ON THE MOON—Loaded with radio, television and electrical power equipment, a huge atomic-powered caterpillar train crawls out of a crater's shadow up into the sunlight, on its way to the site where a Moon base is under construction. After communication and power equipment are on their way, food and prefabricated housing units are unloaded from the two shuttle ships seen in the distance on the crater's floor. Now turn to inside back cover.



WORLDS of SCIENCE FICTION

JUNE 1954

All Stories New and Complete

Editor: JAMES L. QUINN
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EVE P. WULFF

Cover by Ken Fagg: *Lava Falls on Mercury*

NOVELETTES

SHORT STORIES

FEATURES

COVER PICTORIAL: Equipping the Moon Base
by Ed Valigursky

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A CHAT WITH THE EDITOR

WHAT WILL LIFE in America be like 100 years from now?

That is the theme of IF's first Collegiate Science Fiction Contest which was announced last fall. Participants are limited to undergraduates in colleges in the United States and Canada, and the object is three fold: to introduce IF to new readers; stimulate interest in science fiction among young men and women, who will be the America of tomorrow; and to get their ideas and opinions, which are to be expressed in novelette form of approximately 10,000 words. The curtain falls next month, midnight May 15th to be exact, and there are prizes totaling $2,000.

Writing ability is being considered, but of primary concern are ideas and imagination. Politics, science, literature, economics, semantics, sports, medicine—any classroom subject or personal ones —may be used as a background; the scene: any city, village farm or other place in America. There are no taboos and the only limitation is the author's imagination.

Well, manuscripts have begun to trickle in. How many we will receive before the deadline is hard to tell but, judging from enquiries received since last November, there will be many more than anticipated. The response is not only encouraging, from the standpoint of a successful contest, but to see so many young people curious and anxious to express their opinions and speculations about what their country will be like a century from now. As one young man from Seattle, Washington, expressed it: "I have several ideas running around in my head . . . It will be fun to kick this thing around."

None of the entrees will be judged, of course, until after the contest closes, but from brief scanning of early returns space travel, government, electronics, synthetics and human relations seem to be the most popular subjects.

One of the stories predicts an American Empire, consisting of North and South America, as one of three nations existing on earth a century from now. It seems that the United States, diluted with socialism and communism, is saved from becoming a Soviet puppet state (about 1984) by a man with the soldiery of General MacArthur, the economic judgment of Herbert Hoover and the oratory of William Jennings Bryan. Another story tells of a United States subsisting on synthetics while a vast program, under military supervi-

sion, is being conducted to rehabilitate our natural resources; still another contestant prophesizes the human life span to be 125 years, with the cure of cancer as common as that of pneumonia is today.

So—the ideas are coming thick and fast already. What their diversity will be when all submissions are in and we start judging is anybody's guess. But one thing is sure: it's going to be an exciting, fascinating, and thought-provoking journey into what young America is thinking today about tomorrow. And if you want to see what the winners predict, don't miss the November and December issues—you are in for a real treat.

WHEN RADIO first made its appearance with the old crystal sets back in the middle twenties and grew with leaps and bounds up through the thirties and forties, it never did seem to attain the degree of popularity that television has received in the relatively few years since you got a flickering picture over a "seven-inch" set.

In less than ten years TV has become something of a home life social problem as well as a source of entertainment. People build on special rooms or re-do attics or cellars. They buy special chairs, tables, lamps, ash trays, etc. Dad stays home at night and Mother lets the dishes go until morning. The small fry either forget or won't do their homework, they refuse to come to meals until the last redskin has bit the dust, and that errand you want them to do can wait until Space Captain Carson has safely landed his ship on the Moon. In many cases they have taken over the family TV completely.

However, there may soon come a time when television will have the exact opposite effect—on the small fry, anyway. Junior will jump the minute you call him, he will never hesitate to do an errand, he will rush into his meals! Well . . . ?

Television is not only a medium of entertainment. It is used by the Signal Corps to study battle problems. It is the "eyes" of the operator of machines that detonate and disassemble bombs. It is equipment in industry where machinery performs robot operations untenable by man. It is a medium of instruction. . . !

Now we have it! Perhaps it won't be too long before school is conducted by television—right in your own home. All you have to do is put Junior in front of the set, turn it on at "bell time" and he'll get his readin', writin', and 'rithmetic without even going out of doors. He's gonna be told to wash his face and hands, do his home work, do this and that. . . He's gonna get so much schoolin' that he'll be happy to do anything to get a "recess".

So—once TV school starts, parents will get back their sets, ringside seats and domestic peace.

By the way, have you got your color set yet? If not, and that $700-$1,000 price is keeping you from one, don't let it worry you. RCA is sending out color that you can pick up—in black-and-white—on your present set without adapters or gadgets. So, you can wait until color comes down to your budget.

A long, long and fast, fast way from Marconi and Bell. —jlq


ORBAN

If historical precedent be wrong—what qualities, then, must man possess to successfully colonize new worlds? Doctor Ashby said: "There is no piece of data you cannot find, provided you can devise the proper experimental procedure for turning it up." Now—about the man and the procedure . . .

THE COLONISTS

By Raymond F. Jones

Illustrated by Paul Orban

THIS WAS the rainy year. Last year had been the dry one, and it would come again. But they wouldn't be here to see it, Captain Louis Carnahan thought. They had seen four dry ones, and now had come the fourth wet one, and soon they would be going home. For them, this was the end of the cycle.

At first they had kept track of the days, checking each one off on their calendars, but the calendars had long since been mingled indistinguishably with the stuff of the planet itself—along with most of the rest of their equipment. By that time, however, they had learned that the cycle of wet and dry seasons was almost precisely equivalent to a pair of their own Terran years, so they had no more need for the calendars.

But at the beginning of this wet season Carnahan had begun marking off the days once again with scratches on the post of the hut in which he lived. The chronometers

were gone, too, but one and three-quarters Earth days equalled one Serrengian day, and by that he could compute when the ships from Earth were due.

He had dug moats about the hut to keep rain water from coming in over his dirt floor. Only two of the walls were erected, and he didn't know or much care whether he would get the other two up or not. Most of the materials had blown away during the last dry period and he doubted very much that he would replace them. The two available walls were cornered against the prevailing winds. The roof was still in good shape, allowing him a sufficient space free of leaks to accommodate his cooking and the mat which he called a bed.

He picked up a gourd container from the rough bench in the center of the room and took a swallow of the burning liquid. From the front of the hut he looked out over the rain swept terrain at the circle of huts. Diametrically across from him he could see Bolinger, the little biologist, moving energetically about. Bolinger was the only one who had retained any semblance of scientific interest. He puttered continually over his collection, which had grown enormously over the eight year period.

When they got back, Bolinger at least would have some accomplishment to view with pride. The rest of them—?

Carnahan laughed sharply and took another big swallow from the gourd, feeling the fresh surge of hot liquor already crossing the portals of his brain, bringing its false sense of wisdom and clarity. He knew it was false, but it was the only source of wisdom he had left, he told himself.

He staggered back to the bed with the gourd. He caught a glimpse of his image in the small steel mirror on the little table at the end of the bed. Pausing to stare, he stroked the thick mat of beard and ran his fingers through the mane of hair that had been very black when he came, and was now a dirty silver grey.

He hadn't looked at himself for a long time, but now he had to. He had to know what they would see when the ships of Earth came to pick up the personnel of the Base and leave another crew. The image made him sick.

At the beginning of this final season of the rains, all his life before coming to Serrengia seemed like a dream that had never been real. Now it was coming back, as if he were measuring the final distance of a circle and approaching once again his starting point. He kept remembering more and more. Watching his image in the mirror, he remembered what General Winthrop had said on the day of their departure. "The pick of Earth's finest," the General said. "We have combed the Earth and you are the men we have chosen to represent Mankind in the far reaches of the Universe. Remember that wherever you go, there goes the honor of Mankind. Do not, above all, betray that honor."

Carnahan clenched his teeth in bitterness. He wished old fatty Winthrop had come with them. Savagely he upended the gourd and flung it across the room. It

meant a trip to Bailey's hut to get it replenished. Bailey had been the Chief Physicist. Now he was the official distiller, and the rotgut he produced was the only thing that made existence bearable.

The Captain stared again at his own image. "Captain Louis Carnahan," he murmured aloud. "The pick of Earth's finest—!" He smashed a fist at the little metal mirror and sent it flying across the room. The table crashed over, one feeble leg twisting brokenly. Then Carnahan hunched over with his face buried against the bed. His fists beat against it while his shoulders jerked in familiar, drunken sobs.

After it was over he raised up, sitting on the edge of the bed. His mind burned with devastating clarity. It seemed for once he could remember everything that had ever happened to him. He remembered it all. He remembered his childhood under the bright, pleasant sky of Earth. He remembered his ambition to be a soldier, which meant spaceman, even then. He remembered his first flight, a simple training tour of the Moon installations. It convinced him that never again could he consider himself an Earthman in the sense of one who dwells upon the Earth. His realm was the sky and the stars. Not even the short period when he had allowed himself to be in love had changed his convictions. He had sacrificed everything his career demanded.

Where had it gone wrong? How could he have allowed himself to forget? For years he had forgotten, he realized in horror. He had forgotten that Earth existed. He had forgotten how he came to be here, and why. And all that he was meant to accomplish had gone undone. For years the scientific work of the great base expedition had been ignored. Only the little biologist across the way, pecking at his tasks season after season, had accomplished anything.

And now the ships were coming to demand an accounting.

He groaned aloud as the vision became more terrible. He thought of that day when they had arrived at the inhospitable and uninhabited world of Serrengia. He could close his eyes and see it again—the four tall ships standing on the plateau that was scarred by their landing. The men had been so proud of what they had done and would yet do. They could see nothing to defeat them as they unloaded the mountains of equipment and supplies.

Now that same equipment lay oozing in the muck of leafy decomposition, corroded and useless like the men themselves. And in the dry seasons it had been alternately buried and blasted by the sands and the winds.

He remembered exactly the day and the hour when they had cracked beyond all recovery. With an iron hand he had held them for three years. Weekly he demanded an appearance in full dress uniform, and hard discipline in all their relationships was the rule. Then one day he let the dress review go. They had come in from a long trek through a jungle that was renewing itself after a dry season. Too exhausted in body and spirit, and filled with an increasing sense

of futility, he abandoned for the moment the formalities he had held to.

After that it was easy. They fell apart all around him. He tried to hold them, settling quarrels that verged on mutiny. Then in the sixth month of the fourth year he had to kill with his own hands the first of his crazed and rebellious crew. This scientific work disintegrated and was abandoned. He remembered he had locked up all their notes and observations and charts, but where he had hidden the metal chest was one of the few things he seemed unable to recall.

The more violent of the expedition killed each other off, or wandered into the jungle or desert and never came back. On the even dozen who were left there had settled a kind of monastic hermitage. Each man kept to himself, aware that a hairbreadth trespass against his neighbor would mean quick challenge to the death. Yet they clung to membership in this degenerate community as if it represented their last claim to humanness.

This is what they would see Carnahan, thought. They would see his personal failure. It *was* his, there was no question of that. If he had been strong he could have held the expedition together. He could have maintained the base in all the strength and honor of military tradition that had been entrusted to him. He hadn't been strong enough.

The ships would come. The four of them. They might come tomorrow or even today. A panic crept through him. The ships could land at any time now, and their men would come marching out to greet him in his failure and cowardice and his dishonor. It must not happen. Old fatty Winthrop had said one thing that made sense: "—there goes the honor of Mankind. Do not, above all, betray that honor."

Fatty was right. The only thing he had left was honor, and in only one way could he retain it.

With the fiery clarity burning in his brain he struggled from where he lay and picked up the metallic mirror and hung it from the post near the bed. He turned up the broken table against the wall. Then, with the air of one who has not been on the premises for a long time he began searching through the long unused chests stacked in the corner. The contents were for the most part in a state of decay, but he found his straight edged razor in the oiled pouch where he had last placed it.

There should have been shaving detergent, but he couldn't find it. He contented himself with preparing hot water, then slowly and painfully hacked the thick beard away and scraped his face clean. He found a comb and raked it through his tangled mat of hair, arranging it in some vague resemblance to the cut he used to wear.

From the chests he drew forth the dress uniform he had put away so long ago. Fortunately, it had been in the center, surrounded by other articles so that it was among the best preserved of his possessions. He donned it in place of the rags he wore. The shoes were almost completely hard from lack of care,

but he put them on anyway and brushed the toes with a scrap of cloth.

From underneath his bed he took his one possession which he had kept in meticulous repair, his service pistol. Then he stood up, buttoning and smoothing his coat, and smiled at himself in the little mirror. But his gaze shifted at once to something an infinity away.

" 'Do not, above all, betray that honor.' At least you gave us one good piece of advice, fatty," he said.

Carefully, he raised the pistol to his head.

HULL NUMBER FOUR was erect and self-supporting. Its shell enclosure was complete except for necessary installation openings. And in Number One the installations were complete and the ship's first test flight was scheduled for tomorrow morning.

John Ashby looked from the third story window of his office toward the distant assembly yards on the other side of the field. The four hulls stood like golden flames in the afternoon sunlight. Ashby felt defeated by the speed with which the ships were being completed. It was almost as if the engineers had a special animosity toward him, which they expressed in their unreasonable speed of construction. This was nonsense, of course. They had a job to do and were proud if they could cut time from their schedule.

But there was no cutting time from *his* schedule, and without the completion of his work the ships would not fly. He had to find men capable of taking them on their fantastic journeys. To date, he had failed.

He glanced down at the black car with government markings, which had driven in front of the building a few moments before, and then he heard Miss Haslam, his secretary, on the interphone. "The Colonization Commission, Dr. Ashby."

He turned from the window. "Have them come in at once," he said.

He strode to the door and shook hands with each of the men. Only four of them had come: Mr. Merton, Chairman; General Winthrop; Dr. Cowper; and Dr. Boxman.

"Please have seats over here by the window," Ashby suggested.

They accepted and General Winthrop stood a moment looking out. "A beautiful sight, aren't they, Ashby?" he said. "They get more beautiful every day. You ought to get over more often. Collins says you haven't been around the place for weeks, and Number One is going up tomorrow."

"We've had too much to occupy us here."

"*My* men are ready," said the General pointedly. "We could supply a dozen crews to take those ships to Serrengia and back, and man the base there."

Ashby turned away, ignoring the General's comment. He took a chair at the small conference table where the three Commissioners had seated themselves. Winthrop followed, settling in his chair with a smile, as if he had scored a major point.

"Number One is ready," said Merton, "and still you have failed to offer us a single man, Dr. Ashby. The Commission feels that the time is very near when definite action will have to be taken. We have your reports, but we wanted a personal word with you to see if we couldn't come to some understanding as to what we can expect."

"I will send you the men when I find out what kind of man we need," said Ashby. "Until then there had better be no thought of releasing the colonization fleet. I will not be responsible for any but the right answers to this problem."

"We are getting to the point," said Boxman, "where we feel forced to consider the recommendations of General Winthrop. Frankly, we have never been able to fully understand your objections."

"There'll never be a time when I cannot supply all the men needed to establish this base," said Winthrop. "We spend unlimited funds and years of time training personnel for posts of this kind, yet you insist on looking for unprepared amateurs. It makes no sense whatever, and only because you have been given complete charge of the personnel program have you been able to force your views on the Commission. But no one understands you. In view of your continued failure, the Commission is going to be forced to make its own choice."

"My resignation may be had at any time," said Ashby.

"No, no, Dr. Ashby." Merton held up his hand. "The General is perhaps too impulsive in his disappointment that you have failed us so far, but we do not ask for your resignation. We do ask if there is not some way in which you might see fit to use the General's men in manning the base."

"The whole answer lies in the erroneous term you persist in applying to this project," said Ashby. "It is not a base, and never will be. We propose to set up a colony. It makes an enormous difference with respect to the kind of men required. We've been over this before—"

"But not enough," snapped Winthrop. "We'll continue to go over it until you understand you can't waste those ships on a bunch of half-baked idealists inspired by some noble nonsense about carrying on the torch of human civilization beyond the stars. We're putting up a base, to gather scientific data and establish rights of occupancy."

"I don't think I agree with your description of my proposed party of colonists," said Ashby mildly.

"That's what they'll be! Were colonists ever anything but psalm singing rebels or cutthroats trying to escape hanging? You're not going to establish a cultural and scientific base with such people."

"No, you're quite right. That's not the kind."

"What is it you're looking for?" said Merton irritably. "What kind of men do you want, if you can't find them among the best and the worst humanity offers."

"Your terms are hardly accurate," said Ashby. "You fail to recognize the fact that we have never known what kind of man it takes

to colonize. You ignore the fact that we have never yet successfully colonized the planets of our own Solar System. Bases, yes—but all our colonies have failed to date."

"What better evidence could you ask for in support of my argument?" demanded Winthrop. "We've *proved* bases are practical, and that colonies are not."

"No matter how far away or how long the periods of rotation, a man assigned to a base expects to return home. Night or day, in the performance of any duty, there is in his mind as a working background the recognition that at some future time he can go home. His base is never his home."

"Precisely. That is what makes the base successful."

Ashby shook his head. "No base is ever successful from the standpoint of permanent extension of a civilization. By its very nature it is transitory, impermanent. That is not what we want now."

"We have the concept of permanent bases in military thinking," said Winthrop. "You can't generalize in that fashion."

"Name for me a single military or expeditionary base that continued its permanency over any extended period of history."

"Well—now—"

"The concept is invalid," said Ashby. "Extensions of humanity from one area to another on a permanent basis are made by colonists. Men who do not expect to rotate, but come to live and establish homes. This is what we want on Serrengia. Humanity is preparing to make an extension of itself in the Universe.

"But more than this, there are limitations of time and distance in the establishment of bases, which cannot be overcome by any amount of training of personnel. Cycles of rotation and distances from home can be lengthened beyond the capacity of men to endure. It is only when they go out with *no* expectation of return that time and distance cease to control them."

"We do not know of any such limitations," said Winthrop. "They have not been met here in the Solar System."

"We know them," said Ashby. "The thing we have not found and which we must discover before those ships depart is the quality that makes it possible for a man to ignore time and distance and his homeland. We know a good deal about the successful colonists of Earth's history. We know that invariably they were of some minority group which felt itself persecuted or limited by conditions surrounding it, or else they were fleeing the results of some crime."

"If that is what you are looking for, it is no wonder you have failed," said Dr. Cowper. "We have no such minority groups in our society."

"Very true," Ashby replied. "But it is not the condition of fleeing or being persecuted that generates the qualities of a perfect colonist by any means! We have examples enough of adequately persecuted groups who failed as colonists. But there is some quality, which seems to appear, if at all, only in some of those who have courage enough to flee their oppression or limiting conditions. This quality makes

them successful in their colonization.

"We are looking first, therefore, for individuals who would have the courage to resist severe limitations to the extent of flight, if such limitations existed. And among these we hope to find the essence of that which makes it possible for a man to cut all ties with his homeland."

"So you are making your search," said Merton, "among the potentially rebellious and criminal?"

Ashby nodded. "We have confined our study to these individuals as a result of strict historical precedent so that we might narrow the search as much as possible. You must understand, however, that to choose merely the rebellious and staff our ships with these would be foolhardy. It would be a ridiculous shotgun technique. *Some* of them would succeed, but we would never know which it would be. We might send twenty or a thousand ships out and establish one successful colony.

"We have to do much better than that. Our consumption of facilities on this project is so great that we have to *know,* within a negligible margin of error, that when these groups are visited in eight or fifty years from now we will find a community of cooperative, progressive human beings. We cannot be satisfied with less!"

"I'm afraid the majority of sentiment in the Commission is not in agreement with you," said Mr. Merton. "To oppose General Winthrop's trained crews with selected cutthroats and traitors may have historical precedent, but it scarcely seems the optimum proceedure in this case!

"We are willing to be shown proof of your thesis, Dr. Ashby, but we have certain realities of which we are sure. If we can do no better, we shall take the best available to us at the time the ships are ready. If you cannot supply us with proven crews and colonists by then we shall be forced to accept General Winthrop's recommendations and choose personnel whose reactions are at least known and predictable to a high degree. I'm sorry, but surely you can understand our position in this matter."

For a long time Ashby was silent, looking from one to the other of the faces about the table. Then he spoke in a low voice, as if having reached the extremity of his resources. "Yes—the reactions of Winthrop's men are indeed known. I suggest that you come with me and I will show you what those reactions are."

He stood up and the others followed with inquiring expressions on their faces. Winthrop made a short, jerky motion of his head, as if he detected a hidden sting in Ashby's words. "What do you mean by that?" he demanded.

"You don't suppose that our examinations would neglect the men on whom you have spent so much time and effort in training?"

The General flushed with rage. "If you've tampered with any of my men—! You had no right—!"

The other Commission members were smiling in faint amusement at the General's discomfiture.

"I should think it would be to your advantage to check the results of your training," said Mr. Merton.

"There is only one possible

check!" exclaimed General Winthrop. "Put these men on a base for a period of eight years and at a distance of forty seven light years from home and see what they will do. That is the only way you can check on them."

"And if you know anything about our methods of testing, you will understand that this, in effect, is what we have done. Your best man is about to be released from the test pit. He can't have more than an hour to go."

"Who have you got in your guinea pig pen?" the General demanded. "If you've ruined him—"

"Captain Louis Carnahan," said Ashby. "Shall we go down, gentlemen?"

IT HAD been a grisly business, watching the final minutes of Carnahan's disintegration. General Winthrop's face was almost purple when he saw the test pit in which Carnahan was being examined. He tried to tear out the observation lens with his bare hands as he saw the Captain lift the loaded pistol to his head in the moment before the safety beam cut in.

And now Ashby kept hearing Winthrop's furious, scathing voice: "You have destroyed one of the best men the Service has ever produced! I'll have your hide for this, Ashby, if it's the last act of my life."

Merton and the others had been shocked also by the violence and degradation of what they saw, but whether he had made his point or not, Ashby didn't know. Carnahan, of course, would be returned to the Service within twenty four hours, all adverse effects of the test completely removed. He would be aware that he had taken it and had not passed, but there would be no trace of the bitter emotions generated during those days of examination.

Ashby looked out again at the four hulls now turning from gold to red as the sun dropped lower in the sky. He had not asked Merton if the ultimatum was going to stick. He wondered how they could insist on it after what they had seen, but he didn't *know*.

Impatiently, he turned from the window as Miss Haslam's voice came on the intercom once more. "Dr. Ashby, Mr. Jorden is still waiting to see you."

Jorden. He had forgotten. The man had been waiting during his conference with the Commissioners. Jorden was the one who had been rejected for examination two weeks ago and insisted he had a *right* to be examined for colonization factors. He had been trying to get in ever since. He might as well get rid of the man once and for all, Ashby decided reluctantly.

"Show him in," he said.

Mark Jorden was a tall, blond man in his late twenties. Shaking hands with him, Ashby felt thick, strong fingers and glimpsed a massive wrist at the edge of the coat sleeve. Jorden's face was a pleasant Scandinavian pink, matched by blue eyes that looked intently into Ashby's face.

They sat at the desk. "You want to be a colonist," said Ashby. "You say you want to settle forty seven light years from Earth for the rest

of your life. And our preliminary psycho tests indicate you have scarcely a vestige of the basic qualities required. Why do you insist on the full examination?"

Jorden smiled and shook his head honestly. "I don't know exactly. It seems like something I'd enjoy doing. Maybe it's in my people—they liked to move around and see new places. They were seamen in the days when there weren't any charts to sail by."

"It's certain that this is a situation without charts to sail by," said Ashby, "but I hardly think the word 'enjoy' is applicable. Have you thought at all of what existence means at that distance from Earth, with no communication whatever except a ship every eight years or so? Qualifications just a trifle short of insanity are required for a venture of that kind."

"I'm sure you don't mean that, Dr. Ashby," said Jorden reprovingly.

"Perhaps not," said Ashby. His visitor's calm assurance irritated him, as if *he* were the one who knew what a colonist ought to be. "I see by your application you're an electrical engineer."

Jorden nodded. "Yes. My company has just offered me the head of the department, but I had to explain I was putting in an application for colonist. They think I'm crazy, of course."

"Does taking the examination mean giving up your promotion?"

"I'm not sure. But I rather think they will pass me up and give it to one of the other men."

"You want to go badly enough to risk giving up that chance in order to take an examination which will unquestionably show you have no qualifications whatever to be a colonist?"

"I think I'm qualified," said Jorden. "I insist on being given the chance. I believe I have the right to it."

Ashby tried to restrain his irritation. What Jorden said was perhaps true. No one had ever raised the point before. Those previously rejected by the preliminary tests had withdrawn in good grace. It seemed senseless to waste the time of a test pit and its large crew on an obviously hopeless applicant. On the other hand, he couldn't afford to have Jorden stirring up trouble with the Colonization Commission at this critical time—and he could guess that was exactly what Jorden's next move would be if he were turned down again.

"Our machines will find out everything about you later," said Ashby, "but I'd like you to tell me about yourself so that I may feel personally acquainted with you."

Jorden shrugged. "There's not much to tell. I had the usual schooling, which wasn't anything impressive. I had my three year hitch in the Service, and I suppose that's where I began to feel there was something available in life which I had never anticipated. I suppose it sounds very silly to you, but when I first put a foot on the Moon I felt like crying. I picked up a handful of pumice and let it sift through my fingers. I looked out toward Mars and felt as if I could go anywhere, that I ought to go everywhere.

"The medicos told me later that it was a crazy sort of feeling that

everyone gets his first time out, but I didn't believe them. I didn't believe it was quite the same with anyone else. When I got out to Mars finally, and during my one tour on Pluto, it seemed to get worse instead of decreasing as they told me it would. When I got out I took a job in my profession, and I've been satisfied, but I've never been able to get rid of the feeling there's something I'm missing, something I ought to be doing. It's connected with everything out there." He lifted a broad hand and gestured to the horizon beyond the windows.

"Perhaps your career should have been in the Service," suggested Ashby.

"No. That was good enough while it lasted, but they didn't have anything I wanted permanently. When I heard about the proposed colonization on Serrengia that seemed to be it."

"Your application indicates you are not married."

"That's right," said Jorden. "I have no ties to hold me back."

"You understand, of course, that as a colonist you will be expected to marry, either before leaving or soon after arrival. Colonial life is family life."

"I hadn't thought much about that, but it can't be too bad, I suppose. I presume my choice would be quite severely limited to a fellow colonist?"

"Correct."

"There is a story about my third or fourth grandfather who was given a girl to marry the night before he sailed from his homeland to settle in a new country. They had seventeen children and were said to be extraordinarily happy. My family still owns the homestead they cleared. I was born there."

"It can be done, but it doesn't conform closely with our currently accepted social mores," said Ashby hopefully.

"I'm sure that won't stand in my way. If there's a woman who's willing to take a chance, I certainly will be."

"There's one more thing we have to know," said Ashby. "What are you running away from? Who or what are your enemies?"

Jorden laughed uncertainly. "I'm sorry, but I'm not running away from anything. As far as I know I have no enemies."

"*All* colonists are running from something," said Ashby. "Otherwise they would stay where they are."

Jorden regarded him a moment in silence, then smiled slowly. "I think you are going to have occasion to revise that thesis," he said.

"A great deal of history would also have to be revised if we did," said Ashby. "At any rate, let's go down to the test pits. I'll show you what's in store for you there, and you can further decide if you insist on going through with it."

THE LABORATORIES of the Institute of Social Science were spread over a forty acre area, consisting mostly of the test pits where experimental examination of proposed colonists was being conducted. Ashby led his visitor to the ground floor where they took a pair of the electric cycles used for

transportation along the vast corridors of the laboratory.

A quarter of a mile away they stopped and entered a glassed-in control room fitted with a number of desks and extensive banks of electronic equipment.

"This almost looks like a good sized computer setup," said Jorden admiringly.

"We use computers extensively, but this equipment is merely the recording and control apparatus for the synthetic environment established in the test pit. Please step this way."

The control room was empty now, but during a test it was occupied by a dozen technicians. It was a highly unorthodox procedure to show a prospective colonist the test pit setup before examination, but Ashby still had hopes of shunting Jorden aside without wasting the facilities on a useless test.

They moved to an observation post and Ashby directed Jorden's attention to the observation lenses. "We cleaned out here this afternoon," he said. "A Captain of the Service last occupied the pit."

Jorden looked up inquiringly. "Did he—?"

"No. He didn't make it. Tomorrow morning you will be given a preconditioning which will set up the basic situation that you have traveled to Serrengia and are now established there in the colony. We will begin the test at a period of some length after establishment there, when difficulties begin to pile up. Other members of the party will be laboratory staff people who will provide specific, guiding stimuli to determine your reaction to them."

"Are they there constantly, night and day?"

"No. When you are asleep their day's work is over and they go home."

"What if I wake up and find the whole setup is a phony?"

"You won't. We have control beams constantly focussed upon the persons being tested. These are used to keep him asleep when desirable, and to control him to the extent of preventing him doing physical harm to himself or others."

"Is that necessary?" said Jorden dubiously. "Why should anyone wish to do harm?"

"The Captain, whom we released today, was pushed to the point of suicide," said Ashby. "We find it *quite* necessary to assure ourselves of adequate control at all times."

"How can you set up the illusion of distance and a whole new world in such a comparatively small area?"

"It *is* illusion, a great deal of it. Some is induced along with the initial preconditioning, other features are done mechanically, but when you are there you will have no doubt whatever that you are a colonist on the planet Serrengia. You will act accordingly, and respond to the stimuli exactly as if you had been transported to the actual planet. In this way, we are sure of finding colonists who will not blow up when they face the real situation."

"How many have you found so far?"

"None."

Jorden was shaken for a moment, but he smiled then and said, "You have found one. Put my name down on the books."

"We'll see," said Ashby grimly. "Your colony will be in the limited belt of the planet's northern hemisphere where considerable agriculture is possible. You'll be in the midst of a group trying to beat a living from a world which is neither excessively hostile nor conducive to indolence. Some of the people will be bitter and wish they had never come. They will break up in groups and fight each other. They will challenge every reason you have for your own coming. You will face your own personal impoverishment, the death of your child—"

"Child?" said Jorden.

"Yes. You will be provided with a wife and three children. One of these will die, and you will react as if it were your own flesh. Your wife will oppose your staying, and demand a return to Earth. We will throw at you every force available to tear down your determination to build a colony. We shall test in every possible way the validity of your decision to go. Do you still wish to go through with it?"

Jorden's grin was somewhat fainter. He took a deep breath as he nodded slowly. "Yes, I'll go through with it. I think it's what I want."

When Ashby finally returned alone to the office, Miss Haslam had gone home. He put in a call anyway for Dr. Bonnie Nathan. She usually remained somewhere in the laboratory until quite late, even when not assigned to a test.

In a few minutes her voice came over the phone. "John? What can I do for you?"

"I thought I could let you off for a few days," said Ashby, "but we've got another one that's come up rather suddenly." He told her briefly about Mark Jorden. "It's useless, but I don't want him running to the Commission right now, so we'll put him through. You'll be the wife. We'll use Program Sixty Eight, except that we'll accelerate it."

"Accelerate—!"

"Yes. It won't hurt him any. Whatever happens we can wipe up afterwards. This is simply a nuisance and I want it out of the way as quickly as possible. After that—perhaps I can give you those few days I promised you. O.K.?"

"It's all right with me," said Bonnie. "But an accelerated Sixty Eight—"

THEY STOOD on a low hillock overlooking the ninety acres of bottom land salvaged from the creek grass. Mark Jorden shaded his eyes and squinted critically over the even stand of green shoots emerging from the bronzed soil. Germination had been good in spite of the poor planting time. The chance of getting a crop out was fair. If they didn't they'd be eating shoe plastic in another few months.

The ten year old boy beside him clutched his hand and edged closer as if there were something threatening him from the broad fields. "Isn't there any way at all for

Earth to send us food," he said, "if we don't get a crop?"

"We have to make believe Earth doesn't exist, Roddy," said Jorden. "We couldn't even let them know we need help, we're so far away." He gripped the boy's shoulders solidly in his big hands and drew him close. "We aren't going to need any help from Earth. We're going to make it on our own. After all, what would they do on Earth if they couldn't make it? Where would they go for outside help?"

"I know," said the boy, "but there are so many of them they can't fail. Here, there's only the few of us."

Jorden patted his shoulder gently again as they started moving toward the rough houses a half mile away. "That makes it all the easier for us," he said. "We don't have to worry about the ones who won't cooperate. We can't lose with the setup we've got."

It was harder for Roddy. He remembered Earth, although he had been only four when they left. He still remembered the cities and the oceans and the forests he had known so briefly, and was cursed with the human nostalgia for a past that seemed more desirable than an unknown, fearful future.

Of the other children, Alice had been a baby when they left, and Jerry had been born during the trip. They knew only Serrengia and loved its wild, uncompromising rigor. They spent their abandoned wildness of childhood in the nearby hills and forests. But with Roddy it was different. Childhood seemed to have slipped by him. He was moody, and moved carefully in constant fear of this world he would never willingly call home. Jorden's heart ached with longing to instill some kind of joy into him.

"That looks like Mr. Tibbets," said Roddy suddenly, his eyes on the new log house.

"I believe you're right," said Jorden. "It looks like Roberts and Adamson with him. Quite a delegation. I wonder what they want."

The colony consisted of about a hundred families, each averaging five members. Originally they had settled on a broad plateau at some distance from the river. It was a good location overlooking hundreds of miles of desert and forest land. Its soil was fertile and the river water was lifted easily through the abundant power of the community atomic energy plant which had been brought from Earth.

Three months ago, however, the power plant had been destroyed in a disasterous explosion that killed almost a score of the colonists. Crops for their next season's food supply were half matured and could not be saved by any means available.

The community was broken into a number of smaller groups. Three of these, composed of fifteen families each, moved to the low lands along the river bank and cleared acreage for new crops in a desperate hope of getting a harvest before the season ended. They had not yet learned enough of the cycle of weather in this area to predict it with much accuracy.

Mark Jorden was in charge of one of the farms and the elected

leader of the village in which he lived.

Tibbets was an elderly man from the same village. In his middle sixties, he presented a puzzle to Jorden as to why he had been permitted to come. Roberts and Adamson were from the settlements farther down the river.

Jorden felt certain of the reason for their visit. He didn't want to hear what they had to say, but he knew he might as well get it over with.

They hailed him from the narrow wooden porch. Jorden came up the steps and shook hands with each. "Won't you come in? I'm sure Bonnie can find something cool to drink."

Tibbets wiped his thin, wrinkled brow. "She already has. That girl of yours doesn't waste any time being told what to do. It's too bad some of the others can't pitch in the way Bonnie does."

Jorden accepted the praise without comment, wondering if no one else at all were aware of the hot, violent protests she sometimes poured out against him because of the colony.

"Come in anyway," Jorden said. "I have to go back to the watering in a little while, but you can take it easy till then." He led the way into the log house.

Their homes on the plateau had been decent ones. With adequate power they had made lumber and cement, and within a year of their landing had built a town of fine homes. Among those who had been forced to abandon them, no one was more bitter than Bonnie. "You're no farmer," she said. "Why can't those who are be the ones to move?"

Now, when he came into the kitchen, she was tired, but she tried to smile as always at her pleasure in seeing him again. He couldn't imagine what it would be like not having her to welcome him from the fields.

"I'll get something cool for you and Roddy," she said. "Would you gentlemen like another drink?"

When they were settled in the front room Tibbets spoke. "You know why we've come, Mark. The election is only a couple of months away. We can't have Boggs in for another term of governor. You've got to say you'll run against him."

"As I told you last time, Boggs may be a poor excuse for the job, but I'd be worse. He's at least an administrator. I'm only an engineer —and more recently a farmer."

"We've got something new, now," said Tibbets, his eyes suddenly cold and meaningful.

"The talk about his deliberately blowing up the power plant? Talk of that kind could blow up the whole colony as well. Boggs may have his faults but he's not insane."

"We've got proof now," said Tibbets. "It's true. Adamson's got the evidence. He got one of the engineers who escaped the blast to talk. It's one of them who were supposed to have been killed. He's so scared of Boggs he's still hiding out. But he's got the proof and those who are helping him know it's true."

"Tibbet's is right," said Adamson earnestly. "We know it's true. And something like that can't stay hidden. It's got to be brought out

if we're going to make the colony survive. You can't just shut your eyes to it and say, 'Good old Boggs would never do a thing like that.' "

Jorden's eyes were darker as he spoke in low tones now, hoping Roddy would not be listening in the kitchen. "Suppose it is true. Why would Boggs do such an insane thing?"

"Because he's an insane man," said Tibbets. "That's the obvious answer. He wants to destroy the colony and limit its growth. He was satisfied to come here and be elected governor and run the show. He saw it as means of becoming a two-bit dictator over a group of subservient colonists. It hasn't turned out that way. He found a large percentage of engineers and scientists who would have none of his nonsense.

"He saw the group becoming something bigger than himself. He had to cut it down to his own size. He's willing to destroy what he can't possess, but he believes that by reducing us to primitive status he can keep us in line. In either case the colony loses."

"If what you say is true—if it's actually true," Jorden said, his eyes suddenly far away, "we've got to fight him—"

"Then we can count on you?"

"Yes—you can count on me."

He stood in the doorway watching the departure of the three men, but he was aware of Bonnie behind him. She rushed to him as he turned, and put her face against his chest.

"Mark—you can't do it! Boggs will kill you. This is no concern of ours. We don't belong to Maintown any more. It's their business up there. I'd go crazy if anything happened to you. You've got to think of the rest of us!"

"I am thinking," said Mark. He raised her chin so he could look into her eyes. "I'm thinking that we are going to live here the rest of our lives, and so are the children. If the story about Boggs is true, we're all concerned. We wouldn't be down here if the power plant hadn't been destroyed. We'd be living in our good home in Maintown. Would you expect me to let Boggs get away with this without raising a hand to stop him?"

"Yes—I would," said Bonnie, "because there is nothing anyone can do. You know he has Maintown in the palm of his hand. He's screened out every ruffian and soured colonist in the whole group and they'll do anything he says. You can't fight them all, Mark. I won't let you."

"It won't be me alone," said Jorden. "If it develops into a fight the majority of the colony will be with us. Earth will be with us. Boggs will be facing the results of the whole two billion year struggle it took to make man what he now is."

IN THE lounge off the lab cafeteria, Ashby indulged in a late coffee knowing he wouldn't sleep anyway. Across the table Bonnie ate sparingly of a belated supper.

"The threat of having to fight Boggs didn't give him much of a scare," said Ashby thoughtfully.

"It'll take a lot more than a

bogey man like Boggs to scare Mark," said Bonnie. "You've got yourself a bigger quantity of man than you bargained for."

"This might turn out to be more interesting than we thought. I wish there were more time to spend on him. But Merton called up again today to verify the ultimatum I told you about. We produce colonists by the time Hull Four is complete or they turn the personnel problem over to Winthrop—even after they saw Carnahan go to pieces before their eyes."

"Has it ever occurred to you," said Bonnie slowly, "that we might just possibly be off on the wrong foot? How do you know that any of the colonists of Earth's history could have stood up to the demands of Serrengia? I'm beginning to suspect that the Mayflower's passenger list would have folded quite completely under these conditions. They had it comparatively easy. So did most other successful colonists."

"Yes—?" said Ashby.

"Maybe they succeeded in *spite* of being rebels. If they could have come to the new lands without the pressure of flight, but in complete freedom of action, they might have made an even greater success."

"But why would they have come at all, then?"

"I don't know. There must be another motive capable of impelling them. In great feats of exploration, creation—other human actions similar to colonization—"

"There are *no* other human actions similar to colonization," said Ashby. "Surely you realize we're dealing with something unique here, Bonnie!"

"I know—all I'm trying to say is there could be another valid motive. I think Mark Jorden's got it. There's something different about this test, and I think you ought to look in on it yourself."

"What's so different about him?"

"He doesn't act like the rest. He hasn't any apparent reason for being here."

Ashby looked at the girl closely. She was one of his top staff members and had been with him from the beginning. The incredible strain of working day after day in the test pits was showing its effects, he thought.

"I shouldn't have let you get started on this one," he said. "You're fagged out. Maybe it would be better to erase what we've done and start over, so that you can drop out."

She shook her head with a quickness that surprised him. "I want to finish it, and see how Mark turns out. I'm so used to working with the bitter, anti-social ones that it's a relief to have someone who is halfway normal and gregarious. I want to be around when we find out why he's here."

"Especially if he should go all the way to the end. But he won't—"

Ashby was genuinely concerned about Bonnie's condition when he looked in on her the next morning. The strain on her face was real beyond any matter of make-up or acting. He wondered just why she should be giving in to it now. Bonnie was well trained, as were all the staff members who worked in

the test pits. The emotional conflicts mocked up there were not allowed to penetrate very deeply into their personal experience, yet it looked now as if Bonnie had somehow lost control of the armor to protect against such invasion. She seemed to be living the circumstances of the test program almost as intensely as Mark Jorden was doing.

Such a condition couldn't be permitted to continue, but he was baffled by it. Her physical and emotional check prior to the test had not shown her threshold to be this low. Evidently there was emotional dynamite buried somewhere in the situation they had manufactured.

Through the observation lens of the test pit Ashby watched Jorden begin a tour of the villages, making a quiet investigation of the situation, which he had all but ignored until it was forced to his attention. Jorden spent an hour with Adamson, listening carefully to the atomic engineer's story, and then was led to the hiding place of the engineer who claimed direct evidence that Boggs had instigated the explosion at the power plant.

As Adamson left them, Ashby signaled him through the tiny button buried in the skin behind his right ear. "This is Ashby," he said. "How does it look? Do you think he's going to tackle Boggs?"

"No question of that." Adamson's words came back, although he made no movement of his mouth or throat. "Jorden is one of these people with a lot of inertia. It takes a big push to get him moving, but when he really gets rolling there isn't much that can stop him, either. You're really going to have to put the pressure on to find his cracking point."

"I'm afraid we're likely to find Bonnie's first. There's something about this that's hitting her too hard. Do you know what it is?"

"No," said Adamson. "I thought I noticed it a little yesterday, too. Maybe we ought to check her out."

"She insists on completing the program. And I'd like to go all the way with Jorden. I'm becoming rather curious about him. Keep an eye on Bonnie and let me know what you think at the end of the shift."

"I'll do that," said Adamson.

JORDEN followed his guide for more than a mile beyond the last village on the bank of the river. There, in a willow hidden cave in the clay bank, he found James, the atomic engineer who was reported to know of Boggs' attack on the power plant.

"I told him you were coming," said Adamson, "but I'm going to leave. You can make out better if you're alone with him. He's bitter, but he isn't armed, and he'll go along with you if you don't push him too hard."

Jorden watched Adamson disappear along the bank in the direction from which they had come. He had a feeling of utter ridiculousness. This wasn't what they had come for! They had come to build an outpost of human beings, to establish man's claim in this sector of the Universe. And they were ending in a petty conflict worthy of

the politics of centuries before, back on Earth.

His face took on a harder set as he approached the mouth of the cave and whistled the signal notes that Adamson had taught him. If the establishment of the colony demanded this kind of fight then he was willing to enter the battle. He had not dedicated the remainder of his life to a goal only to abandon it to a petty tyrant like Boggs.

A bearded face peered cautiously through parted willows and James' voice spoke. "You're Jorden? I suppose by now everybody in the villages knows where I'm hiding out. I'm the world's prize fool for letting this parade come past my place. Come in and I'll tell you what I know. If you help get Boggs it will be worth anything it costs me."

Jorden followed the man through the screening willows to the mouth of the cave. There the two of them squatted on rocks opposite each other.

"I remember you now," said James. "You set up the electric plant when we were assembling the pile, didn't you? I thought we'd worked together."

Jorden nodded, hoping James would go on, remembering Adamson's caution not to push him too hard, but the engineer seemed to have nothing more to say. He rubbed a hand forcibly against his other arm and looked beyond the mouth of the cave to the slow moving river.

"This business concerning Boggs' destruction of the plant—how did it start?" said Jorden finally.

"How does anything of that kind start?" said James. "Boggs came to some of us and remarked in casual conversation what a shame it would be if the colony were to duplicate all over again the mistakes that societies on Earth have made during the past thousands of years. A few of us were sympathetic with that thought—it would indeed be a shame. Some of the engineers thought that this was the perfect chance to set up a truly scientific society. They didn't agree that Boggs was the ideal leader, but he *was* the leader and the obvious one to work through. They all became convinced that a rapid industrialization and a highly technological society built upon the old rusty foundations would be most difficult to overcome in building a society on truly adequate sociological principles. You can take it from there."

Yes, he could, Jorden thought. Anybody could take it from there. It was the oldest lie that men of power and position had ever concocted. Why had those particular colonists fallen for it?

"What about you?" he asked James. "Were you sucked in by Boggs' arguments?"

The engineer nodded. "He took all of us. And all along he never intended that more than a couple would get out alive—by double crossing the others."

"Why?" said Jorden.

"Why? I've thought a lot about that, living here in this mudhole. You get to thinking about things like that when you realize there's no going back, that Boggs would kill me on sight for what I could tell—and that the other colonists would also, because of what I've done. Adamson says I can trust

him. He says I can trust you. But I don't trust anybody. I know that someday soon I'm going to get a bullet in the head from one of you. All I'm hoping is that some of you hate Boggs enough to get him first."

"Why did you come to Serrengia in the first place?"

"To get away. Why did anyone come? You don't give up everything you've got in order to go to some strange world and spend the rest of your life unless you've got a reason. Unless you hate what you've got so much you're willing to try anything else. Unless you're so terribly afraid of what could happen to you back there that you're willing to face any kind of dangers out here. We all had our reasons. I'm not asking yours. It makes no difference to you what mine were. But they're all alike. We came because we were so afraid or full of hate we couldn't stay."

"How did you expect to build a new world out of hate and fear of the old one?"

"Who worried about what we'd build here? All we wanted to do was get away. You can't tell me *you* came for any other reason!"

JORDEN made no answer. He continued to stare in wonder at the atomic engineer. To what extent were James' words actually true? How completely was the colony riddled with unpredictable, purposeless characters like him?

If they had fled Earth with a purpose to create something better than they left, there was a chance. But if James was right that most of them had come in blind flight with no goal at all then the Earth colony of Serrengia would be dead long before the ships came again.

But Jorden did not believe this. He did not believe that any but a small fraction of the colonists had any feeling toward Earth except that of love. Most had come because they wanted to do this particular thing with their lives. Nothing had driven or forced them to it.

"Tell me what Boggs did, and what he persuaded you to do," said Jorden.

In detail, James told him how Boggs had gained influence with the technicians necessary to prepare the plant for destruction, how he had persuaded them that a new, idealistic social order demanded their obedience to this fantastic plan. Then, under the Governor's direction, two of the men betrayed the rest. Only James, who was at a slight distance from his normal operating post that night, had escaped with non-fatal injuries.

"I know how you feel," said James. "You'd like to stick a knife into me now. But until you succeed in disposing of Boggs, you need to be sure I'm alive. When that's over you'll send someone around to take care of the traitor, James. But you may be sure I won't be here. I'll get through your guards!"

The man was half crazed, Jorden thought, from infection and fever in half treated wounds, and probably from the effects of radiation itself. "We aren't going to set up any guards," he said. "We're going to send you medical care. Don't try to get away down the river. I'll

have some men who'll take you where you'll be safe and have care."

Jorden left, on the hope that James would not attempt further flight until he was assured of Boggs' defeat. But the colony could not quickly administer the kind of defeat James wanted. They had to be orderly, even if it was a frontier community. There had to be a trial. There had to be evidence, and James had to be called to give it.

He returned to the village and made arrangements with Adamson to get medical care for James. Dr. Babbit, one of the four physicians with the colony, was sufficiently out of sympathy with Boggs to be trusted.

Then, with his family, he accompanied Tibbets to Maintown. On the bulletin board outside the Council Hall he hung an announcement of his candidacy for the governorship, which Tibbets had prepared for him. Tibbets made a little speech to the handfull of people who gathered to read what was on the bulletin, but Jorden declined to make any personal statement just now. He had enough to say when it came time to accuse Boggs of the crimes involved in destruction of the power plant.

But among those who squinted closely at Tibbets' fine, black printing there came a look of mild awe. It had been generally assumed that Boggs would go unopposed for reelection.

On the way back Tibbets' car passed the length of Maintown and took them by the deserted house which Jorden had built in their first year on Serrengia. Bonnie gave it a covetous look, contrasting its spaciousness with the primitive cabin in which she now lived.

Tibbets caught her glance. "If it were not for Boggs you would still be living there," he said.

Bonnie made no answer. Both she and Roddy stared ahead, as if unable to bring their attention to bear upon the present, because of the fear incited by everything about them. Jorden was also silent, but his eyes wandered incessantly over the surrounding hills and distant farmlands. He hadn't bargained for anything like this. He had expected to find himself in a society of cooperative and uniformly energetic human beings. He knew now, without any further persuasion, that this had been a vision strictly from an ivory tower.

He should have anticipated that in a group like this there would be a sprinkling of small time thugs and dictators and generally shiftless individuals who could not make a go of it in the society they had left. At home you could live and work with such without ever being more than vaguely aware of their eccentricities. Here, their deviation from required cooperation was enough to disrupt the whole community.

He could understand the terror in Bonnie and Roddy. They had come only because of him, with no understanding of the colony's purpose. The present turmoil underlined their conviction that it had been pure folly to come. Somehow he'd have to show them. He'd have to make them understand there was a reason for being on Serrengia. But at the moment he did not know how to do it.

THE PROGRAM called for a continuation well into the night with a long scene at the cabin, but Ashby interrupted it as soon as they returned from Maintown. He ordered a twenty four hour rest, because of Bonnie. The extended period of sleep wouldn't harm Jorden.

Bonnie, however, was furious at the interruption as she came out of the test pit.

"If you're going to let it go to the end, why don't you get on with it?" she demanded. "The whole thing is so far off the track that you might as well find out as soon as possible that you're not getting anywhere."

"I think we're beginning to find out a great deal. But I want you to have a rest. The hours of this shift are much too long for you."

"You think you know what's going on inside Mark Jorden by watching the dials and meters, but you don't, because it's not himself he's concerned about. It's a goal outside and bigger than himself. The colony *means* something to him. It never meant anything at all to any of the others."

"Then this is the kind of situation we've been looking for."

"But we haven't the techniques or insight to understand it. We can analyze a man who's running away —but we're not prepared for one who's running *toward.*"

The night after they returned from Maintown a terrific storm broke over the plateau. It began at supper time and for an hour poured torrents of water on the land. Jorden wanted to go down to the river to see if their diversion dams were holding. If they went out it meant long days of hard hand labor restoring them.

He gave in, however, to Bonnie's plea to stay in the house with them. Roddy was frightened of the storm and looked physically ill when thunder made the walls of the cabin shake. It wouldn't change the actual facts of the damage to the dams whether Jorden examined them now or in the morning. He tried to think up stories to tell the children, but it was hard to make up some dealing only with Serrengia and ignoring Earth, as he had to do for Roddy's sake.

After the rain finally stopped and Bonnie had put the children to bed there came a knock at the door. Bonnie opened it. Governor Boggs and two of Council members moved into the room. Little pools of water drained to the floor about their feet.

The Governor turned slowly and grinned at Bonnie and Mark Jorden as the light from the lamp and the fireplace fell upon him. "Nasty night out," he said. "For a time I was afraid we weren't going to make it."

Boggs was a short, stout man and carried himself very erect. He seemed to exaggerate his normal posture as he moved toward the chairs Bonnie offered the men.

Jorden remained seated in his big wooden chair by the fireplace glancing up with cold challenge in his face as his visitors settled on the opposite side of the fire.

"I'm sorry we missed you when you were in town today," said Boggs. "It was not until late this

afternoon that I became aware of your visit."

He reached to an inner coat pocket and drew forth a paper which he unfolded carefully. Jorden recognized it as the announcement he had tacked on the bulletin board. Boggs passed it over.

"I felt sure you would wish to withdraw this, Jorden, after you had given it a little fuller consideration. I'm sure that by now you have had time to think over the matter a little more calmly and find a good many reasons why you should withdraw your announcement."

"I haven't thought much about it," said Jorden, "but now that you call it to my attention I am becoming aware of an increasing number of reasons why I should not withdraw. I assure you I have no intention of doing so."

Boggs smiled and folded up the paper and slipped it into the fire. "I have not been such a bad administrator during my first term of office, have I Jorden?"

"That is for the people to decide —on election day."

"But why should they want to change a perfectly capable administrator," said Boggs in an injured tone, "and put in a very capable engineer and farm manager—who has no qualifications in administrative matters?"

"That too is a question to be answered on election day."

Boggs shifted in his chair, dropping the deliberately maintained smile from his face. "There have been some stories circulating about the colony recently," he said. "It is possible that you have heard them and believe them."

"Possibly," said Jorden.

"I wouldn't. I wouldn't believe them if I were you. I wouldn't even listen to them because it might lead to dangerous and erroneous conclusions, which would cause you to convict in your mind an honest man."

"That would be my error then, wouldn't it?" said Jorden.

The Governor nodded. "A grave one as far as it concerns the welfare of yourself and your family, Jorden."

Jorden's face hardened. "Threats of that kind aren't appropriate to your position, Governor."

"Perhaps you are not aware of my exact position."

"I think I am! And I intend to do everything in my power to change it. You are a small time chiseler who saw a good chance to set yourself up for life in a cushy situation where five hundred other people would obey your slightest whim. That's an old fashioned situation, Boggs, and you can't set it up here even if you are willing to resort to sabotage and murder."

Boggs eyes narrowed and he looked at Jorden for a long time. "I am afraid, then," he said, "that there is nothing I can do except put a stop to your repeating these lying stories about me."

The Governor's eyes never moved, but Jorden shifted in sudden, wild indecision. Almost simultaneously there were two shots exploding in the narrow cabin, and then a third. Jorden and Boggs leaped out of their chairs.

From the kitchen doorway came the steel-taut voice of Bonnie.

"Don't move any further, Mr. Boggs. Put your hands in the air. Get his gun, Mark—in the pocket on this side."

For a moment Jorden hesitated, his eyes held by the sight of Boggs' two gunmen on the floor, blood spreading in tiny rivulets. He took the pistol from the Governor's pocket and held it in readiness.

"I ought to kill you now, Boggs," he said. "Fortunately, or unfortunately, we have to set a precedent in such matters if the colony is to survive. We have to go through the formality of a trial for sabotaging the power plant and murdering those killed there. Actually, it would be a good idea if you just took off over the hills and went as far as you could before the jungle got you. It would save us all a great deal of trouble."

Hope surged in Boggs' eyes as he recognized that Jorden was incapable of shooting him down. Then bitterness mingled with that hope. "You won't get away with this, Jorden. We'll see what the people have to say about your wife shooting my men down while my back is turned."

"*Their* backs weren't turned," said Jorden. "Get them out of here now. If you want to save explanations as to why you came here tonight you might find a convenient spot and bury them—before you take out over the hills yourself."

Watching until they could no longer see the lights of Boggs' car, they closed the door. Bonnie collapsed with a moan, cringing in Jorden's arms.

"Now they'll kill us all," she said in a lifeless voice. "We haven't got a chance. For this we followed your great dream of colonizing an outpost of the Universe!"

That night Roddy was sick. Six days later he was dead. Before they decided to go through with this section of the program there were long and heated conferences between Bonnie and Ashby and the staff working at the test pit. Bonnie insisted the program should be dropped here. They already knew that Jorden was what they were searching for. They had only to analyze the factors that had brought him to the test and they would have what they needed to identify as many colonists as the project required. He didn't need to be broken down any further.

Ashby knew this was not true. Jorden's basic purpose as a colonist had not yet been brought into sight. Ashby recognized that his goal was almost certainly the perpetuation of the colony—and he was the first one who had maintained such a goal this far—but they had to know the drive that existed behind the goal. If it should develop a basis wholly in flight it would still crack before completion of the program.

But Ashby continued to be hesitant on Bonnie's account. Roddy's illness and death meant a continuous tour in the test pit for the full six days. And this was cut from the scheduled eight it normally occupied. Why it was impossible for Bonnie to reduce her own personal tension on the project, Ashby didn't know, but she had become increasingly susceptible as time went on.

Word of Jorden's persistence was spreading among the staff person-

nel of other sections of the lab. A subdued excitement was stirring among them. In most cases so far examined, the colonist had by now either knuckled under to Boggs or engaged in a futile personal duel with him. If they went further, they almost invariably collapsed under the pressure of Bonnie's blame and began cursing Serrengia as well as the Earth from which they fled.

Ashby ordered resumption of the program. It was an agony for him, too, watching Bonnie during the long hours of Roddy's illness. It seemed every bit as much a test of her strength and endurance as it was of Mark Jorden's. With the televiewer Ashby brought an image of her face up close, studying her from every angle during the long nights when she and Mark Jorden exchanged vigil over Roddy. He scanned her face by the firelight of the rough cabin.

After three days, Jorden was running close to exhaustion, but in spite of the strain Bonnie seemed capable of remaining there forever. Her eyes watched Jorden's face, taking in his every movement and expression.

And after three days of watching Bonnie's face in close-up, Ashby suddenly murmured aloud to himself in disbelief and astonishment.

Dr. Miller, who was Tibbets in the program, came up to his side. "What is it, Ashby? Has something gone wrong?"

Ashby shook his head slowly in wonder and pointed to the image in the viewer. "Look at her," he said. "Can't you see what has happened to Bonnie? We should have caught it long ago. No wonder this job is tearing her apart—no wonder she doesn't want it to end the way it must—or end at all, for that matter!"

"I still don't see what you are talking about," said Miller in exasperation. "I don't see that anything has happened to her. She looks like the same old Bonnie to me."

"Does she?" said Ashby. "Watch her when she looks at Jorden. Can't you see she has fallen in love with him?"

THERE WAS probably a whole class of people like Roddy, Jorden thought. People incapable of surviving beyond the world on which they were born. Since the day of his coming Roddy had fought an unceasing battle with this hated, alien world of Serrengia. He awoke each morning to renew the unequal contest before he was even out of bed—and knowing fully that he was beaten before he started.

Jorden had tried every way he knew to instill into his son some of his own love for this new world. It was a good world and the men who grew up on it in the years to come would love it with all their hearts. But Roddy could not give up his reaching back, his longing for Earth. He shrank before the problem of their doubtful food supply. He caught snatches of adult worries and nourished them with a dark agony that made it appear to Jorden sometimes as if the boy were walking in a nightmare.

It had been cruel and brutal to bring him. But there was no use blaming himself for that. If only Bonnie would stop blaming him! He couldn't have known ahead of time that Roddy was one of those who could not be—transplanted. Fervently, he prayed for the boy's life now and vowed that when the ships came again he would be free to go home.

And always Bonnie's eyes were upon him. Sitting in the firelight of the cabin, he could feel her staring at him, accusing him, hating him for bringing them to Serrengia.

Once he looked up and caught her glance. "Don't hate me so much, Bonnie!" he said. "You're driving Roddy down. I can feel it. Reach out to him with your love and don't let him go."

But Roddy said later that same evening, "Maybe I'll go back to Earth now, Daddy. Do you think that's where little boys go when they die?"

He wanted to return so badly that he was willing to die to achieve it, Jordon thought. That's what Dr. Babbit said: "Roddy doesn't even want to live, Jorden. As incredible as it seems, he's literally dying of homesickness. I'm afraid there's not a thing I can do for him. I'm sorry, but it's up to you. You and Bonnie are the only ones who can give him a desire to remain, if

anyone can."

Roddy's hate for Serrengia was greater than any desire they could induce in him to live. With ease, he conquered all the miracle drugs Dr. Babbit lavished from the colony's restricted store. He died on the sixth night after Boggs' visit.

The funeral was held in the little community church built when the colonists first laid out Maintown. Mark and Bonnie Jorden were almost oblivious to the words spoken over the body of Roddy by the Reverend Wagner, who had come as the colonists' spiritual adviser.

Bonnie's hands were folded on her lap, and she kept her eyes down throughout the service. She was aware of the agony within Mark Jorden. It was a real agony, and its strength almost frightened her, for she had never before seen such a response in any man who had gone through the test this far. They were men concerned only with themselves, incapable of the love that Jorden could feel for a son.

He reached out and took one of her hands in his own. She could feel the emotion within him, the tightening and trembling of his big, hard-muscled arm.

Ashby was watching. Over the private communication system that linked them he murmured, "Cry, Bonnie! Make it real. Make him hate himself and everything he's done since he decided to become a colonist—if you can! This is where we've got to find out whether he can crack or not—and why."

"You can't break him," said Bonnie. "He's the strongest man I've ever known. If you find his breaking point it will be when you destroy him utterly. You've got to quit before you reach that point!"

"All that we've done will be useless if we quit now, Bonnie. Just a few more hours and then it will all be over—"

As if his words had touched a hidden trigger, she did begin to cry with a deep but almost inaudible sound and a heavy movement of her shoulders. Mark Jorden put his arm about her as if to force away her grief.

"I *know,* Bonnie," said Ashby softly. "I can see in your face what's happened to you. It's going to be all right. Everything doesn't end for you when the test is over."

"Oh, shut up!" said Bonnie in a sudden rage that made her tears come faster. "If I ever work on another of your damned experiments it will be when I've lost my senses entirely! You don't know what this does to people. I didn't know either —because I didn't care. But now I know—"

"You know that no harm results after we've erased and corrected all inadequate reactions at the end of the test. You're letting your feelings cover up your full awareness of what we're doing."

"Yes, and I suppose that when it's over I had better submit to a little erasing myself. Then Bonnie can go back to work as a little iced steel probe for some more of your guinea pigs!"

"Bonnie—!"

She made no answer to Ashby, but lay her head on Jorden's shoulder while her sobbing subsided. How did it happen? she asked her-

self. It wasn't anything she had wanted. It had just happened. It had happened that first day when he came in from the field at the beginning of the experiment with all of the planted background that made him think he was meeting Bonnie for the thousandth time instead of the first.

She was supposed to be an actress and receive his husbandly kiss with all the skilled mimicry that made her so valuable to the lab. But it hadn't been like that. She had played sister, mother, daughter, wife—a hundred roles to as many other tested applicants. For the first time she saw one as a human being instead of a sociological specimen. That's the way it was when she met Mark Jorden.

There was no answer to it, she thought bitterly as she rested her face against his shoulder. Ashby was right—just a few more hours and it would all be over. All Jorden's feeling for her as his wife was induced by the postulates of the test, just as were his feelings for Roddy. His subjective reactions were real enough, but they would vanish when their stimulus was removed with the test postulates. He would look upon the restored Roddy as just another little boy—and upon Bonnie, the Doctor in Sociology, as just another misemployed female.

She raised her head and dried her eyes as she sensed that the service was ending. Actually, Ashby was right, of course. They had to go on, and the sooner it came to an end the better it would be for her. She *would* submit to alteration of her own personal data after the test, she thought. She would let them erase all feelings and sentiments she held for Mark Jorden, and then she would be as good as new. After all, if a sociologist couldn't handle his own reactions in a situation of this kind he wasn't of much value in his profession!

THE SUN was hot as they returned from the little burial ground near the church. There were quite a number of other graves besides Roddy's, but his was the loneliest, Jorden thought. He had never forgiven them for robbing him of his home and the only world in which he could live.

He felt the growing coldness of Bonnie as they came up to their shabby cabin that had once looked so brave to him. Serrengia had cost him Bonnie, too. Even before Roddy. She had remained only because it was her duty.

He took her hand as she put a foot on the doorstep. "Bonnie—"

She looked at him bitterly, her eyes searching his face as if to find something of the quality that once drew her to him. "Don't try to say it, Mark—there's nothing left to say."

He let her go, and the two children followed past him into the house. He sat down on the step and looked out over the fields that edged the river bank. His mind felt numbed by Roddy's passing. Bonnie's insistent blame made him live it over and over again.

The light from the green of the fields was like a caress to his eyes. I should hate it, he thought. I should hate the whole damned planet for

what it's taken from me. But that's not right—Serrengia hasn't taken anything. It's only that Bonnie and I can't live in the same world, or live the same kind of lives. Roddy was like her. But I didn't know then. I didn't know how either of them were.

We have to go on. There's no going back. Maybe if I'd known, I would have made it different for all of us. I can't now, and it would be crazy to start hating Serrengia for the faults that are in us. Who could do anything but love this fresh, wild planet of ours—?

He ought to go down and take a look at the field, he thought. He rose to go in and tell Bonnie. The crops hadn't had water since Roddy took sick.

He found Bonnie in the bedroom with the drawers of their cabinets open and their trunk in the middle of the floor, its lid thrown back. Clothes lay strewn on the bed.

He felt a slow tightening of his scalp and of the skin along the back of his neck. "Bonnie—"

She straightened and looked into his face with cold, distant eyes. "I'm packing, Mark," she said. "I'm leaving. I'm going home. The girls are going with me. You can stay until they dig your grave beside Roddy's, but I'm going home."

Jorden's face went white. He strode forward and caught her by the arms. "Bonnie—you know there's no way to go home. There won't be a ship for six years. This is home, Bonnie. There's no other place to go."

For a moment the set expression of her face seemed to melt. She frowned as if he had told her some mystery she could not fathom. Then her countenance cleared and its blank determination returned. "I'm going home," she repeated. "You can't stop me. I've done all a wife can be expected to do. I've given my son as the price of your foolishness. You can't ask for more."

He had to get out. He felt that if he remained another instant just then something inside him would explode under the pressure of his grief. He went to the front door and stood leaning against it while he looked over the landscape that almost seemed to reach out for him in hate as it had for Roddy. So you want her, too! he cried inside himself.

Alice came up and tugged at his hand as he stood there. "What's the matter, Daddy? What's the matter with Mama?"

He bent down and kissed her on the forehead. "Nothing, honey. You go and play for a moment while I help Mother."

"I want to help, too!"

"Please, Alice—"

He moved back to the bedroom. Bonnie was carefully examining each item of apparel she packed in the big trunk. She didn't look up as he came in.

"Bonnie," he said in a low voice, "are you going to leave me?"

She put down the dress she was holding and looked up at him. "Yes I'm leaving you," she said. "You've got what you wanted—all you've ever wanted." She looked out towards the fields, shimmering in the heat of the day.

"That's not true, Bonnie. You know it isn't. I've always loved you

and needed you, and it's grown greater every hour we've been together."

"Then you'll have to prove it! Give up this hell-world you want us to call home, and give us back our Earth. If you love me, you can prove it."

"It's no test of love to make a man give up the goal that means his life to him. You'd despise me forever if I let you do that to me. I'd rather you went away from me now with the feeling you have at this time, because I'd know I had your love—"

Bonnie remained still and unmoving in his arms, her face averted from his. He put his hand to her chin and turned her face to him. "You do love me, Bonnie? That hasn't changed, has it?"

She put her head against his chest and rocked from side to side as if in some agony. "Oh, no—Mark! That will never change. Damn you, Ashby, damn you—"

In the control room Ashby and Miller groaned aloud to each other, and a technician looked at them questioningly, his hand on a switch. Ashby shook his head and stared at the scene before him.

Jorden shook Bonnie gently in his arms. "Ashby?" he said. "Who's Ashby?"

Bonnie looked up, the blank despair on her face again. "I don't remember—" she said haltingly. "Someone I used to—know—"

"It makes no difference," Jorden said. "What matters is that you love me and you're going to stay with me. Let's put these things away now, darling. I know how you've felt the past week, but we've got to put it behind us and look forward to the future. Roddy would want it that way."

"There's no future to look forward to," said Bonnie dully. "Nothing here on Serrengia. There's no meaning to any of us being here. I'm going back to Earth."

"It does have a meaning! If I could only make you see it. If you could only understand why I had to come—"

"Then tell me if you know! You've never tried to tell me. You live as if you know something so deep and secret you can live by it every hour of your life and find meaning in it. But I can only guess at what it is you've chosen for your god. If it's anything but some illusion, put it into words and make me know it, too!"

"I've never tried," said Jorden hesitantly. "I've never tried to put it into words. It's something I didn't know was in me until I heard of the chance to colonize Serrengia. And then I knew I had to come.

"It's like a growing that you feel in every cell. It's a growing out and away, and it's what you have to do. You're a sperm—an ovum—and if you don't leave the parent body you die. You don't have to hate what you leave behind as James and Boggs and so many of the others do. It gave you life, and for that you're grateful. But you've got to have a life of your own.

"It's what I was born to do, Bonnie. I didn't know it was there, but now I've found it I can't kill it."

"You have to kill it—or me."

"You don't mean that. You're part of me. You've been a part of me so long you feel what I feel. You're lying, Bonnie, when you say you're going away. You don't want to go. You want to go on with me, but something's holding you back. What is it, Bonnie? Tell me what it is that holds you back!"

Her eyes went wide. For a moment she thought he was talking out of the real situation, not the make-believe of the test. Then she recognized the impossibility of this. Her eyes cast a pleading glance in the direction of the observation tubes.

Ashby spoke fiercely: "Go on, Bonnie! Don't lose the tension. Push him. We've got to know. He's almost there!"

She moved slowly to the dresser where she had laid Jorden's hunting knife previously, as if with no particular intent. Now, out of sight of Jorden, her hand touched it. She picked it up.

Ashby's voice came again. "Bonnie—move!"

She murmured, "Lost—"

And then she whirled about, knife in hand. She cried aloud. "I can't go on any further! Can't you see this is enough? Stop it! Stop it—"

Jorden leaped for the knife.

In the observation room a technician touched a switch.

ASHBY FELT the subdued elation of success reached after a long and strenuous effort. Bonnie was seated across the desk from him, but he sat at an angle so that he could see the four hulls out of the corner of his eye. One and Two had made their test flights and the others would not be far behind. The expedition would be a success, too. There was no longer any doubt of that, because he knew now where to look for adequate personnel.

"I'm glad I didn't foul up your test completely, anyway," said Bonnie slowly. "Even if what you say about Mark shouldn't turn out to be true."

Ashby moved his chair around to face her directly. She was rested, and had gone through a mental reorientation which had removed some of the tension from her face.

"You didn't foul it up at all," he said. "We went far enough to learn that he would have survived even your suicide, and would have continued in his determination to carry the colony forward. Nothing but his own death will stand in his way if he actually sets out on such a project. Are you completely sure you want to be tied to such a single purposed man as Mark Jorden is?"

"There's no doubt of that! But I just don't feel as if I can face him now—with his knowing . . . How can I ever be sure his feeling for me was not merely induced by the test experience, and might change as time goes on? You should have wiped it all out, and let us start over from scratch. It would have been easier that way."

"There isn't time enough before the ships leave. But why should we have erased it all? We took away the postulates of the test and left Bonnie in his memory. His love for you didn't vanish when the test

postulates went. As long as he has a memory of you he will love you. So why make him fall in love with you twice? No use wasting so much important time at your age. Here he comes—"

Bonnie felt she couldn't possibly turn around as the door opened behind her. She heard Mark's moment of hesitation, his slow steps on the carpet. Ashby was smiling a little and nodding. Then she felt the hard grip of Mark's hands on her shoulders. He drew her up and turned her to face him. Her eyes were wet.

"Bonnie—" he said softly.

Ashby turned to the window again. The gantry cranes were hoisting machinery in Hull Three. Maybe he had been wrong about there not being enough time between now and takeoff for Mark and Bonnie to discover each other all over again. They worked pretty fast. But then, as he had mentioned, why waste time at their age?

They were smiling, holding tight to each other as Ashby turned back from the window.

"They tell me I passed," said Jorden. "I'm sorry about taking your best Social Examiner away from you—but as you told me in the beginning this colonization business is a family affair."

"Yes—that happens to be one of the few things I was right about." Ashby motioned them to the chairs. "Through you we located our major error. It was our identifying rebellion with colonization ability. Colonization is not a matter of rebellion at all. The two factors merely happen to accompany each other at times. But the essence of colonization is a growth factor—of the kind you so very accurately described when Bonnie pushed you into digging up some insight on the matter. It is so often associated with rebellion because rebellion is or has been, historically, necessary to the exercise of this growth factor.

"The American Colonists, for example, were rebels only incidentally. As a group, they possessed a growth factor forcing them beyond the confines of the culture in which they lived. It gave them the strength for rebellion and successful colonization. And it is so easy to confuse colonists of that type with mere cutthroats, thugs, and misfits. The latter may or may not have a sufficiently high growth factor. In any case, their primary drive is hate and fear, which are wholly inadequate motives for successful colonization.

"The ideal colonist does not break with the parent body, nor does he merely extend it. He creates a new nucleus capable of interchange with the parent body, but not controlled by it. He wants to build beyond the current society, and the latter is not strong enough to pull him back into it. Colonization may take everything else of value in life and give nothing but itself in return, but the colonists' desire for new life and growth is great enough to make this sufficient. It is not a mere transplant of an old life. It is conception and gestation and birth.

"Our present society allows almost unlimited exercise of the

growth factor in individuals, regardless of how powerful it may be. That is why we have failed to colonize the planets. They offer no motive or satisfaction sufficient to outweigh the satisfactions already available. As a result we've had virtually no applicants coming to us because of hampered growth. You are one of the very few who might come under our present approach. And even a very slight change of occupational conditions would have kept you from coming. You didn't want the department leadership offered you, because it would limit the personally creative functions you enjoyed. That one slim, hairbreadth factor brought you in."

"But how do you expect now to get any substantial number of colonists?" exclaimed Jorden.

"We'll put on a recruiting campaign. We'll go to the creative groups—the engineers, the planners, the artists—we'll show that opportunity for creative functioning and growth will be far greater in the work of building colonial outposts than in any activity they now enjoy. And we won't have to exaggerate, either. It's true.

"We'll be able to send out a colony of whom we can be certain. In the past, colonies have invariably failed when they consisted only of members fleeing from something, without possessing an adequate growth factor.

"When this becomes thoroughly understood in my field, I shall probably never live down my initial error of assuming that a colonist had to hate or fear what he left behind in order to leave it forever. The exact opposite is true. Successful colonization of the Universe by Earthmen will occur only when there is a love and respect for the Homeland—and a capacity for complete independence from it."

Ashby pressed his fingers together and looked at his visitors soberly. "There is only one thing further," he said. "We've found out also that Bonnie is not essentially a colonist—"

Bonnie's face went white. She pushed Jorden's arm away and leaned across the desk. "You knew—! Then we can't— Why didn't you tell me this in the beginning?"

"Please don't be hasty, Bonnie," said Ashby. "As I was about to say, we have found, however, that another condition exists in which you can become eligible and stable through a genuine love for a qualified colonist, to the extent you are willing to follow him completely in his ambitions and desires. This is strictly a feminine possibility—a woman can become a sort of second order colonist, you might say.

"Of course, Jorden, you still have to make the basic decision as to whether you want to go to Serrengia or not. We have found out merely that you *can*."

"I think there's no doubt about my wanting to," said Jorden.

He turned Bonnie around in his arms again, and Ashby chuckled mildly. "I have always said there is no piece of data you cannot find, provided you can devise the proper experimental procedure for turning it up," he said.

• • • THE END

Poor Henry was an unhappy husband whose wife had a habit of using bad clichès. Alféar was a genii who was, quite like most humans, a creature of habit. Their murder compact was absolutely perfect, with—

No Strings Attached

By Lester del Rey

Illustrated by Kelly Freas

COMMITTING a perfect murder is a simple matter. Drive out some night to a lonely road, find a single person walking along out of sight of anyone else, offer him a ride, knife him, and go home. In such a crime, there's no reason to connect killer and victim—no motive, no clue, no suspect.

To achieve the perfect murder of a man's own wife, however, is a different matter. For obvious reasons, husbands are always high on the suspect list. Who has a better reason for such a crime?

Henry Aimsworth had been pondering the problem with more than academic interest for some time. It wasn't that he hated his wife. He simply couldn't stand the sight or sound of her; even thinking about her made his flesh crawl. If she had been willing to give him a divorce, he'd have been content to wish her all the happiness she was capable of discovering. But Emma, unfortunately, was fond of being his wife; perhaps she was even fond of him. Worse, she was too rigidly bound to trite morality to give him grounds to sue.

There was no hope of her straying. What had been good enough for her mother was good enough for her, and saved all need of thinking; a woman needed a husband, her place was in the home, marriage was forever, and what would the neighbors think? Anyhow, she'd have had difficulty being unfaithful, even if she tried. She'd been gaining some ten pounds every year for the eleven years they had been married, and she'd long since

stopped worrying about taking care of her appearance.

He looked up at her now, letting the book drop to his lap. She sat watching the television screen with a vacant look on her face, while some comic went through a tired routine. If she enjoyed it, there was no sign, though she spent half her life in front of the screen. Then the comic went off, and dancers came on. She went back to darning a pair of his socks, as seriously as if she didn't know that he had always refused to wear the lumpy results. Her stockings had runs, and she still wore the faded apron in which she'd cooked supper.

He contrasted her with Shirley unconsciously, and shuddered. In the year since Shirley Bates had come to work in his rare book store, he'd done a lot of such shuddering, and never because of the slim blonde warmth of his assistant. Since that hot day in August when they'd closed the shop early and he'd suggested a ride in the country to cool off, he and Shirley . . .

He was interrupted in his more pleasant thoughts by the crash of scissors onto the floor, and his eyes focussed on the deepening folds of fat as Emma bent to retrieve them. "Company coming," she said, before he could think of anything to prevent the mistaken cliché. Then she became aware that he was staring at her. "Did you take the garbage out, Henry?"

"Yes, dear," he answered woodenly. Then, because he knew it was coming anyhow, he filled in the inevitable. "Cleanliness is next to godliness."

She nodded solemnly, and began putting aside her darning. "That's finished. Mama always said a stitch in time saves nine. If you'd cut your toenails, Henry . . ."

He could feel his skin begin to tingle with irritation. But there was no escape. If he went upstairs to his bedroom, she'd be up at once, puttering about. If he went to the basement, she'd find the canned food needed checking. A woman's place was with her husband, as she'd repeatedly told him. Probably she couldn't stand her own company, either.

Then he remembered something he'd stored away. "There's a new picture at the Metro," he said as quietly as he could. "Taylor's starred, I think. I was going to take you, before this extra work came up."

He could see her take the bait and nibble at it. She had some vague crush left for Taylor. She stared at the television set, shifted her bulk, and then shook her head reluctantly. "It'd be nice, Henry. But going at night costs so much, and—well, a penny saved is a penny earned."

"Exactly. That's what I meant to say." He even relaxed enough to overlook the platitude, now that there was some hope. "I saved the price of lunch today. The nut who wanted *King in Yellow* was so tickled to get the copy finally, he insisted on treating. You can even take a cab home afterwards."

"That's nice. It'll probably rain, the way my bunion's been aching." She considered it a second more, before cutting off the television. He watched as she drew off the apron and went for her coat and hat,

making a pretense of dabbing on make-up. She might as well have worn the apron, he decided, as she came over to kiss him a damp goodbye.

HE CONSIDERED calling Shirley, but her mother was visiting her, and the conversation would have to be too guarded at her end. If he could find some way of getting rid of Emma . . .

It wouldn't even be murder, really. More like destroying a vegetable—certainly no worse than ending the life of a dumb cow to make man's life more worth living. It wasn't as if she had anything to live for or to contribute. It would almost be a kindness, since she lived in a perpetual state of vague discontent and unhappiness, as if somehow aware that she had lost herself. But unfortunately, the law wouldn't look at it in such a light.

He'd only been thinking actively of getting her out of the way since August, however; and somehow, with time, there must be some foolproof scheme. There was that alcohol-injection system—but it required someone who would drink pretty freely first, and Emma was a teetotaler. Maybe, though, if he could get her to taking some of those tonics for women . . .

He dropped it for the moment and turned back to the book. It was an odd old volume he'd received with a shipment for appraisal. There was no title or date, but the strange leather binding showed it was old. Apparently it had been hand-set and printed on some tiny press by the writer, whose name was omitted. It seemed to be a mixture of instructions on how to work spells, conjure demons, and practice witchcraft, along with bitter tirades against the group who had driven the writer out and forced him, as he put it, to enter a compact with the devil for to be a wizard, which is like to a male witch. Henry had been reading it idly, slowly deciding the book was authentic enough, however crazy the writer was. The book had no particular value as a collector's item, but he could probably get a fine price from some of the local cultists, particularly since there were constant promises in it that the writer was going to give a surefire, positive and simple recipe for conjuring up a demon without need of virgin blood, graveyard earth or unicorn horn.

He skimmed through it, looking for the formula. It turned up on the fifth page from the end, and was everything the writer had claimed. A five-sided figure drawn on the floor with ordinary candle wax, a pinch of sugar inside, a bit of something bitter outside, two odd but simple finger gestures, and a string of words in bad Latin and worse Greek. There was a warning that it would work without the pentagram, sugar and bitters, but at parlous risk to the conjurer without such protection.

He frowned. Too simple for the cultists, he realized—unless he could somehow persuade them that the trick lay in some exact phrasing or gesturing pattern which took experiment. They liked things made difficult, so they'd have a good alibi for their faith when the tricks

failed. If he could show them in advance that it didn't work, but hint that a good occultist might figure out the right rhythm, or whatever . . .

He read it through again, trying to memorize the whole thing. The gestures were—so—and the words —umm . . .

There was no flash of fire, no smell of sulphur, and no clap of thunder. There was simply a tall creature with yellowish skin and flashing yellow eyes standing in front of the television set. His head was completely hairless, and he was so tall that he had to duck slightly to keep from crashing into the ceiling. His features were too sharp for any human face. There were no scales, however; his gold cape and black tights were spangled, and he wore green shoes with turned up toes. But generally, he wasn't bad looking.

"Mind if I sit down?" the creature asked. He took Henry's assent for granted and dropped into Emma's chair, folding his cape over one arm and reaching for an apple on the side table. "Glad to see you're not superstitious enough to keep me locked up in one of those damned pentagrams. Drat it, I thought the last copy of that book was burned and I was free. Your signal caught me in the middle of dinner."

HENRY swallowed thickly, feeling the sweat trickle down his nose. The book had warned against summoning the demon without the protective devices! But the thing seemed peaceful enough for the moment. He cleared his voice. "You mean—you mean magic works?"

"Magic—shmagic!" the creature snorted. He jerked his thumb toward the television. "To old Ephriam—the crackpot who wrote the book before he went completely crazy—that set would have been more magic than I am. I thought this age knew about dimensions, planes of vibrations, and simultaneous universes. You humans always were a backward race, but you seemed to be learning the basic facts. Hell, I suppose that means you'll lay a geas on me, after I was hoping it was just an experimental summons!"

Henry puzzled it over, with some of the fright leaving him. The scientific sounding terms somehow took some of the magic off the appearance of the thing. "You mean those passes and words set up some sort of vibrational pattern . . ."

The hairless fellow snorted again, and began attacking the grapes. "Bunk, Henry! Oh, my name's Alféar, by the way. I mean I was a fool. I should have gone to my psychiatrist and taken the fifty year course, as he advised. But I thought the books were all burned and nobody knew the summons. So here I am, stuck with the habit. Because that's all it is—a conditioned reflex. Pure compulsory behavior. I'm sensitized to receive the summons, and when it comes, I teleport into your plane just the way you pull your hand off a hot stove. You read the whole book, I suppose? Yeah, just my luck. Then you know I'm stuck with any job you give me—practically your slave. I can't even get back without dismissal or finish-

ing your task! That's what comes of saving money by not going to my psychiatrist."

He muttered unhappily, reaching for more grapes, while Henry began to decide nothing was going to happen to him, at least physically. Souls were things he wasn't quite sure of, but he couldn't see how just talking to Alféar could endanger his.

"Still," the creature said thoughtfully, "it could be worse. No pentagram. I never did get mixed up with some of the foul odors and messes some of my friends had to take. And I've developed quite a taste for sugar; tobacco, too." He reached out and plucked a cigarette out of Henry's pack, then a book of matches. He lighted it, inhaled, and rubbed the flame out on his other palm. "Kind of weak tobacco, but not bad. Any more questions while I smoke this? There's no free oxygen where I come from, so I can't smoke there."

"But if you demons answer such —such summons, why don't people know about it now?" Henry asked. "I'd think more and more people would be going in for this sort of thing. If the wizards were right all along . . ."

"They weren't, and we're not demons. It didn't get started until your Middle Ages. And if it hadn't been for old Apalon . . ." Alféar lighted another cigarette off the butt, which he proceeded to extinguish on the tip of his sharp tongue. He scratched his head thoughtfully, and then went on.

"Apalon was studying your worship. You see, we've been studying your race the way you study white rats, using lower races to explain our own behavior. Anyhow, he got curious and figured out a way to mentalize himself into your plane. He was sort of a practical joker, you might say. So he picked a time when some half-crazy witch was trying to call up the being you worship as Satan to make some kind of a deal. Just as she finished, he popped up in front of her, spitting out a bunch of phosphorus to make a nice smoke and fire effect, and agreed with all her mumbo-jumbo about having to do what she wanted. She wanted her heart fixed up then, so he showed her how to use belladonna and went back, figuring it was a fine joke.

"Only he made a mistake. There's something about moving between planes that lowers the resistance to conditioning. Some of our people can take five or six trips, but Apalon was one of those who was so conditioning-prone that he had the habit fixed after the first trip. The next time she did the rigamarole, back he popped. He had to dig up gold for her, hypnotize a local baron into marrying her, and generally keep on the constant *qui vive,* until she got sloppy and forgot the pentagram she thought protected her and which he was conditioned to. But after he disintegrated her, he found she'd passed on the word to a couple of other witches. And he knew somebody at the Institute was bound to find what a fool he'd made of himself.

"So he began taking members aside and telling them about the trick of getting into your world. Excellent chance for study. Have to humor the humans by sticking

to their superstitions, of course. One by one, they went over on little trips. It wasn't hard to find some superstitious dolt trying to summon something, since word had got around in your world. One of us would pop up, and that spread the word further. Anyhow, when Apalon was sure each member had made enough trips to be conditioned, he'd tell him the sad truth, and swear him to secrecy on penalty of being laughed out of the Institute. The old blaggard wound up with all of us conditioned. There was quite a flurry of witchcraft here, until we finally found a psychiatrist who could break the habit for us. Even then, it was tough going. We'd never have made it without the inquisitions and witch-burnings one of our experimental sociologists managed to stir up."

Alféar put out the third cigarette butt and stood up slowly. "Look, I don't mind a chat now and then, but my wives are waiting dinner. How about dismissing me?"

"Umm." Henry had been thinking while he listened. It had sounded like a reasonable explanation on the whole, except for the bit about Apalon's disintegrating the witch. Apparently as long as a man wasn't too unreasonable, there was a certain usefulness to having such friends on call. "What about the price for your help? I mean—well, about souls . . ."

Alféar twitched his ears disgustedly. "What the deuce would I do with your soul, Henry? Eat it? Wear it? Don't be a shnook!"

"Well, then—well, I've heard about wishes that were granted, but they all had a trick attached. If I asked for immortality, you'd give it, say; but then I'd get some horrible disease and beg and plead for death. Or ask for money, and then find the money was recorded as being paid to a kidnaper, or something."

"In the first place, I couldn't give you immortality," Alféar said, as patiently as he apparently could. "Your metabolism's not like ours. In the second place, why should I look for tainted money? It's enough nuisance doing what you ask, without looking for tricks to pull. Anyhow, I told you I half-enjoy visiting here. As long as you're reasonable about it, I don't mind keeping my end of the compulsion going. If you've got something to ask, ask away. There are no strings attached."

The creature seemed to be quite sincere. Henry considered it briefly, staring at a large tinted picture of Emma, and took the plunge. "Suppose I asked you to kill my wife for me—say by what looked like a stroke, so nobody would blame me?"

"That seems reasonable enough," Alféar agreed easily. "I could break a few blood vessels inside her skull . . . Sure, why not? Only the picture in your mind is so distorted, I wouldn't know her. If she's like that, why'd you ever marry her?"

"Because she seemed different from other women, I guess," Henry admitted. "When I tipped the canoe over, and I figured she'd be mad because her dress was ruined, all she said was something about not being sugar, so she wouldn't melt." He shuddered, remembering all the times she'd said it since.

"You won't have any trouble. Look, can you really read my mind?"

"Naturally. But it's all disorganized."

"Umm. Well." It gave him a queasy feeling to think of anyone seeing his secret thoughts. But this fellow apparently didn't work by human attitudes, anyhow. He groped about, and then smiled grimly. "All right, then. You can tell I think of her as my wife. And just to make sure, she'll be sure to say something about early to bed and early to rise; she says that every single damned night, Alféar! She never misses."

Alféar grunted. "Sounds more reasonable every minute, Henry. All right, when your wife says that, I pop out and give her a stroke that will kill her. How about dismissing me now?"

"No strings?" Henry asked. He watched carefully as Alféar nodded assent, and he could see no sign of cunning or trickery. He caught his breath, nodded, and closed his eyes. Seeing something vanish was nothing he wanted. "Dismissed."

THE FRUIT was still gone when he opened his eyes, but there was no other sign of the thing. He found some fruit still in the refrigerator and restocked the bowl. Then he closed the strange book and put it away. He'd have to buy it himself, and burn it to make sure no one else found the trick, of course. For a moment, uneasiness pricked at him. Yet he was sure Alféar hadn't been lying, and the story the creature had told made more sense than the older superstitions. Henry adjusted his mind to having a well-conditioned demon on tap and then began the harder job of bracing himself for Emma's incoherent but detailed account of the movie when she came back.

Unfortunately, it was a more complicated plot than usual, and she went on and on, from the moment she entered the door. He tried to close his ears, but he'd never succeeded in that. He yawned, and she yawned back, but went on until the last final morsel was covered for the second or third time.

"He was wonderful," she finally concluded. "Just wonderful. Only I wished you'd come with me. You'd have liked it. Henry, did you take the garbage out?"

"Yes, dear," he answered. "Hours ago."

He yawned elaborately again. She mumbled something about having to keep the kitchen clean because cleanliness was next to godliness, but her automatic yawn muffled the words. Then she glanced at the clock. "Heavens, it's almost one! And early to bed and early to rise . . ."

Henry jerked his eyes away, just as he caught the first glimpse of Alféar popping into existence beside her. He heard the beginning of a shriek change to a horrible gargling and then become a dying moan. Something soft and heavy hit the floor with a dull thud. Henry turned around slowly.

"Dead," Alféar said calmly, rubbing one of his fingers. "This business of getting just one finger through the planes into her head cuts off the circulation. There, that's better. Satisfied?"

Henry dropped beside the corpse. She was dead, according to the mirror test, and there wasn't a mark on her. He stared at the puffy, relaxed features; he'd expected an expression of horror, but she seemed simply asleep. His initial feeling of pity and contrition vanished; after all, it had been quick and nearly painless. Now he was free!

"Thanks, Alféar," he said. "It's fine—fine. Do I dismiss you now?"

"No need this time. I'm free as soon as the job's done. Unless you'd like to talk awhile . . ."

Henry shook his head quickly. He had to telephone a doctor. Then he could call Shirley—her mother would be gone by now. "Not now. Maybe I'll summon you sometime for a smoke or something. But not now!"

"Okay," Alféar said, and vanished. Surprisingly, seeing him disappear wasn't unpleasant, after all. He just wasn't there.

Waiting for the doctor was the worst part of it. All the legends Henry knew ran through his mind. Alféar could have given her a stroke and then added some violent poison that would show up in an autopsy. He could be sitting wherever he was, chuckling because Henry hadn't restricted his wish enough to be safe. Or any of a hundred things could happen. There was the first witch, who had thought she had Apalon under control, only to be turned to dust.

But the doctor took it calmly enough. "Stroke, all right," he decided. "I warned her last year that she was putting on too much weight and getting high blood pressure. Too bad, Mr. Aimsworth, but there was nothing you could do. I'll turn in a certificate. Want me to contact a mortician for you?"

Henry nodded, trying to appear properly grief-stricken. "I—I'd appreciate it."

"Too late now," the doctor said. "But I'll be glad to send Mr. Glazier around in the morning." He pulled the sheet up over Emma's body, leaving it on the backroom couch to which they had carried it. "You'd better go to a hotel for the night. And I'll give you something that will make you sleep."

"I'd rather not," Henry said quickly. "I mean, I'd feel better here. You know . . ."

"Certainly, certainly." The doctor nodded sympathetically, but as if it were an old story to him. He left the pills with instructions, said the proper things again, and finally went out.

SHIRLEY'S voice was sleepy and cross when she answered, but it grew alert as soon as he told her about Emma's stroke. He was almost beginning to believe the simple version of the story himself.

"Poor Henry," she murmured. Her voice sharpened again. "It *was* a stroke? The doctor was sure?"

"Positive," he assured her, cursing himself for having let her guess some of the thoughts that had been on his mind. "The doctor said she'd had hypertension and such before."

She considered it a second, and then a faint laugh sounded. "Then I guess there's no use in crying over spilled milk, is there, Henry? If it had to happen, it just had to. And

I mean, it's like fate, almost!"

"It *is* fate!" he agreed happily. Then he dropped his voice. "And now I'm all alone here, baby lamb, and I had to call you up . . ."

She caught on at once, as she always did. "You can't stay there now! It's so morbid. Henry, you come right over here!"

Demons, Henry thought as he drove the car through the quiet residential streets toward her apartment, had their uses. They were a much maligned breed. Probably the people who had summoned them before had been ignorant, stupid people; they'd messed up their chances and brought trouble on themselves by not finding out the facts and putting it all down to superstitious magic. The fellows were almost people—maybe even a little superior to humans. If a man would just try to understand them, they could help him, and with no danger at all.

"No strings attached," he said to himself, and then chuckled softly. It fitted perfectly; now there were no strings attached to him. Emma was at peace, and he was free. He'd have to wait a few months to marry Shirley legally, of course. But already, she was as good as his wife. And if he played up the shock angle just enough, this could be a wonderful evening again . . .

Shirley was unusually lovely when she met him at the door. Her soft golden hair made a halo for her face—a face that said she'd already anticipated his ideas, and had decided he was a man who needed sympathy and understanding for what had happened.

There was even time for the idea that he was free to be brought up, tentatively at first, and then eventually as a matter of course. And the plans expanded as he considered them. There was no need to worry about things now. The quiet marriage became a trip around the world as he confessed to having money that no one knew about. They could close the shop. He could leave town almost at once, and she could follow later. Nobody would know, and they wouldn't have to wait to avoid any scandal. They could be married in two weeks!

Henry was just realizing the values of a friendly demon. With proper handling, a lot of purely friendly summoning, and a reasonable attitude, there was no reason why Alféar couldn't provide him with every worldly comfort to share with Shirley.

He caught her to him again. "My own little wife! That's what you are, lambkins! What's a mere piece of paper? I already think of you as my wife. I feel you're my wife. That's what counts, isn't it?"

"That's all that counts," she agreed with a warmth that set fire to his blood. Then she gasped. "Henry, darling, it's getting light already! You'll have to get back. What will the neighbors say if they see you coming from here now?"

He tore away reluctantly, swearing at the neighbors. But she was right, of course. He had to go back and take the sleeping medicine to be ready for the arrival of the mortician in the morning.

"It's still early," he protested, automatically trying to squeeze out a few more minutes. "Nobody's up yet."

"I'll heat up the coffee, and then you'll have to go," Shirley said firmly, heading for the kitchen. "Plenty of people get up early around here. And besides, you need some sleep. Early to bed and early to rise, makes a man healthy, wealthy and—"

From the kitchen came the beginning of a shriek. It changed to a horrible gasp, and died away in a failing moan. There was the sound of a body hitting the floor.

Alféar stood over Shirley's body, rubbing one finger tenderly. His ears twitched uncertainly as he studied Henry's horror-frozen face. "I told you," he said. "I warned you some of us get conditioned to a habit the first time. And you thought of her as your wife and she said . . ."

Abruptly, he vanished. Henry's screams were the only sound in the apartment.

• • • THE END

WORTH CITING

WITH CURT SIODMAK doing the script, *Riders to the Stars* promises to be a movie any died-in-the-wool science fiction lover will put down on his "must see" list. We've just read the book—another excellent Ballantine release—and it is just what the blurb claims it to be: "swift and electrifying".

No moon vistas, monsterous Martians or Venusian aphrodites are running rampant in this story. Essentially, it is the tale of three men who gamble their lives, with plausible and human motivations, to help change the history of the world—and perhaps the universe. Science fiction has already accepted space travel as a completely normal state of affairs in the future, but this is the story of the men who will do it first. What sort of men will they be? Why will they take the terrifying gamble that runs the gamut of human experiences? What may happen before we reach those stars that twinkle so invitingly?

The cast seems to be a competent one, including Herbert Marshall, William Lundigan and Richard Carlson, and they've sure got a walloping good yarn to work with.

Incidentally, Siodmak's *Donovan's Brain* has been made into a moving picture too and anyone who has read that classic science fiction novel can look forward to another fine film treat.

So—IF's Citation for this month goes to the man whose fine work in script writing and story telling has taken a new direction away from the "Frankenstein" tradition—Curt Siodmak.

Do you really know *if it is really* you *who decides whether you are happy, or hungry, or want something, or in love? Maybe you do, but read this thought-provoking article on thought control and be on guard!*

snaring THE HUMAN MIND

By Fritz Leiber

DEAR FRIEND, I suppose you are taking it easy as you read this. You are lying down, sitting, or possibly straphanging. Outside of the possibility of unexpected atom bombs and smaller commotions, you feel quite safe.

I'm sorry to tell you, but you aren't.

The human mind can be snared quite as easily as the human body can be atomized. The modern witch-doctors have an astonishing armory of new weapons, which they they are probably trying out on you right now. Even the magazine in your hands (I humbly apologize to the editor) could be a threat.

There's a rat at the University of California. He has a radio in his skull. Dr. Joseph Gengerelli inserted it there surgically. For the very best scientific purposes. Dr. Gengerelli is showing, among other things, that he can control a rat from a distance.

From the midget radio a very tiny wire leads into the rat's brain through a very tiny hole drilled in its skull. When Dr. Gengerelli starts broadcasting, the rat gets the jitters and runs "erratically about". All because Dr. Gengerelli has pushed a button. The learned scientist and his button might be on the moon and it would still work, if he had a strong enough broadcasting set. If all the rats in the world were so equipped, they would all get the jitters.

This type of experiment has been carried a lot further, working with monkeys. These primates have had not one, but dozens of tiny wires inserted in different parts of their brains, from a central radio receiver permanently set in the skull. The wires are insulated up to the point

where they touch a selected bit of gray matter. Radio control allows any selected part of the monkey's brain to be stimulated electrically. Sometimes the result is a violent dislike of bananas. Sometimes the monkey finds himself with ten times as much appetite as usual. Sometimes he gets violently aggressive, and sometimes he fawns. It all depends on which button is pushed.

Could anything like this be done in a practical way to human beings? Surely not. But according to the Signal Corps Engineering Laboratory at Fort Monmouth, New Jersey, a wrist-watch size radio receiver has been perfected that hears up to 40 miles. It is made of five transistors, a pencil-tip battery, a tiny earphone like that of a hearing aid, and an antenna that fits inside a man's sleeve.

Meanwhile General Electric has developed a radio transmitter which, including the microphone, is no bigger than a cigarette case. So far it has a range of only 70 feet, but we all know what technology can do to a "so far".

Technologically-shrunken versions of such radio transmitters and receivers could be surgically inserted into the human body. Specifically, near the skull, ear and vocal chords, or connected to those by wires. The skin would be grown back over them again, just as it is over a plastic or metal hip joint. Such radios would report back to headquarters every word a man or woman said, they would even keep check on his half-whispered, or subvocal thinking. They would send him orders through an implanted earphone. They might even, if the tiny holes in the skull were drilled and the wires inserted, control his emotions. Finally a midget bomb might be implanted in the flesh, set to explode at the proper radio signal.

While it might be wasteful to outfit an army this way, considering how age-old methods of discipline achieve comparable results, such surgeried-in devices could be used to advantage on spies, soldiers on suicidal missions, suspected traitors and persons with top-secret information.

But how would it really help headquarters to give a man a violent dislike for bananas, or punch a button to make him aggressive, or decide from his sub-vocal mutterings that he wasn't being aggressive enough and so blow him up at long distance?

The answer is that these are things that could be done today. With our rapidly increasing knowledge of the human brain, control will become much subtler. For that matter, maybe it has already become much subtler. Maybe you are haunted, as I am, by the uneasy feeling that we people outside the barriers of military and governmental security simply don't know the tenth of it. Heck, at some moments I am afraid that I think certain thoughts simply because some propaganda bureau has already invaded the inmost recesses of my brain.

Of course there are a lot more axlike methods than implanted radios of influencing the activities of the human brain—methods which have been popular in hospitals and clinics for some twenty

years. I am referring to those methods which destroy a part of the brain slowly by long series of electric shocks (or insulin or metrazol injections), or quickly by the surgeon's knife or probe.

In lobotomy and its sister operations a part of the brain is destroyed and as a result the person so favored does not bother about things so much. For instance, if he is against the government, he gives up this idealistic pursuit and takes up chasing food or women. Which makes it easier for his keepers.

It has been suggested, by the French scientist Christian Favre, that lobotomy may be one of the key weapons of dictators. Imagine that the dictator has captured an enemy of his regime who cannot be broken down by torture. A clever twist of the surgeon's knife inside his brain and he is turned into a vegetable, a creature who can be drilled into saying whatever the prosecuting attorney wants to hear.

Would scars show that such surgery has been performed? The surgeon's probe, inserted between the eyeball and the muscles around it, can reach the brain and destroy the necessary part, leaving no outward trace.

Electro-shock, on the other hand, probably does no damage to the brain except when treatments are repeated many times. But it has been used as a threat to get neurotic soldiers back into the fighting lines. Some psychiatrists believe that electro-shock is effective mostly because dread of it, much like the old snake-pits and whippings for lunatics, scares the patient back into a semblance of sanity.

IT IS NATURAL that we should feel a spontaneous revulsion at the idea of invading the human brain by knife or even electricity. For a long time investigation of the living human brain was taboo. The idea was that if it was bad to cut into the human body, it was much more indecent to cut into the seat of reason. Knowledge of the brain was gained during necessary and rare surgical operations, when a willing subject would permit the surface of his brain to be given a mild electrical stimulation in different places, the subject reporting what he felt. Now it is possible to study the brain without piercing the skull. One method is by recording the well-known brain waves, those mixed and faint electrical rhythms that can be picked up by moist electrical contacts on the head.

But this is not thought-control. Brain waves cannot as yet be beamed back into the skull to control a man's activities.

Yet recently it has been discovered that brain waves *can* (in a sense) be effectively turned back on the brain to control it, not in the form of electricity, but light. At the Burden Neurological Institute in Bristol, England, physiologist Grey Walter gives people what he calls flicker-fits. While a person's brain waves are being recorded, a bright light that flickers about ten times a second is shined into his eyes. Then the timing of the flashes is changed so that they are in exact rhythm with one of the chief brain waves.

At this point the person begins to see things that are not there, and not only see but also feel and touch. He may experience an inexplicible

disgust, or intense pleasure. Finally he begins to have convulsions like those of an epileptic. At this point Grey Walters switches off the light.

But suppose he didn't. Could brilliant, rapidly flickering star-shells strike down an army with artificial epilepsy?

One thing that Grey Walter's subjects frequently see in their flicker-fits is a spiral, a light that whirls out from a center in tight but rapidly widening circles. This is a common scanning pattern—a way of inspecting every part of an area, just as a boy might hunt for a lost baseball by circling out from a central point. TV does the same thing in getting or reproducing a picture, except that it works in straight lines, back and forth.

Grey Walter believes that here we have evidence that the thinking part of the brain is scanning the seeing part of the brain, which is located in the back of the head, to see what pictures have been transmitted there from the retina of the eye.

This is an example of the way the brain is being investigated these days. Here is another: physiologists have speculated about the sense of smell for a long time. They have tried to reduce it to something like the simple sweet-salt-bitter-sour of the sense of taste. All sorts of experts, including the suavest French wine-tasters and the most judicial British tea-samplers, have tried to describe just what they were smelling. But they did not reach conclusions.

Now Raymond Hainer, an industrial scientist in Cambridge, Massachusetts, has tackled this problem from brain-side, rather than nose-side. He finds that there are 24 different types of odor-sensitive nerves leading from the nose to the brain. Depending on which nerves are stimulated and which are not, the brain can sense about 16 million different odors. No wonder the experts couldn't find a vocabulary to describe smells accurately.

These examples show the carefully detailed way the human brain is being examined these days. For several years scientists like Norbert Wiener of M. I. T. (see IF, January issue) have been hinting to us that the brain is a calculating machine. And just like slot-machines, calculating machines can be gimmicked to give whatever results and pay off on whatever percentages the mechanic who adjusts them chooses.

Do you want your brain gimmicked? Neither do I. But we'll have to watch out for it in the future.

For a long time the robot of fiction has been the machine built to imitate man. Now it is turning out that man himself is a robot, a vastly complex electro-chemical circuit that can nevertheless be gimmicked by a clever operator.

Yet the gimmicking of the human brain is far from a modern wonder. It is something that was going on long before the first priest of Ammon talked through a tube whose outlet was the mouth of the statue of the god for whom he was soliciting. It started with the first witch-doctor to discover the cosmos-shaking truth that people don't think realistically, but in terms of desires

and symbols. In other words, if you want to influence other people, you work through the subconscious. This obviously holds true today. For example, a firm manufacturing men's shirts and wanting to sell them, not to ordinary customers but to hard-headed retailers, decided on these rules: Don't talk about shirts, don't talk about prices; but show a pretty girl almost without one of the shirts you are trying to sell.

Such seemingly obvious appeals to basic human urges are getting more subtle all the time, as trained psychologists and sociologists are lured into the selling game by far higher salaries than universities can pay. For instance, a Viennese psychiatrist has figured out for Chrysler that a man looks on a convertible as his mistress, but on a hardtopped sedan as his wife. So the psychiatrist advises car dealers to put a convertible in the front window of the store, with a lot of more businesslike cars behind it. Men will come in to smell anxiously around the convertible, but they'll buy the other model.

Another psychoanalyst has been telling greeting card manufacturers just what shapes and forms to put on the pasteboard oblongs they sell. The shapes and forms, all very gayly colored and carefully generalized, turn out to be the basic symbols of sex.

Of course, part of this is just good old horse sense and another part is merely psychologists trying to sell industry an interesting bill of goods. But there is a solid reminder of activities pointing to an ever more efficient gimmicking of the human brain.

A LOT OF this gimmicking seems much too obvious to be effective, especially to the person who prides himself on being "ad-hardened." This may be true for the conscious mind, but hardly for the subconscious. We laugh indulgently at the childishness of an advertiser who tries to make us buy a soft drink because it is pictured on the same billboard as an impossibly attractive and innocent-looking girl. Meanwhile we drink the same soft drink because, we tell ourselves, it is really more refreshing.

The migration of psychologists into industry has been paralleled by other manifestations of a large-scale attempt to gimmick the human brain: the growing resemblance between articles and advertising in magazines and newspapers; the tendency to expect authorities—or perhaps, ultimately, robot brains—to settle all questions; careful censoring in advance of each item that goes into the mass media of communication; increasing distrust by authorities of the ability of ordinary people to weigh any general problem intelligently.

Meanwhile, our old friend hypnotism is being made into a more potent weapon. For a long time many psychologists believed that a hypnotized person could not be made to perform an act contrary to his moral code. Yet recent experiments show that a hypnotized person will attempt a murderous attack on an innocent bystander—if first

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EMSH

Here is a love story of two young people who met under the magic of festival time. One was Trina, whose world was a gentle make-believe Earth. The other was Max, handsome spaceman, whose world was the infinite universe of space . . .

THE FIRST DAY OF SPRING

By Mari Wolf

Illustrated by Ed Emsh

THE FIRST DAY of spring, the man at the weather tower had said, and certainly it felt like spring, with the cool breeze blowing lightly about her and a faint new clover smell borne in from the east. Spring —that meant they would make the days longer now, and the nights shorter, and they would warm the whole world until it was summer again.

Trina laughed aloud at the thought of summer, with its picnics and languid swims in the refilled lakes, with its music and the heavy scent of flowers and the visitors in from space for the festival. She laughed, and urged her horse faster, out of its ambling walk into a trot, a canter, until the wind streamed about her, blowing back her hair, bringing tears to her eyes as she rode homeward toward the eastern horizon—the horizon that looked so far away but wasn't really.

"Trina!"

His voice was very close. And it was familiar, though for a moment she couldn't imagine who it might be.

"Where are you?" She had reined the horse in abruptly and now looked around her, in all directions, toward the north and south and east and west, toward the farm houses of the neighboring village, toward the light tower and the sun tower. She saw no one. No one else rode this early in the day in the pasture part of the world.

"I'm up here, Trina."

She looked up then and saw him, hovering some thirty feet off the ground in the ridiculous windmill-like craft he and his people used when they visited the world.

"Oh, hello, Max." No wonder she had known the voice. Max Cramer, down from space, down to the world, to see her. She knew, even before he dropped his craft onto the grass beside her, that he had come to see her. He couldn't have been on the world for more than the hour she'd been riding.

"You're visiting us early this year, Max. It's not festival time for three months yet."

"I know." He cut the power to the windmill blades, and they slowed, becoming sharply visible. The horse snorted and backed away. Max smiled. "This world is very—attractive."

His eyes caught hers, held them. She smiled back, wishing for the hundredth time since last summer's festival that he were one of her people, or at least a worldling, and not a man with the too white skin of space.

"It may be attractive," she said. "But you always leave it soon enough."

He nodded. "It's too confining. It's all right, for a little while, but then . . ."

"How can you say that?" She shook her head sadly. Already they were arguing the same old unresolvable argument, and they had scarcely greeted each other. After all his months in space they met with the same words as they had parted. She looked past him, up and out, toward the horizon that seemed so many miles away, toward the morning sun that seemed to hang far, far off in the vaulted blue dome of the sky.

"How can you even think it? About this?"

His lips tightened. "About *this,*" he repeated. "A horizon you could ride to in five minutes. A world you could ride around in two hours. A sun—you really call it a sun—that you could almost reach up and pluck out of that sky of yours." He laughed. "Illusions. World of illusions."

"Well, what do you have? A ship—a tiny ship you can't get out of, with walls you can see, all around you."

"Yes, Trina, with walls we can see."

He was still smiling, watching her, and she knew that he desired her. And she desired him. But not the stars.

"You have nothing like this," she said, knowing it wouldn't do any good. She looked past him at the light tower, one of the many that formed the protective screen about her world, that made it seem great and convex, a huge flattened sphere with the sun high above, and not the swift curving steel ball that it actually was.

This was her world. It was like Earth, like the old Earth of the legends of the time before the radiation wars. And even though her mind might know the truth about the screens that refracted light and the atomic pile that was her sun, her heart knew a more human truth. This was a world. As it had been in the beginning. As it must be till the end—or until they found

a new Earth, somewhere, sometime . . .

Max sighed. "Yes, you have your world, Trina. And it's a good one—the best of its kind I've ever visited."

"Why don't you stay here then?"

A spaceman, she thought. With all the dozens of men in my world, why did it have to be a spaceman? With all the visitors from New France and New Chile and New Australia last festival, why did it have to be him?

"I have the stars, Trina."

"We do too!" Last festival, and the warm June night, heavy, druggedly heavy with honeysuckle and magnolia, and the hidden music from the pavillions. And Max Cramer, tall and strong boned and alien, holding her in his arms, dancing her away from her people, out onto the terrace above the little stream, beneath the full festival moon and the summer stars, the safe, sane, well ordered constellations that their ancestors had looked upon from Earth.

"My stars are real, Trina."

She shook her head, unable to argue with him. World-woman and space-man, and always different, with nothing in common between them, really, except a brief forgetfulness at festival time.

"Come with me, Trina."

"No." She gathered up the reins and chucked at the horse and turned, slowly, for the village.

"You wouldn't come—for me?"

"You wouldn't stay, would you?"

She heard the windmill blades whir again, and a rustling of wind, and then he was beside her, skimming slowly along, barely off the ground, making her horse snort nervously away.

"Trina, I shouldn't tell you this, not until we've met with your councilmen. But I—I've got to."

He wasn't smiling now. There was a wild look about his face. She didn't like it.

"Captain Bernard's with the council now, giving them the news. But I wanted to see you first, to be the one who told you." He broke off, shook his head. "Yet when I found you I couldn't say anything. I guess I was afraid of what you'd answer. . ."

"What are you talking about?" She didn't want to look at him. It embarrassed her somehow, seeing him so eager. "What do you want to tell me?"

"About our last trip, Trina. We've found a world!"

She stared at him blankly, and his hand made a cutting gesture of impatience. "Oh, not a world like this one! A planet, Trina. And it's Earth type!"

She wheeled the horse about and stared at him. For a moment she felt excitement rise inside of her too, and then she remembered the generations of searching, and the false alarms, and the dozens of barren, unfit planets that the spacemen colonized, planets like ground-bound ships.

"Oh, Trina," Max cried, "This isn't like the others. It's a new Earth. And there are already people there. From not long after the Exodus. . ."

"A new Earth?" she said. "I don't believe it."

The council wouldn't either, she thought. Not after all the other

new Earths, freezing cold or methane atmosphered or at best completely waterless. This would be like the others. A spaceman's dream.

"You've got to believe me, Trina," Max said. "And you've got to help make the others believe. Don't you see? You wouldn't live in space. I wouldn't live here—on this. But there, on a real planet, on a real Earth. . ."

Then suddenly she felt his excitement and it was a part of her, until against all reason she wanted to believe in his mad dream of a world. She laughed aloud as she caught up the reins and raced her horse homeward, toward the long vista of the horizon and the capital village beyond it, ten minutes gallop away.

MAX AND TRINA came together into the council hall and saw the two groups, the roomful of worldmen and the half dozen spacemen, apart from each other, arguing. The spacemen's eyes were angry.

"A world," Captain Bernard said bitterly, "there for your taking, and you don't even want to look at it."

"How do we know what kind of world it is?" Councilman Elias leaned forward on the divan. His voice was gentle, almost pitying. "You brought no samples. No vegetation, no minerals. . ."

"Not even air samples," Aaron Gomez said softly. "Why?"

Bernard sighed. "We didn't want to wait," he said. "We wanted to get back here, to tell you."

"It may be a paradise world to *you*," Elias said. "But to us. . ."

Max Cramer tightened his grip on Trina's hand. "The fools," he said. "Talking and talking, and all the time this world drifts farther and farther away."

"It takes so much power to change course," Trina said. "And besides, you feel it. It makes you heavy."

She remembered the stories her father used to tell, about his own youth, when he and Curt Elias had turned the world to go to a planet the spaceman found. A planet with people—people who lived under glass domes, or deep below the formaldehyde poisoned surface.

"You could be there in two weeks, easily, even at your world's speed," Captain Bernard said.

"And then we'd have to go out," Elias said. "Into space."

The worldmen nodded. The women looked at each other and nodded too. One of the spacemen swore, graphically, and there was an embarrassed silence as Trina's people pretended not to have heard.

"Oh, let's get out of here." The spaceman who had sworn swore again, just as descriptively, and then grinned at the councilmen and their aloof, blank faces. "They don't want our planet. All right. Maybe New Chile. . ."

"Wait!" Trina said it without thinking, without intending to. She stood speechless when the others turned to face her. All the others. Her people and Max's. Curt Elias, leaning forward again, smiling at her.

"Yes, Trina?" the councilman

said.

"Why don't we at least look at it? Maybe it is—what they say."

Expression came back to their faces then. They nodded at each other and looked from her to Max Cramer and back again at her, and they smiled. Festival time, their eyes said. Summer evenings, summer foolishness.

And festival time long behind them, but soon to come again.

"Your father went to space," Elias said. "We saw one of those worlds the spacemen talk of."

"I know."

"He didn't like it."

"I know that too," she said, remembering his bitter words and the nightmare times when her mother had had so much trouble comforting him, and the winter evenings when he didn't want even to go outside and see the familiar, Earth encircling stars.

He was dead now. Her mother was dead now. They were not here, to disapprove, to join with Elias and the others.

They would have hated for her to go out there.

She faltered, the excitement Max had aroused in her dying away, and then she thought of their argument, as old as their desire. She knew that if she wanted him it would have to be away from the worlds.

"At least we could look," she said. "And the spacemen could bring up samples. And maybe even some of the people for us to talk to."

Elias nodded. "It would be interesting," he said slowly, "to talk to some new people. It's been so long."

"And we wouldn't even have to land," Aaron Gomez said, "if it didn't look right."

The people turned to each other again and smiled happily. She knew that they were thinking of the men and women they would see, and all the new things to talk about.

"We might even invite some of them up for the festival," Elias said slowly. "Providing they're—courteous." He frowned at the young spaceman who had done the swearing, and then he looked back at Captain Bernard. "And providing, of course, that we're not too far away by then."

"I don't think you will be," Bernard said. "I think you'll stay."

"I think so too," Max Cramer said, moving closer to Trina. "I hope so."

Elias stood up slowly and signalled that the council was dismissed. The other people stood up also and moved toward the doors.

"We'd better see about changing the world's course," Aaron Gomez said.

No one objected. It was going to be done. Trina looked up at Max Cramer and knew that she loved him. And wondered why she was afraid.

IT WAS TEN days later that the world, New America, came into the gravitational influence of the planet's solar system. The automatic deflectors swung into functioning position, ready to change course, slowly and imperceptibly, but enough to take the world

around the system and out into the freedom of space where it could wander on its random course. But this time men shunted aside the automatic controls. Men guided their homeland in, slowly now, toward the second planet from the sun, the one that the spacemen had said was so like Earth.

"We'll see it tomorrow," Trina said. "They'll shut off part of the light tower system then."

"Why don't they now?" Max Cramer asked her. It was just past sunset, and the stars of a dozen generations ago were just beginning to wink into view. He saw Venus, low on the horizon, and his lips tightened, and then he looked up to where he knew the new sun must be.

There was only the crescent of Earth's moon.

"Now?" Trina said. "Why should they turn the screens off now? We're still so far away. We wouldn't see anything."

"You'd see the sun," Max said. "It's quite bright, even from here. And from close up, from where the planet is, it looks just about like Earth's."

Trina nodded. "That's good," she said, looking over at the rose tints of the afterglow. "It wouldn't seem right if it didn't."

A cow lowed in the distance, and nearer, the laughing voices of children rode the evening breeze. Somewhere a dog barked. Somewhere else a woman called her family home to supper. Old sounds. Older, literally, than this world.

"What are the people like, out there?"

He looked at her face, eager and worried at the same time, and he smiled. "You'll like them, Trina," he said. "They're like—well, they're more like *this* than anything else."

He gestured, vaguely, at the farmhouse lights ahead of them, at the slow walking figures of the young couples out enjoying the warm spring evening, at the old farmer leading his plow horse home along the path.

"They live in villages, not too different from yours. And in cities. And on farms."

"And yet, you like it there, don't you?" she said.

He nodded. "Yes, I like it there."

"But you don't like it here. Why?"

"If you don't understand by now, Trina, I can't explain."

They walked on. Night came swiftly, crowding the rose and purple tints out of the western sky, closing in dark and cool and sweet smelling about them. Ahead, a footbridge loomed up out of the shadows. There was the sound of running water, and, on the bank not far from the bridge, the low murmuring of a couple of late lingering fishermen.

"The people live out in the open, like this?" Trina said.

"Yes."

"Not underground?" Not under a dome?"

"I've told you before that it's like Earth, Trina. About the same size, even."

"*This* is about the same size, too."

"Not really. It only looks that way."

The fishermen glanced up as they passed, and then bent down

over their lines again. Lucas Crossman, from Trina's town, and Jake Krakorian from the southern hemisphere, up to visit his sister Lucienne, who had just had twins. . .

Trina said hello to them as she passed, and found out that the twins looked just like their mother, except for Grandfather Mueller's eyes, and then she turned back to Max.

"Do people live all over the planet?"

"On most of it. The land sections, that is. Of course, up by the poles it's too cold."

"But how do they know each other?"

He stopped walking and stared at her, not understanding for a minute. Girl's laughter came from the bushes, and the soft urging voice of one of the village boys. Max looked back at the fishermen and then down at Trina and shook his head.

"They don't all know each other," he said. "They couldn't."

She thought of New Chile, where her cousin Isobelle was married last year, and New India, which would follow them soon to the planet, because Captain Bernard had been able to contact them by radio. She thought of her people, her friends, and then she remembered the spacemen's far flung ships and the homes they burrowed deep in the rock of inhospitable worlds. She knew that he would never understand why she pitied the people of this system.

"I suppose we'll see them soon," she said. "You're going to bring some of them back up in your ship tomorrow, aren't you?"

He stood quietly, looking down at her. His face was shadowed in the gathering night and his whole body was in shadow, tall and somehow alien seeming there before her.

"Why wait for them to come here, Trina?" he said. "Come down with us, in the ship, tomorrow. Come down and see for yourself what it's like."

She trembled. "No," she said.

And she thought of the ship, out away from the sky, not down on the planet yet but hanging above it, with no atmosphere to break the blackness, to soften the glare of the planet's sun, to shut out the emptiness.

"You'd hardly know you weren't here, Trina. The air smells the same. And the weight's almost the same too. Maybe a little lighter."

She nodded. "I know. If we land the world, I'll go out there. But not in the ship."

"All right." He sighed and let go his grip on her shoulders and turned to start walking back the way they had come, toward the town.

She thought suddenly of what he had just said, that she would hardly be able to tell the difference.

"It can't be so much like this," she said. "Or you couldn't like it. No matter what you say."

"Trina." His voice was harsh. "You've never been out in space, so you couldn't understand. You just don't know what your world is like, from outside, when you're coming in."

But she could picture it. A tiny planetoid, shining perhaps behind its own screens, a small, drifting, lonely sphere of rock. She trembled

again. "I don't want to know," she said.

Somewhere in the meadows beyond the road there was laughter, a boy and a girl laughing together, happy in the night. Trina's fingers tightened on Max's hand and she pulled him around to face her and then clung to him, trembling, feeling the nearness of him as she held up her face to be kissed.

He held her to him. And slowly, the outside world of space faded, and her world seemed big and solid and sure, and in his arms it was almost like festival time again.

AT NOON the next day the world slowed again and changed course, going into an orbit around the planet, becoming a third moon, nearer to the surface than the others.

The people, all of those who had followed their normal day-to-day life even after New America came into the system, abandoned it at last. They crowded near the television towers, waiting for the signal which would open up some of the sky and show them the planet they circled, a great green disk, twice the apparent diameter of the legendary Moon of Earth.

Max stood beside Trina in the crowd that pressed close about his ship. He wore his spaceman's suit, and the helmet was in his hand. Soon he too would be aboard with the others, going down to the planet.

"You're sure you won't come, Trina? We'll be down in a couple of hours."

"I'll wait until we land there. If we do."

Curt Elias came toward them through the crowd. When he saw Trina he smiled and walked faster, almost briskly. It was strange to see him move like a young and active man.

"If I were younger," he said, "I'd go down there." He smiled again and pointed up at the zenith, where the blue was beginning to waver and fade as the sky screens slipped away. "This brings back memories."

"You didn't like that other world," Trina said. "Not any more than Father did."

"The air was bad there," Elias said.

The signal buzzer sounded again. The center screens came down. Above them, outlined by the fuzzy halo of the still remaining sky, the black of space stood forth, and the stars, and the great disk of the planet, with its seas and continents and cloud masses and the shadow of night creeping across it from the east.

"You see, Trina?" Max said softly.

The voices of the people rose, some alive with interest and others anxious, fighting back the planet and the unfamiliar, too bright stars. Trina clutched Max Cramer's hand, feeling again the eagerness of that first day, when he had come to tell her of this world.

"You're right," she whispered. "It *is* like Earth."

It was so much like the pictures, though of course the continents were different, and the seas, and instead of one moon there were two. Earth. A new Earth, there

above them in the sky.

Elias let out his breath slowly. "Yes," he said. "It is. It's not a bit like that world we visited. Not a bit."

"When you're down there it's even more like Earth," Max said. "And all the way down you could watch it grow larger. It wouldn't be at all like open space."

At the poles of the planet snow gleamed, and cloud masses drifted across the equator. And the people looked, and pointed, their voices growing loud with eagerness.

"Why don't we land the world now?" Trina cried. "Why wait for the ship to bring people up here?"

"Landing the world would take a lot of power," Elias said. "It would be foolish to do it unless we planned on staying for quite a while." He sighed. "Though I would like to go down there. I'd like to see a really Earth type planet."

He looked at Max, and Max smiled. "Well, why not?" he said.

Elias smiled too. "After all, I've been in space once. I'll go again." He turned and pushed his way through the people.

Trina watched him go. Somehow he seemed a symbol to her. Old and stable, he had been head of the council since she was a child. And he had gone into space with her father. . .

"Please come, Trina," Max said. "There's nothing to be afraid of."

With both Max and Elias along, certainly it couldn't be too bad. Max was right. There was nothing, really, to be afraid of. She smiled up at him.

"All right," she said. "I'll go."

And then she was walking with Max Cramer toward the ship and trying not to remember her father crying in his sleep.

THE SHIP rose, and Trina cried out as she felt the heaviness wrench her back against the cushions. Max reached over to her. She felt the needle go into her arm again, and then sank back into the half sleep that he had promised would last until they were ready to land.

When she awoke the planet was a disk no longer, but a great curving mass beneath the ship, with the mountains and valleys and towns of its people plainly visible. But the planet's sky still lay below, and around them, in every direction except down, space stretched out, blacker than any night on the world. The world. Trina moaned and closed her eyes, glad she hadn't seen it, somewhere tiny and insignificant behind them.

Max heard her moan and reached toward her. She slept again, and woke only when they were down and he was tugging the straps loose from around her. She sat up, still numbed by the drug, still half asleep and unreal feeling, and looked out about her at the planet's surface.

They were in a field of some sort of grain. Beyond the scorched land where they had come down the tall cereal grasses rippled in the soft wind, a great undulating sea of green, reaching out toward the far off hills and the horizon. Cloud shadows drifted across the fields, and the shadow of the ship reached

out to meet them.

Trina rubbed her eyes in wonder. "It *is* like the world," she said. "Just like it."

For a moment she was sure that they were back on the world again, in some momentarily unrecognized pasture, or perhaps on one of the sister worlds. Then, looking along the row of hills to where they dropped away into an extension of the plain, she saw that the horizon was a little too far, and that the light shimmered differently, somehow, than on her home. But it was such a little difference.

"Come on outside," Max Cramer said. "You'll be all right now."

She stood up and followed him. Elias was already at the airlock, moving unsteadily and a little blankly, also still partly under the influence of the narcotic.

The lock opened. Captain Bernard stepped out and went down the ladder to the ground. The others followed him. Within a few minutes the ship stood empty.

TRINA breathed the open air of the planet and felt the warmth on her face and smelled the scent of grass and the elusive fragrance of alien flowers. She heard the song of some strange, infinitely sweet throated bird.

"It's—it's Earth," she whispered.

Voices, eager, calling voices, sang out in the distance. Then, little cars rolled toward them through the field, mowing down the grass, cutting themselves a path to the ship. People, men and women and children, were calling greetings.

"This is where we landed before," Max said. "We told them we'd be back."

They were sunbronzed, country people, and except for their strange clothing they might have been from any of the worlds. Even their language was the same, though accented differently, with some of the old, unused words, like those in the legends.

"You've brought your people?" the tall man who stood in the forefront said to Captain Bernard.

"They're up there." Bernard pointed up at the sky, and the people looked up. Trina looked up too. One of the planet's moons was almost full overhead. But the world was invisible, shut off by the sky and the clouds and the light of the earthlike sun.

"They'd like some of you to come visit their world," Bernard said. "If any of you are willing."

The tall man nodded. "Everyone will want to go," he said. "Very few ships ever land here. Until you came, it had been years."

"You'd go out in space?" Trina said incredulously.

Again the man nodded. "I was a spaceman once," he said. "All of us MacGregors were." Then he sighed. "Sometimes even now I want to go out again. But there've been no ships here, not for years."

Trina looked past him, at the women and the children, at the lush fields and the little houses far in the distance. "You'd leave this?"

MacGregor shook his head. "No, of course not. Not to live in space permanently. I'd always come back."

"It's a fine world to come back

to," Max said, and he and the tall man smiled at each other, as if they shared something that Trina couldn't possibly understand.

"We might as well go into town," MacGregor said.

They walked over to the cars. MacGregor stopped beside one of them, his hand on the door button.

"Here, let me drive." The girl stepped forward out of the crowd as she spoke. She was tall, almost as tall as MacGregor, and she had the same high cheekbones and the same laughter lines about her eyes.

"Not this time, Saari," MacGregor said. "This time you can entertain our guests." He turned to Max and Trina and smiled. "My daughter." His face was proud.

They climbed in, Trina wedging herself into the middle of the back seat between Max and the planet girl. The car throbbed into motion, then picked up speed, jolting a bit on the rough country road. The ground rushed past and the fields rushed past and Trina leaned against Max and shut her eyes against the dizzying speed. Here, close to the ground, so close that they could feel every unevenness of its surface, it was far worse than in the windmill like craft the spacemen used on the worlds.

"Don't you have cars?" Saari asked.

"No," Trina said. "We don't need them."

A car like this would rush all the way around the world in half an hour. In a car like this one even the horizons wouldn't look right, rushing to meet them. Here, though the horizons stayed the same, unmoving while the fence posts and the farmhouses and the people flashed past.

"What do you use for transportation then?"

"We walk," Trina said, opening her eyes to look at the girl and then closing them again. "Or we ride horses."

"Oh."

A few minutes later the car slowed, and Trina opened her eyes again.

"We're coming into town," Saari said.

They had climbed up over the brow of a small hill and were now dropping down. At the bottom of the hill the houses clumped together, sparsely at first, then more and more of them, so that the whole valley was filled with buildings, and more buildings hugged the far slopes.

"There are so many of them," Trina whispered.

"Oh, no, Trina. This is just a small town."

"But the people—all those people. . ."

They crowded the streets, watching the cars come in, looking with open curiosity at their alien visitors. Faces, a thousand faces, all different and yet somehow all alike, blended together into a great anonymous mass.

"There aren't half that many people on the whole world," Trina said.

Saari smiled. "Just wait till you see the city."

Trina shook her head and looked up at Max. He was smiling out at the town, nodding to some men he apparently knew, with nothing but eagerness in his face. He seemed a

stranger. She looked around for Curt Elias, but he was in one of the other cars cut off from them by the crowd. She couldn't see him at all.

"Don't you like it?" Saari said.

"I liked it better where we landed."

Max turned and glanced down at her briefly, but his hand found hers and held it, tightly, until her own relaxed. "If you want to, Trina, we can live out there, in those fields."

For a moment she forgot the crowd and the endless faces as she looked up at him. "Do you mean that, Max? We could really live out there?"

Where it was quiet, and the sun was the same, and the birds sang sweetly just before harvest time, where she would have room to ride and plenty of pasture for her favorite horse. Where she would have Max, there with her, not out somewhere beyond the stars.

"Certainly we could live there," he said. "That's what I've been saying all along."

"You could settle down here?"

He laughed. "Oh, I suppose I'd be out in space a good deal of the time," he said. "The ships will come here now, you know. But I'll always come home, Trina. To this world. To you."

And suddenly it didn't matter that the girl beside her chuckled, nor that there were too many people crowding around them, all talking at once in their strangely accented voices. All that mattered was Max, and this world, which was real after all, and a life that seemed like an endless festival time before her.

EVENING came quickly, too quickly, with the sun dropping in an unnatural plunge toward the horizon. Shadows crept out from the houses of the town, reached across the narrow street and blended with the walls of the houses opposite. The birds sang louder in the twilight, the notes of their song drifting in from the nearby fields. And there was another sound, that of the wind, not loud now but rising, swirling fingers of dust in the street.

Trina sat in front of the town cafe with the planet girl, Saari. Max Cramer was only a few feet away, but he paid no attention to her, and little to Elias. He was too busy telling the planet people about space.

"Your man?" Saari asked.

"Yes," Trina said. "I guess so."

"You're lucky." Saari looked over at Max and sighed, and then she turned back to Trina. "My father was a spaceman. He used to take my mother up, when they were first married, when the ships were still running." She sighed. "I remember the ships, a little. But it was such a long time ago."

"I can't understand you people." Trina shook her head. "Leaving all of this, just to go out in space."

The room was crowded, oppressively crowded. Outside, too many people walked the shadowed streets. Too many voices babbled together. The people of this planet must be a little mad, Trina thought, to live cooped together as the spacemen lived, with all their world around them.

Saari sat watching her, and

nodded. "You're different, aren't you? From us, and from them too." She looked over at Max and Bernard and the others, and then she looked at Curt Elias, who sat clenching and unclenching his hands, saying nothing.

"Yes, we're different," Trina said.

Max Cramer's voice broke incisively into the silence that lay between them then. "I don't see why," he said, "we didn't all know about this world. Especially if more than one ship came here."

Saari's father laughed softly. "It's not so strange. The ships all belonged to one clan. The MacGregors. And eventually all of them either were lost in space somewhere or else grew tired of roaming around and settled down. Here." He smiled again, and his high cheekboned face leaned forward into the light. "Like me. . ."

Night. Cloudless, black, but hazed over with atmosphere and thus familiar, not like the night of space. The two small moons, the stars in unfamiliar places, and somewhere, a star that was her world. And Trina sat and listened to the planet men talk, and to the spacemen among them who could no longer be distinguished from the native born. Outside, in the narrow street, wind murmured, skudding papers and brush before it, vague shadows against the light houses. Wind, rising and moaning, the sound coming in over the voices and the music from the cafe singers.

It was a stronger wind than ever blew on the world, even during the winter, when the people had to stay inside and wish that Earth tradition might be broken and good weather be had the year around.

"We'd better get back to the ship," Elias said.

They stopped talking and looked at him, and he looked down at his hands, embarrassed. "They'll be worried about us at home."

"No, they won't," Max said. Then he saw the thin, blue-veined hands trembling and the quiver not quite controlled in the wrinkled neck. "Though perhaps we should start back. . ."

Trina let out her breath in relief. To be back in the ship, she thought, with the needle and its forgetfulness, away from the noise and the crowd and the nervousness brought on by the rising wind.

It would be better, of course, when they had their place in the country. There it would be warm and homelike and quiet, with the farm animals near by, and the weather shut out, boarded out and forgotten, the way it was in winter on the world.

"You're coming with us?" Captain Bernard was saying.

"Yes, we're coming." Half a dozen of the men stood up and began pulling on their long, awkward coats.

"It'll be good to get back in space again," MacGregor said. "For a while." He smiled. "But I'm too old for a spaceman's life now."

"And I'm too old even for this," Elias said apologetically. "If we'd found this planet the other time. . ." He sighed and shook his head and looked out the window at the shadows that were people, bent forward, walking into the wind. He

sighed again. "I don't know. I just don't know."

Saari got up and pulled on her wrap too. Then she walked over to one of the other women, spoke to her a minute, and came back carrying a quilted, rough fabricked coat. "Here, Trina, you'd better put this on. It'll be cold out."

"Are you going with us?"

"Sure. Why not? Dad's talked enough about space. I might as well see what it's like for myself."

Trina shook her head. But before she could speak, someone opened the door and the cold breeze came in, hitting her in the face.

"Come on," Saari said. "It'll be warm in the car."

Somehow she was outside, following the others. The wind whipped her hair, stung her eyes, tore at her legs. The coat kept it from her body, but she couldn't protect her face, nor shut out the low moaning wail of it through the trees and the housetops.

She groped her way into the car. The door slammed shut, and the wind retreated, a little.

"Is it—is it often like that?"

Saari MacGregor looked at her. Max Cramer turned and looked at her, and so did the others in the car. For a long moment no one said anything. And then Saari said, "Why, this is *summer,* Trina."

"Summer?" She thought of the cereal grasses, rippling in the warm day. They'd be whipping in the wind now, of course. The wind that was so much stronger than any the world's machines ever made.

"You ought to be here in winter," Saari was saying. "It really blows then. And there are the rainstorms, and snow. . ."

"Snow?" Trina said blankly.

"Certainly. A couple of feet of it, usually." Saari stopped talking and looked at Trina, and surprise crept even farther into her face. "You mean you don't have snow on your world?"

"Why, yes, we have snow. We have everything Earth had." But snow two feet deep. . . Trina shivered, thinking of winter on the world, and the soft dusting of white on winter mornings, the beautiful powdery flakes cool in the sunlight.

"They have about a sixteenth of an inch of it," Max said. "And even that's more than some of the worlds have. It hardly ever even rains in New California."

Saari turned away finally, and the others did too. The car started, the sound of its motors shutting out the wind a little, and then they were moving. Yet it was even more frightening, rushing over the roads in the darkness, with the houses flashing past and the trees thrashing in the wind and the people briefly seen and then left behind in the night.

The ship was ahead. The ship. Now even it seemed a safe, familiar place.

"This isn't like Earth after all," Trina said bitterly. "And it seemed so beautiful at first."

Then she saw that Saari MacGregor was looking at her again, but this time more in pity than in surprise.

"Not like Earth, Trina? You're wrong. We have a better climate than Earth's. We never have blizzards, nor hurricanes, and it's never

too cold nor too hot, really."

"How can you say that?" Trina cried. "We've kept *our* world like Earth. Oh, maybe we've shortened winter a little, but still. . ."

Saari's voice was sad and gentle, as if she were explaining something to a bewildered child. "My mother's ancestors came here only a few years out from Earth," she said. "And do you know what they called this planet? A paradise. A garden world."

"That's why they named it Eden," Max Cramer said.

Then they were at the ship, out of the car, running to the airlock, with the grass lashing at their legs and the wind lashing at their faces and the cold night air aflame suddenly in their lungs. And Trina couldn't protest any longer, not with the world mad about her, not with Saari's words ringing in her ears like the wind.

She saw them carry Curt Elias in, and then Max was helping her aboard, and a moment later, finally, the airlock doors slipped shut and it was quiet.

She held out her arm for the needle.

WHEN SHE awoke again it was morning. Morning on the world. They had carried her to one of the divans in the council hall, one near a window so that she could see the familiar fields of her homeland as soon as she awoke. She rubbed her eyes and straightened and looked up at the others. At Elias, still resting on another divan. At Captain Bernard. At Saari and her father, and another man from the planet. At Max.

He looked at her, and then sighed and turned away, shaking his head.

"Are we—are we going back there?" Trina asked.

"No," Elias said. "The people are against it."

There was silence for a moment, and then Elias went on. "I'm against it. I suppose that even if I'd been young I wouldn't have wanted to stay." His eyes met Trina's, and there was pity in them.

"No," Max said. "You wouldn't have wanted to."

"And yet," Elias said, "I went down there. Trina went down there. Her father and I both went out into space." He sighed. "The others wouldn't even do that."

"You're not quite as bad, that's all," Max said bluntly. "But I don't understand any of you. None of us ever has understood you. None of us ever will."

Trina looked across at him. Her fingers knew every line of his face, but now he was withdrawn, a stranger. "You're going back there, aren't you?" she said. And when he nodded, she sighed. "We'll never understand you either, I guess."

She remembered Saari's question of the night before, "Is he your man?" and she realized that her answer had not been the truth. She knew now that he had never been hers, not really, nor she his, that the woman who would be his would be like Saari, eager and unafraid and laughing in the wind, or looking out the ports at friendly stars.

Elias leaned forward on the divan and gestured toward the master weather panel for their part

of the village, the indicators that told what it was like today and what it would be like tomorrow all over the world. "I think I understand," he said. "I think I know what we did to our environment, through the generations. But it doesn't do much good, just knowing something."

"You'll never change," Max said.

"No, I don't think we will."

Captain Bernard got up, and MacGregor got up too. They looked at Max. Slowly he turned his head and smiled at Trina, and then he too stood up. "Want to come outside and talk, Trina?"

But there was nothing to say. Nothing she could do except break down and cry in his arms and beg him not to leave her, beg him to spend the rest of his life on a world she could never leave again.

"No," she said. "I guess not." And then, the memories rushed back, and the music, and the little lane down by the stream where the magnolias spread their web of fragrance. It's—it's almost festival time, Max. Will you be here for it?"

"I don't know, Trina."

It meant no; she knew that.

The weeks slipped by, until it was summer on the world, until the festival music sang through the villages and the festival flowers bloomed and the festival lovers slipped off from the dances to walk among them. There was a breeze, just enough to carry the mingled fragrances and the mingled songs, just enough to touch the throat and ruffle the hair and lie lightly between the lips of lovers.

Trina danced with Aaron Gomez, and remembered. And the wind seemed too soft somehow, almost lifeless, with the air too sweet and cloying.

She wondered what a festival on the planet would be like.

Max, with Saari MacGregor, perhaps, laughing in the wind, running in the chill of evening along some riverbank.

I could have gone with him, she thought. I could have gone. . .

But then the music swirled faster about them, the pulse of it pounding in her ears, and Aaron swept her closer as they danced, spinning among the people and the laughter, out toward the terrace, toward the trees with leaves unstirring in the evening air. All was color and sound and scent, all blended, hypnotically perfect, something infinitely precious that she could never, never leave.

For it was summer on the world, and festival time again.

• • • THE END

If you can't find it countless millions of miles in space, come back to Earth. You might find it just on the other side of the fence—where the grass is always greener.

THE VALLEY

By Richard Stockham

Illustrated by Ed Emsh

THE SHIP dove into Earth's sea of atmosphere like a great, silver fish.

Inside the ship, a man and woman stood looking down at the expanse of land that curved away to a growing horizon. They saw the yellow ground cracked like a dried skin; and the polished stone of the mountains and the seas that were shrunken away in the dust. And they saw how the city circled the sea, as a circle of men surround a water hole in a desert under a blazing sun.

The ship's radio cried out. "You've made it! Thank God! You've made it!"

Another voice, shaking, said, "President — Davis is — overwhelmed. He can't go on. On his behalf and on behalf of all the people—with our hope that was almost dead, we greet you." A pause. "Please come in!"

The voice was silent. The air screamed against the hull of the ship.

"I can't tell them," said the man.

"Please come in!" said the radio. "Do you hear me?"

The woman looked up at the man. "You've got to Michael!"

"Two thousand years. From one end of the galaxy to the other. Not one grain of dust we can live on. Just Earth. And it's burned to a cinder."

A note of hysteria stabbed into the radio voice. "Are you all right? Stand by! We're sending a rescue ship."

"They've got a right to know what we've found," said the woman. "They sent us out. They've waited so long—."

He stared into space. "It's hopeless. If we'd found another planet they could live on, they'd do the same as they've done here."

He touched the tiny golden locket that hung around his neck. "Right now, I could press this and scratch myself and the whole farce would be over."

"No. A thousand of us died. You've got to think of them."

"We'll go back out into space," he said. "It's clean out there. I'm tired. Two thousand years of reincarnation."

She spoke softly. "We've been together for a long time. I've loved you. I've asked very little. But I need to stay on Earth. Please, Michael."

He looked at her for a moment. Then he flipped a switch. "Milky Way to Earth. Never mind the rescue ship. We're all right. We're coming in."

THE GREAT, white ship settled to Earth that was like a plain after flood waters have drained away.

The man and woman came out into the blazing sunlight.

A shout, like the crashing of a thousand surfs, rose and broke over them. The man and woman descended the gang-plank toward the officials gathered on the platform. They glanced around at the massed field of white faces beneath them; saw those same faces that had been turned toward them two thousand years past; remembered the cheers and the cries that had crashed around them then, as they and the thousand had stood before the towering spires of the ships, before the takeoff.

And, as then, there were no children among the milling, grasping throng. Only the same clutching hands and voices and arms, asking for an answer, a salvation, a happy end.

Now the officials gathered around the man and the woman, and spoke to them in voices of reverence.

A microphone was thrust into Michael's hand with the whispered admonition to tell the people of the great new life waiting for them, open and green and moist, on a virgin planet.

The cries of the people were slipping away and a stillness growing like an ocean calm and, within it, the sound of the pumps, throbbing, sucking the water from the seas.

And then Michael's voice, "The thousand who left with us are dead." For some time we've known the other planets in our solar system were uninhabitable. Now we've been from one end of the galaxy to the other. And this is what we've found. . . . We were given Earth. There's no place else for us. The rest of the planets in the galaxy were given to others. There's no place else for them. We've all had a chance to make the best of Earth. Instead we've made the worst of it. So we're here


EMSH-

to stay—and die." He handed the microphone back.

The silence did not change.

The President grasped Michael's arm. "What're you saying?"

A buzzing rose up from the people like that of a swarm of frightened bees. The sea of white faces swayed and their voices began to cry. The din and motion held, long and drawn out, with a wail now and a fluttering beneath it.

Michael and the woman stood above them in the center of the pale, hovering faces of the officials.

"Good God," said the President. "You've got to tell them what you said isn't true!"

"We've been searching two thousand years for a truth," said Michael. "A thousand of us have died finding it. I've told it. That's the way it's got to be."

The President swayed, took the microphone in his hands.

"There's been some mistake!" he cried. "Go back to the pumps and the distilleries! Go back to the water vats and the gardens and the flocks! Go back! Work and wait! We'll get the full truth to you. Everything's going to be *all right!*"

Obediently the mass of faces separated, as though they were being spun away on a whirling disk. Michael and the woman were swallowed up, like pebbles inside a closing hand, and carried away from the great, white ship.

They ushered the man and woman into the beamed and paneled council chambers and sat them in thick chairs before the wall of polished wood desks across which stared the line of faces, silent and waiting. And on a far wall, facing them all, hung a silver screen, fifty feet square.

The President stood. "Members of the council." He paused. "As you heard, they report—complete failure." He turned to Michael. "And now, the proof."

Michael stood beside the motion picture projector, close to his chair. The lights dimmed. There was only the sound of the pumps throbbing in the darkness close and far away, above and beneath and all around. Suddenly on the screen appeared an endless depth of blackness filled with a mass of glowing white, which extended into the room around the watching people, seeming to touch them and then spreading, like an ocean, farther away and out and out into an endless distance.

Now streaks of yellow fire shot into the picture, like a swarm of lightning bugs, the thin sharp nosed shadows of space ships, hurtling, like comets, toward the clustered star smear. And then silent thoughts flashed from the screen into the minds of the spectators; of time passing in months, years and centuries, passing and passing until they themselves seemed to be rushing and rushing into the blackness toward blinding balls of white light, the size of moons.

The dark shapes of smaller spheres circling the blinding ones moved forward into the picture; red, blue, green, yellow, purple and many mixtures of all these, and then one planet filled the screen, seeming to be inflated, like a balloon, into a shining red ball. There was a razor edge of horizon then

and pink sky and an expanse of crimson. Flat, yellow creatures lay all around, expanding and contracting. A roaring rose and fell like the roaring of a million winds. Then fear flowed out of the picture into the minds of the watchers so that they gasped and cringed, and a silent voice told them that the atmosphere of this planet would disintegrate a human being.

Now the red ball seemed to pull away from them into the blackness and the blinding balls of light, and all around could be seen the streaks of rocket flame shooting away in all directions.

Suddenly a flash cut the blackness, like the flare of a match, and died, and the watchers caught from the screen the awareness of the death of a ship.

They were also aware of the rushing of time through centuries and they saw the streaking rocket flames and planets rushing at them; saw creatures in squares and circles, in threads wriggling, in lumps and blobs, rolling jumping and crawling; saw them in cloud forms whisking about, changing their shapes, and in flowing wavelets of water. They saw creatures hopping about on one leg and others crawling at incredible speeds on a thousand; saw some with all the numbers of legs and arms in between; and were aware of creatures that were there but invisible.

And those watching the screen on which time and distance were a compressed and distilled kaleidoscope, saw planet after planet and thousands at a time; heard strange noises; rasping and roaring, clinks and whistles, screams and crying, sighing and moaning. And they were aware through all this of atmosphere and ground inimical to man, some that would evaporate at the touch of a human body, or would burst into flame, or swallow, or turn from liquid to solid or solid to liquid. They saw and heard chemical analyses, were aware of this ocean of blackness and clouds of white through which man might move, and must ever move, because he could live only upon this floating dust speck that was Earth.

The picture faded in, close to one of the long, needle nosed crafts, showing inside, a man and a woman. Time was telescoped again while the man cut a tiny piece of scar tissue from his arm and that of the woman, put them in bottles and set them into compartments where solutions dripped rhythmically into the bottles, the temperature was held at that of the human body, and synthetic sunlight focused upon them from many pencil like tubes.

The watchers in the council chamber saw the bits of tissue swell into human embryos in a few seconds, and grow arms and legs and faces and extend themselves into babies. Saw them taken from the bottles and cared for, and become replicas of the man and woman controlling the ship, who, all this time were aging, until life went out of their bodies. Then the ones who had been the scar tissue disintegrated them in the coffin-like tubes and let their dust be sucked out into space—all this through millions of miles and a hundred years, compressed for the watchers

into sixty seconds and a few feet of space.

Instantly there was black space on the screen again, with the fingers of flame pointing out behind the dark bodies of the ships.

And then the spectators saw one ship shudder and swerve into a blazing, bluish white star, like a gnat flying into a white hot poker; saw another drop away and away, out and out into the blackness past the swirling white rim of the galaxy, and sink into a dark nothingness.

Great balls of rock showered like hail onto other ships, smashing them into grotesque tin cans. The stream of fire at the tail of another ship suddenly died and the ship floated into an orbit around a great, yellow planet, ten times the size of Jupiter, then was sucked into it. Another burst like a bomb, flinging a man and woman out into the darkness, where they hung suspended, frozen into statues, like bodies drowned in the depths of an Artic sea.

At this instant from the watching council, there were screams of horror and voices crying out, "Shut it off! Shut it off!" There was a moving about in the darkness. Murmurs and harsh cries of disapproval grew in volume.

Another ship in the picture was split down the side by a meteor and the bodies inside were impaled on jagged blades of steel, the contorted, bloody faces lighted by bursts of flame. And the screams and crys of the spectators rose higher, "Shut it off . . . Oh Lord . . ."

Lights flashed through the room and the picture died.

MICHAEL and Mary, both staring, saw, along the line of desks, the agonized faces, some staring like white stones, others hidden in clutching fingers, as though they had been confronted by a Medusa. There was the sound of heavy breathing that mixed with the throbbing of the pumps. The President held tightly to the edges of his desk to quiet his trembling.

"There—there've been changes," he said, "since you've been out in space. There isn't a person on Earth who's seen a violent death for hundreds of years."

Michael faced him, frowning. "I don't follow you."

"Dying violently happened so seldom on Earth that, after a long time, the sight of it began to drive some people mad. And then one day a man was struck by one of the ground cars and *everyone* who saw it went insane. Since then we've eliminated accidents, even the idea. Now, no one is aware that death by violence is even a possibility."

"I'm sorry," said Michael, "we've been so close to violent death for so long. . . What you've seen is part of the proof you asked for."

"What you showed us was a picture," said the President. "If it had been real, we'd all be insane by now. If it were shown to the people there'd be mass hysteria."

"But even if we'd found another habitable planet, getting to it would involve just what we've shown you. Maybe only a tenth of the people who left Earth, or a hundredth, would ever reach a destination out in space."

"We couldn't tolerate such a pos-

sibility," said the President gravely. "We'd have to find a way around it."

The pumps throbbed like giant hearts all through the stillness in the council chambers. The faces along the line of desks were smoothing out; ths terror in them was fading away.

"And yet the Earth is almost dead," said Michael quietly, "and you can't bring it back to life."

"The sins of our past, Mr. Nelson," said the President. "The Atomic wars five thousand years ago. And the greed. It was too late a long time ago. That, of course, is why the expedition was sent out. And now you've come back to us with this terrible news." He looked around, slowly, then back to Michael. Can you give us any hope at all?"

"None."

"Another expedition? To Andromeda perhaps? With you the leader?"

Michael shook his head. "We're finished with expeditions, Mr. President."

There were mutterings in the council, and hastily whispered consultations. Now they were watching the man and woman again.

"We feel," said the President, "it would be dangerous to allow you to go out among the people. They've been informed that your statement wasn't entirely true. This was necessary, to avoid a panic. The people simply must not know the whole truth." He paused. "Now we ask you to keep in mind that whatever we decide about the two of you will be for the good of the people."

Michael and Mary were silent.

"You'll wait outside the council chambers," the President went on, "until we have reached our decision."

As the man and woman were led away, the pumps beat in the stillness, and at the edge of the shrinking seas the salt thick waters were being pulled into the distilleries, and from them into the tier upon tier of artificial gardens that sat like giant bee hives all around the shoreline; and the mounds of salt glistening in the sunlight behind the gardens were growing into mountains.

IN THEIR rooms, Michael and Mary were talking through the hours, and waiting. All around them were fragile, form-fitting chairs and translucent walls and a ceiling that, holding the light of the sun when they had first seen it, was now filled with moonlight.

Standing at a circular window, ten feet in diameter, Michael saw, far below, the lights of the city extending into the darkness along the shoreline of the sea.

"We should have delivered our message by radio," he said, "and gone back into space."

"You could probably still go," she said quietly.

He came and stood beside her. "I couldn't stand being out in space, or anywhere, without you."

She looked up at him. "We could go out into the wilderness, Michael, outside the force walls. We could go far away."

He turned from her. "It's all dead. What would be the use?"

"I came from the Earth," she said quietly. "And I've got to go back to it. Space is so cold and frightening. Steel walls and blackness and the rockets and the little pinpoints of light. It's a prison."

"But to die out there in the desert, in that dust." Then he paused and looked away from her. "We're crazy—talking as though we had a choice."

"Maybe they'll have to *give* us a choice."

"What're you talking about?"

"They went into hysterics at the sight of those bodies in the picture. Those young bodies that didn't die of old age."

He waited.

"They can't stand the sight of people dying violently."

Her hand went to her throat and touched the tiny locket.

"These lockets were given to us so we'd have a choice between suffering or quick painless death . . . We still have a choice."

He touched the locket at his own throat and was very still for a long moment. "So we threaten to kill ourselves, before their eyes. What would it do to them?"

He was still for a long time. "Sometimes, Mary, I think I don't know you at all." A pause. "And so now you and I are back where we started. Which'll it be, space or Earth?"

"Michael." Her voice trembled. "I—I don't know how to say this."

He waited, frowning, watching her intently.

"I'm—going to have a child."

His face went blank.

Then he stepped forward and took her by the shoulders. He saw the softness there in her face; saw her eyes bright as though the sun were shining in them; saw a flush in her cheeks, as though she had been running. And suddenly his throat was full.

"No," he said thickly. "I can't believe it."

"It's true."

He held her for a long time, then he turned his eyes aside.

"Yes, I can see it is."

"I—I can't put into words why I let it happen, Michael."

He shook his head. "I don't know —what to—to say. It's so incredible."

"Maybe—I got so—tired—just seeing the two of us over and over again and the culturing of the scar tissue, for twenty centuries. Maybe that was it. It was just—something I felt I *had* to do. Some—*real* life again. Something new. I felt a need to produce something out of myself. It all started way out in space, while we were getting close to the solar system. I began to wonder if we'd ever get out of the ship alive or if we'd ever see a sunset again or a dawn or the night or morning like we'd seen on Earth—so—so long ago. And then I *had* to let it happen. It was a vague and strange thing. There was something forcing me. But at the same time I wanted it, too. I seemed to be willing it, seemed to be feeling it was a necessary thing." She paused, frowning. "I didn't stop to think—it would be like this."

"Such a thing," he said, smiling grimly, "hasn't happened on Earth for three thousand years. I can remember in school, reading in the history books, how the whole Earth

was overcrowded and how the food and water had to be rationed and then how the laws were passed forbidding birth and after that how the people died and there weren't anymore babies born, until at last there was plenty of what the Earth had to give, for everyone. And then the news was broken to everyone about the culturing of the scar tissue, and there were a few dissenters but they were soon conditioned out of their dissension and the population was stabilized." He paused. "After all this past history, I don't think the council could endure what you've done."

"No," she said quietly. "I don't think they could."

"And so this will be just for *us.*" He took her in his arms. "If I remember rightly, this is a traditional action." A pause. "Now I'll go with you out onto the Earth—if we can swing it. When we get outside the city, or if we do— Well, we'll see."

They were very still together and then he turned and stood by the window and looked down upon the city and she came and stood beside him.

THEY BOTH saw it at the same time. And they watched, without speaking, both knowing what was in the other's mind and heart. They watched the giant four dimensional screens all through the city. A green, lush planet showed bright and clear on them and there were ships standing among the trees and men walking through the grass, that moved gently like the swells on a calm ocean, while into their minds came the thoughts projected from the screen:

"This will be your new home. It was found and then lost. But another expedition will be sent out to find it again. Be of good hope. Everything will be all right."

Michael turned from the window. "So there's our evidence. Two thousand years. All the others killed getting it. And with a simple twist, it becomes a lie."

Mary sat down and buried her face in her hands.

"What a terrible failure there's been here," said Michael. "The neglect and destruction of a whole planet. It's like a family letting their home decay all around them, and living in smaller and smaller rooms of it, until at last the rooms are all gone, and since they can't find another home, they all die in the ruins of the last room."

"I can't face dying," Mary said quietly, "squeezed in with all these people, in this tomb they've made around the seas. I want to have the open sky and the quiet away from those awful pounding pumps when I die. I want the spread of the Earth all around and the clean air. I want to be a real part of the Earth again."

Michael barely nodded in agreement. He was standing very still now.

And then there was the sound of the door opening.

They both rose, like mourners at a funeral, and went into the council chambers.

Again they sat in the thick chairs before the wall of desks with the faces of the council looking across it like defenders.

The pumps were beating, beating all through the room and the quiet.

The President was standing. He faced Michael and Mary, and seemed to set himself as though to deliver a blow, or to receive one.

"Michael and Mary," he said, his voice struggling against a tightness, "we've considered a long time concerning what is to be done with you and the report you brought back to us from the galaxy." He took another swallow of water. "To protect the sanity of the people, we've changed your report. We've also decided that the people must be protected from the possibility of your spreading the truth, as you did at the landing field. So, for the good of the people, you'll be isolated. All comforts will be given you. After all, in a sense, you *are* heroes and martyrs. Your scar tissue will be cultured as it has been in the past, and you will stay in solitary confinement until the time when, perhaps, we can migrate to another planet. We feel that hope must not be destroyed. And so another expedition is being sent out. It may be that, in time, on another planet, you'll be able to take your place in our society."

He paused. "Is there anything you wish to say?"

"Yes, there is."

"Proceed."

Michael stared straight at the President. After a long moment, he raised his hand to the tiny locket at his throat.

"Perhaps you remember," he said, "the lockets given to every member of the expedition the night before we left. I still have mine." He raised it. "So does my wife. They were designed to kill the wearer instantly and painlessly if he were ever faced with pain or a terror he couldn't endure."

The President was standing again. A stir ran along the barricade of desks.

"We can't endure the city," went on Michael, "or its life and the ways of the people." He glanced along the line of staring faces.

"If what I think you're about to say is true," said the President in a shaking voice, "it would have been better if you'd never been born."

"Let's face facts, Mr. President. We were *born* and haven't died—yet." A pause. "And we can kill ourselves right here before your eyes. It'd be painless to us. We'd be unconscious. But there would be horrible convulsions and grimaces. Our bodies would be twisted and torn. They'd thresh about. The deaths you saw in the picture happened a long time ago, in outer space. You all went into hysterics at the sight of them. Our deaths now would be close and terrible to see."

The President staggered as though about to faint. There was a stirring and muttering and a jumping up along the desks. Voices cried out, in anger and fear. Arms waved and fists pounded. Hands clasped and unclasped and clawed at collars, and there was a pell mell rushing around the President. They yelled at each other and clasped each other by the shoulders, turned away and back again, and then suddenly became very still.

Now they began to step down from the raised line of desks, the

President leading them, and came close to the man and woman, gathering around them in a wide half circle.

Michael and Mary were holding the lockets close to their throats. The half circle of people, with the President at its center was moving closer and closer. They were sweaty faces and red ones and dry white ones and hands were raised to seize them.

Michael put his arm around Mary's waist. He felt the trembling in her body and the waiting for death.

"Stop!" he said quietly.

They halted, in slight confusion, barely drawing back.

"If you want to see us die—just come a step closer . . . And remember what'll happed to you."

The faces began turning to each other and there was an undertone of muttering and whispering. "A ghastly thing . . . Instant . . . Nothing to do . . . Space's broken their minds . . . They'll do it . . . Eyes're mad . . . What can we do? . . . What? . . ." The sweaty faces, the cold white ones, the flushed hot ones: all began to turn to the President, who was staring at the two before him like a man watching himself die in a mirror.

"I command you," he suddenly said, in a choked voice, "to—to give me those—lockets! It's your—duty!"

"We've only one duty, Mr. President," said Michael sharply. "To ourselves."

"You're sick. Give yourselves over to us. We'll help you."

"We've made our choice. We want an answer. Quickly! Now!"

The President's body sagged. "What—what is it you want?"

Michael threw the words. "To go beyond the force fields of the city. To go far out onto the Earth and live as long as we can, and then to die a natural death."

The half circle of faces turned to each other and muttered and whispered again. "In the name of God . . . Let them go . . . Contaminate us . . . Like animals . . . Get them out of here . . . *Let* them be finished . . . Best for us all . . . And them . . ."

There was a turning to the President again and hands thrusting him forward to within one step of Michael and Mary, who were standing there close together, as though attached.

Haltingly he said, "Go. Please go. Out onto the Earth—to die. You *will* die. The Earth is dead out there. You'll never see the city or your people again."

"We want a ground car," said Michael. "And supplies."

"A ground car," repeated the President. "And—supplies. . . . Yes."

"You can give us an escort, if you want to, out beyond the first range of mountains."

"There will be no escort," said the President firmly. "No one has been allowed to go out upon the Earth or to fly above it for many hundreds of years. We know it's there. That's enough. We couldn't bear the sight of it." He took a step back. "And we can't bear the sight of you any longer. Go now. Quickly!"

Michael and Mary did not let go of the lockets as they watched the

half circle of faces move backward, staring, as though at corpses that should sink to the floor.

IT WAS night. The city had been lost beyond the dead mounds of Earth that rolled away behind them, like a thousand ancient tombs. The ground car sat still on a crumbling road.

Looking up through the car's driving blister, they saw the stars sunk into the blue black ocean of space; saw the path of the Milky Way along which they had rushed, while they had been searching frantically for the place of salvation.

"If any one of the other couples had made it back," said Mary, "do you think they'd be with us?"

"I think they'd either be with us," he said, "or out in space again —or in prison."

She stared ahead along the beam of headlight that stabbed out into the night over the decaying road.

"How sorry are you," she said quietly, "coming with me?"

"All I know is, if I were out in space for long without you, I'd kill myself."

"Are we going to die out here, Michael?" she said, gesturing toward the wall of night that stood at the end of the headlight, "with the land?"

He turned from her, frowning, and drove the ground car forward, watching the headlights push back the darkness.

They followed the crumbling highway all night until light crept across the bald and cracked hills. The morning sun looked down upon the desolation ten feet above the horizon when the car stopped. They sat for a long time then, looking out upon the Earth's parched and inflamed skin. In the distance a wall of mountains rose like a great pile of bleached bones. Close ahead the rolling plains were motionless waves of dead Earth with a slight breeze stirring up little swirls of dust.

"I'm getting out," she said.

"I haven't the slightest idea how much farther to go, or why," said Michael shrugging. "It's all the same. Dirt and hills and mountains and sun and dust. It's really not much different from being out in space. We live in the car just like in a space ship. We've enough concentrated supplies to last for a year. How far do we go? Why? When?"

They stepped upon the Earth and felt the warmth of the sun and strolled toward the top of the hill.

"The air smells clean," he said.

"The ground feels good. I think I'll take off my shoes." She did. "Take off your boots, Michael. Try it."

Wearily he pulled off his boots, stood in his bare feet. "It takes me back."

"Yes," she said and began walking toward the hilltop.

He followed, his boots slung around his neck. "There was a road somewhere, with the dust between my toes. Or was it a dream?"

"I guess when the past is old enough," she said, "it becomes a dream."

He watched her footprints in the dust. "God, listen to the quiet."

"I can't seem to remember so much quiet around me. There's always been the sound of a space ship,

or the pumps back in the cities."

He did not answer but continued to watch her footsteps and to feel the dust squishing up between his toes. Then suddenly:

"Mary!"

She stopped, whirling around.

He was staring down at her feet.

She followed his gaze.

"It's grass!" He bent down. "Three blades."

She knelt beside him. They touched the green blades.

"They're new," he said.

They stared, like religious devotees concentrating upon some sacred object.

He rose, pulling her up with him. They hurried to the top of the hill and stood very still, looking down into a valley. There were tiny patches of green and little trees sprouting, and here and there, a pale flower. The green was in a cluster, in the center of the valley and there was a tiny glint of sunlight in its center.

"Oh!"

Her hand found his.

They ran down the gentle slope, feeling the patches of green touch their feet, smelling a new freshness in the air. And coming to the little spring, they stood beside it and watched the crystal water that trickled along the valley floor and lost itself around a bend. They saw a furry, little animal scurry away and heard the twitter of a bird and saw it resting on a slim, bending branch. They heard the buzz of a bee, saw it light on a pale flower at their feet and work at the sweetness inside.

Mary knelt down and drank from the spring.

"It's so cool. It must come from deep down."

"It does," he said. There were tears in his eyes and a tightness in his throat. "From deep down."

"We can *live* here, Michael!"

Slowly he looked all around until his sight stopped at the bottom of a hill. "We'll build our house just beyond those rocks. We'll dig and plant and you'll have the child."

"Yes!" she said. "Oh yes!"

"And the ones back in the city will know the Earth again. Sometime we'll lead them back here and show them the Earth is coming alive." He paused. "By following what we had to do for ourselves, we've found a way to save them."

They remained kneeling in the silence beside the pool for a long time. They felt the sun on their backs and looked into the clean depth of the water deeply aware of the new life breathing all around them and of themselves absorbing it, and at the same time giving back to it the life that was their own.

There was only this quiet and breathing and warmth until Michael stood and picked up a rock and walked toward the base of the hill where he had decided to build the house. • • • THE END

Colonel Johns, that famous Revolutionary War hero, had the unique—and painful—experience of meeting his great-great-great-great granddaughter. Now maybe you can't change history, but what's there to prevent a soldier from changing his mind about the gal he is going to marry?

The Ordeal of COLONEL JOHNS

By George H. Smith

Illustrated by Rudolph Palais

CLARK DECKER winced and scrounged still lower in his seat as Mrs. Appleby-Simpkin rested her enormous bosom on the front of the podium and smiled down on the Patriot Daughters of America in convention assembled as she announced: "And now, my dears, I will read you one more short quotation from Major Wicks' fascinating book 'The Minor Tactics of The American Revolution.' When I am finished, I know that you will all agree that Rebecca Johns-Hayes will be a more than fitting successor to myself as your President."

Decker looked wildly about for a way of escape from the convention auditorium. If he had only remained in the anteroom with Professor MacCulloch and the Historical Reintergrator! After suffering through four days of speeches by ladies in various stages of mammalian top-heaviness, he hadn't believed it possible that anyone could top Mrs. Appleby-Simpkin for either sheer ability to bore or for the nobility of her bust. Mrs. Rebecca Johns-Hayes had come as something of a shock as she squirmed her way onto the speaker's platform. But there she was as big as life, or rather bigger, smil-

ing at Mrs. Appleby-Simpkin, the Past President, beaming at Mrs. Lynd-Torris, a defeated candidate for the presidency and whose ancestor had been only a captain, and completely ignoring Mrs. Tolman, the other defeated candidate whose ancestor had been so inconsiderate as to have been a Continental sergeant. Only the thought that now that the voting was over and the new president chosen, the ladies might be ready for the demonstration of the Reintergrator had brought Decker onto the convention floor, and now he was trapped and would have to listen.

"And so," Mrs. Appleby-Simpkin was reading, "upon such small events do the great moments of history depend. The brilliant scouting and skirmishing of the riflemen under Colonel Peter Johns prevented the breakthrough of Captain Fosdick's column and the possible flanking of the American army before Saratoga. Thus, this little known action may have been the deciding factor in the whole campaign that prevented General Burgoyne from carrying out the British plan to divide the colonies and end the war. It is impossible for the historian to refrain from speculation as to what might have happened had Colonel Johns not been on hand to direct the riflemen and militia in this section; as indeed he might *not* have been, since his own regiment of short-term enlistees had returned to Pennsylvania a few days previously. Only the Colonel's patriotism and devotion to duty kept him in the field and made his abilities available to the country when they were most needed."

Mrs. Appleby-Simpkin waited until the burst of applause had died down and then continued, "That is the man whose great-great-great-great - granddaughter you have elected your president today . . . Mrs. Rebecca Johns-Hayes!" Turning to Mrs. Johns-Hayes she went on, "Before you make your acceptance speech, dear, we have a little surprise for you."

Clark Decker had been edging his way toward the side of the auditorium where the Men's Auxiliary of the Daughters had their seats but he turned back at the mention of the surprise. It sounded as though it was time for him and the Professor to start their demonstration.

"A surprise which we hope will also be a surprise to the whole world of science," Mrs. Appleby-Simpkin was holding the podium against a determinedly advancing Mrs. Johns-Hayes. "Indeed we may be able to say in future years, that the 1989 Convention of the Patriot Daughters was marked by the first public demonstration of one of the most momentous inventions in the history of science." The Past President was speaking faster and faster, because the new President with a hand full of notes was doing her best to edge her away from both the podium and the microphone.

"Thank you, darling," Mrs. Johns-Hayes said, pulling the microphone firmly toward her, "but we really must get along with business. I have quite a few things I want to say and several motions which I want to place before the Convention."

"And as I was saying, dear," Mrs.

Appleby-Simpkin said, pulling the microphone back with equal firmness, "I know that you will be just unbearably thrilled." There was another brief struggle for the mike and Mrs. Appleby-Simpkin won and went on. "I know that he will be just as proud of you as you are of him. That is why we have arranged for Professor MacCulloch to demonstrate his historical Reintegrator at our convention by bringing into our midst Colonel Peter Johns, the hero of the action at Temple Farm, to see his great-great-great-great-granddaughter installed as the fifty-fourth president of the Loyal Order of Patriot Daughters of America. Now I . . ." Mrs. Johns-Hayes again won control of the mike.

"Thank you very much, dear." Her voice was a genteel screech. "I'm sure that we will be only too glad to have the . . . who? Who did you say?" Mrs. Appleby-Simpkin regained the microphone from the other woman's relaxing grip.

"I believe I see Mr. Decker, the Professor's assistant, in the audience," she said. "Will you be so good as to tell the Professor that we are ready for his epic-making experiment?"

With a great feeling of relief, Decker escaped from the rising turmoil of the convention hall into the relative quiet of the anteroom where MacCulloch waited with the Reintegrator. He found the Professor sitting with his head in his hands staring at the machine. The little man looked up and smiled quizzically as his assistant approached him.

"They're ready, Professor! They're ready!" Still under the influence of the convention, Decker found himself shouting.

"Ah. Ah, yes. Then it will be today. I've waited so long. Ten years of work and now instead of a scientific gathering, I have to demonstrate my machine before a woman's club."

DECKER began to wheel the platform which held the Reintegrator toward the door. "After today, Professor, all the scientific organizations in the world will have heard of you and will be demanding demonstrations."

"Yes, but these Patriot Daughters! Who are they? Who in the scientific world ever heard of them?"

"No one except a few scientists unfortunate enough to fall afoul of their Loyalty and Conformity Committee."

"I think we should have gone elsewhere for our demonstration."

"Now Professor. Who in the world today would be interested in the past except a group of ancestor conscious women?"

"Some historical society perhaps," the Professor said wistfully.

"And what historical society could have advanced the twenty thousand dollars we needed to complete the machine?"

"I suppose you're right, my boy," MacCulloch sighed as he helped push the Reintegrator onto the auditorium floor.

By the time Clark Decker reached the platform to explain the demonstration, the fight for the microphone had turned into a three-way

struggle. A lady who represented the Finance Committee was trying to win it away from both the Past President and the new President.

Taking them by surprise, Decker managed to gain control long enough to explain what was about to happen.

"You mean," demanded Mrs. Johns-Hayes, "that this is some sort of time machine and you're going to transport great-great-great-great-grandfather from the past into the present?"

"No, Mrs. Hayes. This isn't a time machine in the comic book use of the term. It is just what Professor MacCulloch has called it, an historical Reintegrator. The theory upon which it is based, the MacCulloch Reaction, says that every person who ever existed, and every event which ever took place caused electrical disturbances in the space-time continuum of the universe by displacing an equal and identical group of electrons. The task of the Reintegrator is to reassemble those electrons. That is why Professor MacCulloch is now placing your ancestor's sword in the machine. We will use that as a base point from which our recreation will begin."

The machine was humming and small lights were beginning to play about its tubes and dials. "If our calculations are accurate, and we believe that they are," Decker said, "within a very few minutes, Colonel Johns should be standing before us as he was on a day approximately a week before his heroic action in the battle at Temple Farm."

Mrs. Johns-Hayes, although still gripping her notes, was beginning to get a little flustered. "Oh my, that would be before he married great-great-great-great-grandmother Sayles. They were married only two days before the battle, you know. It was so romantic . . . a wartime romance and all."

"Just imagine," Mrs. Tolman remarked, "at that time your whole family was just a gleam in the Colonel's eye!"

Professor MacCulloch made one or two last passes at the machine and then stood back to watch, a look of pure scientific ecstasy on his face. A mistiness began to gather on the platform where the Colonel's sword lay and through it from time to time shot sparks of electricity. Suddenly a gasp went up from the assembled Daughters as a man's head and shoulders appeared and expanded downward, a long way downward, to a large pair of feet. There was one last hum from the machine and then a tall young man in faded blue regimentals and very much in need of a shave was standing blinking in the blazing lights of the auditorium.

"Oh, Mr. Decker, surely there's some mistake!" was Mrs. Johns-Hayes' first comment as she surveyed the very tall, very tattered, and very dirty young man. "Great-great-great-great-grandfather's pictures always show him as a dignified old gentleman."

The Colonel took one quick look around and made a grab for his sword, but the Professor managed to calm him and to explain the situation before any violence could take place. After a few minutes of hurried talk, MacCulloch steered the Colonel in the direction of the

speaker's platform for the meeting with his great-great-great-great-granddaughter.

Peter Johns' bewilderment faded into astonishment, but he still gripped his sword as the Professor guided him through the throngs of excited ladies onto the stage. He paused momentarily to look at the brilliant lights and at the huge number of American flags which hung overhead. A picture of George Washington, hung among the flags, seemed to reassure him and he allowed the Professor to lead him to Mrs. Johns-Hayes.

That lady had drawn herself together at the approach of her ancestor and had obviously decided to carry it off as best she could. She advanced to meet him crying, "Dear, dear great-great-great-great-grandfather! This is such a pleasure! You can't know how proud all of us in the family have always been of you."

The young Continental officer stared open mouthed at the red-faced, big-bosomed woman who was twice his age, but who addressed him as great-great-great-great-grandfather. Then he turned to MacCulloch who stood beside him. "Are you sure you have the right man?" he asked.

"Oh yes! Perfectly, perfectly! You're Colonel Peter Johns of Pamworth, Pennsylvania, and this is your great-great-great-great-granddaughter, Rebecca Johns-Hayes."

"Rebecca? You mean she's named after Becky Sayles?" The Colonel rubbed a hand across his several days' growth of beard.

"That's right, dear great-great-great-great-grandfather. I'm named after great-great-great-great-grandmother," Mrs. Johns-Hayes announced.

"Then I married Becky Sales?" the Colonel asked.

"Why, of course! Aren't you planning on getting married in a few days?" Clark Decker asked.

The Colonel was embarrassed but he grinned, "Well, I don't rightly know. Miss Sayles and I have been courtin' for some months but there's little Jennie Taylor down in Trenton . . . To tell the truth, I haven't quite made up my mind."

"Well! Of all things! What would the family think! What would great Aunt Mary Hayes say?" Mrs. Johns-Hayes puffed out even farther than usual.

"Well, we can ease your mind on that subject, Colonel. The history books say that you married Miss Sayles—and here is Mrs. Johns-Hayes to prove it."

The Colonel scratched his chin again as he looked at Mrs. Johns-Hayes. "Is that so? Is that so? What's all this about history books? You mean I got in history because I married Becky Sayles?"

The Professor laughed. "Well, not exactly. It was because of your heroism in the defeat of Burgoyne's army. If you hadn't blocked Captain Fenwick's flanking move at Temple Farm, the American army under General Gates might have been defeated and the Colonies might even have lost the war."

"Well, I'll be . . . Me? I did all that? I didn't even know there was going to be a battle. Did I end up a live hero or a dead one?" The Colonel was beginning to feel a bit

more easy in his surroundings, and, to the horror of Mrs. Johns-Hayes, took a plug of tobacco out of his pocket and bit off a piece and began to chew it.

"You came through the battle with only a slight wound and lived to a ripe old age surrounded by grandchildren," the Professor told him.

"Then I reckon I won't go back to Pennsylvania with the other boys. They figure that since their enlistments are up, it's time to get back to the farm and let them New Yorkers do some of their own fighting."

"Oh no! You weren't thinking of going back—of leaving the fighting?" Mrs. Johns-Hayes demanded.

The Colonel shifted his wad of tobacco and looked at the woman carefully as though he couldn't quite believe the evidence of his eyes. "No, ma'am, I don't reckon I am. I don't exactly look on it the same as the other boys do. I kind of feel like if we're ever going to have a country, it's worth fighting for."

Mrs. Johns-Hayes beamed, as did all the other officers of the Daughters. "Well, your faith and heroism have been rewarded, great-great-great-great-grandfather. I know you'll be proud to know that these ladies whom you see before you are the present guardians of the ideals that you fought for."

"Well, now, is that so, ma'am? Is that so?" Peter Johns looked around the convention hall in amazement.

"And that I, your descendant, have just been elected their President!"

"Well, what do you know about that! Maybe all the hard times and the danger we been going through is worth it if you folks still remember the way we felt about things."

"It's too bad," Decker whispered to MacCulloch, "that we can't let him see what the country is really like. I'm not sure these ladies are representative."

There was a worried look on the Professor's face. "That's impossible. The reintegration is good for only an hour or so. I hope nothing goes wrong here."

Mrs. Appleby-Simpkin took charge of the Colonel and ushered him to a seat of honor near the podium while the new President prepared to deliver her speech. Decker and the professor managed to obtain seats on either side of Johns just as Rebecca started. He managed to whisper to them, "I'm sure amazed! I'm sure amazed! All these nice old ladies feeling the same way about things as we do."

DECKER had a premonition of trouble as Mrs. Hayes' words poured forth. He had hoped for a cut and dried acceptance speech with nothing but the usual patriotic platitudes, but, as she went on his worst fears were realized. Inspired by the presence of her ancestor, the woman was going into superlatives about the purposes and aims of the Patriot Daughters. She covered everything from the glories of her ancestry to the morals of the younger generation and women in politics.

Decker watched the Colonel's face, saw it changed from puzzlement to painful boredom as word after word floated from the battery of speakers overhead.

MacCulloch was whispering in Johns' ear in an attempt to draw his attention from the woman's booming voice but the man disregarded him. "Am I really responsible for that? The Colonel jerked his head in the direction of Mrs. Johns-Hayes.

"I'm afraid, Colonel, that you're getting a distorted idea of what America is like in our time," Decker said. The Colonel didn't even turn to look at him. He was scowling at his Amazonian descendant as her screeching reached new heights.

". . . and we hold that this is true! Our simple motto, as you all know, is: One race, one creed, one way of thinking!"

Colonel Johns began to squirm violently in his seat. The professor found it necessary to grasp him firmly by one arm while Decker held him by the other.

The president of the Patriot Daughters had finished her speech amidst thunderous applause and started to present suggestions for the formation of new committees, for the passing of new by-laws and for resolutions.

"A committee should be formed to see that the public parks are properly policed to prevent so-called 'spooners' from pursuing their immoral behaviour.

"A new by-law is needed," and here Mrs. Hayes glanced aside at Mrs. Tolman, "to prevent members being accepted unless their forebears were lieutenants or of higher rank in the glorious Continental army."

The Colonel was a strong man and both Decker and MacCulloch were older than he. With something between a snort and a roar he shook them loose and started for the exit.

"Oh my," MacCulloch moaned, "I was afraid that this whole thing was a mistake."

Colonel Johns had taken only two steps toward the door when he seemed to stagger. MacCulloch leaped to his side and caught him by the arm. There was an uproar in the auditorium as the Colonel faded slightly and the professor hurried him down the steps toward the Reintegrator.

"I'm afraid the Colonel isn't going to be with us much longer," the professor explained.

Thank goodness, Decker thought, I don't believe the poor man could have stood it much longer.

"I'm afraid the reintegration time of Colonel Johns is running out and he must return to his own time," the professor went on.

The grim-faced Colonel said nothing as MacCulloch led him up to the machine.

"Goodbye, great-great-great-great-grandfather," Mrs. Johns-Hayes called from the platform. "It has been so nice having you with us."

"Goodbye, Rebecca," the Colonel said as he began to fade away.

"Give my regards to great-great-great-great-grandmother."

The figure in the dirty, faded blue uniform was gone but Decker

(Continued on page 105)

Theirs was a world of great culture yet their destiny had ever been run, run, run—flee the Hunters. Even with the near perfection of the Concerts, the ultimate advance of civilized man, they would run once again. But this time there were two who stayed behind . . .

The LINK

By Alan E. Nourse

Illustration by Rudolph Palais

IT WAS NEARLY sundown when Ravdin eased the ship down into the last slow arc toward the Earth's surface. Stretching his arms and legs, he tried to relax and ease the tension in his tired muscles. Carefully he tightened the seat belt for landing; then he blinked eagerly down at the vast, tangled expanse of Jungle-land below him. Several miles ahead was the bright circle of the landing field, with the sparkling glow of the city beyond. Momentarily his eyes swept the horizon beyond the city, hoping to catch a glimpse of the Concert before he was swallowed by the brilliant lights.

A bell chimed softly in his ear, and Ravdin brought his attention back to the landing operation. He was still numb and shaken from the Warp-passage, his mind still muddled by the abrupt and incredible change. Moments before the sky had been a vast, starry blanket of black velvet; then, abruptly, he had been hovering over the city, sliding down toward warm friendly lights and music. He checked the proper switches and felt the throbbing purr of anti-gravs as the ship slid down toward the landing slot. The tall spires of the other ships rose to meet him, circle upon circle of silver needles in the bright landing place. The instrument panel whirred into activity as the automatics set the ship back into the berth from which it had risen days

before. With a sigh, Ravdin eased himself out of the seat, his heart pounding with excitement. Perhaps, he thought, he was too excited, too eager to be home, for his mind still reeled from the fearful discovery of his journey.

The station was completely empty as Ravdin walked down the ramp to the shuttles. At the desk he checked his fuel report in the shiny punchcard robot, and walked swiftly across the polished floor. The wall panels pulsed a sombre blue-green, broken sharply by brilliant flashes and overtones of scarlet, reflecting with subtle accuracy the tumult in his own mind. Not a sound was in the air, not a whisper nor sign of human habitation. Vaguely, uneasiness grew in his mind as he entered the shuttle station. Then, suddenly, the music caught him—a long, low chord of indescribable beauty, rising and falling in the wind, a distant whisper of life. The Concert, of course. Everyone would be at the Concert tonight, and even at the five-mile distance, the beauty of four hundred perfectly harmonized voices could carry to him in the breeze. The uneasiness disappeared, replaced by an eagerness to join, to discharge his horrible message and join the others in the great amphitheatre set deep in the hillside outside the city. Because he knew everyone would be there—except one. Instinctively Ravdin knew that Lord Nehmon would be missing the Concert, too, waiting for him to return.

The shuttle slipped soundlessly from its berth, rising in a slow arc high over the edges of Jungle-land toward the shining walls of the city. Ravdin settled back, trying to clear his mind of the shock and horror, straining to catch the wisps of music as he crossed closer to the hillside place, down into the bright beauty of the city. The curves and spires of glowing plastic passed below, and his throat tightened as he looked down. Very suddenly he realized that his whole life was entangled in the very beauty of that wonderful city, everything he had ever hoped or dreamed lay sheltered there in the ever-clinging rhythm of colors and shapes and sounds. And now, he knew, he would see his beloved city burning once again, a consuming pyre, heartbreaking memorial to the age-old fear of his people.

Softly the little shuttle-car sighed, settling down gently on the green terrace near the center of the city. The building was a masterpiece of smoothly curving walls and tasteful lines, opening a full side to the south to catch the soft sunlight and warm breezes. Ravdin stepped onto the deep carpeting of the terrace. There was other music here, different music, a wilder, more intimate fantasy of whirling sound. An oval door opened for him, ushering him into the vaulted room. He stopped short, staggered for a moment by the overpowering beauty of the dance before him.

A girl with flaming red hair—red like the color of new flame—dancing with enthralling beauty and abandon, her flowing body moving like ripples of wind to the music which filled the room with its throbbing cry. Her beauty was exquisite, every motion, every

flowing turn, a symphony of flawless perfection as she danced to the wild music.

"Lord Nehmon!"

The dancer threw back her head sharply, eyes wide, her body frozen in midair, and then, abruptly, she was gone, leaving only the barest flickering image of her fiery hair. The music slowed, singing softly, and Ravdin could see the man who sat in the room, looking at him. Nehmon rose, a tall, vital man, his graying hair and the strong, sad lines of his face belying the youthful movement of his body. A smile broke on his face, and he came forward, clapping Ravdin on the back, taking his hand warmly. "You're too late for the Concert—it's a shame. Mischana is the master tonight, and the whole city is there—"

Ravdin's throat tightened as he tried to smile, and his voice was hoarse and urgent. *"They're coming,* Nehmon! I saw them, hours ago—"

The last overtones of the dance broke abruptly, like a glass shattered on stone. The room was deathly still. Lord Nehmon's eyes searched the younger man's face for a long moment; then he turned away, not quite concealing the sadness and pain in his eyes. "You couldn't be mistaken?"

"No chance. I found signs of their passing in a dozen places. I saw *them,* their whole fleet. There were hundreds. They're coming, I saw them."

"Did they see you?" Nehmon's voice was sharp.

"No, no. The Warp is a wonderful thing. With it, I can come and go in the twinkling of an eye. But I saw them in the twinkling of an eye."

"It couldn't have been anyone else?"

"Could anyone else build ships like the Hunters?"

Nehmon sighed, sinking back into his relaxer, shaking his head. "No one that we know." He glanced up at the scout. "Sit down, Ravdin, sit down. I—I'll just have to rearrange my thinking a little. Where were they? How far?"

Ravdin sat down facing him, his face drawn and pale. "Seven light years, Nehmon. Can you imagine it? Just seven, and they were coming without hesitation. *They know where we are."* His eyes filled with fear. "They *couldn't* have come—unless they have the Warp, too—"

The older man's breath cut off sharply. There was real alarm in his eyes. "You're right," he said softly. "Six months ago it was eight hundred light years away, in an era completely remote from us. Now just seven. In six months they have come so close—"

"And there's no confusion now. They know where we are—" the scout looked up at Nehmon, a desolate look. "What can we do? We have only weeks, maybe days, before they're here. We have no time to plan, no time to prepare for them. What can we do?"

The room was silent. Finally the older man stood up, wearily, his six hundred years of life showing in his face for the first time in centuries. "We can do once again what we have always done," he said sadly. "We can run away."

THE BRIGHT street below the oval window was empty and quiet. Not a breath of air stirred in the city. Ravdin stared out in shocked silence, hardly believing the words, now that he'd heard them. "Again", he said dully. "After we have worked so hard, done so much—now we must burn the city and flee again—" His voice trailed off to silence. He stared at Nehmon, seeking in his face some answer, some reassurance. He found no answer there, only sadness. "The Concerts—it's taken so long, we're so close to the ultimate goal in the Concerts—" he gestured toward the thought-sensitive sounding boards lining the walls, through which the dancer-illusion had been possible—"All the beauty and peace we've found here—"

"I know. How well I know."

Ravdin's voice became sharper. "Yet the Hunters come again, and again we must run away." He stared at the old man, his eyes suddenly bright. "Nehmon, I've been thinking—"

Nehmon looked up sharply. Not in alarm, but with a look of pleading, like the look of an old and dying man who begs to be spared false hope. A faint smile crossed his lips. "I think, too, sometimes."

"Not what I've been thinking." Ravdin sat down, clasping his hands in excitement. "We run away, Nehmon. Think about that a moment. We run, and we run, and we run. From what? We run from the Hunters. They're hunting *us,* these Hunters. They never quite find us, because we've already run. We're clever, we're fortunate, we have a way of life that they do not, so they've never found us—yet. Whenever they come close to finding us, we run."

Nehmon nodded slowly. "For thousands of years."

Ravdin's eyes were bright. "Yes, we run, we cringe, we hide under stones, we break up our lives and tear up our families, we run like frightened animals—" he gulped a breath, and his eyes sought Nehmon's, angrily. *"Why do we run, my Lord?"*

Nehmon's eyes widened. "Because we have no choice," he said sharply. "We must run or be killed. You know that, you've seen the records, you've been taught."

"Oh, yes, I've been taught, I know. I've been taught that millenia ago remote ancestors of ours fought the Hunters, and lost, and fled, and were pursued—and always ran, ran, ran. But *why?* Time after time we've been cornered, and we've turned and fled. Why? Even animals know that when they're cornered they must turn and fight—"

"We are not animals." Nehmon's voice cut the air like a whiplash.

"But we could fight."

"Animals fight. We do not. We fought once, like animals, and now we must run from the Hunters, who must continue to fight like animals. Let the Hunters fight."

Ravdin rubbed his lips, sinking back into the relaxer. "Then—the Hunters are not men like us," he said suddenly. "That's what you're saying. They're animals. We kill animals for our food, isn't that true? We kill the tiger-beasts in the Jungle to protect ourselves. Why

not kill the Hunters to protect ourselves?"

Nehmon sighed, and reached out a hand to the younger man. "I'm sorry," he said gently. "It seems logical, but it's false logic. No, the Hunters are men—men just like you and me. Their lives are different, their culture is different, but they are men. And human life is sacred, to us, above all else. This is the fundamental basis of our very existence. Without it we would be Hunters, too. If we fight, we are dead. That's why we must run away now, and always. Because we know that we must not kill men."

ON THE STREET below, the night air was suddenly full of voices, chattering , intermingled with whispers of song and occasional brief harmonic flutterings. The footfalls were muted on the polished pavement as the people passed, slowly, their voices carrying a hint of puzzled uneasiness as they passed.

"The Concert's over!" Ravdin walked to the window, feeling a chill pass through him. "So soon—something must have gone wrong." Eagerly he searched the faces passing in the street for Dana's face, sensing the lurking discord in the people's quiet talk. Suddenly the sound-boards in the room tinkled a carrilon of ruby tones in his ear and he turned from the window. And then she was in the room, his new bride, rushing to his arms with a happy cry, pressing her soft cheek to his rough chin. "You're back! Oh, I'm so glad, so very glad!" She turned to Lord Nehmon then, her face stricken. "Oh, Nehmon, if you could have been there tonight—it was horrible. There was something in the air. Everyone felt it—we knew there was something wrong, and the Concert was ruined. The people were *afraid—*"

Ravdin turned away sharply. "Tell her," he said to the old man.

Dana looked at them, her gray eyes widening in horror. "The Hunters! They've found us?"

Ravdin nodded wordlessly.

Her hands trembled as she sat down, and there were tears in her eyes. "We came so close tonight—so very close. I *felt* the music before it was sung, do you realize that? I *felt* the fear around me, even though no one said a word. It wasn't vague or fuzzy, it was *clear!* The transference was perfect." She turned her stunned face to the old man. "It's taken so long to come this far, Nehmon. So much work and training to reach toward a perfect communal Concert. We've had only two hundred years here, only *two hundred!* I was just a little girl when we came, I can't even remember before that. Before we came here we were undisturbed for a thousand years, and before that, four thousand. But *two hundred*—we *can't* leave now. Not when we've come so far."

Ravdin looked from Dana to the old man. "Closer and closer. This time they will catch us. Or next time, or the next. And that will be the end of everything for us, unless we fight them." He paused, watching the last groups dispersing on the street below. "If we only knew, for sure, what we were running from."

There was a startled silence. The

girl's breath came in a gasp and her eyes widened as his words sank home. "Ravdin," she said softly. *"Have you ever seen a Hunter?"*

The couple stared at each other in amazement. Ravdin felt chill of excitement tingle his spine. Music burst from the sounding-board—odd, wild music, suddenly hopeful. "No," he said, "no, of course not. You know that."

She rose from her seat, trembling. She looked at Lord Nehmon. "Have *you?"*

"Never." The old man's voice was harsh.

Dana stared at her husband. "Has *anyone* ever seen a Hunter?"

Ravdin's hand trembled. "I—I don't know. None of us living now, no. It's been too long since they last actually found us. I've read—oh, I can't remember. I think my grandfather saw them—or my great grandfather — somewhere back there. It's been thousands of years—"

"Yet we've been tearing ourselves up by the roots, wrenching our people from planet to planet, running and dying and still running. Suppose that we might not have to run?"

He stared at her. "But they keep coming. They keep searching for us. What more proof do you need?"

Dana's face glowed with excitement; her slender body was alive with new vitality, new hope. "But they might have *changed.* Things can happen—look at us, how we've grown since the wars with the Hunters. Think how our philosophy and culture have matured! Oh, Ravdin, you were to be Master at a Concert next month. Think how the Concerts have changed! Even my grandmother can remember when the Concerts were just a few performers playing, and everyone else just sitting and *listening!* Can you imagine anything more silly? They hadn't even thought of transference then, they never dreamed what a real Concert-communion could be. Why, those people had never *tasted* music, until they became a part of the music. Even we can see these changes — why couldn't the Hunters have grown and changed just as we have?"

Nehmon's voice broke in, almost harshly, as he faced the excited pair. "The Hunters don't have Concerts," he said grimly. "You're deluding yourselves. They laughed at our music, they scoffed at our arts and twisted them into mockeries. They had no concept of beauty in their language. The Hunters are incapable of change."

"And you can say that when nobody has seen them for thousands of years?"

Nehmon met her steady eyes, read the strength and determination in their depths. He knew, despairingly, what they were thinking —that he was old, that he couldn't understand, that his mind was channeled now beyond the approach of wisdom. "You mustn't think what you're thinking," he said weakly. "You're blind. You wouldn't know, you couldn't have any idea what you would find. If you tried to contact them, you could be lost completely, killed, tortured. If they haven't changed, you wouldn't stand a chance. You'd never come back, Dana."

"She's right." Ravdin's voice was

low in the still room. "You're wrong, my Lord. We can't continue this way if we're to survive. Sometime our people must contact them, find the link that was once between us, and forge it strong again. We could do it."

"I could forbid you to go."

Dana looked at her husband, and her eyes were proud. "You could forbid us to go," she said, facing the old man, "but you could never stop us."

FROM THE edge of the Jungleland a great beast watched with green-gleaming eyes, licking his fanged jaws as he watched the glowing city, sensing somehow that the mystifying circle of light and motion was soon to become his jungle again. In the city the turmoil bubbled over, as wave after wave of the people made the short safari across the intervening jungle to the circles of their ships. Husbands, wives, fathers, mothers, carrying their small, frail remembrances out to the ships. There was music among them still, but it was a different sort of music, now, an eerie, hopeless music that drifted out of the city on the wind and caused all but the bravest of the beasts to prickle the hair on their backs and run in panic through the jungle darkness. A melancholy music carried from thought to thought, from voice to voice as the people of the city wearily prepared themselves once again for the long journey.

To run away. In the darkness of secrecy, to be gone, without a trace, without symbol or vestige of their once proud presence, leaving only the scorched circle of land for the jungle to reclaim, so that no eyes, not even the sharpest, would ever know how long they had stayed, nor where they might have gone.

In the rounded room of his house, Lord Nehmon dispatched the last of his belongings, a few remembrances, nothing more, because the space on the ships must take people, not remembrances. He knew that the remembrances would bring only pain. All day he had supervised the loading, the intricate preparations, following plans laid down millenia before. He saw the libraries and records transported, mile upon endless mile of multimicrofilm, carted to the ships prepared to carry them, stored until a new resting place was found. The history of a people was carried to those ships, a people once proud and strong, now equally proud, but dwindling in numbers in toll for the constant roving. A proud people, yet a people who would turn and run without thought, in a panic of age-old fear. They *had* to run, Nehmon knew, if they were to survive. And with a blaze of anger in his heart, he almost hated the two young people waiting with him for the last ship to be filled. For these two would not go.

It had been a long night, a painful night. He had pleaded and begged, to persuade them that there was no hope, that the very idea of remaining behind or trying to contact the Hunters was insane. Yet he knew they were sane—perhaps unwise, naive, but their decision had been reached, and they would not be shaken.

The day was almost gone, the sun sinking lower as the last ships began to fill. Nehmon turned to Ravdin and Dana, his face lined and tired. "You'll have to go soon," he said. "The city will be burned, of course, as always. You'll be left with food and with weapons against the jungle. The Hunters will know that we've been here, but they'll not know when, nor where we have gone. You will have to see that they don't learn."

Dana shook her head. "We'll tell them nothing, unless it's safe for them to know."

"They'll question you, even torture you—"

She smiled calmly. "Perhaps they won't. But as a last resort, we can blank out."

Nehmon's face went white. "You'd never regain your memory," he said. That *must* be saved as a last resort."

Down below on the street the last groups of people were passing, the last sweet, eerie tones rising to the darkening room. In a few moments the last families would have taken their refuge in the ships, waiting for Nehmon to give the dreaded signal to fire the plastic city before the ships started on their voyage. The Concerts were over. They all knew the years of aimless wandering in the black reaches of space before another home could be found. They knew the longer years of settlement and turmoil before the Concerts could once again rise from their hearts and throats and minds, once again work toward the climactic expression of their heritage.

Ravdin felt the desolation in the people's minds, the utter hopelessness in the old man's face, and his own mind reeled in sudden despair. It was such a slender hope, so frail and dangerous. He knew of the terrible fight, the war of his people against the Hunters, so many thousand thousand years before. They had risen together, a common people, a single planet their home. And then, the gradual splitting of the nations, his own people living in peace, seeking the growth and beauty of the arts, hating the bitterness and barrenness of war—and the Hunters, under an iron heel of militarism, of government for the perpetuation of government, split farther and farther from them. It was an ever-widening split as the Hunters grew to hate Ravdin's people for all the things the Hunters were losing: peace, love, happiness. Ravdin knew of the slowly developing doctrine of the Sanctity of Life, shattered abruptly by the horrible wars, and then the centuries of fear and flight, hiding from the wrath of the Hunters' vengeance. His people had learned much in those long years—they had conquered disease, they had grown in strength as they dwindled in numbers. And now the end could be seen, crystal clear, the end of his people and a ghastly grave.

Nehmon's voice broke the silence. "If you must go, then go. The city will burn an hour after we blast."

"We will be safe, outside the city." Dana's eyes glowed, instilling some fraction of her strength and confidence in her husband's heart. "Wish us the best, Nehmon. If a

link can be forged, we will do it."

"I wish you the best in everything." There were tears in the old man's eyes as he turned and left the room.

THEY STOOD in the jungle-land and heard the running animals. They shivered in the cool night air as the bright sparks of the ships' exhausts faded into the black starry sky. A man and a woman, speechless, watching, staring with awful longing into the skies, watching the bright specks flicker and go out—

Purple spumes of flame shot into the air from the city, throwing a ghastly, un-human light on the frightened jungle, spires of flame seeking the stars with their fingers as the plastic walls and streets of the city hissed and shriveled, blackening, bubbling into a vanishing memory before their eyes. The flames shot high, carrying with them the last remnants of the city which had stood proud and tall an hour before. And then a silence fell, deathly, like the lifeless silence of a cold grave. Finally, out of the silence, little whispering sounds of the jungle crept to their ears, first frightened, then curious, then bolder and bolder, as the wisps of grass and little animals ventured out and out toward the clearing where the city had stood. And the jungle gathered courage, and the clearing slowly, silently, began to disappear.

And then, days later, new sparks of light appeared in the black sky, grew to larger specks, and then to flames, and finally settled to the earth on powerful, flaming jets.

They were squat, misshapen vessels, circling down out of the air, hissing, screeching, landing with a grinding crash in the tall thicket of the jungle. Ravdin's signal had brought the ships down, and the Hunters had seen them, standing on a hilltop where the amphitheater had been. Men had come out of the ship, large men with cold faces and dull eyes, weapons strapped to their trim uniforms. The Hunters had blinked at them, unbelieving, and their weapons were held ready. Ravdin and Dana were seized and led to the largest ship. As they approached it, their hearts sank and they clasped hands to bolster their failing hope.

The leader of the Hunters sat back from his desk as they were thrust into the cabin. His face was a graven mask as he searched their faces dispassionately, the slightest hint of a sneer about his deep-set, thoughtful eyes. Their eyes were pale with fear in the bright light, and Frankle felt a wave of disgust pass through his mind. "Chickens," he muttered. "We have been hunting down chickens." His eyes turned to one of the guards. "They have been searched?"

"Of course, sir."

"And questioned?"

The guard frowned. "Their language, sir, it's almost unintelligible."

"You've studied the basic tongues, haven't you?" Frankle's voice was as cold as his eyes.

"Of course, sir, but this is very different—"

Frankle's eyes swept contemptuously to the fair-skinned pair, and fixed upon their faces for a long

moment. Finally he said, "Well?"

Ravdin glanced briefly at Dana's white face. His own voice seemed weak and unsteady in comparison to the Hunter's grating baritone. "You are the leader of the Hunters?"

Frankle regarded them sourly, without replying. His thin face was swarthy, his short-cut grey hair matching the cold grey of his eyes. His was an odd face, completely expressionless, blank of any thought or emotion, yet capable of shifting to a strange biting slyness in the briefest instant. It was a rich face, a face of inscrutable depth. Sharply he pushed his chair back, his eyes watchful and sharp. "We know your people were here," he said suddenly. "Now they've gone and you've stayed behind." There was no softness in the man's face, only suspicion and distrust. "Presumably you had some reason for such rashness. Are you going to tell me now, or do you prefer to waste a few days of my time first?"

Ravdin stared at him for a moment. "My people were here, that's true. We stayed to contact you, to tell you we want peace—"

Frankle's eyes widened, almost startled. Then tired lines appeared around his eyes. "Is that all you have to say? Where have your people gone?"

Ravdin met him eye for eye. "I can't say."

The Hunter burst into a short laugh. "I'm quite sure you *can*. You don't choose to—just now. Let's be precise. Who knows, very soon you may wish with all your heart to tell me—"

Dana's voice was sharp. "We want peace—that's all there is to say. This constant hunting and running is senseless, exhausting to both of us. We want to make peace with you, to bring our people together again."

Frankle snorted. "You came to us in war, once, long ago. Now you want peace. What would you do, clasp us to your bosom, to smother us in your idiotic music? Or have you gone on to greater things?"

Ravdin's face flushed hotly. "Much greater things," he snapped.

Frankle sat down slowly, his eyes betraying his anger. "Very soon you will be killed," he said softly. "The quickness or lengthiness of your dying will be largely determined by the civility of your tongue. A civil tongue answers questions with the right answers. Now, shall we commence asking questions?"

Dana stepped forward suddenly, her cheeks flushed. "We don't have the words to express ourselves, we can't tell you in words what we must," she said softly. "But music is a language even you can understand. We could tell you what we want, in music—"

Frankle scowled. He knew the magic of this music, he had heard of the witchcraft these weak chicken-people could weave, of their strange, magic power to steal men's minds from them, to make them like children before wolves. Yet he had never heard that music, with his own ears—he looked up at them, his eyes strangely bright. "You know I cannot listen to your music," he growled. "It's forbidden, even you should know that. How dare you propose—"

"But this is different music—" Dana's eyes widened suddenly, and she threw an excited glance at her husband. "Our music is beautiful, wonderful to hear. If you could only hear it—"

"Never." The man looked away, a little light of indecision in his eyes. "Your music is forbidden, poisonous—"

Her smile was like sweet wine, a smile that worked into the Hunter's mind like a gentle, lazy drug. "But you are the leader here," she said. "And forbidden pleasures are so much sweeter—"

Frankle's eyes were on hers, fascinated. Slowly, with a graceful movement, she drew the gleaming thought-sensitive stone from her clothing. It glowed in the room with a pearly luminescence, and she saw the man's eyes turning to it, drawn as if by magic. Then he shook his head, and a cruel smile played about his mouth. He motioned toward the stone. "All right," he said mockingly. "Show me your precious music."

Like a tinkle of glass breaking in a well, the stone flashed its fiery light in the room. Little swirls of music floated suddenly into the barren stillness of the room. Frankle tensed, a chill running up his spine, unable to draw his eyes from the gleaming jewel. And then the music was there in the room, rising in its glorious beauty like an overpowering wave, filling his mind with strange and wonderful images. The stone shimmered and grew, and took the form of dancing clouds of light, swirling with the music as it rose. Suddenly Frankle felt his mind groping toward the music, trying desperately to reach into the heart of it, to become part of it. And Ravdin and Dana stood there, trancelike, staring transfixed at the gleaming center of light, forcing their joined minds into the crashing, majestic chords as the song lifted from the depths of oblivion to the heights of glory in the old, old song of their people—

A song of majesty, and strength, and dignity. A song of love, of aspiration, a song of achievement. A song of peoples driven by ancient fears across the eons of space, seeking only peace, seeking love, even the love of those who drove them. Frankle heard the music, and could not comprehend, for his mind could not catch the chords, the true overtones of that glorious music, but he felt the strangeness in the pangs of fear which groped through his mind, cringing from the wonderful strains, dazzled by the dancing light. And then he was staring at the couple, wide-eyed, trembling. The authority was gone from his face for the barest instant, the cruelty was gone, the avarice, the sardonic mockery. For the briefest moment his cold grey eyes grew incredibly tender with a sudden ancient, long-forgotten longing, crying at last to be heard—

And then, with an animal scream, he was stumbling into the midst of the light, lashing out wildly into the heart of its shimmering brilliance, sweeping the hypnotic stone with a roar into a crashing, ear-splitting cacophony against the cold steel bulkhead. He stood, his whole body shaking, eyes blazing with fear and anger, bitter hatred sparking from his gleaming eyes as

he turned on Ravdin and Dana, his voice a raging storm of hatred in the dying strains of the music.

"Spies! You thought you could steal my mind away, make me forget my duty, make me listen to your rotten, poisonous noise! Well, you failed, do you hear? I didn't hear it, I didn't listen, *I didn't!* I'll hunt you down as my fathers hunted you down. I'll bring my people their vengeance and glory, and then your music will be dead!" He turned to the guards, wildly, his hands still trembling. "Take them out! Whip them, burn them, do anything! But *find out where their people have gone.* Find out! *Music!* We'll take the music from them, once and for all——"

THE INQUISITION had been horrible. Their minds had no concept of such horror, such insidious, racking pain. The burning lights, the questions screamed in their ears, Frankle's vicious eyes burning in bitter frustrated hatred, and their own screams, rising with each question they would not answer, rising into hideous rasps until their throats were scorched and they could no longer scream. And then they reached the limit, and almost at the same instant they muttered the hoarse words that could deliver them. No words that Frankle could hear, but the words that could blank out their minds like a wet sponge over slate. The hypnotic key clicked into the lock of their minds, and their screams died in their throats. Then their eyes widened stupidly as their memories died in their brains. Frankle stared at them, and knew instantly what they had done, a technique of total memory obliteration known and dreaded for so many thousand years that history could not remember. And then, as his prey stood mindless before him, he let out one hoarse, agonized scream, and flew into a terrible, roaring, flailing rage of frustration and defeat.

But he did not kill them. They were left on a cold stone ledge, blinking dumbly at each other as the Hunter's ships rose, one by one, and vanished like fireflies in the dark night sky. Naked, they sat alone. They knew no words, no music, nothing. And they did not know that in the departing ships the seed was planted. For Frankle had heard the music, he had seen the beauty of his enemies for that brief instant, and in that instant they had become less his enemies. Though he hated them now, the tiny, tiny seed of doubt had been planted. The seed would grow.

The two sat dumbly, shivering. Far in the distance a beast roared against the heavy night, and a light rain began to fall. The two sat naked, the rain soaking their skin and hair, and still they sat. Then one of them grunted and moved into the dry darkness of the cave. Deep within him some instinct spoke, warned him to fear the roar of the animal in the distance.

Blinking dully, the woman crept into the cave after him. Three thoughts alone filled their empty minds. Not thoughts of Nehmon and his people—to them, Nehmon had never existed, forgotten as completely as if he had never been.

No thoughts of the Hunter, either, nor of his unheard-of mercy in leaving them their lives—lives of memoryless oblivion, like animals in this green Jungle-land, but life—

Only three thoughts filled their minds:

It was raining.

They were hungry.

The saber-tooth was wandering tonight.

They never knew that the link had been forged.

• • • THE END

THE ORDEAL OF COLONEL JOHNS *(Continued from page 91)*

and MacCullogh heard him mutter just before he disappeared altogether, "I will, if I ever see her again!"

MacCulloch turned to stare at the platform and Decker turned to follow his gaze. A sudden dizziness overcame them both and there was a slight haze about the auditorium. When it cleared, the podium was empty. Mrs. Johns-Hayes was gone as if she had never been.

"My God!," the professor gasped. "I was afraid something like this might happen. He must have married the other girl."

"I suppose," Decker said quietly, "that we should consider ourselves lucky that he didn't decide to go back to Pennsylvania." His voice broke off and he wondered what he had been saying. He looked up at the speakers' platform trying to remember why he should think it strange that it was draped in Union Jacks and that Lady Appleby-Simpkin should be saying, "And now, my dears, I know that all of you, as Loyal Daughters of the British Empire will be happy to know . . ."

• • • THE END

SNARING THE HUMAN MIND *(Continued from page 53)*

he is convinced by the hypnotist's suggestions that the bystander is a hated enemy. Normally a woman will not undress when such a suggestion is made by the hypnotist, but if she first be convinced she is alone, it is a different matter.

Drugs have been discovered, which in properly controlled doses, create practically all the symptoms of such mental diseases as schizophrenia. All in all, there are many new and super-sharp weapons appearing in the armory of the modern witch-doctor.

One need not cite such extreme examples as Communist brain washing and the thought control of the police state to make the point that the whole idea of thought control is as disgusting as those murals showing the enemies of the Aztecs being led around by cords inserted through holes drilled in their noses. Yet, nose-ring or not, inserted radio or not, the controlled human brain is a problem that has been greatly accentuated in the last few years. There is no defense against the misuse of thought control except constant and intelligent watchfulness by everyone of us.

So, even while you're reading this magazine, watch out!

Personalities in Science

Nature and Nature's Laws lay
hid in night,
God said, "Let Newton be!"
and there was light.
—Pope.

TO REALIZE what Newton's discoveries mean to us, let us look back a little into the minds of the men of several centuries ago. In those days they recognized a certain order of things beneath nature's confusion—such as the fact that the sun rises in the east and sets in the west, that summer and winter and day and night follow one another, that objects always fall to the ground when released in mid-air. But all these things were accepted without explanation. The nature of light, heat, sound and electricity were unknown; chemistry was still befogged with alchemy, and astronomy with astrology. The farthest outposts were the discoveries of Galileo and Keppler in astronomy, mechanics and optics. Such was the intellectual world into which Isaac Newton was born on Christmas morn in the year 1642 in Woolton-shire, England.

Until he made the momentous decision that he would beat the school bully both mentally and physically, he was an extremely poor student. His interests lay in inventing clever devices rather than in the study of Greek and Latin. Among his childhood inventions were such things as a small windmill that would grind wheat and corn, a water clock run by the force of dropping water, a sundial, which still stands today on the wall of the house in which he was born, and very practical doll's house furniture.

AT FOURTEEN he was taken from school to help his widowed mother run the farm. He spent so much time at reading that he was of absolutely no use on the homestead at all and it was decided that he be sent to the University. Here he was a profound student and an excellent scientist, so eager to learn that he often read ahead on his own hook and completely astonished his teachers by knowing his subject fully and completely before the school year had really started.

His devotion to the study of mathematics led him to discover a new method of calculus—or, as he called it, fluxions—which was to prove invaluable and was later to enable him to prove his law of gravitation. A curious sidelight on this particular discovery is that the great Leibnitz seems to have discovered this same method at about the same time; and publication by

Newton was met with bitterness by the German who accused Newton of having stolen the idea from him. The controversy raged all their lives and had such a deep effect on Newton that he became extremely reluctant about publishing his findings. He became so sensitive to criticism that his friends had to beg him to publish his work. Writing to a friend, he said, "I see that a man must either resolve to put out nothing new, or to become a slave to defend it."

The story of the apple is one that every school child learns long before he really understands what gravity means. As a test to prove his theory, Newton calculated the orbit of the moon, and the motion as he figured it agreed "pretty nearly" with the known facts. But to him "pretty nearly" was as bad as not at all—and since he could go no further with it at the time, he laid gravitation aside for a while.

Now he began to tinker with light and color. By 1669 he demonstrated the compound character of light and the fact that color resides not in the object, but in the light itself. Newton explained light by the corpuscular theory—that light is caused by a stream of minute particles given off at a high velocity by a luminous body. This was later rejected by scientists as the one place where Newton really had gone wrong. The undulatory theory, in which light traveled in waves, became the accepted theory. But since the discovery of radium and radioactivity have proved the existence of minute particles moving at high speeds, we're not so sure now that he was completely wrong on this point.

In 1684, the astronomer Halley stumbled on the fact that Newton had (after seven years of inactivity on the subject) picked up his theory of gravitation again. That he had in fact worked out in solitude the principle of his theory. He had satisfied himself and with his usual reticence about "advertising" had absolutely no desire to tell the world about it. Halley nagged and begged and pleaded until Newton finally set down the elements of his findings in his "Principia." It is said there weren't 12 men in Europe able to understand this book at the time of its publication in 1687.

AT ABOUT that time a new facet of the personality that was Isaac Newton came to the fore. Through the despotic meddling of King James II, who desired to bring catholicism into power in England, force was brought against the University of Cambridge to grant a degree to a monk of extremely low capabilities. The university refused. When King James threatened to close the school, Newton was called from his studies to lend his abilities and prestige to a committee that had been formed to combat this encroachment. His activities in this cause resulted in his election to a seat in Parliament, which he held for two years. While he held the seat he was a keen and active participant in the promotion of public welfare and used it to seek official encouragement for inventors and young men of science. The development of the chro-

nometer devised by John Harrison was largely due to his generous interest and inspiration.

In 1696 he was appointed warden of the mint, being regarded as particularly suited to the post, not only because of his reputation as a mathematician, but especially as a metallurgist because of his many experiments with alloys for making telescope mirrors. A reformation in coinage was taking place at the time and Newton was able to be particularly helpful. Two years later he was made Master of the Mint, which position he held for the rest of his life and which assured him a comfortable old age.

This shorter than average, rather stout little man hardly seemed to have stature enough to be prepossessing, yet he stood a giant among men dedicated to scientific investigation.

TODAY Newton's theory of gravitation has been questioned. Einstein has rejected his explanation, though not the fact of its operation. But all science admits that the Englishman laid the foundations on which Einstein built his theory of relativity. The "Principia" has been called the greatest single contribution to science ever made by one man. It established the ideas of mass and force, the principal of mechanics of the heavenly bodies and the science of theoretical mechanics as it exists today. Newton's improved methods of calculation placed knowledge and achievement on a basis of mathematical precision. The spectrum analysis of white light paved the way for a host of useful optical discoveries and inventions. He originated the mathematical basis for all of modern physics. For isolated facts he substituted a rule of law. He invented the first reflector telescope and widened the scope of the entire Universe for us. With these universal laws Newton brought order into chaos, knowledge out of superstition.

After being knighted, Isaac was able to retire and continue his work with more ease—if a man such as he ever could take things easy. A hackney, three beautiful horses and a home presided over by a gay and charming sister provided all the ease he wanted. Despite criticism of his "notions," he had literally hundreds of friends. He was charming, witty and serene—and calm beyond belief. With all this he was so modest that he never considered himself at all important in the field of science—he preferred to think of himself as the eternal "tinkerer." He always maintained that his achievements were those of "—a little boy picking up a few pebbles on the beach; while all around lay the boundless sea of undiscovered knowledge."

—epw

Man knows he is the forerunner of a finer and more perfect race; and his pride in that fact should be great enough to overshadow the disappointments and hardships of the present. *Pierre du Nouy*

He was something out of a nightmare but his music was straight from heaven. He was a ragged little man out of a hole but he was money in the bank to Stanley's four-piece combo. He was —whoops!...

The HOLES and JOHN SMITH

By Edward W. Ludwig

Illustration by Kelly Freas

IT ALL BEGAN on a Saturday night at *The Space Room.* If you've seen any recent Martian travel folders, you know the place: "A picturesque oasis of old Martian charm, situated on the beauteous Grand Canal in the heart of Marsport. Only half a mile from historic Chandler Field, landing site of the first Martian expedition nearly fifty years ago in 1990. A visitor to the hotel, lunch room or cocktail lounge will thrill at the sight of hardy space pioneers mingling side by side with colorful Martian tribesmen. An evening at *The Space Room* is an amazing, unforgettable experience."

Of course, the folders neglect to add that the most amazing aspect is the scent of the Canal's stagnant water—and that the most unforgettable experience is seeing the "root-of-all-evil" evaporate from your

pocketbook like snow from the Great Red Desert.

We were sitting on the bandstand of the candle-lit cocktail lounge. Me — Jimmie Stanley — and my four-piece combo. Maybe you've seen our motto back on Earth: "The Hottest Music This Side of Mercury."

But there weren't four of us tonight. Only three. Ziggy, our bass fiddle man, had nearly sliced off two fingers while opening a can of Saturnian ice-fish, thus decreasing the number of our personnel by a tragic twenty-five per cent.

Which was why Ke-teeli, our boss, was descending upon us with all the grace of an enraged Venusian vinosaur.

"Where ees museek?" he shrilled in his nasal tenor. He was almost skeleton thin, like most Martians, and so tall that if he fell down he'd be half way home.

I gulped. "Our bass man can't be here, but we've called the Marsport local for another. He'll be here any minute."

Ke-teeli, sometimes referred to as Goon-Face and The Eye, leered coldly down at me from his eight-foot-three. His eyes were like black needle points set deep in a mask of dry, ancient, reddish leather.

"Ees no feedle man, ees no job," he squeaked.

I sighed. This was the week our contract ended. Goon-Face had displayed little enough enthusiasm for our music as it was. His comments were either, "Ees too loud, too fast," or "Ees too slow, too soft." The real cause of his concern being, I suspected, the infrequency with which his cash register tinkled.

"But," I added, "even if the new man doesn't come, *we're* still here. We'll play for you." I glanced at the conglomeration of uniformed spacemen, white-suited tourists, and loin-clothed natives who sat at ancient stone tables. "You wouldn't want to disappoint your customers, would you?"

Ke-teeli snorted. "Maybe ees better dey be deesappointed. Ees better no museek den bad museek."

Fat Boy, our clarinetist who doubles on Martian horn-harp, made a feeble attempt at optimism. "Don't worry, Mr. Ke-teeli. That new bass man will be here."

"Sure," said Hammer-Head, our red-haired vibro-drummer. "I think I hear him coming now."

Suspiciously, Ke-teeli eyed the entrance. There was only silence. His naked, parchment-like chest swelled as if it were an expanding balloon.

"Five meenutes!" he shrieked. "Eef no feedle, den you go!" And he whirled away.

We waited.

Fat Boy's two hundred and eighty-odd pounds were drooped over his chair like the blubber of an exhausted, beach-stranded whale.

"Well," he muttered, "there's always the uranium pits of Neptune. Course, you don't live more than five years there—"

"Maybe we could make it back to Lunar City," suggested Hammer-Head.

"Using what for fare?" I asked. "Your brains?"

Hammer-Head groaned. "No. I guess it'll have to be the black pits of Neptune. The home of washed-up interplanetary musicians. It's too

bad. We're so young, too."

The seconds swept by. Ke-teeli was casting his razor-edged glare in our direction. I brushed the chewed finger nails from the keyboard of my electronic piano.

Then it happened.

FROM THE entrance of *The Space Room* came a thumping and a grating and a banging. Suddenly, sweeping across the dance floor like a cold wind, was a bass fiddle, an enormous black monstrosity, a refugee from a pawnbroker's attic. It was queerly shaped. It was too tall, too wide. It was more like a monstrous, midnight-black hourglass than a bass.

The fiddle was not unaccompanied as I'd first imagined. Behind it, streaking over the floor in a waltz of agony, was a little guy, an animated matchstick with a flat, broad face that seemed to have been compressed in a vice. His sand-colored mop of hair reminded me of a field of dry grass, the long strands forming loops that flanked the sides of his face.

His pale blue eyes were watery, like twin pools of fog. His tight-fitting suit, as black as the bass, was something off a park bench. It was impossible to guess his age. He could have been anywhere between twenty and forty.

The bass thumped down upon the bandstand.

"Hello," he puffed. "I'm John Smith, from the Marsport union." He spoke shrilly and rapidly, as if anxious to conclude the routine of introductions. "I'm sorry I'm late, but I was working on my plan."

A moment's silence.

"Your plan?" I echoed at last.

"How to get back home," he snapped as if I should have known it already.

Hummm, I thought.

My gaze turned to the dance floor. Goon-Face had his eyes on us, and they were as cold as six Indians going South.

"We'll talk about your plan at intermission," I said, shivering. "Now, we'd better start playing. John, do you know *On An Asteroid With You?*"

"I know *everything,*" said John Smith.

I turned to my piano with a shudder. I didn't dare look at that horrible fiddle again. I didn't dare think what kind of soul-chilling tones might emerge from its ancient depths.

And I didn't dare look again at the second monstrosity, the one named John Smith. I closed my eyes and plunged into a four-bar intro.

Hammer-Head joined in on vibro-drums and Fat Boy on clarinet, and then—

My eyes burst open. A shiver coursed down my spine like gigantic mice feet.

The tones that surged from that monstrous bass were ecstatic. They were out of a jazzman's Heaven. They were great rolling clouds that seemed to envelop the entire universe with their vibrance. They held a depth and a volume and a richness that were astounding, that were like no others I'd ever heard.

First they went *Boom-de-boom-de-boom-de-boom,* and then, *boom-de-de-boom-de-de-boom-de-de-*

boom, just like the tones of all bass fiddles.

But there was something else, too. There were overtones, so that John wasn't just playing a single note, but a whole chord with each beat. And the fullness, the depth of those incredible chords actually set my blood tingling. I could *feel* the tingling just as one can feel the vibration of a plucked guitar string.

I glanced at the cash customers. They looked like weary warriors getting their first glimpse of Valhalla. Gap-jawed and wide-eyed, they seemed in a kind of ecstatic hypnosis. Even the silent, bland-faced Martians stopped sipping their wine-syrup and nodded their dark heads in time with the rhythm.

I looked at The Eye. The transformation of his gaunt features was miraculous. Shadows of gloom dissolved and were replaced by a black-toothed, crescent-shaped smile of delight. His eyes shone like those of a kid seeing Santa Claus.

We finished *On An Asteroid With You,* modulated into *Sweet Sally from Saturn* and finished with *Tighten Your Lips on Titan.*

We waited for the applause of the Earth people and the shrilling of the Martians to die down. Then I turned to John and his fiddle.

"If I didn't hear it," I gasped, "I wouldn't believe it!"

"And the fiddle's so old, too!" added Hammer-Head who, although sober, seemed quite drunk.

"Old?" said John Smith. "Of course it's old. It's over five thousand years old. I was lucky to find it in a pawnshop. Only it's not a fiddle but a *Zloomph.* This is the only one in existence." He patted the thing tenderly. "I tried the hole in it but it isn't the right one."

I wondered what the hell he was talking about. I studied the black, mirror-like wood. The aperture in the vesonator was like that of any bass fiddle.

"Isn't right for what?" I had to ask.

He turned his sad eyes to me. "For going home," he said.

Hummm, I thought.

WE PLAYED. Tune after tune. John knew them all, from the latest pop melodies to a swing version of the classic *Rhapsody of The Stars.* He was a quiet guy during the next couple of hours, and getting more than a few words from him seemed as hard as extracting a tooth. He'd stand by his fiddle—I mean, his *Zloomph*—with a dreamy expression in those watery eyes, staring at nothing.

But after one number he studied Fat Boy's clarinet for a moment. "Nice clarinet," he mused. "Has an unusual hole in the front."

Fat Boy scratched the back of his head. "You—you mean here? Where the music comes out?"

John Smith nodded. "Unusual."

Hummm, I thought again.

Awhile later I caught him eyeing my piano keyboard. "What's the matter, John?"

He pointed.

"Oh, there," I said. "A cigarette fell out of my ashtray, burnt a hole in the key. If The Eye sees it, he'll swear at me in seven languages."

"Even there," he said softly, "even there. . . ."

There was no doubt about it.

John Smith was peculiar, but he was the best bass man this side of a musician's Nirvana.

It didn't take a genius to figure out our situation. Item one: Goon-Face's countenance had evidenced an excellent imitation of Mephistopheles before John began to play. Item two: Goon-Face had beamed like a kitten with a quart of cream after John began to play.

Conclusion: If we wanted to keep eating, we'd have to persuade John Smith to join our combo.

At intermission I said, "How about a drink, John? Maybe a shot of wine-syrup?"

He shook his head.

"Then maybe a Venusian fizz?"

His grunt was negative.

"Then some old-fashioned beer?"

He smiled. "Yes, I *like* beer."

I escorted him to the bar and assisted him in his arduous climb onto a stool.

"John," I ventured after he'd taken an experimental sip, "where have you been hiding? A guy like you should be playing every night."

John yawned. "Just got here. Figured I might need some money so I went to the union. Then I worked on my plan."

"Then you need a job. How about playing with us steady? We like your style a lot."

He made a long, low humming sound which I interpreted as an expression of intense concentration. "I don't know," he finally drawled.

"It'd be a steady job, John." Inspiration struck me. "And listen, I have an apartment. It's got everything, solar shower, automatic chef, 'copter landing—if we ever get a 'copter. Plenty of room there for two people. You can stay with me and it won't cost you a cent. And we'll even pay you over union wages."

His watery gaze wandered lazily to the bar mirror, down to the glittering array of bottles and then out to the dance floor.

He yawned again and spoke slowly, as if each word were a leaden weight cast reluctantly from his tongue:

"No, I don't . . . care much . . . about playing."

"What *do* you like to do, John?"

His string-bean of a body stiffened. "I like to study ancient history . . . and I must work on my plan."

Oh Lord, that plan again!

I took a deep breath. "Tell me about it, John. It *must* be interesting."

He made queer clicking noises with his mouth that reminded me of a mechanical toy being wound into motion. "The whole foundation of this or any other culture is based on the history of all the time dimensions, each interwoven with the other, throughout the ages. And the holes provide a means of studying all of it first hand."

Oh, oh, I thought. *But you still have to eat. Remember, you still have to eat.*

"Trouble is," he went on, "there are so many holes in this universe."

"Holes?" I kept a straight face.

"Certainly. Look around you. All you see is holes. These beer bottles are just holes surrounded by glass. The doors and windows—they're holes in walls. The mine tunnels make a network of holes under the desert. Caves are holes, animals live

in holes, our faces have holes, clothes have holes—millions and millions of holes!"

I winced and thought, humor him because you gotta eat, you gotta eat.

His voice trembled with emotion. "Why, they're everywhere. They're in pots and pans, in pipes, in rocket jets, in bumpy roads. There are buttonholes and well holes, and shoelace holes. There are doughnut holes and stocking holes and woodpecker holes and cheese holes. Oceans lie in holes in the earth, and rivers and canals and valleys. The craters of the Moon are holes. Everything is—"

"But, John," I said patiently as as possible, "what have these holes got to do with you?"

He glowered at me as if I were unworthy of such a confidence. "What have they to do with me?" he shrilled. "I can't find the right one—that's what!"

I closed my eyes. "Which particular hole are you looking for, John?"

He was speaking rapidly again now.

"I was hurrying back to the University with the *Zloomph* to prove a point of ancient history to those fools. They don't believe that instruments which make music actually existed before the tapes! It was dark—and some fool researcher had forgotten to set a force-field over the hole—I fell through."

I closed my eyes. "Now wait a minute. Did you drop something, lose it in the hole—is that why you have to find it?"

"Oh I didn't lose anything important," he snapped, "*just* my own time dimension. And if I don't get back they will think I couldn't prove my theory, that I'm ashamed to come back, and I'll be discredited."

His chest sagged for an instant. Then he straightened. "But there's still time for my plan to work out—with the relative difference taken into account. Only I get so tired just thinking about it."

"Yes, I can see where thinking about it would tire any one."

He nodded. "But it can't be too far away."

"I'd like to hear more about it," I said. "But if you're not going to play with us—"

"Oh, I'll play with you," he beamed. "I can talk to *you*. *You* understand."

Thank heaven!

HEAVEN LASTED for just three days. During those seventy-two golden hours the melodious tinkling of The Eye's cash register was as constant as that of Santa's sleigh bells.

John became the hero of tourists, spacemen, and Martians, but nevertheless he remained stubbornly aloof. He was quiet, moody, playing his *Zloomph* automatically. He'd reveal definite indications of belonging to Homo Sapiens only when drinking beer and talking about his holes.

Goon-Face was still cautious.

"Contract?" he wheezed. "Maybe. We see. Eef feedleman stay, we have contract. He stay, yes?"

"Oh, sure," I said. "He'll stay—just as long as you want him."

"Den he sign contract, too. No beeg feedle, no contract."

"Sure. We'll get him to sign it."

I laughed hollowly. "Don't worry, Mr. Ke-teeli."

Just a few minutes later tragedy struck.

A reporter from the *Marsport Times* ambled into interview the Man of The Hour. The interview, unfortunately, was conducted over the bar and accompanied by a generous guzzling of beer. Fat Boy, Hammer-Head and I watched from a table. Knowing John as we did, a silent prayer was in our eyes.

"This is the first time he's talked to anybody," Fat Boy breathed. "I—I'm scared.

"Nothing can happen," I said, optimistically. "This'll be good publicity."

We watched.

John murmured something. The reporter, a paunchy, balding man, scribbled furiously in his notebook.

John yawned, muttered something else. The reporter continued to scribble.

John sipped beer. His eyes brightened, and he began to talk more rapidly.

The reporter frowned, stopped writing, and studied John curiously.

John finished his first beer, started on his second. His eyes were wild, and he was talking more and more rapidly.

"He's doing it," Hammer-Head groaned. "He's telling him!"

I rose swiftly. "We better get over there. We should have known better—"

We were too late. The reporter had already slapped on his hat and was striding to the exit. John turned to us, dazed, his enthusiasm vanishing like air from a punctured balloon.

"He wouldn't listen," he said, weakly. "I tried to tell him, but he said he'd come back when I'm sober. I'm sober now. So I quit. I've got to find my hole."

I patted him on the back. "No, John, we'll help you. Don't quit. We'll—well, we'll help you."

"We're working on a plan, too," said Fat Boy in a burst of inspiration. "We're going to make a more scientific approach."

"How?" John asked.

Fat Boy gulped.

"Just wait another day," I said. "We'll have it worked out. Just be patient another day. You can't leave now, not after all your work."

"No, I guess not," he sighed. "I'll stay—until tomorrow."

ALL NIGHT the thought crept through my brain like a teasing spider: *What can we do to make him stay? What can we tell him? What, what, what?*

Unable to sleep the next morning, I left John to his snoring and went for an aspirin and black coffee. All the possible schemes were drumming through my mind: finding an Earth blonde to capture John's interest, having him electrohypnotized, breaking his leg, forging a letter from this mythical university telling him his theory was proved valid and for him to take a nice long vacation now. He was a screwball about holes and force fields and dimensional worlds but for that music of his I'd baby him the rest of his life.

It was early afternoon when I trudged back to my apartment.

John was squatting on the living

room floor, surrounded by a forest of empty beer bottles. His eyes were bulging, his hair was even wilder than usual, and he was swaying.

"John!" I cried. "You're drunk!"

His watery eyes squinted at me. "No, not drunk. Just scared. I'm awful scared!"

"But you mustn't be scared. That reporter was just stupid. We'll help you with your theory."

His body trembled. "No, it isn't that. It isn't the reporter."

"Then what is it, John?"

"It's my body. It's—"

"Yes, what about your body? Are you sick?"

His face was white with terror. "No, my—*my body's full of holes.* Suppose it's one of those holes! How will I get back if it is?"

He rose and staggered to his *Zloomph,* clutching it as though it were somehow a source of strength and consolation.

I patted him gingerly on the arm. "Now John. You've just had too much beer, that's all. Let's go out and get some air and some strong black coffee. C'mon now."

We staggered out into the morning darkness, the three of us. John, the *Zloomph,* and I.

I was hanging on to him trying to see around and over and even under the *Zloomph*—steering by a sort of radar-like sixth sense. The street lights on Marsport are pretty dim compared to Earthside. I didn't see the open manhole that the workmen had figured would be all right at that time of night. It gets pretty damned cold around 4: A.M. of a Martian morning, and I guess the men were warming up with a little nip at the bar across the street.

Then—he was gone.

John just slipped out of my grasp —*Zloomph* and all—and was gone —completely and irrevocably gone. I even risked a broken neck and jumped in the manhole after him. Nothing—nothing but the smell of ozone and an echo bouncing crazily off the walls of the conduit.

"—is it. —is it. —is it. —is it."

John Smith was gone, so utterly and completely and tragically gone it was as if he'd never existed. . . .

Tonight is our last night at *The Space Room.* Goon-Face is scowling again with the icy fury of a Plutonian monsoon. As Goon-Face has said, "No beeg feedle, no contract."

Without John, we're notes in a lost chord.

We've searched everything, in hospitals, morgues, jails, night clubs, hotels. We've hounded spaceports and 'copter terminals. Nowhere, nowhere is John Smith.

Ziggy, whose two fingers have healed, has already bowed to what seems inevitable. He's signed up for that trip to Neptune's uranium pits. There's plenty of room for more volunteers, he tells us. But I spend my time cussing the guy who forgot to set the force field at the other end of the hole and let John and his *Zloomph* back into his own time dimension. I cuss harder when I think how we were robbed of the best bass player in the galaxy.

And without a corpus delecti we can't even sue the city.

• • • THE END

What Is Your Science I.Q.?

NOT SO very long ago atoms were comparatively unknown to the lay public, now every science fiction aficionado, including the kids who love space suits and ray guns, knows about them. The intrepid reader is also learning about a lot of other things in and out of this world—both fact-wise and fiction-wise. See how many of the questions below you can answer. Then check your score on page 119 and see how wise you are in the ways of science and science fiction. Counting 5 for each correct answer, here's how you rate: 100—good; 110—very good; 120—excellent.

GROUP 1

1. What is the name of the process that uses two or more combined atoms to release energy.
2. What is the name of the man who was the first to successfully smash the atom?
3. When we speak of a thickly clustered group of stars, what word do we use to describe it?
4. What are the high frequency rays produced beyond the Earth's atmosphere called?
5. What is the science fiction term used to describe an unhumanoid alien being?
6. We know that Saturn has rings, but how many moons has it?
7. What is the term used to refer to the growing of food in chemical compounds.
8. What American is credited with the discovery of "heavy water"?
9. The historical and psychological evolution of words and language is called ——?
10. Which of the planets is the smallest?
11. What is the term we use to describe abilities that seem to go beyond that of the five known senses?
12. What do we call a luminous heavenly body that has a tail and follows a fixed orbit around the sun?

GROUP 2 *(True or False?)*

1. Gamma rays are waves of pure energy.
2. The Great Nebula is a mass of luminous gas in the constellation Orion than can be seen with the naked eye.
3. Wolf I is a fixed star.
4. Light travels at a speed of 186,000 miles per minute.
5. An android is a mechanical device made to resemble a man.
6. When two dissimilar organisms live together in close union it is called symbiosis.
7. Plutonium is a natural element found in the earth.
8. A parsec is a unit of astronomical length equal to 19.2 trillion miles.
9. Parthenogenesis is a process of reproduction through union of a sperm and an ovum.
10. An asteroid is a small planet with wandering or orbital tendencies.
11. Mars has 5 moons.
12. Radioactivity is caused by a process of disintegration in an atom that is unstable.
13. The atmospheric pressure on earth is about 15 pounds per square foot.
14. Mare Crisium is the name astronomers have given to the largest crater of the moon visible to the naked eye.
15. A light year is equal to 6,000,000,000,000 miles.

Sun Cookery—Indian scientists have perfected a food cooker that utilizes solar energy as fuel. With a mirror four feet wide, this cooker weighs about thirty pounds and is more than adequate for an average size family. It sells for about $14—and is being manufactured at the rate of about 1,000 per month. Sounds good, but we'll hang onto our old gas stove for the rainy season.

Mail Rockets—What the postage will cost is anybody's guess, but rocket experts are predicting that by 1978 we will be receiving first class mail by rockets. Advances in the science of guided missiles indicate that a letter posted in New York (E.S.T.) will arrive approximately 36 minutes later in San Francisco (P.S.T.) When this time is halved, which they will undoubtedly do, your friend can read your letter in San Francisco before you write it in New York! Figure it out.

T.V. Bomb Demolition—At the Army Ordnance Depot in Oregon, bombs of all types are now disassembled safely with the aid of a T.V. camera. The operator who works the motor driven disassembling machine sits in a bomb-proof shelter and watches the entire operation on a receiver. The camera is focused on all moving parts and the operator can stop work immediately after noting any signs of danger. Safe but it probably tops all other shows for suspense effects!

X-Ray "Tooth-picks"—Wooden applicator sticks with radioactive cesium for the "heads" will replace bulky X-ray equipment now used by dentists. This "tooth-pick" held against the jaw or tooth, either inside or outside the mouth, will produce a picture on an X-ray film packet held in the appropriate position.

Missile "Brains"—Two small but high speed computers, lightweight enough for air-borne control of guided missiles, were revealed recently. Nine different devices feed information into the computers. After digesting the information and solving the control problems, the "brain" takes over by controlling the flight mechanism. The actual use to which this computer will be put is still a military secret.

Skull "Pie"—Skull surgeons will now be required to be "bakers" too. A Washington doctor has perfected a plastic dough which, when kneaded and rolled, can be molded into the skull depression to replace metal plates now used for such repairs. More form-fitting and a better insulator than metal, this plastic won't perforate the skin and is far less expensive than metal. The "pie" is mixed, fitted, hardened and sterilized right in the operating room. Less than twenty minutes are required for the whole process.

Fish "Radar"—A new deep-sea echo-sounding device which can sweep back and forth as well as straight down and so "see" in any direction will soon take most of the guesswork out of commercial fishing. With this gadget fishermen can locate a school of fish, note it's size, direction and speed and lower nets before they reach the vicinity. A pocket-sized edition would help eliminate all those tales of "the one that got away".

Prospecting '54 Style—Using mass production techniques that would daze a forty-niner, the government's uranium prospecting doesn't guarantee results but, rather, supplies uranium-hunters with leads to potential deposits, leaving it to individuals to work the areas over.

The basic technique is for a low flying plane carrying a scintillation detector—a sort of super Geiger counter—to fly over measured strips in a given area. Any reaction on the detector is marked on a paper tape and a 35-mm. camera mounted on the tail of the plane maps the area at the same time. The air prospectors work in teams, with a D.C. 3, flying at about 500 feet, and mapping up to 600 square miles a day. Then, the second crew, flying a little Piper Cub, flys over the area at a much lower altitude to get more accurate readings. The aerial maps gathered in this way, with the potential deposits clearly marked, are then posted in offices of the Department of the Interior and Atomic Energy Commission.

That the program has been helpful is indicated by the A.E.C. report that three-fourths of the newly opened uranium deposits in the Black Hills of South Dakota have been located by this aerial exploration method. With payment of $1.50 a pound for ore containing 1/10 of 1 per cent uranium to $3.50 a pound for 2/10 of 1 per cent, plus the extra bonus on delivery to the A.E.C., there is a host of small-time prospectors hoping to strike it rich in this government sponsored prospecting business.

Flying Blinds—"Flying Venetian blinds" are likely to pop up in the news soon. Army tests of a plane with slatted wings have proved extremely promising. With such equipment a fast transport can take off vertically from a "pocket handkerchief" field.

Robot Arms—The "little wonder robot arm" that can bake a cake and pour your tea is right around the corner. It exists right now, but a gross weight of 15 tons makes it a little impractical. Patience Ladies, the day will come.

YOUR SCIENCE I. Q.

GROUP 1: 1—Fusion. 2—Ernest Rutherford. 3—Galaxy. 4—Cosmic rays. 5—BEM. 6—Nine. 7—Hydroponics. 8—Harold Urey. 9—Semantics. 10—Mercury. 11—Extra sensory perception (esp.). 12—Comet.

GROUP 2: 1—True. 2—True. 3—False (comet). 4—False (per second). 5—True. 6—True. 7—False (man made). 8—True. 9.—False (reproduction through a single unfertilized egg). 10—True. 11.—False (two). 12—True. 13—False (per square inch). 14—True. 15—True.

Shades of Dick Tracy—The wrist radio is coming closer and closer for everybody's use. The latest model uses five transistors instead of vacuum tubes, and can pick up broadcasts from as far away as 65 miles.

Underwater "Mountain Climbing"—Mountaineers of the future may be climbing underwater mountains. Recent ocean surveys show canyons as deep as Grand Canyon and mountains of gigantic proportions under the Pacific Ocean.

Insects Beware!—Those insects that have learned to resist D.D.T. take warning. A new insecticide that is 100 times more powerful, yet non poisonous to man or animals, has been developed. We're not licked yet.

Salt-Water Fresh Water—Residents in low-rainfall areas won't have to worry too much about water conservation in the future. Heat from atomic fuels is being visualized as the agent for distilling fresh water from the ocean in quantities huge enough to serve every need.

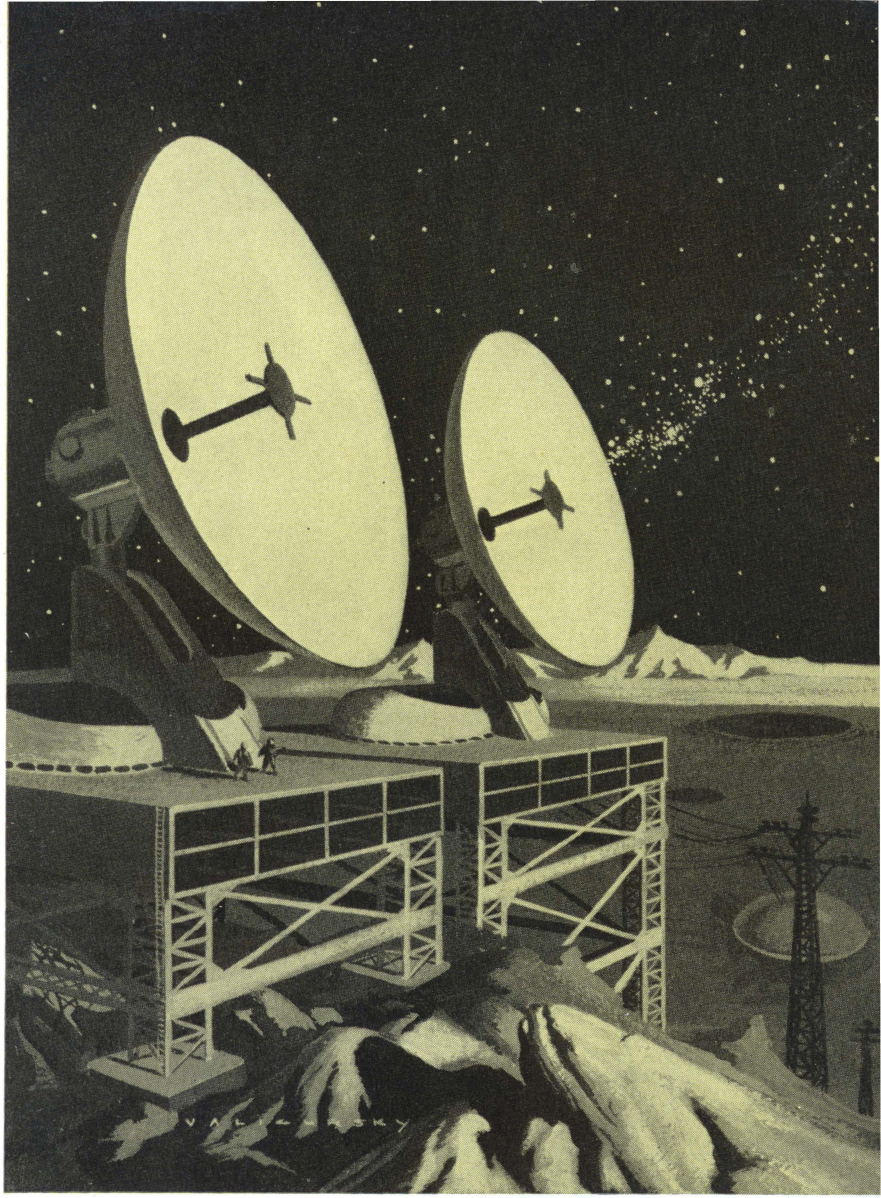
Bomb-Radiation-Proof Concrete—If contractors should receive standing orders to mix barite with concrete, there will be an excellent reason. Tests have shown that such a combination helps buildings withstand bomb blasts and protects the occupants from radiation.

"Shock Treatment"—Even an electronic brain can become cranky or difficult, and when the computers display such human failings engineers in charge of them treat them much the same way a psychiatrist would treat a human patient with a personality maladjustment.

First a rest (a complete stoppage) is prescribed. Then a slow resumption of operation is ordered, quite often this sort of brief "rest-cure" is all the "cranky" machine may need. If this "vacation" doesn't work, the next step is a shock treatment of sorts. Sometimes a swift kick on the part of the engineer will be "shock" enough. If it isn't, then the kind of treatment now used on stubborn mental cases is used. Just as the application of high voltage electricity often shocks the patient back to normality, so the "brain" often responds to a sudden over-voltage charge, and the mechanism may be set to working again.

If all this sort of treatment still doesn't bring about a cure of the balky computer, engineers resort to their version of surgery. This means tearing out one or more parts and repairing or replacing them. Of course, there is an added advantage to this sort of surgery over the human kind, the "patient" needs no post operative care and can go back to the business at hand immediately.

LOOKING AHEAD to the July issue of IF . . . JAMES GUNN, who is no stranger to science fiction readers, has written one of those really exciting and suspenseful stories for which he is noted. The title is A MONSTER NAMED SMITH—another outstanding novelette in a fine issue filled with *exceptionally* good science fiction.



SOLAR POWER PLANTS—Giant power plants such as these are installed at a point where they will receive constant sunlight. The entire project hinges on these plants for they will convert the sun's rays into heat and electrical power needed in all construction and maintenance work. The semi-spherical building in the lower right is a prefabricated shelter unit which will house workmen and scientists until the larger, all-functioning housing unit is completed. (In the July issue: Moon base in operation.)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