# Beachheads In Space

EDITED AND WITH

AN INTRODUCTION BY

August Derleth

Pellegrini & Cudahy

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*and other books.*

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# Introduction

EVER MORE frequently in the past few years, mankind is being treated to curiously disturbing news stories suggesting that watchers from outside—that is to say, from other planets or from interplanetary spaces—are keeping this planet under observation. Even as I write, there are current various sobering articles about mysterious green fireballs seen in the American Southwest, of photographed "lights" in orderly arrangement traveling at what would seem to be 15,000 miles an hour, of guarded admissions by the powers that be that there is after all, something to the flying saucers, something presumably attesting to the theory that they are from "outside."

All this is "new" only to the newspapers and magazines. Science-fiction writers have been speculating about it for decades. What the news stories suggest, without ever saying so, is that science-fiction writers may very well have been setting down aspects of the future history of Earth.

Quite possibly hundreds of variations of that history might be compiled. Beginning with the postulate that we are observed, we go on quite logically to wonder by what manner of beings? Man, being self-centered, is entirely likely to conceive of the inhabitants of other planets, if such there be, as in his own image. Actually, however, there is not the slightest reason for believing that they are, and contemporary writers of science-fiction have run the gamut of imaginary concepts of what invaders from space might be like. Consider, in the present collection, the silicon beings of *And the Walls Came Tumbling Down,* by John Wyndham, the almost incredible vernal creatures of Kendall F. Crossen's *The Ambassadors from Venus,* the tiny insect-like invaders of John Benyon Harris' *Meteor.*

Whether mankind will invade the star spaces before Earth itself is invaded is a moot point, of course. It is just as conceivable that man will find a way into space as that the dwellers of the void may find their way to us. Beginning with the concept of the waters in David Keller's *The Star,* a half dozen authors have followed Dr. Keller's prologue to future history with variations on the theme of interplanetary exploration. What lies outside challenges the imagination, and particularly that of the science-fiction writer, who is least likely to be bound to the conventional.

Jack Williamson watches Earth from a vantage point on the moon; Clifford Simak goes appreciably beyond; Lester del Rey conceives a dying cosmos; Eric Frank Russell creates a vast, interlocking system of future interplanetary civilizations; L. Sprague de Camp and A. E. Van Vogt each strike an ironic note in postulating that interplanetary worlds might duplicate the pattern of human civilization.

And for how long might space dwellers tolerate the explorations of mankind before becoming impatient and striking back? Another quartet of authors foresees invasion in various forms and on different planes—Isaac Asimov, John Beynon Harris, John Wyndham, and Donald Wandrei—before Clark Ashton Smith conceives of Earth's destruction and Kendall F. Crossen manages to effect the rescue of some last men on Earth.

Thereafter Nelson Bond in *To People a New World* elucidates the supreme irony of all history—the blind obedience to pattern—in a superb allegory on the Biblical story of Cain and Abel, suggesting that despite all that has happened to mankind, the basic flaws in human nature will reassert themselves, and man's history of errors will only repeat itself in a new cycle.

If there are watchers from interstellar space scrutinizing Earth, it must puzzle them indeed to determine what manner of creatures men are. That something untoward is happening in the air above our planet seems indisputable, if the evidence in our newspapers, our magazines, and many recent books is to be believed. I have drawn upon certain writings in order to preface each story in this collection with pertinent paragraphs of exposition gleaned from the news, or from scientific speculation. To the editors, authors and/or publishers of *Time, Life, Is Another World Watching?,* by Gerald Heard (Harper); *Men of Other Planets,* by Kenneth Heuer (Pellegrini & Cudahy), I am indebted for permission to reproduce such paragraphs in these pages.

Together with the stories, they lend a disturbing air of verisimilitude to the collection, which here suggests not an inevitable but an alternate course of the possible future of our planet. In our time, one need not be a devotee of the outré to appreciate the lessons inherent in the fiction of escape of which the stories in this book are typical.

—August Derleth

*Sauk City, Wisconsin*
*April 17, 1952*

# *Beachheads In Space*

# *Prologue*

"NOT ONLY is it clear now beyond any possibility of reasonable doubt that something has been continually haunting the upper skies of the vast area of land comprised between the southern provinces of Canada and the northern States of Mexico. Further than that, the phenomena, though varied in some particulars, do all of them fall into certain categories. What has been seen over these years, and is still being seen to the last moment of reporting, is some sort of super-flying machine. (The old-fashioned name is used because some of the craft are clearly not 'planes' in any exact sense of the word. Also, it is possible that some do not 'plane' at all—that is, keep themselves up in the air by the pressure of the air on a flat underside—some seem to be able to roll along quite as comfortably as cart wheels on their rims.)

"The problem then arises—and it is an acute one, second to none in immediate importance to all the peoples of this world—who controls them, who has made them, whence do they come?"—GERALD HEARD, *Is Another World Watching?*

# The Star

*by David H. Keller*

THE PEOPLE of the Star sang in the twilight.

For many years they had gathered at the close of day to give expression to their happiness in song. Life had few problems for them; they had achieved a form of social security whereby all their needs were satisfied; their medical science adequately protected them against disease, suffering and annoyances of old age.

Noj Kassi was the senior member of the Council. For half a century he had held the admiration of the Star people by his wisdom and ability as a storyteller. Now, surrounded by his loved ones, he led the family chorus. As the singing ended, a grandchild asked for a particular story, one that had been retold many times but with each telling seemed new.

When he ended the tale, he bade his family good-by and rode away in his magnocar. They knew where he was going but felt no grief. His had been a pleasant life. For years he had given happiness

to all who read his interesting tales of the past and exciting narratives of things to come. Actual life on the Star was placid and uneventful; only through the imagination of their authors could anyone realize that such words as excitement, adventure, peril had meaning.

At the Euthanasia Center he left the car and walked slowly towards the marble building. Seated on the steps was Elto Rean. Kassi smiled and sat down beside him.

"I received your message," Rean said softly. "Perhaps I can persuade you to change your mind; if not, I can at least say good-by to an old friend."

"It was kind of you to come, Elto," Kassi replied. "My only reason for informing you of my decision was to thank you for the long years of friendship. There seems no doubt that I am acting wisely in going on with my program. There comes a time in the life of every man when there is no zest, no thrill to existence. You well know the pattern of life on the Star and how it is ended. If I could further contribute, in any way, to the happiness of our people I would gladly continue my work on the Council. But we have arrived at a state of life where there is nothing left to strive for. So now I am seeking new adventures. Good-by, Elto."

He passed through the open doorway, signed the register, and entered a small room. Closing the door, he lay down on a bed covered with a silk sheet and pressed a gold button near the pillow. Immediately the songs of nightingales and the perfume of exotic flowers filled the room. Noj Kassi closed his eyes. Then, sleeping, he drifted into a new land. Gradually his body dried, until only a handful of clean white ash lay between the folds of his garments.

Three men sat around a circular stone table which was ornamented on the top by a carved map of the universe around the Star. Physically the men were small; mentally they were giants; spiritually they were philosophers who had solved the enigmas of time and space. For many centuries three men had met in the Council room and sat around this table. Occasionally one, satiated with life's unchanging routine, would voluntarily seek release in the Euthanasia Center. Then he would automatically be replaced by the next highest intellectual of the Star.

The circular table symbolized the equality of the Council members. None superior to the others ruled. Their yearly meetings were informal, the discussions harmonious. Being equally intelligent, they arrived at decisions without lengthy argument. However, for

centuries, there had been few problems to discuss or questions to answer. Once a year they met for a few hours simply because it was thought best to follow an age-old pattern and not because there were new laws to pass. Sociologically, life on the Star was so nearly perfect that even the old laws had become unnecessary and most of them had been forgotten.

As the Senior member of the Council, Elto Rean, a quiet, dignified, calm-faced man opened the meeting.

"Because Noj Kassi, for fifty years the beloved Senior member of the Council, entered the Euthanasia Center last week it has become necessary to select a citizen to take his place. For many years it has been universally recognized that Net Org should join the Council when there was a vacancy. He now takes his place with us around the stone table. Har Onwa and I thought it best to call a session at once to welcome him officially, and to study the problem of Earth.

"As you know, we on the Star have lived in peace and happiness for many hundreds of years. While the Star is comparatively small, we have so carefully adjusted population to resources that everyone has been amply provided for in every respect. Long ago, our scientists applied eugenical regulations which were so effective that disease, insanity, and crime became obsolete. Machinery was invented to do all the actual manual work and we were wise enough to remain masters of these machines and not their servants. Intensive study of sociological and governmental problems enabled us to evolve a system whereby life became completely standardized. This, combined with a program of liberal education, established an actual equality which added greatly to the pleasure of life, sense of security, and personal dignity because in no way could anyone be made to feel or appear inferior to another.

"Freedom from the all-compelling need to work hard or suffer pain and privation gave ample leisure for recreation. Some of our citizens became devotees of the arts, musicians, painters, authors, designers of jewelry. Others perfected existing machinery or invented new mechanical devices to make life more comfortable. A few decided to spend their life dreaming. Agriculture, free from insects or blight, furnished ample food for our vegetarian diet. Every family had its own home surrounded by gardens filled with beautiful flowers.

"Finally we had no problems to solve and, as I review the history of the Star, I consider this a definite failure in our sociological program. Perhaps conflict, difficulties, hardships are needed for a

nation to remain alert, progressive, and capable of continuous intellectual growth. It may be that a race can advance only when it continuously faces complex problems threatening its existence. Without such a challenge it merely exists, perfect in every way, but doomed to eventual decay and death. Unless a nation continues to grow, it begins to die.

"For many centuries we have known of the existence of life on our neighboring planet, Earth. Over a thousand years ago we sent investigators to study that life, but they reported it so barbaric and inferior to ours that we had no reason for further interest in it. It was reported to be a planet filled with suffering, conflicts, and a complete disregard for the rights of the individual. Following that one study we completely ignored Earth people.

"Now, for various reasons, chief of which is the need of something new to interest us, it seems advisable to make another study of Earth life. Perhaps, in some way, we may add to the welfare of its population by persuading them to adopt, at least in part, our pattern of life. As we are thousands of years ahead of them in culture it is useless to expect them to fully accept our advice; our suggestions will appear too radical; but perhaps we can eventually add, in some slight degree, to their happiness."

"The best way to do that," put in Har Onwa, "would be to send three of our most advanced scientists and educators to Earth with authority to use their best judgment in dealing with any situation which they encounter. They can adjust themselves to Earth life, become citizens of some nation, learn all they can about the problems of the people and do what is possible to help them. Once their work is completed, they can return to the Star and report."

"That seems an admirable plan," agreed Net Org. "Probably it will take several years for them to complete their survey but time means little to us. Naturally they will have many problems when they arrive on Earth. They must provide themselves with articles of clothing such as is worn there and find some way to make a living. Our last study on Earth life indicated that all necessities were bought with pieces of metal called money. Not knowing what kind of clothing is worn or what metal is used to buy food and pay for shelter, it will be impossible to supply the three investigators in advance. And, of course, they will have to hide their space plane, not only so it will be available for return but also to conceal their identity. If the Earth people learn they are from the Star, they would either promptly kill them or make them prisoners."

"I have full confidence in the ability of any we select to care for themselves, accomplish their research, and return safely," answered Elto Rean. "From a purely personal and perhaps selfish reason I am pleased with our decision to conduct this study of the Earth people. For over a year I have seriously considered visiting the Euthanasia Center. When I talked to Noj Kassi just before he entered the Center, I envied him. Life has been dull because it held nothing of great interest. Now I have something to live for—the return of our three investigators. Their report should be most enlightening and may even pose a problem for us to solve.

"The Council made its last important decision six hundred years ago. I'm certain that if there were a new and definite problem, something to make us, as a people, think, it will benefit all of us. I propose that we arrange a program and select the three men who will act as investigators. The choice will have to be made very carefully. Hundreds will ask for the opportunity to share in the adventure but only the most capable should be chosen after a rigid process of elimination. Special consideration should be given to those who have an aptitude for foreign languages. Our last survey showed that the Earth people spoke in many different tongues. It is possible, of course, that in the interim they have learned the advisability of universal speech. If that proves true, it is probable they have a small, simple vocabulary and a very primitive grammar so our men should have little difficulty in learning it."

Five years later, almost to the day, the Council met in an emergency session.

"We are here," began Elto Rean, "to welcome our very recently returned Earth investigators. After reading a summary of their extremely interesting report, I thought it advisable to hold a meeting of the Council at once. It appears that after many wars the Earth people have finally achieved a semblance of unity. Compared with a thousand years ago there has been marked improvement in the condition of that part of their society called 'the common men'; there is less starvation; many diseases have been conquered; great advancement has been made in adapting and perfecting machinery to the needs of their nationals. Unfortunately, however, there has been little improvement in their spiritual life; the strong continue to oppress the weak; the rich become wealthier by robbing the poor.

"I have touched only on the high lights of the report. It would be best for each investigator to make a full report on his life on Earth

and his observations concerning the social and economic conditions on that planet. I will ask that Ztet Oin, who was called Anderson on Earth, make the report of his experiences."

"On our arrival," Ztet Oin began, "our first problem was to locate a suitable cave in which to hide our space plane. Fortunately Earth has an abundance of very large caves. With your permission we will omit the details of our first contact with the Earth men, how we acquired their type of clothing, learned their language, and secured some of the metal used for money. The latter was very necessary, for we soon learned that nothing, not even the necessities of life, was free, but had to be purchased. While our adjustment was necessarily slow, we encountered less difficulty than anticipated, mainly because physically we Star people are not radically different from the Earth people. By that I mean that our bodies, while small, were considered human in appearance by those who first saw us. I might digress here to say that while the Star people are uniform in stature and color and have flawless bodies the Earth people are of different sizes, from pigmies to giants, some with fine bodies and others with horrible malformations. The variation in color is remarkable. Their skins are of all possible shades of black, brown, an unusual yellow, a strange red copper-brown, anad an impure white far different from our clear, healthy white which permits the rich red blood under the skin to make parts of it glow with a delicate pink.

"The hazard of being recognized as Star visitors was also mitigated because of the migratory habits of the Earth people, their extraordinary variety of clothing and differences of speech. Even before we were able to acquire new clothing, we caused little comment because our travel suits were not very different from those used by Earth's air travelers.

"The speech problem was greater than we had suspected because, instead of one language, as on the Star, they spoke in many different ways. The language called English was used by the most advanced nations; so we decided to concentrate on its vocabulary and grammar and after a few months we were able to speak it perfectly. By that time we had arrived at the most powerful Earth nation called the United States.

"We found that life on Earth was, in some ways, similiar to ours, but far inferior in cultural attainments. The first impression we gained was that the Earth people were never content unless they were either preparing for a war, actually fighting one, and then, be-

ing either conquered or victorious, planning the next conflict. The last war had ended just before our arrival. From all we learned and saw it was a most terrible one, with incredible destruction of life and property on both sides. The various nations associated with the United States were the victors.

"All the surviving nations formed an Earth Union with one man, called the President, as the ruler. His name was Random Howel, a citizen of the United States, with little intellectual capacity to enable him to solve the many problems of such an union of nations, with many different ideologies. By an arrangement of coincidences, I became his private secretary and for four years wrote all his public addresses. I hoped that if the President appeared to be a very wise man and a great leader the Earth people would stop quarreling and devote their entire united energy towards creating a finer and more cultured existence. The result of my work was, to some extent, satisfactory. Earth continued to remain united as a political entity. But little has been accomplished to improve their standards of social justice. It would be best to have my fellow adventurer, Dach Irel, known on Earth as Max Hueffler, explain the reasons for this remarkable retardation in cultural achievements."

"My first work of any importance was for James Madison, an official known as the Secretary of State," Dach Irel said. "I advised him concerning peace treaties and the adjustment of Earth trade. A new constitution had to be written for the new Union and adopted by all the member nations. This new political organization was called One Earth. An intensive program was started to repair the ravages of the last war; an attempt had to be made to educate the so-called 'backward nations' so they could participate in the new government. Unfortunately, however, almost all these programs were under the control of the politicians."

"What is the meaning of that word?" asked Net Org. "Have we anything similar on the Star?"

"Fortunately not. The United States was founded on the principle that 'all men are created free and equal,' but the word, 'equal' ceases to apply immediately after birth. Because biological reproduction is identical, there had to be an equality in the uterus but after the individual was born there existed a sharp division between the rich and poor, educated and illiterate, employer and employee, and even among the races. All the governments were controlled by men who were able to impose their will on the people and pass laws preserving this inequality. These lawmakers were called poli-

ticians. Naturally, the submerged masses were always discontented and strove to advance upward; but when, in their turn the advocates of the poor became powerful they immediately changed from benevolent leaders to unscrupulous politicians more concerned with retaining political prestige than working for the welfare of their followers.

"However, the social condition of the masses seems to be slowly improving. Those who work toil fewer hours and receive far more pay. The laboring man eats better than formerly, wears good clothes, lives in well-built houses, owns the so-called luxuries such as automobiles and television sets; he has free medical care, is insured against unemployment, and receives old age benefits. He is told that he is cared for from the cradle to the grave. But he pays for all this in taxes. With increased income, there is a corresponding rise in the cost of all the components necessary for existence and the politicians continue to increase the tax rate. Thus at year's end the worker is no better off than the laborers of previous years were. The world debt has assumed astronomical proportions; there is not nearly enough actual money to keep the new government from bankruptcy.

"In order for you to understand this, I must explain that the medium of exchange is known as the dollar. This is supposed to be worth one hundred cents in gold and is issued as pieces of printed paper, the value of which is guaranteed and supported by a gold reserve kept in a cave in North America. But there is not enough gold to redeem the paper money; so the actual purchasing value of the dollar has been finally reduced to twenty cents. Thus the working man who receives a dollar for his labor can buy only twenty cents worth of real food or clothing with it. No matter how much money he makes each week he is still unable to support himself and pay taxes."

"All this seems strange to me," said Elto Rean. "It is so different from conditions on the Star. You speak of wages and money and taxes. Do you mean that everyone had to buy the necessities of life from some one else? And why was the government so heavily in debt when they took so much of the income in what you term taxes?"

"That is hard to explain; but one thing is certain. The politicians were to blame. One group were called economists. They sat in their offices and thought out new and novel ways to tax and spend. Finally there were ten million politicians and economists who controlled the fiscal life of the world; each of them became

rich, while the common people became poorer. The value of the paper dollar continued to shrink and nobody tried to be thrifty. They spent their income as fast as possible in order to secure something tangible for their money before it became absolutely worthless. I considered this scarcity of gold and thought that if Earth had enough to restore the dollar to its former value of one hundred cents there would be an improvement in the lives of the workers. My co-investigator, Kra Onain, known on Earth as Victor Koch, will report what happened when he made an effort to save Earth from financial collapse."

"I was not on Earth long," began Kra Onain, "before I found that the Earth men had several dominant urges. One was to satisfy their curiosity, another to explore their planet, and the third to fight. As we know, the satisfaction of curiosity is a worthy ideation provided it leads to helpful discovery. Our very pleasant life on the Star is the result of similar investigations by our ancestors. But the Earth people spend years in studying some problem which, when solved, is of no use to their fellow men. For example, on Earth there is an insect called the fly. It is a pest and often carries disease. One man studied this insect for thirty years and finally wrote a thousand page treatise which he titled *Love Life of the Fly*. I read this very carefully and was surprised when I found that it was exclusively a study of the insect's biological urge, without a single mention of methods of eradication or prevention of the pest's ability to spread disease.

"The Earth people are insatiable explorers. They descend into every known cave, climb all the mountains, sail the vast seas, and, after charting the ocean floor, are endeavoring to dominate the skies. No matter where they are they want to go somewhere else. Many, who know their next door neighbor by name only, go thousands of miles to become intimate with natives of distant regions. This desire to travel is literally an obsession.

"For many centuries they fought. I made a very thorough study of these wars and failed to find any logical reason for any of them except the satisfaction derived from conquering, pillaging, and the imposition of power. Now Earth is at peace. But the lust to fight is still strong in their hearts and their preparation for another war is the main reason for our sudden return to the Star. I will come back to this matter later.

"As a young man I helped explore the moon. We found large amounts of gold there and brought some to the Star to make jew-

elry. I thought that if this gold could be taken to Earth it would enable them to secure financial stability. So I helped them build space ships, went with them on their first moon trip, and showed them the location of the gold. For a while it seemed a worthwhile project. They were soon making regular trips and brought back so much gold that they were able to restore the value of one hundred cents to their paper dollar. Finally they had more gold than they knew what to do with; so they built a tall column of the metal for each of their seven largest cities. Each column was surmounted with a globe to symbolize the new nation called One Earth. Previously at the entrance to their most important city, called New York, they had a tall statue of a woman called the Statue of Liberty. Her broken shackles symbolized the release of men from slavery and her torch was supposed to enlighten the Earth. They replaced this beautiful symbol with one of the gold columns. The politicians told the workers that the abundance of gold would solve all their problems and that the symbol of liberty was no longer necessary.

"Now everyone had work, for which he received large wages. But the margin between income and expense, both personal and governmental, continued to shrink and there was much discontent. The politicians realized that unless something was done to divert the workers' attention they would start a revolution; so, to give them something exciting and novel to think about, they determined to explore the Star."

"Why?" asked Net Org. "They could only guess there was life on the Star. I can't understand why they should want to come here."

"I admit their reasoning seems obscure," Kra Onain replied, "but I have told you of their three dominant urges—to solve problems, explore, and fight. A trip to the Star would satisfy all three of these obsessions. When I left, they were building a number of space planes. These they will fill with politicians and hydrogen bombs. When they arrive at the Star they will offer our people a place in their Union of States. If we accept, they will call the new nation One Universe instead of One Earth. They will consider our culture inferior to theirs and attempt to enforce their program of life on us. They will casually appropriate our most valuable possessions for which they will give us worthless trinkets. We will become their economic slaves. If we refuse their suggestions they will destroy the Star with their hydrogen bombs. This is a problem the Council will have to study and solve. Within a year we must choose between slavery or destruction."

"We have never had a war!" exclaimed Elto Rean. "Until you made this report we barely knew the meaning of the word. Have you any suggestions as to what we should do?"

"Yes. I think we should follow Earth's pattern of behavior and strike first. We are their intellectual superiors in every way except the ability to fight. Deliberate destruction of life has always been obnoxious to us; but we are faced with the very simple question: shall we kill or be killed? Of course, we have been away a number of years, but when we went to Earth, the Star had no army, no instruments of warfare, no adequate method of either defending ourselves or destroying an enemy."

"I have the answer," declared Har Onwa. "We can use our Euthanasia gas. We have always considered it a pleasant method of terminating the existence of those who have no further incentive to live. One part of gas to ten million parts of air not only kills painlessly but so completely destroys the body that there remains simply a small handful of white ash. We can make a very large amount, solidify it into a thick liquid by pressure. Then we can scatter it on the Earth. Even in its gaseous form it is heavier than air and will drop rapidly. Within twenty-four hours all the Earth people will be destroyed. For some unknown reason it doesn't affect other forms of life, so the animals, birds, and fish will not be harmed. The gas becomes inert in a day but by that time it will have done its work. We will need several hundred space planes for this mission."

"That is a terrible program," Elto Rean protested. "So far the Earth people have not harmed us; they are simply preparing to. While it is true that they are planning to conquer the Star, we are not certain they can make the flight. There is no doubt they are a low form of life, definitely stupid in many ways, but, after all, there is the possibility that some time they may increase their intelligence sufficiently to live happily. Is there no alternative to such complete devastation? If the Council would go there and talk to their rulers, would it not be possible to show them that our way of life is superior and persuade them to adopt it?"

"That would be worse than useless," replied Kra Onain. "For centuries each of the many nations on Earth has considered itself superior to its neighbors. Even now, with One Earth government, some of its members hold quite frankly that they are more intelligent than others. I have talked to their politicians, economists, and sociologists, and they are all convinced that if there is life on other

planets it must be decidedly inferior in every way to Earth's culture. I have read many of their novels written by so-called science-fictionists and their highly imaginative descriptions of people and life on other planets is supremely grotesque. Six-legged people covered with red hair who procreate by laying eggs! In their novels the adventurers from Earth never have any trouble conquering these stellar monstrosities. The Earth rulers would sneer at our ambassadors. There is no way to help a person or a nation if they are either unaware of any need of assistance or are overconfident in their own power. I believe that the only program possible for our own preservation is Earth's complete destruction.

"I can furnish you an Earth map showing the important cities, manufacturing centers, and hte air field in the Sahara Desert where they are concentrating their planes for the attack on the Star. While the entire surface of Earth should be covered with the gas a heavy concentration should be dropped on these particular places," Kra Onain continued. "We have no time to lose. Their preparations were well advanced when I left; in fact they had selected the day when their planes would leave for the Star. Using their usual alphabetical nomenclature they have called this S. C. D. or Star Conquest Day. It is, according to their time, the fifteenth of December."

"Why did they select that date?" asked Net Org.

"Their choice was very interesting. To me it is paradoxical. They have calculated that it will take ten days of space flight to reach the Star. So they plan to arrive here on the twenty-fifth of December, which is a very important religious holiday for them. It is said that centuries ago a great man was born on that date. He proclaimed, 'Peace on Earth, good will towards men.' They say that if they arrive on his birthday and give us that message it will prove their peaceful intentions and we should be more willing to surrender to them."

"But from what you have told us, it seems that they have never followed this philosopher's teachings," Elto Rean remarked. "Why should they worship him but ignore his advice and continue fighting and killing?"

"That is a habit the Earth men have," explained Kra Onain. "They have made a fetish of collecting and preserving the sayings and fundamental truths of their few wise men. They frequently quote these at great length when it suits the occasion and elaborate on the advisability of incorporating these lofty ideals into their daily life. There are some Earth men who devote their lives to shout-

ing these philosophies and teachings. They can be divided into political orators, reformers, and religious teachers. But while they talk a great deal about a better way of life, they do little or nothing to accomplish it.

"For example: One of the admonitions of this particular philosopher whose birthday is Star Conquest Day was, 'Thou shalt not kill!' Yet all the Earth people have indulged in wanton killing, both as nations and individuals. In contrast, there hasn't been one such killing on the Star for so many centuries that the memory of the last one has been so dimmed as to become almost a myth. The collected teachings of this philosopher, as I understand them, are epitomized in our life on the Star; for we do not kill or steal from one another. Envy, malice, and all the evils known on Earth are unfamiliar words and emotions to us."

"I believe that we shall have to destroy them," Elto Rean said with a tone of finality. "Blot them out—but not completely. We should save a small fragment to build a new race which may profit from past mistakes. I think that it would be possible for Kra Onain to return to Earth and persuade a very small group of the very best citizens to somehow protect themselves against the gas. If he is successful, they can be saved. They may advance in culture so that in the centuries to come they will be good neighbors."

"I think I can accomplish this mission," Onain replied. "I don't know just how I'll go about it, but it's worth trying. While on Earth I met a few very charming, worthwhile people who were so different from the majority that they were looked on as queer anti-social beings. I'll start at once. When will you drop the gas?"

"If they are leaving Earth on the fifteenth of December it would be best to select the first of that month, starting at midnight. Of course they may have changed the date of departure. If you find this true you must return at once and inform us so our efforts to block them will be in time. Have you any idea where you will locate your group of survivors?"

"Probably somewhere in the desert region of western North America. Since the Earth is constantly rotating, twelve midnight means something different in every part of the Earth. They regulate their time from London. Better start at midnight there. Then wherever my colony is I will be able to adjust to the London time."

Upon hearing of Earth's plans, the Star people at once prepared to build a fleet of small space planes and compound and compress

the necessary amount of lethal gas. The three hundred planes were small but each capable of carrying a pilot, co-pilot, and six large cylinders of the highly compressed Euthanasia gas. The first of December had been selected as the date for the Earth-bound expedition. As the silver-hued planes went into formation, there was no sound from thousands of the Star people assembled to watch the unique fleet setting out to save their nation. For the first time in the history of the Star, deliberately planned destructive measures were being executed. There was no sense of exaltation, no special pride of achievement, no real lust for conquest, but rather a conviction that there was no other solution to a serious problem and a sincere hope that their effort to remain free would be successful.

When the planes arrived at the designated point in the stratosphere over the Earth, they separated, forming a wide ring around the enemy planet. Each pilot had been provided with a map and specific instructions concerning his particular target with the exact time for dropping his cargo of gas. The time element was very important as, irrespective of target location, all the gas had to be liberated at night.

Late on the evening of the ninth of December the planes over London and western Europe dropped slowly until they were about three hundred feet above Earth's surface. At twelve o'clock midnight, Greenwich time, they simultaneously liberated the Euthanasia gas. With exact precision the other planes encircling the Earth east and west of London did the same. Within the twelve hour differential the surface of the Earth was thoroughly sprayed. It was possible that many small islands in the various oceans were not covered and that winds blew the gas from some areas to increase its density in others.

At the end of two days all except twenty of the planes returned to the Star. Those remaining waited another two days and then landed on Earth to verify the effects of the gas. Star men walked the streets of Washington, London, Paris, New York, and Canton. They inspected the huge air field where the fleet of space planes had been concentrated for the invasion of the Star. As far as could be determined, all human life on Earth had been destroyed.

"Apparently the gas worked perfectly," the Captain of the fleet reported to the Council. "In my opinion not more than one in a million of the Earth men remain alive; and the survivors are in isolated regions and are unimportant and harmless. All animals, birds,

fishes, and reptiles still live, but Earth man has paid the penalty for his utter stupidity and selfishness. We performed a most unpleasant duty, though vitally necessary. We inspected their air fleet in the Sahara Desert and there is every evidence they were prepared to destroy the Star. We studied their powerful hydrogen bombs and discovered the secret of their delayed-time detonating mechanisms. We started them before we left. We were fifteen miles above Earth when they exploded and our planes were badly rocked by the air waves. A very large crater was formed by the explosion and by now this must be a new inland sea.

"The attack was a complete surprise to the Earth men. Prior to the last war many countries were protected by radar stations which warned of enemy bombing attacks. Kra Onain told about them but also stated that after the last war they had been completely abandoned as being unnecessary and obsolete. There is no evidence that their intelligence department had any idea that enemy planes were only three hundred feet above the surface; no attempt was made to destroy us by anti-aircraft fire."

Elto Rean thanked him and complimented him on the efficient manner in which the mission had been completed.

"It was a sad affair," he commented to the Council, "but absolutely necessary. Self preservation is an important law of all life. There is nothing to do now," he continued, "except to wait for the return of Kra Onain with his report of the success or failure of his experiment. If he was able to save a small group of Earth people, only time will tell whether they are able to profit from prior errors and build a finer race. We have saved the Star and in so doing have received a mental stimulus which may rejuvenate our people and prevent their spiritual decay. I find that many of our men are no longer satisfied with being only dreamers and have begun to really think, to solve problems. I thought we had none, but our scientists are now asking questions which other groups of intellectuals are trying to answer. That is a very healthy condition. However, I shall always regret the need for the destruction of the Earth race. Perhaps we should have given them a chance. Even though we knew in advance that it was hopeless, we might have made an effort to save them."

Four months later Kra Onain sat at the stone table with the three old men of the Council and his two co-workers who had been with him in the investigation of Earth.

"To immediately satisfy your curiosity," he began, "I am happy to report that my mission was successful. When I arrived on Earth, I promptly made an inspection of the progress of the space-plane construction program. I was surprised at the rapidity with which they had constructed planes far larger than those used on the moon trips. They had thirty space-ships completed and seemed confident of leaving on Star Conquest Day as planned. It was not difficult to obtain accurate information because daily reports of progress were broadcast from the Sahara air field. Politicians had been selected to make the trip, but each plane was equipped with hydrogen bombs to use if the politician's propaganda failed to impress us. Official photographers and reporters were assigned to cover fully all the details of the invasion.

"The Government Publication Bureau had two manuscripts all prepared for printing. One was called *One Universe* and the other *Earth Victorious*. Thus no matter what happened they could rush into print an authentic account of the expedition and its results.

"The War Department of the Government was so confident of success and so positive that no nation living on a distant planet could possibly invade the Earth that they had completely abandoned all defensive measures. Previously they had units devoted to protection against atomic, gas, or germ warfare but these had been abolished; they were considered obsolete. I soon realized that it would be useless to make any attempt to have gas defense restored; had I made any attempt to work through a government agency I would have been laughed at. Besides, I had to conceal my identity. If they discovered that I was the scientist who aided in the exploration of the moon I would have been imprisoned until I explained where I had been and why I had so suddenly disappeared.

"There was no time to waste; so I decided to locate a very unusual young man with whom I had been friendly when I previously visited the Earth. Because Peter Doaks was so different from the average Earth man, he was considered a crank. He was most thoroughly dissatisfied with the behavior of his fellow men and constantly irritated by what he called 'their stupid behavior.'

"I finally found him in a desolate region of Texas, a part of the former United States. He had bought a large tract of semi-arid land and lived isolated from the rest of Earth. He read no newspapers and never listened to the radio. Strangely enough, he and his little family were very happy. His wife had adjusted herself to the primi-

tive life and the two children were intelligent and as fine youngsters as any parents could desire.

"My sudden and unannounced arrival was a complete surprise to Doaks. He remembered meeting me in Washington but could not understand why I had located him and come to visit him. During the first few days I was with him I became more convinced than ever that he was the man I was looking for.

"I decided that honesty was the best policy so determined to give him the actual reason for my visit. I sat with him and his wife one beautiful evening when the sky was cloudless. Far in the dark blue I could see the Star. I pointed it out to them, told them of the visit to Earth of the three investigators, their report to the Council, and the decision to destroy the Earth race. Then I explained the decision to save a fragment of his people, if that was possible.

"To my astonishment he believed everything I said. After I finished he sat thinking about our plan.

" 'I believe I can find some young men, all married with children,' he said at last. 'Those I have in mind share in my anti-social ideas. If I can persuade them to join us, form a colony here in the Big Bend, will you help us survive?'

"I am preparing a detailed account of just who formed this group of survivors. For the present it will be sufficient to say that a physician, a farmer, a historian, a scientist, a musician, and a big game hunter joined Doaks. They were all young men, married, with children. It took two months to contact them, explain the emergency, and persuade them to abandon their homes and join us in the Big Bend Colony.

"During this time I had considered various methods of gas protection. We could have bought masks from any of the Army and Navy stores which were selling the now unnecessary and worthless war supplies. But I wasn't certain they would protect against the Euthanasia gas and there was no way to test their efficiency. Besides, they would have to be worn for at least forty-eight hours, which might have been possible for the adults but not for the children and few babies.

"I finally decided to have a large house built of heavy adobe blocks, feeling certain the thick walls would be gas-proof. Doaks engaged some Mexicans to do the adobe and construction work while we worked on the interior. Two of the men went to a nearby city and purchased a number of tanks of oxygen. When the house

was finished, it seemed rather small for the thirty-three people of the colony but, after all, it would only have to be occupied for two days and nights. It didn't take long to furnish it with food, water, and bedding.

"On the morning of the tenth of December we entered the house and put the finishing touches on by hermetically sealing the door. Now there was nothing to do except to turn on the oxygen and wait. That was the hardest part for all of us. At the end of forty-eight hours I felt that the danger was past and we opened the door. As far as we could tell, nothing important had happened to the Earth.

"The next day Doaks and I rode to the nearest town. It was as quiet as the desert. A few dogs ran around the streets of Marathon. A long freight train stood on a side track. We entered several houses but found no one—just little piles of white ashes in crumpled garments.

"Marathon had a small airfield. A professional aviator kept a small plane there which he used to hunt eagles and mountain lions for the ranchers. We took the plane and flew to San Antonio, one of the nearest cities. It was quiet there. I was satisfied the gas had done its work. Returning to the colony, I held a final conference with the seven men and their wives. While they were stunned by the thought that they were perhaps the sole survivors on Earth, they were unafraid of the future and its problems. I believe they will do very well. I took the liberty of promising them a yearly visit. Of course, in a few hundred years, their successors may revert to some of Earth's primitive ideologies, but it is to be hoped that their new cultural pattern will be free of all such errors."

"What happened to the politicians?" asked Net Org.

"I visited Washington so I could determine that matter and give you an exact answer. It was a large city filled with over two million Government officials and workers. When I last visited it, the streets were jammed with atom-cars; but this time there was no sign of life. The politicians, economists, army officers, found, too late, that they could die just like the newsboys and bootblacks. I believe the same conditions existed in all the gigantic Earth cities, though I visited only New York, London, and Paris."

"Did you inspect that air field in the Sahara?" asked Har Onwa.

"Yes. I was curious to learn what happened there."

"We should have told you that we detonated all the hydrogen

bombs before the Captain of our planes left the Earth," explained Elto Rean.

"I judged that something like that happened. The desert was a vast inland sea. The force of the explosion must have been terrific. It not only formed a crater three hundred miles in diameter which was immediately filled by the waters of the Mediterranean Sea but demolished all cities within a seven-hundred-mile area. The Earth people had prepared ninety hydrogen bombs. You can only imagine what would have happened to the Star had they been dropped here."

"What was your final advice to the Colony?" asked Elto Rean.

"They had everything they needed in the way of clothing, food, fuel, and machinery to make themselves comfortable; I tried to impress on them only that brotherhood should be their first objective toward making a better Earth in the future. Just before I left, they renamed their settlement Brotherhood."

# *Exploration*

"WITHOUT PUBLIC DEBATE, indeed with almost no public awareness of the problem, a big and awesome decision, once postponed, was soon to be made.

"U. S. scientists believed that they could manufacture a hydrogen bomb, an atomic bomb summoning up the same sort of fierce energy that gives the sun its heat. All that was needed was a way of forcing performance of a well-known scientific fact: if hydrogen atoms are converted into helium atoms, massive amounts of energy are released. The H-bomb could be at least 1,000 times as powerful as the atomic bombs dropped on Japan, might well use the present A-bombs as mere matches to start the hydrogen on its way. It would . . . be capable of devastating perhaps 100 square miles with one blast.

"The principle had been studied for years . . ."—*Time,* January 16, 1950.

# The Man from Outside

*by Jack Williamson*

THE QUARANTINE station lay hidden in a crater on the face of the moon that Earth never sees. Dummy craterlets of inflated fabric disguised the small field where the yearly supply flier landed, and all the other installations were sunk deep inside a lonely peak within the dead ring-mountain.

The lieutenant saw the explosion on Earth, from the lookout center there. He stood beneath a thousand feet of lunar rock, but that savage burst of gamma radiation had triggered relays in the orbital spy cells, and they transmitted a dozen views of that fateful flash and the ominous cloud that mushroomed and faded above it.

He burst into the commander's office, breathless with the news.

"An atomic explosion, sir!" he gasped. "On Sol III—in the southwestern desert of North America."

The commander was a cold, unbending man, a competent officer but hard to know. The psionic translators rendered his name as Bowman, but its original clicking consonants were unpronounceable. Though he was only eighty, his straight black hair was already

silvered at the temples and his thin dark face was deeply lined as if with age. He looked up at the younger officer with an air of absent inquiry.

"So it's you, Lieutenant?" His quiet voice became mildly reproving. "Weren't you taught how to approach your commanding officer?"

The lieutenant turned first white and then pink with fury. He was too new in the service to recognize the problems of discipline at this remote outpost, thirty light-years and more from regional headquarters. He had already come to regard this silent, icy man with a secret antagonism, which exploded in him now.

"I was taught—sir." He saluted stiffly, but his incredulous resentment echoed in his voice. "Do you want me to ring and wait for your official permission to tell you that I've seen an atomic blast?"

"I do."

"A uranium fission reaction!" A bitter amazement shook him. "Don't you know what that means, sir? It means that these people have reached a very dangerous crisis in their development—or else that somebody has given them dangerous illicit information from outside."

"Leave the room." The commander's voice had lifted very slightly. "Come back properly."

The lieutenant shook his head unbelievingly, and stumbled back into the corridor. He paused a moment there, struggling to control his anger. He had honestly tried to understand the commander, but they came from different worlds. Although they could talk easily enough, with the tiny psionic translators they wore like hearing aids, Bowman's hawknosed, black-pigmented face seemed as forbiddingly foreign as his life was strange.

The commander lived inside himself. His mental horizons were apparently limited to the service directives for the operation of a Class F outstation. He was obeyed and even respected, but he had no friends. While the younger officers fretted through their dull tours of duty and went eagerly back to civilization, he had stayed on here at his own request.

The lieutenant could not understand why, but he dismissed that private mystery with a shrug of puzzled annoyance. All that mattered now was the life or the death of the new civilization coming to birth on this planet they watched. He tried to smooth his face, and set his finger on the announcer button.

The tiny convex screen beside the door instantly showed the com-

mander's impatient face, and his voice snapped from the speaker.

"Yes?"

"Lieutenant Woods, asking permission to report, sir," he said huskily. "With reference to the atomic explosion observed on Sol III."

"Come in, Lieutenant."

He walked inside, came to attention, and saluted. The commander returned the salute with a mechanical correctness, but left him at attention. He stood painfully erect, hating the black tyrant at the desk.

"So the first fission bomb has exploded here?" The commander shrugged. "What are we to do about it?"

The lieutenant caught his breath unbelievingly.

"I was taught, sir, that the liberation of atomic energy is one of the most dangerous turning points in the history of any planet."

"But Sol III is not an important planet," the commander said coldly. "The natural resources are worthless. The people are nondescript savages, remarkable for nothing except the variety and power of the malignant viruses and germs they allow to ravage them."

"Any planet is important to me." Resentment quickened the lieutenant's voice. "Expecially this one, because our own ancestors are supposed to have taken to space from here, fifteen thousand years ago."

"I doubt that theory." The commander straightened impatiently. "Even if the Atlantean culture did arise here, these squalid savages have left no trace of it. I see no reason for much concern over anything they do."

The lieutenant tried to quiet his angry breathing.

"I'm new here," he answered quietly, "but I had supposed it would be our duty to investigate that explosion promptly and then take the necessary steps to protect these people."

"What sort of steps?"

"In cases where dangerous clandestine technological information has been received from outside," he said carefully, "I believe the Covenants provide that it should be discredited or suppressed."

"It's true that an outsider has recently been operating on this planet." The commander's flat dry voice showed no feeling. "In fact, I have spent several years on the planet myself, assigned to the case as an undercover agent. You'll find my reports in our files. Unfortunately, the outsider escaped."

"To reveal the secret of nuclear fission?"

"You are still at attention." The commander's lean jaws tightened in reproof. "The reaction you saw is the logical climax of some centuries of independent progress. The energy equation was published here forty years ago, by a mathematician named Einstein. I investigated him. He is a native, and he derived the equation for himself."

The lieutenant shifted his weight uncomfortably and straightened again. He knew he ought to keep silent, but he couldn't help blurting impulsively:

"Can't we do something, anyhow—sir? Even though these people did stumble on the secret by themselves, can't we help them learn to use it?"

"We can't." The commander's black face stiffened. "You ought to know that."

"Why not?" He frowned with a troubled astonishment. "Isn't Sol III our responsibility, sir? Now that these people have come to the time when atomic energy will either lift them out of barbarism or else destroy all they've accomplished—can't we help them at all?"

"We can't," the commander repeated. "I have been watching the struggles and the blunders of these people longer than you have lived. I try to remember that what they do is none of my business."

"Isn't it?"

The commander studied him thoughtfully. "Why do you think we are stationed here?"

"Fundamentally, to assist these people in their climb toward civilization."

"Fundamentally, you are wrong." The commander's voice turned brittle with impatience. "The Quarantine Service exists to enforce the Covenants of Non-Contact. The Covenants were set up to prevent the damaging collisions of cultures at incompatible levels of social evolution. Our duty here is to ward off all cultural contact with the outside. That is all. Whether these people use atomic energy to reach the stars or to commit race suicide, we can't interfere. Understand?"

"I suppose so."

Yet the lieutenant held on to a private reservation, which the commander must have seen.

"I've been watching you, Woods." The probing eyes of Bowman were cold and keen as a scalpel. "Though you came here with an excellent record, your attitude is disappointing."

Pale with resentment, the lieutenant held himself erect and silent.

"We're all uprooted people, in the service," the austere officer continued. "Each change of post carries us a dozen or a hundred years ahead in relative time, and there is no turning back. Every one of us has given up his home and his friends and his family. Though the service offers compensations, they must be earned."

The lieutenant stood listening with a frozen impatience. He had left his own native place and time with a painful sense of loss. Vega IV had been a good planet, a hundred years ago. His father had begged him to take over the family's prosperous shipping firm. There had been a girl who begged him to stay. Against all that, there had been only his imperative desire to join the great organization that guarded civilization. He had volunteered—and he thought of that hard decision with a pang of cruel disillusion now.

"Do you want to stay in the service?"

Flinching from the harshness of that question, he said that he did.

"Then you had better watch yourself." The dark eyes searched him dispassionately. "Have you ever known a man broken from the service?"

"I don't think so."

"I have," the commander said. "They are pathetic figures. We still have our demanding duty and our own small world of men and women dedicated to it. If you lose those, you've nothing left. The service will pay your way back to the place where you joined, but you are still lost in time. There are no fliers to the past."

"I understand," the lieutenant answered.

Yet he had not entered the service for his own benefit, and he left the commander's office still determined to investigate the atomic explosion he had seen. He was assigned to routine clerical work, but he began to spend his spare time searching the files of the case the commander had mentioned.

Thirty years ago, those records showed, a patrol flier commanded by Bowman had found a shipment of cultured viruses cached on Pluto. The malignant micro-organisms had been gathered on Earth, obviously for military use on some planet whose people were not immune to them.

Such a bold violation of the Covenants demanded vigorous action. The web of spy cells was widened. Another patrol flier was sent out to intercept any outlaw craft approaching the cache on Pluto. Bow-

man, then a lieutenant, volunteered for the dangerous undercover mission to trap the outsider still presumably operating on Earth.

That effort had run through twenty years, but no unidentified craft had ever disturbed the spy cells. The trap on Pluto had not been sprung. Bowman and the other agents sent to Earth had brought back voluminous reports but no outsider.

The lieutenant neglected his meals and his sleep for nearly two years, exploring those reports. He finally found the clues he wanted, and took them at once to the commander's office.

"Lieutenant Woods, asking permission to report, sir." This time he was carefully correct. "I have found promising leads in the outsider case that don't seem to have been followed up. I request permission to carry my own investigation to Earth, as an undercover agent."

"That matter was dropped ten years ago." The commander scowled at him with an annoyed impatience. "Where did you find these new clues?"

"In the files, sir."

The black man's annoyance changed to a guarded watchfulness. "Where in the files?"

"In your own reports, among others." The lieutenant's knees and voice were trembling, but he went on stubbornly. "Chiefly in those from the Soviet tribe." He caught his breath. "I believe an outsider has been advising the tribal council called the Politburo, probably as a member of it."

"Impossible!" The commander seemed almost angry. "Where is any evidence of that?"

"It appears first in the recorded psionic translations of the unpublished writings of the native revolutionist named Lenin."

The commander's dark face thinned and hardened. "Do you think Lenin was an outsider?"

"I think he was taught by one."

"But he wasn't even a scientist."

"Not a physicist," the lieutenant said. "He didn't invent the fission bomb. But he did introduce methods of violent revolution unknown on Earth before. In some of his private writings about the science of revolution, I found direct quotations from the interstellar histories I studied at the service academy."

"History repeats itself." The black man shrugged impatiently. "A million decaying empires have been toppled by a million revolution-

ists. Is it very remarkable that a few of them happened to develop similar methods?"

"But there are other clues," the lieutenant insisted. "Such as the devious shifts of tribal economic and military policy. One by one, they mean nothing. Taken all together, they do show outside influence."

"I doubt it." The commander's voice had lifted harshly. "That outsider must have stopped here to arm himself with an illegal biological weapon, but I can't believe he stayed long. The planet is too backward and filthy to be a very desirable hide-out."

"An accident, perhaps," the lieutenant suggested. "He must have intended to rejoin his confederates on Pluto, but I suppose our search scared them off. He was left marooned, and he had to make the best of it."

The commander shook his head, unconvinced.

"Anyhow," the lieutenant persisted, "I believe these leads are worth investigating. May I have the assignment, sir?"

The commander was evasive. He wanted time to review the files himself. He challenged minor points. He proposed to send a more experienced agent. He even hinted at last that he could consider recommending the lieutenant for promotion and transfer to a more desirable station.

Outraged, the lieutenant refused to be bribed. Each new delay heightened his suspicion that Bowman had stayed on here to keep something covered up. He was careful to make no reckless charges, but he renewed his pleas until finally the black man yielded.

"All right, Woods," the commander said. "I'll send you down to Sol III." Bleakly, he added, "If you expect to stay in the service, you had better bring back your elusive outsider."

Two years later, the lietuenant stood again at attention in Bowman's plain, gray-walled office. He had spent that interval on Earth. A neutrionic flier had landed him by night on the frozen tundra of northern Asia, clothed and equipped for his mission. He had carried a portable psionic telephone with which to call the station when he was ready to be picked up, but he had never called. Two more agents had been landed at last, to track him down and bring him back.

"Well, Lietuenant?" Bowman looked him up and down with black, sardonic eyes. "Did you find the outsider?"

"I'm not certain."

The lieutenant was thinner and visibly older. His eyes were red-rimmed with strain and restless with a puzzled unease. He held himself erect, but his flushed skin and his hurried breathing showed his agitation.

"But I did find something else," he added quickly. "Something more important now. A danger to the birth of freedom on this planet."

"Due to outside influence?"

"Indirectly, yes."

"What is it?"

"An accidental atomic explosion, about to happen."

"We've observed quite a number of fission explosions during the past four years," the commander said. "None of them has been unduly disastrous—or set off by outsiders, either."

"But this one is different," the lieutenant insisted. "I'm afraid it will extinguish this young civilization—unless you let me go back and prevent it."

"You have been on Sol III too long already." Disapproval hardened the commander's dark face. "You had better give me an excellent excuse for your long absence, unless you want to be charged with desertion."

"But I didn't desert!" The lieutenant wet his lips nervously. "I simply found such a desperate situation that I couldn't leave, even to report." His voice shook urgently. "You must let me go back, sir —in time to stop that tragic accident!"

"I'm afraid you've forgotten the Covenants." The commander scowled at him severely. "But let's hear about this coming explosion."

"I landed in Soviet territory," he began. "I was expecting to find the outsider hiding among the rulers of that tribe, but I failed."

He saw the commander's satisfaction, and lifted his head defiantly.

"I did penetrate the walled group of council huts called the Kremlin," he went on quickly. "I found enough evidence of outside influence—even in the methods the present chief, Stalin, is using to crush the last spark of freedom from his own tribe.

"The guilty outsider was already gone, but I soon found clues to make me think he had left the Politburo to lead a resistance group. This small group is the only active opposition left. It operates deep inside the continent, where the police aren't quite so alert as at the

frontiers. It is organized around a few nuclear physicists, who are working furiously to build a hydrogen bomb—I thought one of them would surely be my man."

"But he wasn't." The commander's lips tightened oddly. "How did you find this underground group?"

"The first clues were the secret police reports of shortages at the plants where Stalin is trying to make fusion bombs—with processes his spies have stolen—for a surprise attack on the American tribe. With our methods, I was able to find the missing items and the men using them—but not the outsider.

"All the plotters are natives—most of them Communist party members, Red Army officers, and factory managers. They are furnishing the supplies. The physicists have set up a number of scattered, hidden laboratories. They are gathered now in a cave in the mountains of Central Asia, ready to assemble their first hydrogen bomb.

"They plan to destroy the Kremlin with it. They hope to kill Stalin, the entire membership of the Politburo, and other key leaders. After the explosion, they intend to lead a general rebellion."

Frowning, the commander shook his head. "I see no reason to regret the destruction of the Kremlin."

"It is in no danger," the lieutenant said grimly. "I was able to enter that cave and examine the incomplete fusion bomb. Its builders are natives, and they have made a fatal error. Unless their mistake is corrected, the bomb is certain to explode prematurely. It will wipe out the leadership of the resistance, and leave Stalin free to smash the American tribe with his own atomic attack."

"Perhaps." The commander shrugged impatiently. "But what can we do about it?"

"We can supply just one bit of essential information." The lieutenant's voice lifted resolutely. "I was preparing to do that—establishing myself as another nuclear physicist, a refugee of the German tribe—when your men arrested me."

"Then they were just in time." The commander nodded grimly. "These people invented their own atomic bombs, and we've no right to interfere. As for you, I'm afraid the charges against you must include attempted contravention of the Covenants."

"But we must interfere," the lieutenant insisted huskily. "Even though the atomic bomb may be a native product, the Soviet methods for its use are partly borrowed from outside. Isn't that excuse enough?"

"It isn't. One crime does not excuse another."

"But I'm afraid the American tribe can't survive an atomic attack conducted by outside methods."

"Whatever happens, we can't meddle again." The commander's black head thrust forward bleakly. "These people must stand or fall by their own efforts alone."

"They'll fall!" Forgetting that he was at attention, the lieutenant stepped anxiously forward. "Unless—"

"Attention!" The commander peered at him sternly. "You are relieved of all duty at Sol Station, effective now. You will remain in your quarters, under arrest, until the next supply ship calls. You will return aboard it to Denebola Base, to receive whatever discipline your dangerous misconduct requires."

Trembling, the lieutenant gulped and shook his head protestingly.

"In view of your youth and your intentions," the commander continued, "I am going to recommend clemency. I hope your punishment will not be unduly severe. In any case, these people will have time to solve their atomic problems without your interference. Thirty-two years of relative time will pass before you dock. In that time, these people will either learn to live with atomic energy or else die by it."

"But, sir—" he muttered hoarsely. "Please—"

"That is all," the black man rapped. "Report to your quarters."

He half turned and swung back again. His fists had clenched unconsciously. He wet his pale lips and caught his breath to speak.

"Silence!" the commander shouted. "Any further insubordination will prejudice my recommendation for clemency. You had better go quietly."

The lieutenant stood peering at the gaunt man, as if he hadn't heard. His thin hands opened and shook and knotted again. Sweat broke out on his face. For a moment he was about to obey, but abrupt defiance checked him.

"I'm not going yet," he whispered breathlessly, "because we've something else to talk about." He saw the black hand sliding toward a button on the desk. "Don't call anybody—unless you want the whole service to know you are the outsider!"

"I? The outsider?" The commander's voice rose angrily. "You can't frame me."

Yet his face had turned a sickly gray, and his thin hand drew back shaking before he had touched the button.

"I don't need to frame you." The lieutenant stood watching his symptoms of collapse with an uneasy elation. "I've facts to show that you began meddling illegally with the internal affairs of this planet nearly fifty years ago."

"What facts?" he gasped faintly.

"The fact that no arrest was ever made." The lieutenant stepped warily toward him. "Although that search would certainly have caught any outsider, except one of us.

"The fact that you were commanding the two-man patrol flier that discovered the cache of malignant viruses on Pluto—where you yourself had left them.

"The fact that you had already done undercover work on Sol III at that time—and no doubt collected the viruses there.

"The fact that you volunteered very promptly for numerous undercover missions to Sol III. You must have been the outside member of the Politburo, at the very time you were pretending to hunt yourself!

"The fact that you have stayed on at Sol Station long after you might have had some more desirable post so that you could carry on your criminal aid to the Soviet tribe, in direct violation of the Covenants."

The lieutenant paused to get his breath, grinning without mirth.

"Are those facts enough?" he rasped. "If they aren't, I've others—enough to round out the picture. But I'm willing to forget them all, even now, if you will ask for a transfer to another station—and let me prevent that explosion."

"I . . . I can't—"

The words were choked and hopeless. The commander had slumped miserably at his desk, looking suddenly feeble and tired and very old. He rubbed at his eyes in a bewildered way, and then sat fumbling nervously with the psionic telephone and the other little objects before him.

"Make up your mind." The lieutenant's voice lifted sharply. "Unless you let me go back, I'll report those facts. I believe you already know what it means, to be broken from the service and lost in time. Is that what you want?"

The black man twisted in his chair, almost as if in physical pain.

"My mind is made up." Desperation shuddered in his voice. "And you aren't going back."

His shaking hand fell to the butt of his neutrionic pistol.

The lieutenant started forward and checked himself helplessly.

Disarmed since his arrest, he stood empty-handed against that silent gun. His mind could already feel the freezing flash of it, which killed by transforming heat into impalpable neutrinos. This twisted monster, who had guided the blood-stained rulers of the Kremlin for thirty years, wouldn't hesitate at one more murder.

"I'm still your superior," the commander was rasping hoarsely. "I won't tolerate—"

An orange light halted him, exploding in the crystal dome of the psionic telephone. A tiny voice called from the instrument, urgently:

"Lookout to commander!"

"Go ahead, Lookout."

The orange signal faded, and the image of the Lookout's head appeared in the dome, doll-sized but visibly excited.

"A hydrogen fusion explosion, Commander!" his small voice cried. "It was apparently set off by a plutonium fission detonator, but the reaction was a thousand times more violent than the fission explosions we observed on Bikini."

"Where—" the lieutenant whispered huskily.

The commander echoed, "Where did it happen?"

"In Central Asia, sir. Evidently the American atomic monopoly is broken. I think these savages are going to be showing us some action!"

The commander nodded heavily, and the crystal dome went clear again.

"So this is what you've done?" In his savage anger, the lieutenant forgot the neutrionic pistol. "You wouldn't let me reveal just one fact to aid these people—but you have spent fifty years systematically corrupting and destroying them."

The commander merely shook his head, as if overwhelmed with weariness and pain. His restless hand had risen from the gun.

"That was the blast I wanted to stop," the lieutenant continued bitterly. "Now it has wiped out the last island of freedom in Soviet territory. In time, it will sweep human liberty from the planet."

He paused to shake his head, with a puzzled scorn.

"What I can't understand is why you did it," he whispered harshly. "You have sacrificed your own career to stay on at this dull little post—for what?"

The commander straightened, breathing heavily. His sick eyes looked up for an instant, and fell back to the desk. Aimlessly, his

nervous hands fumbled with the telephone. His grayish face twitched. He looked anguished and dangerous.

A new panic swept the lieutenant. He had seen the risk in his hasty accusations, but the pressure of that struggle for a planet had left him no time for caution. He was defenseless now. Watching the tortured man slowly draw the gun, he waited silently to die—and gasped with surprise when he saw the weapon pushed out toward him across the desk.

"Take it," the commander's dry voice rasped. "If you want to kill me, go ahead. It's true I've broken the Covenants. My meddling has done ghastly damage, and I'm ready enough to pay for it. For your own sake, however, I think you had better let me explain the miscalculations that made me an unwilling partner of Stalin. Perhaps I can save you the same error."

The lieutenant moved to pick up the gun but thought better of it. He straightened uneasily, frowning at the haggard man.

"Explain," he said, "if you can."

"My blunder was the same one you have been trying to make." The commander nodded with a weary regret. "I failed to understand the wisdom of the Covenants. I didn't know that people can't be helped."

"I know they can't," the lieutenant whispered harshly. "Not by Stalinism!"

"Listen to me—please!"

The commander's wounded voice was so moving that he nodded silently.

"This was my first station," the broken man began. "I came here at about your age, brimming with your own blind eagerness to help these unfortunate people climb the difficult path to civilization.

"My tragic blundering began when an archaeologist arrived here on the supply ship from Denebola with permission from headquarters to make an undercover expedition to Sol III to look for the ruins of Atlantis. He expected to find them in Central Asia.

"He had to be accompanied by an officer trained in undercover work, and I volunteered to go with him. I was already interested in these people. When our preparations were complete, we were landed one night on the steppe near the large village of Kazan.

"We established identities as explorers from the American tribe, and spent several months at the village university, looking in vain for historical records of the Atlantean culture, before we went east to the site we were to excavate.

"Altogether, we were on Sol III nearly a year. We didn't find Atlantis. If our interstellar civilization sprang from Sol III at all, I know it wasn't born in the miserable mud huts we uncovered.

"The living natives we met were still wretched enough. Most of them had recently been owned, like the land, by a decaying aristocracy, and they were oppressed by the corrupt bureaucracy that surrounded the Czar, the autocratic hereditary chief of the tribe.

"I was as deeply disturbed as you would have been by the contrasts of squalid poverty and unearned wealth, and as painfully shocked by the cruel injustice we saw everywhere. I wanted to do something about it, and unfortunately I did.

"It happened while we were traveling across the Yenisei Valley on our way back to Kazan. Difficulties with the primitive transportation system delayed us in a frontier hamlet there, and I met a native who had the same desire to remedy those wrongs.

"I spent a whole night talking to him, at the filthy little inn. He was extraordinary enough, even then, a short vigorous man, with a powerful head. His commonplace features were brightened by piercing eyes. You seldom find a native—or an outsider, for that matter—with his energy and intelligence.

"He was then less than thirty, but he had already dedicated his life to the liberation of the working class. He had been arrested and imprisoned for a year before his exile to that remote province, and his beloved older brother had been killed for activities against the Czar.

"That night—never really thinking what I was doing—I violated the Covenants. I was fascinated by the ability and earnestness of that young rebel, and moved by the drama of his unequal struggle for the freedom of his people.

"I failed to see the danger in him. He was full of a naive philosophy he called dialectical materialism, which forecast the fall of his oppressors and the rise of a classless society. Utter nonsense. That same battle for freedom has been repeated many million times, on several million planets, and it has never yet ended with the automatic withering away of classes and the state. Even with my own smattering of interstellar history, I could see the flaws in his philosophy and the fatal weakness in any plan of action based upon it.

"And I forgot myself. Not so far as to let that native rebel guess that I was an outsider, but I did tell him a few of the simplest general principles of war and revolution that I had learned at school.

He seized upon the ideas with an eagerness that disturbed me a little, even then.

"He thanked me, when we left the inn at dawn, for a very stimulating conversation. The archaeologist and I went on to meet the flier, and he stayed to overwhelm his enemies with weapons I had given him so carelessly—ideas more deadly than neutrionic bombs."

The lieutenant whispered suddenly, "Was his name—"

"Lenin." The commander nodded bleakly. "He is dead long ago, but those ideas are still alive. They are sweeping the planet like a conflagration."

"My friends in the cave were trying to put out that blaze with their hydrogen bomb," the lieutenant said bitterly. "They could have succeeded, if you let me alone long enough to give them that one hint."

"I don't think so." The gaunt black man shrugged heavily. "I tried for many years to undo what I had done, and only made things worse."

The lieutenant looked at him searchingly.

"So that was your business at the Kremlin?"

"I arranged to go back, by planting that cache of viruses on Pluto." The commander nodded unhappily. "I borrowed the identities of men in the Kremlin to advocate moderation within the tribe and reconciliation with the peoples still free. But Stalin, the cynical chief who followed Lenin, merely used those peaceful policies to screen his ruthless schemes for enslaving the whole planet."

The haggard man sank wearily back in his chair.

"The lesson was hard," he whispered, "but I learned it at last. Freedom cannot be bestowed; it must be earned. Even the best-meant efforts to grant it as a gift are commonly blighting."

The lieutenant stood silent for a time, grappling with that idea.

"But suppose I had helped perfect that hydrogen bomb," he protested at last. "Wouldn't it have crushed Stalin?"

"Only to set up some more monstrous enemy of freedom in his place," the commander answered, "because your friends in the cave had already been contaminated with those ideas I gave Lenin. The absolute power of that weapon would have stricken then with absolute corruption. You can find a thousand examples of the process in interstellar history."

"I'm not a historian." The lieutenant caught himself staring at

the gun on the desk, and looked up uncomfortably. "The plight of Sol III is already desperate," he muttered. "I don't see how anything could make it worse."

"The outlook isn't that black." The tired man smiled faintly. "Not if the Covenants are faithfully enforced. In spite of all the harm I did that night, these people still have a reasonable chance to create a free civilization."

"I don't see how."

"I think I do." The commander nodded soberly. "I've been reading a good bit of history, since I began to see the wisdom of the Covenants, and I'm willing to risk a forecast for the future of Sol III."

The lieutenant waited hopefully.

"The free tribes of America have not yet been seriously corrupted by what I told Lenin that night," the commander said. "They are equipped to detect this last explosion, and it should make them look to their own defenses. If they are stimulated to perfect a hydrogen bomb, it will be something of their own, which they can use without self-destruction."

The lieutenant stood watching the gun.

"I understand," he whispered at last. He picked up the gun and returned it to the commander. "And I . . . I'm guilty, sir."

"And you will make the same atonement I have made," the stern man told him. "You will renounce civilization and your own career. You will stay on here to watch against the sort of men we used to be and to see that the Covenants are enforced."

"OSCAR SCHACHTER, deputy director of the United Nations Legal Division, raised the question of who owns space. He suggested that all space beyond a planet's atmosphere be designated as a sort of 'high seas,' open to all comers under a kind of interplanetary admiralty law."—*Time,* October 22, 1951.

# Beachhead

*by Clifford Simak*

THERE WAS nothing, absolutely nothing, that could stop a human planetary survey party. It was a highly specialized unit created for and charged with one purpose only . . . to establish a bridgehead on an alien planet, to blast out the perimeters of that bridgehead and establish a base where there would be some elbow-room. Then hold that elbow-room against all comers until it was time to go.

After the base was once established, the brains of the party got to work. They turned the place inside out. They put it on tape and captured it within the chains of symbols they scribbled in their field books. They pictured it and wrote it and plotted it and reduced it to a neat assembly of keyed and symbolic facts to be inserted in the galactic files.

If there was life, and sometimes there was, they prodded it to get reaction. Sometimes the reaction was extremely violent and other times it was much more dangerously subtle. But there were ways in which to handle both the violent and the subtle, for the legionnaires and their robotics were trained to a razor's edge and knew nearly all the answers.

As we were saying, there was nothing in the universe, so far known, that could stop a human survey party.

Tom Decker sat at his ease in the empty lounge and swirled the ice in the highball glass, well contented, watching the first of the robots emerge from the bowels of the cargo space. They dragged a

conveyor belt behind them as they emerged and Decker, sitting idly, watched them drive supports into the ground and rig up the belt.

A door clicked open back of Decker and he turned his head.

"May I come in, sir?" Doug Jackson asked.

"Certainly," said Decker.

Jackson walked to the great curving window and looked out.

"What does it look like, sir?" he asked.

Decker shrugged. "Another job," he said. "Six weeks. Six months. Depends on what we find."

Jackson sat down beside him.

"This one looks tough," he said. "Jungle worlds always are a bit meaner than any of the others."

Decker grunted at him. "A job," he said. "That's all. Another job to do. Another report to file. Then they'll either send out an exploitation gang or a pitiful bunch of bleating colonists."

"Or," said Jackson, "they'll file the report and let it gather dust for a thousand years or so."

"They can do anything they want," Decker told him. "We turn it in. What someone else does with it after that is their affair, not ours."

They sat quietly, watching the six robots roll out the first of the packing cases, rip off its cover and unpack the seventh robot, laying out his various parts neatly in a row in the tramped-down, waist-high grass. Then, working as a team, with not a single fumble, they put No. 7 together, screwed his brain case into his metal skull, flipped up his energizing switch and slapped the breastplate home.

No. 7 stood groggily for a moment. He swung his arms uncertainly, shook his head from side to side. Then, having oriented himself, he stepped briskly forward, helped the other six heave the packing case containing No. 8 off the conveyor belt.

"Takes a little time this way," said Decker, "but it saves a lot of space. Have to cut our robot crew in half if we didn't pack them at the end of every job. They stow away better."

He sipped at his highball speculatively. Jackson lit a cigarette.

"Someday," said Jackson, "we're going to run up against something that we can't handle."

Decker snorted.

"Maybe here," insisted Jackson, gesturing at the nightmare jungle world outside the great curved sweep of the vision plate.

"You're a romanticist," Decker told him shortly. "In love with

the unexpected. Besides that, you're new. Get a dozen trips under your belt and you won't feel this way."

"It could happen," declared Jackson.

Decker nodded, almost sleepily. "Maybe," he said. "Maybe it could, at that. It never has, but I suppose it could. And when it does, we take it on the lam. It's no part of our job to fight a last ditch battle. When we bump up against something that's too big to handle, we don't stick around. We don't take any risks."

He had another sip.

"Nor even calculated risks," he said.

The ship rested on the top of a low hill, in a small clearing masked by tall grass, sprinkled here and there with patches of exotic flowers. Below the hill a river flowed sluggishly, a broad expanse of chocolate-colored water moving in a sleepy tide through the immense, vine-entangled forest.

As far as the eye could see the jungle stretched away, a brooding darkness that even from behind the curving quartz of the vision plate seemed to exude a heady, musty scent of danger that swept up over the grass-covered hill top. There was no sign of life, but one knew, almost instinctively, that sentiency lurked in the buried pathways and tunnels of the great tree-land.

Robot No. 8 had been energized and now the eight split into two groups, ran out two packing boxes at a time instead of one. Soon there were twelve robots and then they formed themselves into three groups.

"Like that," said Decker, picking up the conversation where they had left it lying. He gestured with his glass, now empty. "No calculated risks. We send the robots first. They unpack and set up their fellows. Then the whole gang turns to and uncrates the machinery and sets it up and gets it operating. A man doesn't even put his foot on the ground until he has a steel ring around the ship to give him protection."

Jackson sighed. "I guess you're right," he said. "Nothing can happen. We don't take any chances. Not a single one."

"Why should we?" Decker asked.

He heaved himself out of the chair, stood up and stretched.

"Got a job or two to do," he said. "Last minute checks and so on."

"I'll sit here for awhile," said Jackson. "I like to watch. I'm new to this. It is fascinating."

"You'll get over that," said Decker, "in another twenty years."

In his office, Decker lifted the sheaf of preliminary reports off his

desk and ran through them slowly, checking each one carefully, filing away in his mind the basic facts of the world outside.

He worked stolidly, wetting a big, blunt thumb against his outthrust tongue to flip the report pages off the top of the neat stack and deposit them, in not so neat a pile to his right, face downward.

Atmosphere—pressure slightly more than Earth. High in oxygen content.

Gravity—a bit more than Earth.

Temperature—hot. Jungle worlds always were. There was a breeze outside now, he thought. Maybe there'd be a breeze most of the time. That would be a help.

Rotation—thirty-six hour day.

Radiation—none of local origin, but some hard stuff getting through from the sun.

He made a mental note: Watch that!

Bacterial and virus count—as usual. Lots of it. Apparently, not too dangerous. Not with every single soul hypoed and immunized and hormoned to his eyebrows. But you never can be sure, he thought. Not entirely sure. No calculated risks, he had told Jackson. But here was a calculated risk and one you couldn't do a single thing about. If there was a bug that picked you for a host and you weren't loaded for bear to fight him, you took him on and did the best you could.

Life factor—lot of emanations. Probably the vegetation, maybe even the soil, was crawling with all sorts of loathsome life. Vicious stuff, more than likely. But that was something that you took care of as a matter of routine. No use of taking any chances. You went over the ground even if there was no life . . . just to be sure there wasn't.

A tap came on the door and he called out for the man to enter.

It was Captain Carr, commander of the Legion unit.

Carr saluted snappily. Decker did not rise, made his answering salute a sloppy one on purpose. No use, he told himself, of letting the fellow establish any semblance of equality, for there was no such equality in fact. A captain of the Legion did not rank with the commandant of a galactic survey party.

"Reporting, sir," said Carr. "We are ready for a landing."

Decker rumbled at him. "Fine, Captain. Fine."

What was the matter with the fool? The Legion always was ready, always would be ready—that was no more than tradition. Why carry out such an empty, stiff formality?

But it was the nature of a man like Carr, he supposed. The Legion,

with its rigid discipline, with its ancient pride of service and tradition, attracted men like Carr, was a perfect finishing school for accomplished martinets.

Tin soldiers, Decker thought, but accomplished ones. As hard-bitten a gang of fighting men as the galaxy had ever known. They were drilled and disciplined to a razor's edge, serum and hormone-injected against all known diseases of an alien world, trained and educated in alien psychology and strictly indoctrinated with high survival characteristics which stood up under even the most adverse circumstances.

"We shall not be ready for some time, Captain," Decker said. "The robots have just started their uncrating."

"Very well," said Carr. "We await your orders, sir."

"Thank you, Captain," Decker told him, making it quite clear that he wished he would get out. But when Carr turned to go, Decker called him back.

"What is it, sir?" asked Carr.

"I've been wondering," said Decker. "Just wondering, you understand. Can you imagine any circumstance which might arise that the Legion could not handle?"

Carr's expression was a pure delight to see.

"I'm afraid, sir," he said, "I don't understand your question."

Decker sighed. "I didn't think you would," he said.

Before nightfall the full working force of robots had been uncrated and had set up some of the machines, enough to establish a small circle of alarm posts around the ship.

A flame thrower burned a barren circle on the hilltop, stretching five hundred feet around the ship. A hard radiations generator took up its painstaking task, pouring pure death into the soil. The toll must have been terrific. In some spots the ground virtually boiled as the dying life forms fought momentarily and fruitlessly to escape the death that cut them down.

The robots rigged up huge batteries of lamps that set the hilltop ablaze with a light as bright as day and the work went on.

As yet no human had set foot outside the ship.

Inside the ship the robot stewards set up a table in the lounge so that the human diners could see what was going on outside.

The entire company, except for the legionnaires, who stayed in quarters, had gathered for the meal when Decker came into the room.

"Good evening, gentlemen," he said.

He strode to the table's head and the others ranged themselves along the sides. He sat down and there was a scraping of drawn chairs as the others took their places.

He clasped his hands in front of him and bowed his head and parted his lips to say the customary words. And then he halted even as he spoke and when the words did come they were different than the ones he had said by rote a thousand times before.

"Dear Father, we are Thy servants in an unknown land and there is a deadly pride upon us. Teach us humility and lead us to the knowledge, before it is too late, that men, despite their far traveling and their mighty works, still are as children in Thy sight. Bless the bread we are about to break, we beg Thee, and keep us forever in Thy compassion. Amen."

He lifted his head and looked down the table. Some of them, he saw, were startled. The others were amused.

They wonder if I'm cracking, he thought. They think the Old Man's breaking up. And that may be true, for all I know. Although I was all right until this afternoon. All right until young Doug Jackson. . . .

Platters and plates were being passed up and down the table's length and there was the commonplace, homely clatter of silverware and china.

"This looks an interesting world, sir," said Waldron, the anthropologist. "Dickson and I were up in observation just before the sun set. We thought we saw something down by the river. Some sort of life."

Decker grunted, scooping fried potatoes out of the bowl onto his plate. "Funny if we don't run across a lot of life here. The radiation wagon stirred up a lot of it when it went over the field today."

"What Waldron and I saw," said Dickson, "looked humanoid."

Decker squinted at the biologist. "Sure of that?" he asked.

Dickson shook his head. "The seeing was poor. Could not be absolutely sure. Seemed to me there were two or three of them. Matchstick men."

Waldron nodded. "Like a picture a kid would draw," he said. "One stroke for the body. Two strokes each for arms and legs. A circle for a head. Angular. Ungraceful. Skinny."

"Graceful enough in motion, though," said Dickson. "When they moved they went like cats. Flowed, sort of."

"We'll know plenty soon enough," Decker told them, mildly. "In a day or two we'll flush them."

Funny, he thought. On almost every job someone popped up to report he had spotted humanoids. Usually there weren't any. Usually it was just imagination. Probably wishful thinking, he told himself, the yen of men far away from their fellow men to find in an alien place a type of life that somehow seemed familiar.

Although the usual humanoid, once you met him in the flesh, turned out to be so repulsively alien that alongside him an octopus would seem positively human.

Franey, the senior geologist, said: "I've been thinking about those mountains to the west of us, the ones we caught sight of when we were coming in. Had a new look about them. New mountains are good to work in. They haven't worn down, easier to get at whatever's in them."

"We'll lay out our first survey lines in that direction," Decker told him.

Outside the curving vision plate the night was alive with the blaze of the batteries of lights. Gleaming robots toiled in shining gangs. Ponderous machines lumbered past. Smaller ones scurried like frightened beetles. To the south great gouts of flame leaped out and the sky was painted red with the bursts of a squad of flame throwers going into action.

"Chewing out a landing field," said Decker. "A tongue of forest juts out there. Absolutely level ground. Like a floor. Won't take a great deal of work to turn it into a field."

The stewards brought coffee and brandy and a box of good cigars. Decker and his men settled back in their chairs, taking life easy, watching the work going on outside the ship.

"I hate this waiting," Franey said, settling down comfortably to his cigar.

"Part of the job," said Decker. He poured more brandy into his coffee.

By dawn the last machines were set up and either had been moved out to their assigned positions or were parked in the motor pool. The flamers had enlarged the burned-over area and three radiation wagons were busy on their rounds. To the south the airfield had been finished and the jets were lined up and waiting, in a plumb-straight line.

Some of the robots, their work done for the moment, formed themselves in solid ranks to shape a solid square, neat and orderly and occupying a minimum of space. They stood there in the square, waiting against the time when they would be needed, a motor pool of robots, a reservoir of manpower.

Finally the gang-plank came down and the legionnaires marched out in files of two, with clank and glitter and a remorseless precision that put all machines to shame. There were no banners and there were no drums, for these were useless things and the Legion, despite its clank and glitter, was an organization of ruthless efficiency.

The column wheeled and became a line and the line broke up and the platoons moved out toward the planet-head perimeter.

There machine and legionnaire and robot manned the frontier Earth had set up on an alien world.

Busy robots staked out and set up an open-air pavilion of gaudy striped canvas that rippled in the breeze, set up tables and chairs beneath the shading canvas, moved out a refrigerator filled with refreshments, with extra ice compartments.

It finally was safe and comfortable for ordinary men to leave the shelter of the ship.

Organization, Decker told himself—organization and efficiency and leaving not a thing to chance. Plug every loophole before it was a loophole. Crush possible resistance before it could become resistance. Gain absolute control over a certain number of square feet of planet and operate from there.

Later, of course, there were certain chances taken; you couldn't eliminate them all. There would be field trips and even with all precautions that robot and machine and legionnaire could offer, there would be certain risks. There would be aerial mapping and surveys, and these, too, would have elements of chance, but with those elements reduced to the very minimum.

And always there would be the base—an absolutely safe and impregnable base to which a field party or a survey flight could retreat, from which re-enforcements could be sent out or counteraction taken.

Foolproof, he told himself, as foolproof as it could be made.

He wondered, briefly, what had been the matter with him the night before. It had been that young fool, Jackson, of course—a capable biochemist, possibly, but certainly the wrong kind of man for a job like this. Something had slipped up; the screening board

should have stopped a man like Jackson, should have spotted his emotional instability. Not that he could do any actual harm, of course, but he could be upsetting. An irritant, said Decker. That's what he is—just an irritant.

Decker laid an armful of paraphernalia on the long table underneath the gay pavilion. From it he selected a rolled-up sheet of map paper, unrolled it, spread it flat and thumbtacked it at four corners. On it a portion of the river and the mountains to the westward had been roughly penciled in. The base was represented by a crossed-through square—but the rest of it was blank. But it would be filled in; as the days went by it would take on shape and form.

From the field to the south a jet whooshed up into the sky, made a lazy turn and straightened out to streak toward the west. Decker walked to the edge of the pavilion's shade and watched it as it dwindled out of sight. That would be Jarvis and Donnelly, assigned to the preliminary survey of the southwest sector between the base and the western mountains.

Another jet rose lazily, trailing its column of exhaust, gathered speed and sprang into the sky. Freeman and Johns, he thought.

Decker went back to the table, pulled out a chair and sat down. He picked up a pencil and tapped it idly on the almost-blank map paper. Behind his back he heard another jet whoom upward from the field.

He let his eyes take in the base. Already it was losing its raw, burned-over look. Already it had something of the look of Earth about it, of the efficiency and common sense and get-the-job-done attitude of the man of Earth.

Small groups of men stood about the base talking. One of them, he saw, was squatted on the ground, talking things over with three squatting robots. Others of them walked about, giving orders, planning, sizing up the situation.

Decker grunted with satisfaction. A capable gang of men, he thought. Most of them would have to wait around to really get down to work until the first surveys came in, but even while they waited they would not be idle.

They'd take soil samples and test them. The life that swarmed in the soil would be captured and brought in by grinning robots and the squirming, vicious things would be pinned down and investigated—photographed, X-rayed, dissected, analyzed, observed, put through reaction tests. Trees and plants and grasses would be

dug for a look at soil strata. The river's water would be analyzed. Seines would dredge up some of the life it held. Wells would be driven to establish water tables.

All of this here, at the moment, while they waited for the first preliminary flights to bring back data that would pinpoint other areas worthy of investigation.

Once those reports were in the work would be started in dead earnest. Geologist and mineral men would probe into the planet's hide. Weather observation points would be set up. Botanists would take far-ranging check samples. Each man would do the work for which he had been trained. Field reports would pour back to the base, there to be correlated and fit into the picture.

Work then, work in plenty. Work by day and night. And all the time the base would be a bit of Earth, a few square yards held inviolate against all another world might muster.

Decker sat easily in his chair and felt the breeze that came beneath the canvas, a gentle breeze that ruffled through his hair, rattled the papers on the table and twitched the tacked-down map. It was pleasant here, he thought. But it wouldn't stay pleasant long. It almost never did.

Someday, he thought, I'll find a pleasant planet, a paradise planet where the weather's always perfect and there's food for the picking of it and natives that are intelligent to talk with and companionable in other ways—and I will never leave it. I'll refuse to leave when the ship is ready to cast off. I'll live out my days in a fascinating corner of a lousy galaxy—a galaxy that is gaunt with hunger and mad with savagery and lonely beyond all that can be said of loneliness.

He looked up from his revery and saw Jackson standing at the pavilion's edge, watching him.

"What's the matter, Jackson?" Decker asked with sudden bitterness. "Why aren't you . . ."

"They're bringing in a native, sir," said Jackson, breathlessly. "One of the things Waldron and Dickson saw. The robots caught him, sir."

The native was humanoid, but he was not human.

As Waldron and Dickson had said, he was a match-stick man, a flesh and blood extension of a drawing a four-year-old might make. He was black as the ace of spades and he wore no clothing, but the eyes that looked out of the pumpkin-shaped head at Decker were bright with a light that might have been intelligence.

Decker tensed as he looked into those eyes. Then he looked away,

saw the men standing silently around the pavilion's edge, silent and waiting, tense as he was.

Slowly, Decker reached out his hand to one of the twin headsets of the mentograph. His fingers closed over it and for a moment he felt a vague, but forceful reluctance to put it on his head. It was disturbing to contact, or attempt to contact, an alien mind. It gave one a queasy feeling in the pit of the stomach. It was a thing, he thought, that man never had been intended to do—an experience that was utterly foreign to any human background.

He lifted the headset slowly, fitted it over his skull, made a sign toward the second set.

For a moment the alien eyes watched him, the creature standing erect and motionless.

Courage, thought Decker. Raw and naked courage, to stand here in this suddenly unfamiliar environment that had blossomed almost overnight on familiar ground, to stand here motionless and erect, surrounded by creatures that must look as if they had dropped from some horrific nightmare.

The humanoid took one step closer to the table, reached out a hand and took the headset. Fumbling with its unfamiliarity, he clamped it on his head. And, never for a moment, did the eyes waver from Decker's eyes, always alert and watchful.

Decker forced himself to relax, tried to force his mind into an attitude of peace and calm. That was a thing you had to be careful of. You couldn't scare the critters—you had to lull them, quiet them down, make them feel your friendliness. They would be upset and humpy—a sudden thought, even a suggestion of human brusqueness would wind them up tighter than a drum.

There was intelligence here, he told himself, being careful to keep his mind unruffled—a greater intelligence than one would think looking at the creature. Intelligence enough to know that he should put on the headset—guts enough to do it.

He caught the first faint mental whiff of the match-stick man and the pit of his stomach contracted suddenly and there was an ache around his belly. There was nothing in the thing he caught, nothing that could be put in words, but there was an alienness, as a smell is alien. There was a non-human connotation that set one's teeth on edge. He fought back the gagging blackness of repulsive disgust that sought to break the smooth friendliness he held within his mind.

"We are friendly," Decker forced himself to think. "We are

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friendly. We are friendly. We are friendly. We are friendly. We are . . . "

"You should not have come," said the thought of the match-stick man.

"We will not harm you," Decker thought. "We are friendly. We will not harm you. We will not harm you . . ."

"You will never leave," said the humanoid.

"Let's be friends," thought Decker. "Let's be friends. We have gifts. We will help you. We will . . ."

"You should not have come," said the match-stick thought. "But since you are here, you can never leave."

Humor him, Decker told himself. Humor him. Humor him.

"All right, then," he thought. "We will stay. We will stay and we will be friendly. We will stay and teach you. We will give you the things we have brought for you and we will stay with you."

"You will not leave," said the match-stick man's thought, and there was something so cold and logical and matter-of-fact about the way the thought was delivered that Decker suddenly was cold.

The humanoid meant it . . . meant every word of the thing he said. He was not being dramatic, nor was he blustering . . . and neither was he bluffing. He actually thought that the humans would not leave, that they would not live to leave the planet.

Decker smiled softly to himself.

"You will die here," said the humanoid thought.

"Die?" asked Decker. "What is die?"

The match-stick man's thought was pure disgust. Deliberately, he reached up and took off the headset, laid it carefully back upon the table.

Then he turned and walked away and not a man made a move to stop him.

Decker took off his headset, slammed it on the table top.

"Jackson," he said, "pick up a phone and tell the Legion to let him through. Let him leave. Don't try to stop him."

He sat limply in his chair and looked at the ring of faces that was watching him.

Waldron asked, "What is it, Decker?"

"He sentenced us to death," said Decker. "He said he would not allow us to leave the planet. He said that we would die here."

"Strong words," said Waldron.

"He meant them," Decker said.

He lifted a hand, flipped it wearily. "He doesn't know, of course,"

he said. "He really thinks that he can stop us leaving. He thinks that we will die."

It was an amusing situation, really. That a naked humanoid should walk out of the jungle and threaten to kill a human survey party. That he should really think that he could do it. That he should be positive about it.

But there was not a single smile on any of the faces that looked at Decker.

"We can't let it get us," Decker said.

"Nevertheless," Waldron declared, "we should take all precautions."

Decker nodded. "We'll go on emergency alert immediately," he said. "We'll stay that way until we're sure . . . until we're. . . ."

He halted angrily. Sure of what? Sure that an alien savage who wore no clothing, who had not a sign of culture about him could wipe out a group of humans protected by a ring of steel, held within a guard of machine and robots and a group of fighting men who knew all there was to know concerning the refinement of dealing out swift and merciless extermination to anything that moved against them?

Ridiculous?

Of course it was ridiculous!

And yet the eyes had held intelligence. The being had had not only intelligence, but courage. He had stood within a circle of what to him were alien beings and he had not flinched. He had faced the unknown and said what there was to say and then had walked away with a dignity any human would have been proud to wear. He had known that the alien beings within the confines of the base were not of his own planet, for he had said they should not have come and his thought had implied that he was aware they were not of this world of his. He had understood that he was supposed to put on the headset, but whether that was an act more of courage than of intelligence one would never know—for you could not know if he had realized what the headset had been for. Not knowing, the naked courage of clamping it to his head was of an order that could not be measured.

"What do you think?" Decker asked Waldron.

"We'll have to be careful," Waldron told him evenly. "We'll have to watch our step. Take all precautions now that we are warned. But there's nothing to be scared of, nothing we can't handle."

"He was bluffing," Dickson said. "Trying to scare us into leaving."

Decker shook his head. "I don't think he was," he said. "I tried to bluff him and it didn't work. He's just as sure as we are."

The work went on.

There was no attack.

The jets roared out and thrummed away, mapping the land. Field parties went out, cautiously. They were flanked by robots and by legionnaires and preceded by lumbering machines that knifed and tore and burned a roadway through even the most stubborn of the terrain they went up against. Radio weather stations were set up at distant points and at the base the weather tabulators clicked off the data that the stations sent back.

Other field parties were flown into the special areas pinpointed for more extensive exploration and investigation.

And nothing happened.

The days went past.

The weeks went past.

The machines and robots watched and the legionnaires stood ready and the men hurried with their work to get off the planet.

A bed of coal was found and mapped. An iron range was discovered. One area in the mountains to the west crawled with radioactive ores. The botanists found twenty-seven species of edible fruits. The base swarmed with animals that had been trapped as specimens and remained as pets.

And a village of the match-stick men was found.

It wasn't much of a place. Its huts were primitive. Its sanitation was non-existent. Its people were peaceful.

Decker left his chair under the striped pavilion to lead a party to the village.

The party entered cautiously, weapons ready but being very careful not to move too fast, not to speak too quickly, not to make a motion that might be construed as hostile.

The natives sat in their doorways and watched them. They did not speak and they did not move. They simply watched the humans as they marched to the center of the village.

There the robots set up a table and placed a mentograph upon it. Decker sat down in a chair and put one of the headsets on his skull. The rest of the party drew up into a line and waited.

Decker waited and the others waited and the natives sat in their doorways watching.

They waited for an hour and not a native stirred. None came forward to put on the other headset.

Decker waved his hand wearily, took off the headset.

"It's no use," he said. "It won't work. Go ahead and take your pictures. Do anything you wish. But don't disturb the natives. Don't touch a single thing."

He took a handkerchief out of his pocket and mopped his steaming face.

Waldron came and leaned on the table. "What do you make of it?" he asked.

Decker shook his head. "It haunts me," he said. "There's just one thing that I am thinking. It must be wrong. It can't be right. But I thought of it and I can't get rid of it."

"Sometimes that happens," Waldron said. "No matter how illogical a thing may be it sticks with a man, like a burr inside his brain."

"I thought," said Decker, "that they have told us all that they have to tell us. That they have nothing more they wish to say to us."

"That's what you thought," said Waldron.

Decker nodded. "A funny thing to think," he said. "Out of clear sky. And it can't be right."

"I don't know," said Waldron. "Nothing's right here. Notice that they haven't got a single iron tool. Not a single scrap of metal in evidence at all. Their cooking utensils are stone, a sort of funny stuff like soapstone. What few tools they have are stone."

"And yet," Decker told him, "they're intelligent. Look at their eyes. Intelligence there if you ever saw it. And that fellow who came into the base. He knew what to do with the headset. He knew that we didn't belong on the planet."

Waldron sucked thoughtfully at a back tooth. "We better be getting back to base," he said. "It's getting late."

He held his wrist in front of him.

"My watch has stopped," he said. "What time do you have, Decker?"

Decker's arm came up and Waldron heard the sharp gasp of his breath. Slowly, Decker raised his head, looked at the other man.

"My watch has stopped, too," he said, and his voice was scarcely louder than a whisper.

For a moment they were graven images, eyes matching eyes, and then Waldron jerked his head away.

"Assemble," he shouted. "Back to the base. Quick!"

The men came running. The robots fell into place. The column marched away. The natives sat in their doorways and watched them leave.

Decker sat in his camp chair and listened to the canvas of the pavilion snapping softly in the wind, alive in the wind, talking and laughing to itself. The lantern, hung on the ring above his head, swayed gently and cast fleeting shadows that seemed at times to be the shadows of living, moving things. A robot stood quietly by one of the pavilion poles.

Stolidly Decker reached out a finger and stirred the little pile of wheels and springs that lay upon the table.

Sinister, he thought.

Sinister and queer.

The guts of watches, lying on the table.

Not of two watches alone, not only his and Waldron's watches, but many other watches from the wrists of other men. All of them silent, stilled in their task of marking time.

Night had fallen hours before, but the base still was astir with activity that was at once feverish and furtive. Men moved about in the shadows and crossed the glaring patches of brilliance shed by the banks of lights set up by the robots many weeks before. Watching them, one would have sensed that they moved with a haunting sense of doom—and would have known as well that they knew, deep in their inmost hearts, that there was no doom to fear. No definite thing that one could put a finger on and say this is the thing to fear. No direction that one could point and say doom lies out there, waiting to leap upon us.

Just one small thing.

Watches had stopped running.

And that was a simple thing for which there must be some simple explanation.

Except, thought Decker, on an alien planet no occurrence, no accident or incident, can be regarded as a simple thing for which a simple explanation must necessarily be anticipated. For the matrix of cause and effect, the mathematics of chance, may not hold true on alien planets as they hold true on Earth.

There was one rule, Decker thought grimly.

One rule: Take no chances.

That was the one safe rule to follow, the only rule to follow.

Following it, he had ordered all field parties back to base, ordered the crew to prepare the ship for emergency take off, had alerted the robots to be ready at an instant to get the machines aboard—to even desert the machines and leave without them if circumstances should dictate that such was necessary.

Having done that, there was no more to do but wait. Wait until the field parties came back from their advance camps. Wait until some reason could be assigned to the failure of the watches.

It was not a thing, he told himself, that should be allowed to panic one. It was a thing to recognize, not to disregard. It was a thing which made necessary a certain number of precautions, but it was not a thing that should make one lose all sense of proportion.

You could not go back to Earth and say: "Well, you see, our watches stopped and so. . . ."

A footstep sounded and he swung around in his chair. It was Jackson.

"What is it, Jackson?" Decker asked.

"The camps aren't answering, sir," said Jackson. "The operator has been trying to raise them and there is no answer . . . not a single peep."

Decker grunted. "Take it easy," he said. "They will answer. Give them time."

He wished, even as he spoke, that he could feel some of the assurance that he tried to put into his voice. For a second a rising terror mounted in his throat and he choked it back.

"Sit down," he said. "We'll sit here and have a beer and then we'll go down to the radio shack and see what's stirring."

He rapped on the table. "Beer," he said. "Two beers."

The robot standing by the pavilion pole did not answer.

He made his voice louder.

The robot did not stir.

Decker put his fists upon the table and tried to rise, but his legs suddenly were cold and had turned to water and he could not raise himself.

"Jackson," he panted, "go and tap that robot on the shoulder. Tell him we want some beer."

He saw the fear that whitened Jackson's face as he rose and moved slowly forward. Inside himself, starting in the pit of his belly and rising to worry at his throat, he felt the same whiplash terror that Jackson must have felt.

Jackson stood beside the robot and reached out a hesitant hand,

tapped him gently on the shoulder, tapped him harder—and the robot fell flat upon his face!

Feet hammered across the hard packed earth, heading toward the pavilion.

Decker jerked himself around, sat foursquare and solid in his chair, waiting.

It was MacDonald, chief engineer.

He stopped at the table's edge and gripped its boards with two grimy hands. His face was twisted as if he were about to weep.

"The ship, sir. The ship. . . ."

Decker nodded, almost idly. "I know, Mr. MacDonald. The ship won't run."

MacDonald gulped. "The big stuff's all right, sir. But the little gadgets . . . the injector mechanism, the. . . ."

He stopped and stared at Decker. "You knew," he said. "How did you know?"

"I knew," said Decker, "that it would come some day. Not like this, perhaps. But in any one of several ways. I knew that the days would come when our luck would run too thin, when we'd cover all the possibilities but the one that we could not suspect and that, of course, would be the one that would ruin us."

He was thinking: The natives had no metal. No sign of any metal in their camp, at all. Their dishes were soapstone and they wore no ornaments. Their implements were stone. And yet they were intelligent enough, civilized enough, cultured enough, to have fabricated metal. For there was metal here . . . a great deposit of it in the western mountains. They had tried, perhaps, many centuries ago. Had fashioned metal tools and metal ornaments and had them go to pieces underneath their fingers after a few short weeks.

Waldron came into the pavilion on cat-like feet.

"The radio's dead," he said, "and the robots are dying like flies. The place is littered with them, just so much scrap steel."

Decker nodded. "The little stuff, the finely fabricated will go first," he said. "Like watches and radio innards and robot brains and injector mechanisms. After that it will be the big stuff. The ship will melt into a heap of slag."

"The native told us," Waldron said, "when you had him up here. You will never leave, he said."

"We didn't understand," said Decker. "We thought he was threatening us and we knew that we were too big, too well guarded for any threat of his to harm us. He wasn't threatening us at all, of course.

He was just telling us. Warning us, maybe, although even then it might have been too late. He might even have felt sorry for us."

He made a hopeless gesture with his hand. "What is it?" he asked.

"No one knows," said Waldron, quietly. "Not yet at least. We may find out later, but it won't help us any. A microbe, maybe. A virus. Something that eats iron after it has been subjected to heat or alloyed with other metals. Something that won't tolerate alloyed metal on the planet. It doesn't go for iron ore. If it did, that deposit we found would have been gone long ago. Possibly the radioactive ore as well."

"How does it survive?" asked Decker. "Without stuff to eat, how does it live?"

"I wouldn't know," said Waldron. "It might not be a metal-eating organism at all. It might be something else. Something in the atmosphere."

"We tested the atmosphere."

But, even as the words left his mouth, Decker saw how foolish they were. They had tested the atmosphere, but how could they have detected something they had never run across before? Man's yardstick was limited—limited to the things he knew about, limited by the circle of his own experience.

He guarded himself against the obvious and the imaginable. He could not guard himself against the unknowable or the unimaginable.

Decker stood up and saw Jackson standing by the pavilion pole, with the robot stretched out at his feet, his metal hide gleaming in the shine of the swaying lantern.

"You have your answer," he told the biochemist. "Remember that first day. You talked with me in the lounge."

Jackson nodded. "I remember, sir," he said. His voice was quiet.

And suddenly, Decker realized, the entire base was quiet.

A gust of wind came out of the jungle and rattled the canvas and set the lantern to swaying violently.

Now, for the first time since they had landed, he caught in the wind the alien smell of an alien world.

"VON BRAUN sketched out a full-dress flight to Mars. It could be done . . . by using two satellite stations as intermediate refueling and supply bases. The first satellite station would revolve around the earth and form the starting point for the interplanetary voyaging. The second would be established in an orbit around Mars. Then specially designed 'landing boats' would descend into the thin Martian atmosphere to explore the planet's surface.

"Von Braun's Marsprojekt would be a very considerable effort. Forty-six three-stage rocket ships, weighing 6,400 tons each at take-off, would have to make 950 trips above the earth's atmosphere, carrying cargo (39.4 tons of payload per trip) and fuel to build and stock the satellite filling stations. On this base, ten orbit-to-orbit space ships would be assembled. Taking off for Mars, they would establish a second filling station in an orbit around that planet. Enough fuel and supplies would remain to set 50 men down on Mars in three landing craft and maintain them there for a year. Then two of the craft would bring them back to the Mars orbit station to start the long voyage home."—*Time*, September 17, 1951.

# "The Years Draw Nigh"

*by Lester del Rey*

MARS WAS harsh and old, worn with the footsteps of two races that had come and gone, leaving only scant traces behind. Even the wind was tired, and its thin wailing was a monotonous mutter of memories from its eroded past.

Zeke Lerner stared out from the dust-covered observation port of the hastily reconditioned little rocket, across the scarred runways and sand-filled pits for the starships, toward the ruins of what had once been the great Star Station. His face was gray and dull as he watched a figure coming across the pitted sand of the field toward his ship.

He sighed softly, a faint sound in the tiny cabin, and his breath stirred the dust that lay everywhere. In four centuries, a man can learn not to think, but feelings and emotions survive. He was tired

beyond any power of the rejuvenation treatments to remedy. His shoulders sagged slightly, confirming the age that the gray in his hair implied. But his eyes were older still as he swung about to open the inner lock of the ship.

Stendal was a middle-aged man, but some of the same age and fatigue lay on his face when he dropped his aspirator helmet and slumped limply into a seat, and his plain uniform as Assistant Coordinator of Terra was covered with dirt and grime. He grinned faintly at Zeke and pulled a thermo of coffee out of its niche.

"So the *Thirty-four* is coming back?" Zeke asked quietly.

He had no need of the other's nod, though. When they'd finally located him at the Rejuvenation Center and rushed him to the rocket field, he'd suspected. Only a matter of extreme urgency could interrupt a man's return to youth. The messengers had been uninformative, but he had been sure, once they told him Stendal was waiting on Mars. They must have been keeping it restricted to the top administrators. Zeke's eyes went back to the dirt on the man's uniform.

"Top secret," Stendal confirmed. "So hush-hush that I came to do the janitor work here. Now it's all yours. The robots and I managed to get it into a reasonable facsimile of repaired condition. *Oof!* I could use a week's sleep, but I've got to get back Earthside at once. Sorry to interrupt the rejuvenation, Zeke."

Zeke shrugged. Once, when the rejuvenation was new and men stood in line for days to keep their appointment, it might have mattered. Now there'd be a cancellation he could replace. Over fifteen per cent of the population was refusing treatment—and some of the canceling men were ones only reaching their first touch of age. Each year, less of the population seemed to find life worth renewing.

"How'd you find out she was coming?" he asked. "After all, she's fifty years overdue."

Stendal tossed the thermo into a disposal chute and reached for one of Zeke's cigarettes. "Centaurus' automatic signal must still be working. Nigel, at the Bureau, got a series of pips showing something coming this way faster than light. That's the only ship we have out, so it must be her, or—"

He let it hang unfinished, but Zeke knew what he was thinking. It was either the *Thirty-four* or another race coming with a ship that could exceed light speed. Sudden adrenalin shot through him, and he straightened. After all, the ship was long overdue. He wished the ship and the men no ill, but—

"No use getting up false hopes," Stendal cut into his thoughts. "The captain was a pretty determined sort, as I remember him. Maybe he had trouble. And I'll have trouble if I don't get back. I'll leave you a robot, in case anything needs more repairs. Think you can still run this setup, Zeke?"

Zeke snorted. He'd spent time enough at Marsport, first as head of communications, and finally as director of the whole Star Ship project, while they built the great ships and sent them out as fast as they could come off the ways. Forty ships during half a century, each costing over four billion dollars. And the *Thirty-four* was the last one out. All the rest had come back to report failure in this final quest for new frontiers.

They buckled on their aspirator helmets and went out through the locks. Stendal waved curtly and headed toward his own rocket, calling three of the waiting robots with him and sending the fourth toward the broken ruin of the administration building. Zeke watched Stendal's rocket take off and disappear. Then he turned for a final look over the wrecked field.

Mars was already wiping out all traces of this second race that had come boiling out from Earth, bent for the stars. Marsport had been young and booming when Zeke had come there first, three and a half centuries ago. Two centuries later, when the starships first began to come straggling back, and they shifted him to Earth to head General Traffic, the sand was just starting to creep over the outer buildings.

Those structures were gone now, vanished into the desert, with only this single building maintained after a fashion in faint hope the last ship would return. The frame shacks and hydroponic quonsets that had hidden the ancient Martian ruins were rotted long before; there was only the hint of a foundation here and there to show they had ever existed. In a century or so there would be no evidence that Mars had ever felt the marching feet of men, except for the scraps of the returned ships that might last a few millennia longer.

Zeke sighed again, and headed toward the building.

Then his eyes went to the horizon, where the piled stones and pitted pylon of beryl steel still stood, marking what had been the unknown and apparently unknowable race of Mars, dead perhaps ten million years before. Once that race must have spread its structures across the whole planet, but now there were only such traces as this, useless to even the archaeologists. All the elaborate designs

on them might have held significance once, but no man would ever decode them. There was no hint as to their nature, or where the race had vanished—or why.

He entered the lock of the building, with the robot dutifully at his heels, and surveyed it glumly. Only the one room, housing the great space-destroying ultrawave communicators, had been put in order. But most of the sand and dust was gone, and it was livable enough for a while. He checked to see that the communicator was working before walking over to the single window and staring out at the Martian ruins again.

Beside him, the robot stirred uneasily. "Orders?" it questioned.

Zeke turned back reluctantly from the window. "No orders, Ozin. We're on Mars, where men have given up dominion. You're as free as I am. Do what you like."

Ozin stirred again, worn metal protesting at its lack of usefulness, its queer, almost intelligent mind trying to resolve the problem presented by Zeke's words. But even this final robot, the last model before men abandoned the idea of robots, could not handle that.

"Orders?" it repeated.

Zeke gave up. "Take my ship up and house it behind the building, out of the way, then. After that, you can cut off until I call you."

The robot wasted no words in acknowledgment, but turned slowly and headed out, its metal body clumping along as woodenly as Zeke's mind was working. The lock hissed softly, and a trace of the stale, desiccated air of Mars came in. Then Ozin appeared around the arc of the wall, heading toward the rocket. Zeke watched it enter, saw the shiplock close, and shut his eyes at the deep blue flame of the exhaust from the unbaffled tubes.

Sand kicked up, spurting out and grating against the walls of the station wing, swishing against the pylon of the lost Martians. For a minute, dust hung in the air, but it settled back quickly now, to show an unchanged scene. Zeke heard the ship land again behind the building.

He reached automatically for a cigarette, wondering idly if the repaired building aspirators would take even that much added load in their labor of making a decent atmosphere out of Mars' thin air. For a second, he fiddled with the ultrawave set. The signal was coming through from Earth, indicating that they were already quietly beaming it out to where the *Thirty-four* could pick it up. It was the same dull, insipid news Zeke had heard for too many decades, though it might be interesting to men who had been gone from Earth

for over two centuries. There was no other signal to indicate that they were within calling distance, however.

He went to the window again, to watch the slow sinking of the sun that was reddening a distant sandstorm, until it finally crept below the horizon. With an abruptness that was typical of the planet, darkness fell. The stars seemed to leap into the sky, with Earth standing out among them. He frowned at that, realizing that he was the only man who would be seeing it. All the others were home on the planet.

The skylight was filthy, but he found a battered bench that would stand his weight and began working the dust and grime from the glass. The stars were clearer through that. A few hundred years hadn't changed them noticeably, and he picked them out—hot points that barely flickered in the thin air of Mars. Jupiter was in view, and he knew where all the other useless planets should be, though he could not see them.

He grimaced faintly at that, remembering his life as a boy when men had dreamed that each new world might contain some rare treasure—or even intelligence to meet and compete with man. None had panned out, though. Mercury was too hot. Venus was a roiling dustbowl under foul, poisonous layers of atmosphere, Mars worn beyond usefulness, and the other planets too cold and forbidding, except as possible stepping stones to the stars that lay farther out.

Chenery had found the trick to beat light speed when Zeke was still a callow thirty, and Marsport had sprung into life; the planet had made an ideal take-off point for ships which Earth could not permit in her own atmosphere because of the dangerous radiation of their exhausts.

There'd been Centaurus and Sirius, and the thousands of suns beyond, some with planets and some without. There had even been the high moment when a planet had been found and colonized, a mere thousand light-years away, before men had discovered that something in the star's radiation was eventually lethal to all Earth forms. But there had been no life beyond the Solar System—and nothing that even the most foolhardy could use as a reason for man's settlement.

It had proven to be a barren universe, except for Earth and the Mars of perhaps ten million years ago. Zeke looked at the ruins again, still faintly visible in the light that sliced out from his window. Whatever had built them had reached a civilization at least

as high as man's. What had happened to them that had made a culture capable of such work come to a sudden and unmarked end?

A meaningless crackle came from the ultrawave set, and he moved to it, touching up its sensitivity. For a moment again, he hoped that it would respond with only gibberish that might mean another race coming down the long starlanes toward Earth, instead of the code he knew. But he choked off the wish, even before the speaker burped again. There was a sudden sound of code symbols a second later, followed by the thin, wavering words and voice at the limit of reception.

"Starship *Thirty-four* coming in. Can you get us? *Thirty-four* calling Marsport. Landing in two hours maximum. Clear field for full splash landing. Clear field for landing without tube shields. *Thirty-four* calling Marsport—"

Zeke had the great bank of accumulators working through the transmitter, and the indicators showed that the big tubes were ready to throw their pulsed megawatts into the subspace. He glanced at the bandpass and saw that it was at its maximum intelligibility level for the distance.

"Land Marsport, *Thirty-four,* as you will. All clear. Repeat."

The voice came back, weaker. It wavered, broke into a squeal, and disappeared in a hash of static. Only blind luck had given them clear subspace long enough for a complete call. Zeke cut off the transmitter; there was no purpose in telling them that the field had been clear for decades. They'd find that soon enough.

Mars had still been a colony when they took off. It had remained one while six more of the great ships were built and sent out with orders to proceed to the limit of range before returning—or to return on significant discovery. Zeke had watched them all leave, filled with bright young volunteers, sure that they would be the ones to find a new race of intelligent life or a world that would be a paradise for men. Now the last one out was returning, and it was appropriate that he should meet the space-weary men who were coming home.

He tried to remember them, but there had been too many years and too many ships. On impulse, he knocked dust from the walls, scanning the names that had been scrawled there against regulations—and left because he had countermanded those regulations. Surprisingly, he found the one he was seeking. Hugh Miffen, captain of the *Thirty-four.* Zeke remembered him now, a tow-headed boy with a ramrod back and the driving urge of divine inspiration

in his eyes. And there had been "Preacher" Hook, who swore he was going to memorize the whole Bible in subspace. Only the two stood out now, over the long years.

Surely, if any group could have found a home for man or a companion intelligence, that group should have done it. *Something* must have happened during the fifty years they had been overdue. Their fuel would never have lasted, otherwise.

The speaker gobbled at him, finally, until he cut the power down. The wash of static could only mean that they were beginning the struggle out of subspace, knocking a hole for themselves in normal space and crawling painfully into it. It was taking the ship longer than it should, and Zeke began to worry. Then the blare of static decreased. He knew she was down under light speed.

The ship robot took his call this time, indicating that all the men aboard were fully occupied in the task of trimming her for normal flight. The signal was clear, however, and he could hear faint sounds of men's voices in the background. There was no undue worry in them, as best he could tell.

"Sealed beam," Zeke requested. It took more power to maintain a signal that could be handled on a beam with the ultrawave, but she was close enough now to risk it; it wouldn't do to have the message accidentally picked up by Earth until he knew what the results of the trip were. The robot acknowledged his order, and the queer, clipped effect of the sealing could be detected on the signal.

Zeke grunted with satisfaction as he made his own adjustment. "O.K., this is Zeke Lerner, code responsibility 21-zy-18-obt-4-a. You can report."

"Digest of report," the robot began tonelessly. "Visited suns, 3248; examined planets, 2751. Checked suns on automatic spotting, 9472; checked planets and found barren on automatic spotting, 23,911. Maximum distance attained by direct route, one hundred ten thousand light-years, forty-three ship-years; arc of coverage—"

"Cut it out. Did you find inhabited worlds?"

The robot adjusted to the interruption slowly, humming into the microphone as evidence that it was still there. Zeke swore. Then a human voice suddenly took over, weary even through the distortion of the sealed beam.

"Lerner? You still on the spot?" It was a deep bass voice that could only belong to Hugh Miffen, in spite of the years that had roughened it. The ship had naturally carried rejuvenation equipment, but even the best treatment never wiped out all traces of time.

"Sorry we had the robot on—it's about half shot, now. Anyhow, we're under light, and I'm free for a minute. Leaving out the statistics, we ran out too far and got short of fuel. We'd spotted two planets that might barely be habitable, so we back-tracked and put down on one of them. It took us about thirty-five years to find and work fuel out of the ores. Then we went on a bit before we turned home."

Zeke's eyebrows had shot up, and he shook his head. He tried to picture what it would be like on some barely livable planet, scouting for ore, jury-rigging some kind of plant to refine it—with almost no equipment—and his old respect for Miffen went up another notch. That type of man seemed sadly lacking nowadays. But he made no comment on it; it could wait for more important things, and Miffen had begun to describe the two planets.

One was too far from its sun in an eccentric orbit, going from a brief summer into a bitter winter equal to three years of Earth time. It was suitable otherwise, but no more so than Antarctica. The other was a wasteland of little water and low air pressure, though barely habitable. It had been on that world that Miffen and his crew had stranded themselves. Zeke frowned as he discarded the planets. Both would mean tremendous difficulties in ferrying supplies out for at least a century until they could somehow be made self-supporting. Men would work for a dream, but there were limits. It would need more incentive than there seemed to be.

"Evidence of life anywhere?" he asked reluctantly, as the other finished. But the question had to be asked, although the answer could be predicted, almost certainly. Even over that distance, the possibility of other races to study might drive the scientists to set up an outpost, and with that as a basis, another world might be developed as a stepping stone to still further exploration.

Miffen's voice was hesitant as the answer came. "The world we were on—Outpost, we called it—had some ruins that could only come from intelligence. But there was nothing living there. Maybe it had been what we called it once— Damn!"

A yell had sounded thinly over the speaker. Miffen's steps clattered loudly, to fade out, and leave the ultrawave dead. With the ship braking down for a landing, there was probably more than enough work for all the men. Zeke's hand lingered over the switch. Finally, he depressed it, cutting off power.

Ruins that showed intelligence, eighty million light-years across the galaxy! In forty thousand explored worlds the starships had

touched, this was the first sign of even that much chance. It wasn't enough, of course, but—

Slowly Zeke's shoulders straightened and his figure came erect. They'd explored space to a distance of a hundred million light-years on a bare chance, without any reason to hope. Out of all the previous reports, there had been only three habitable worlds, and no sign of life beyond the Solar System. Now a ship was returning with reports of two barely possible worlds and evidence that there was such life! An outpost—and somewhere beyond, perhaps, the planet where that life still existed.

With proper propaganda, with enough build-up, and with evidence that somewhere in the infinity of stars life and livability must exist, could man refuse to go on with his questing?

For a moment, he clutched at the hope. It had to be. One world was not enough for a race that had set its heart on the stars, had always found frontiers, and had geared its soul to an eternal drive toward something beyond. It could not be cooped up and fenced in without sickening in its own futility, as it was sickening even now—as he was sick within himself after four centuries of following blind alleys.

With only a little spark to fan the flames, men might be driven on. And perhaps only a few light-years away from the end of their explorations—the arbitrary limits imposed by time and energy for the ships—there might be fellow races to stir the spark that was dying in mankind.

Then he grinned bitterly and looked out through the window, turning the single workable searchlight on the Martian ruins. Man had found evidence of other life in his own backyard, and it had carried him for centuries. But it was not enough to drive him onward forever. There was nothing on Outpost that couldn't be had here—and no colony had lasted on Mars.

Zeke squinted his eyes as he studied the pylon again, noting the queer, twisted decorations on it. He had seen the report of the scientists, and they had finally given up the riddle. It would take more than this to drive men further outwards. And Miffen's voice had sounded too doubtful.

But some of the hope remained faintly in him as he stood staring into the Martian night. It would have to wait until he heard more. Now it was only another mystery, like that of the lost race of Mars.

What had happened to them? They had known how to cast tungsten, and there was evidence that nuclear reactions had been

used in tempering the pylons. That was high-level science. Where had it gone? There had apparently been no long period of high civilization, since the pylons all over the planet were about alike, with few advances in the later ones. There hadn't been time enough for the race to become decadent. Nor was there any evidences of war carried on by a race with advanced nuclear physics; there would have been enough signs of that. They couldn't have settled Earth, of course—it wouldn't have been suitable. But they must have had starships. What had kept them from spreading outwards—had even wasted them into nothingness in such a brief period of culture on their own planet?

His thoughts were interrupted by a *beep* from the speaker, and he switched on the automatic ultrawave beacons that would guide the ship down. Overhead, a thin whine thickened to a stuttering cough, the unhealthy sound of gasping, unshielded rockets that had been used too often and in too many futile landings. It was coming down well enough, though, half a mile away. Zeke watched it land while he was climbing into antiradiation armor.

The ground was still smoking, but the counter showed the radiation low enough for a quick passage when he went out. He waited for the outer lock to open, then made a dash toward it, his breath reminding him that he was old and had not been rejuvenated. He crawled into the lock and stopped to catch himself before removing the armor, while the inner lock began to open.

Then he was facing four gaunt, weary men. His eyes darted back for others of the thirty who had gone out, but Miffen was shaking his gray-bearded head. "Four of us, general. We had a few casualties. But—"

His arm swept out toward the field, now illuminated by the beams of the great ship, and his eyes fixed on the scene of the sand-filled pits and bits of building foundations that showed through the quartz of the entrance port.

Zeke shrugged and reached for his cigarettes. The sudden hunger in their eyes hit him, then, reminding him of stores now depleted in all those long years. He passed the package around, careful not to notice the hands that shook as they pulled out the cylinders.

"We've had some casualties, too, you might say," he told Miffen. He lighted his own cigarette finally, and his shoulders lifted and dropped at the other's expression. "And I'm not a general now—not since Marsport was abandoned. I came out only because we were expecting you back. What about Outpost?"

"In my cabin I've got it on microfilm." Miffen swung about, waving the three crewmen off. For the first time, Zeke noticed that one of them had the flaming red hair that had always distinguished Preacher Hook.

He lifted an eyebrow and Hook nodded, pulling out a worn Bible and making a circle with his thumb and finger. "All memorized," he stated. But the grin on his face was uncertain, and the achievement no longer seemed to be important to him.

Zeke had forgotten the size of these starships as they went up the handrails. The elevators were obviously not working. Miffen swung up the last and turned into a little cabin, kicking the door farther open. He dug into a worn chest and came out with a small package and a little viewer.

"I figured some things from what we picked up of Earth's broadcast," he remarked emotionlessly as he threaded the film into the viewer. "But I didn't believe it. Not until I saw Marsport. I guess . . . Well, this will give you an idea of Outpost. I explored all the suns around I could reach, but I never learned where the race originated."

Zeke adjusted the lenses carefully, seeing the unfamiliar two-dimensional flatness of non-stereo for the first time in centuries. It was awkward at first, but his eyes soon relearned the trick of fooling themselves.

There were several scenes, showing a sky of dull green, with grayish sand and something that looked like jumbled blocks of granite. As he stared, a pattern began to show itself. Something had been built there once, and by intelligence. Closer viewing showed that the stones had been shaped geometrically, under all their weathering.

He came to a list of statistics and skimmed through it. Then he reached the final scene.

Miffen's voice suddenly sounded behind him, awkward and too tense. "What about the other ships?"

"They all got back—they're piled up beside the field, beyond the reach of your lights. No use to us now. Thirty-nine hulks, and yours makes the fortieth—all we ever built." He turned back to the film, but again Miffen's voice interrupted him.

"All? I'd expect it— That bad, eh?"

"Worse. I suppose you're entitled to know what you've come back to. You'll see it soon enough, though—and better than I can tell you." Zeke clamped the viewer to his eye firmly, and turned to

the light once more. "There was purpose when you left. Now that's all past tense."

"Yeah." Miffen let the word hang. He must have seen Zeke's sudden tenseness and realized there was no use putting off the inspection of the final scene on the film any longer. Zeke was still staring at it, but he was unconscious of what his eyes saw, and the last of the hope in him was draining slowly away.

He stared up at Miffen, tapping the viewer. "You know what this is, of course. Or do you?"

Miffen shook his head. "I suspected. But I never paid much attention back here, and it's been a long time. I kept hoping I was crazy."

Zeke made no answer. He picked up the viewer and headed toward the control room, with Miffen following. Still silent, he pointed out through the viewports, across the leprous surface of Mars, toward the pitted beryl steel pylon that gleamed in the light from the Star Station. Then he put the viewer to his eyes again.

The sky was green instead of black, and the sand was gray where Mars was covered with red. But the scene was the same. A gleaming metal pylon rose from the rubble of ruined blocks, carrying the queer, twisted decorations that had been typical of all Martian structures. There was no question about what race had tried to colonize Outpost—and had failed.

Suddenly a work-gnarled hand took the viewer from him, and he turned to see Preacher Hook and the other men. They must have followed Miffen and himself into the control room. But it didn't matter. They must have suspected. And there was no surprise on their faces as they passed the viewer from one to another, comparing the scene with that ouside.

Almost without feeling, Zeke picked up the ultrawave microphone and called the administration building, ordering the robot to bring his rocket down beside the big starship. He adjusted the dials carefully and spoke terse, coded symbols into the instrument. A moment later, Stendal's voice answered him.

"I'm bringing the four survivors down in my ship," he reported in a voice that seemed completely detached from him. "Give us a secrecy blanket until we can report in full. And see if you can fill a few bathtubs with whisky. We'll need it."

Stendal seemed to catch his breath and then sigh, but his words were level when he spoke. "So Pandora's box was just a fairy story, after all. Well, I never had many hopes. O.K., I'll get the liquor, Zeke. And about your rejuvenation—I'm getting a private installa-

tion here for you. If the others need it, we'll take care of all of you."

Zeke looked up at the four men, and then out toward the pylon again—all that was left of a race that had searched the stars in its need to find new frontiers. It must have been a hardy race, since it had dared to set up a colony across all those innumerable parsecs of space, without even the inspiration of other life. Then, when that colony had failed, the race had returned to the loneliness of its own little world, where the stars looked down grimly, no longer promising anything. Now Mars had been dead ten million years, and the pylon stood as the final tombstone on the world which had become a prison. The old puzzle of that race's end was solved.

The speaker was sputtering with Stendal's impatient questions, as Zeke and the men studied each other, but they gave no attention to it. Preacher Hook sighed, breaking the silence.

*"Man goeth to his long home,"* he quoted softly. *"And the mourners go about the streets; or ever the silver cord be loosed, or the golden bowl be broken, or the pitcher be broken at the fountain, or the wheel broken at the cistern; and the dust return to the earth as it was, and the spirit return unto God who gave it."*

Zeke nodded and picked up the microphone.

"Just get the whisky. We've decided to skip the rejuvenation."

He put the microphone back on its hook carefully and headed toward the handrails that led down, with the others behind him. Ozin had the rocket waiting, and they climbed in and strapped themselves down.

Then the rockets blasted, and the last five men beyond the Earth were heading home.

"DR. STAPLEDON did not believe that these atomic-age settlers could be standard-model people. They would have to be deliberately bred to match the environments they intended to inhabit. Colonists for Mars, for example, might be descendants of Tibetans, slowly accustomed to even greater cold, dryness and rarefied air; while colonists for Venus might be taken from some equatorial race and bred to be capable of enduring even fiercer heat. Such minor adjustments would not be enough for colonists going to Jupiter, however. To withstand the powerful surface gravitation (2.6 times that of the earth) of that giant planet, the colonists would have to be very small, with not sufficient room for the necessary brains. Therefore, Dr. Stapledon suggested special bodies. 'By very drastic eugenical operation on the existing human form, it might be possible to enable the present human brain to be supported, in spite of excessive gravitation, by throwing man into the quadruped position, greatly strengthening the fore legs, and at the same time pushing the head far backwards so as to distribute its weight evenly between the fore and hind legs. But what of the problem of providing hands? . . . My only suggestion is that the nose might be greatly elongated into a trunk equipped with delicate grasping instruments like fingers. It would probably be desirable to have two trunks, if not three. The eyes . . . would have to be projected well forward . . . otherwise *Homo Jovianus* would not be able to see where he was stepping.'

"Inanimate nature may not be the only contestant in the first settlers' struggle for survival. Sooner or later we shall find inhabited worlds, and hostile natives may test further the physical endurance and courage of the pioneers. It is only natural that the primal owners will resent the coming of various groups of strange people, of different skin, clothing and ways. They will feel uneasy when they see their lands occupied, camps set up and towns begun. Thus, the human invaders may disturb the peace. On some planets, the terrestrial settlements may be in constant peril of raids, their early history being a recital of one war after another. On others, such as the huge planet Saturn, however, the presence of natives may not present any difficulty. Saturn is so vast that there may be ample room for innumerable other inhabitants. An imaginary description of such a condition by an interplanetary-age pilgrim recently returned from Saturn might go something like this: 'Then when we got to Saturn our troubles were over. The King of Saturn said, "We can use a billion earth-men. They can start right away. We have solid uranium, solid gold, solid copper, mountains of them. You're all hired at a pretty penny." ' "—KENNETH HEUER, *Men of Other Planets.*

# Metamorphosite

*by Eric Frank Russell*

THEY LET him pause halfway along the gangway so that his eyes could absorb the imposing scene. He stood in the middle of the high metal track, his left hand firmly grasping a side rail, and gazed into the four hundred feet chasm beneath. Then he studied the immense space vessels lying in adjacent berths, his stare tracing their gangways to their respective elevator towers behind which stood a great cluster of buildings whence the spaceport control column soared to the clouds. The height at which he stood, and the enormous dimensions of his surroundings, made him a little, doll-like figure, a man dwarfed by the mightiest works of man.

Watching him closely, his guards noted that he did not seem especially impressed. His eyes appeared to discard sheer dimensions while they sought the true meaning behind it all. His face was quite impassive as he looked around, but all his glances were swift, intelligent, and assured. He comprehended things with that quick confidence which denotes an agile mind. One feature was prominent in the mystery enveloping him; it was evident that he was no dope.

Lieutenant Roka pushed past the two rearmost guards, leaned on the rail beside the silent watcher, and explained. 'This is Madistine Spaceport. There are twenty others like it upon this planet. There are from two to twenty more on every one of four thousand other planets, and a few of them considerably bigger. The Empire is the greatest thing ever known or ever likely to be known. Now you see what you're up against."

" 'Numbers and size,' " quoth the other. He smiled faintly and shrugged. "What of them?"

"You'll learn what!" Roka promised. He, too, smiled, his teeth showing white and clean. "An organization can grow so tremendous that it's far, far bigger than the men who maintain it. From then on, its continued growth and development are well-nigh inevitable. It's an irresistible force with no immovable object big enough to stop it. It's a juggernaut. It's destiny, or whatever you care to call it."

"Bigness," murmured the other. "How you love bigness!" He leaned over the railing, peered into the chasm. "In all probability down there is an enemy you've not conquered yet."

"Such as what?" demanded Roka.

"A cancer bug." The other's eyes swung up, gazed amusedly into the lieutenant's. "Eh?" He shrugged again. "Alas, for brief mortality!"

"Move on," snapped Roka to the leading guard.

The procession shuffled on, two guards, then the prisoner, then Roka, then two more guards. Reaching the tower at the end of the track, the sextet took an elevator to ground level, found a jet car waiting for them, a long, black sedan with the Silver Comet of the Empire embossed on its sides. Two men uniformed in myrtle green occupied its front seats while a third stood by the open door at the rear.

"Lieutenant Roka with the specimen and appropriate documents," said Roka. He indicated the prisoner with a brief gesture, then handed the third man a leather dispatch case. After that, he felt in one pocket, extracted a printed pad, added, "Sign here, please."

The official signed, returned the pad, tossed the dispatch case into the back of the car.

"All right," he said to the prisoner. "Get in."

Still impassive, the other got into the car, relaxed on the rear seat. Roka bent through the doorway, offered a hand.

"Well, sorry to see the last of you. We were just getting to know each other, weren't we? Don't get any funny ideas, will you? You're here under duress, but remember that you're also somewhat of an ambassador. That'll give you the right angle on things. Best of luck!"

"Thanks." The prisoner shook the proffered hand, shifted over as the green uniformed official clambered in beside him. The door slammed, the jets roared, the car shot smoothly off. The prisoner smiled faintly as he caught Roka's final wave.

"Nice guy, Roka," offered the official.

"Quite."

"Specimen," the official chuckled. "Always they call 'em specimens. Whether of human shape or not, any seemingly high or presumably intelligent form of life imported from any newly discovered planet is, in bureaucratic jargon, a specimen. So that's what you are, whether you like it or whether you don't. Mustn't let it worry you, though. Nearly every worthwhile specimen has grabbed himself a high official post when his planet has become part of the Empire."

"Nothing worries me," assured the specimen easily.

"No?"

"No."

The official became self-conscious. He picked the dispatch case off the floor, jiggled it aimlessly around, judged its weight, then flopped it on his lap. The two in front maintained grim silence and scowled steadily through the windshield as the car swung along a broad avenue.

At good speed they swooped over a humpback crossing, overtook a couple of highly colored, streamlined cars, swung left at the end of the avenue. This brought them up against a huge pair of metal gates set in a great stone wall. The place would have looked like a jail to the newcomer if he'd known what jails look like—which he didn't.

The gates heaved themselves open, revealing a broad drive which ran between well-tended lawns to the main entrance of a long, low building with a clock tower at its center. The entrance, another metal job heavy enough to withstand a howitzer, lay directly beneath the tower. The black sedan curved sidewise before it, stopped with a faint hiss of air brakes.

"This is it." The official at the back of the car opened a door, heaved himself out, dragging the case after him. His prisoner followed, shut the door, and the sedan swooped away.

"You see," said the man in green uniform. He gestured toward the lawns and the distant wall. "There's the wall, the gate, and a space from here to there in which you'd be immediately seen by the patrols. Beyond that wall are a thousand other hazards of which you know nothing. I'm telling you this because here's where you'll have your home until matters get settled. I would advise you not to let your impatience overcome your judgment, as others have done. It's no use running away when you've nowhere to run."

"Thanks," acknowledged the other. "I won't run until I've good reason and think I know where I'm going."

The official gave him a sharp look. A rather ordinary fellow, he decided, a little under Empire average in height, slender, dark, thirtyish and moderately good-looking. But possessed of the cockiness of youth. Under examination he'd probably prove boastful and misleading. He sighed his misgiving. A pity that they hadn't snatched somebody a good deal older.

"Harumph!" he said apropos of nothing.

He approached the door, the other following. The door opened

of its own accord, the pair entered a big hall, were met by another official in myrtle green.

"A specimen from a new world," said the escort, "for immediate examination."

The second official stared curiously at the newcomer, sniffed in disdain, said, "O.K. You know where to take him."

Their destination proved to be a large examination room at one end of a marble corridor. Here, the official handed over the dispatch case to a man in white and departed without further comment. There were seven men and one woman in the room, all garbed in white.

They studied the specimen calculatingly; then the woman asked, "You have learned our language?"

"Yes."

"Very well, then, you may undress. Remove all your clothes."

"Not likely!" said the victim in a level voice.

The woman didn't change expression. She bent over an official form lying on her desk and wrote in a neat hand in the proper section: "Sex convention normal." Then she went out.

When the door had shut behind her, the clothes came off. The seven got to work on the prisoner, completing the form as they went along. They did the job quietly, methodically, as an obvious matter of old-established routine. Height: four-point-two lineal units. Weight: seventy-seven migrads. Hair: type-S, with front peaked. No wisdom teeth. All fingers double-jointed. Every piece of data was accepted as if it were perfectly normal, and jotted down on the official form. Evidently they were accustomed to dealing with entities differing from whatever was regarded as the Empire norm.

They X-rayed his cranium, throat, chest, and abdomen from front, back and both sides and dutifully recorded that something that wasn't appendix was located where his appendix ought to be. Down went the details, every one of them. Membraned epiglottis. Optical astigmatism: left eye point seven, right eye point four. Lapped glands in throat in lieu of tonsils. Crenated ear lobes. Cerebral serrations complex and deep.

"Satisfied?" he asked when apparently they'd finished with him.

"You can put on your clothes."

The head man of the seven studied the almost completed form thoughtfully. He watched the subject dressing himself, noted the careful, deliberate manner in which the garments were resumed

one by one. He called three of his assistants, conferred with them in low tones.

Finally he wrote at the bottom of the form: "Not necessarily a more advanced type, but definitely a variation. Possibly dangerous. Should be watched." Unlocking the dispatch case, he shoved the form in on top of the other papers it contained, locked the case, gave it to an assistant. "Take him along to the next stage."

Stage Two was another room almost as large as its predecessor and made to look larger by virtue of comparative emptiness. Its sole furnishings consisted of an enormous carpet with pile so heavy it had to be waded through, also a large desk of glossy plastic and two pneumatic chairs. The walls were of translucite and the ceiling emitted a frosty glow.

In the chair behind the desk reposed a swarthy, saturnine individual with lean features and a hooked nose. His dress was dapper and a jeweled ring ornamented his left index finger. His black eyes gazed speculatively as the prisoner was marched the full length of the carpet and seated in the second chair. He accepted the leather case, unlocked it, spent a long time submitting its contents to careful examination.

In the end, he said, "So it took them eight months to get you here even at supra-spatial speed. Tut, tut, how we grow! Life won't be long enough if this goes on. They've brought you a devil of a distance, eh? And they taught you our language on the way. Did you have much difficulty in learning it?"

"None," said the prisoner.

"You have a natural aptitude for languages, I suppose?"

"I wouldn't know."

The dark man leaned forward, a sudden gleam in his eyes. A faint smell of morocco leather exuded from him. His speech was smooth.

"Your answer implies that there is only one language employed on your home world."

"Does it?" The prisoner stared blankly at his questioner.

The other sat back again, thought for a moment, then went on. "It is easy to discern that you are not in the humor to be cooperative. I don't know why. You've been treated with every courtesy and consideration, or should have been. Have you any complaint to make on that score?"

"No," said the prisoner bluntly.

"Why not?" The dark man made no attempt to conceal his surprise. "This is the point where almost invariably I am treated to an

impassioned tirade about kidnapping. But you don't complain?"

"What good would it do me?"

"No good whatever," assured the other.

"See?" The prisoner settled himself more comfortably in his chair. His smile was grim.

For a while, the dark man contemplated the jewel in his ring, twisting it this way and that to catch the lights from its facets. Eventually he wrote upon the form the one word: "Fatalistic," after which he murmured, "Well, we'll see how far we can get, anyway." He picked up a paper. "Your name is Harold Harold-Myra?"

"That's correct."

"Mine's Helman, by the way. Remember it, because you may need me sometime. Now this Harold-Myra—is that your family name?"

"It is the compound of my father's and mother's names."

"Hm-m-m! I suppose that that's the usual practice on your world?"

"Yes."

"What if you marry a girl named Betty?"

"My name would still be Harold-Myra," the prisoner informed. "Hers would still be the compound of her own parents' names. But our children would be called Harold-Betty."

"I see. Now according to this report, you were removed from a satellite after two of our ships had landed on its parent planet and failed to take off again."

"I was certainly removed from a satellite. I know nothing about your ships."

"Do you know why they failed to take off?"

"How could I? I wasn't there!"

Helman frowned, chewed his lower lip, then rasped, "It is I who am supposed to be putting the questions."

"Go ahead then," said Harold Harold-Myra.

"Your unspoken thought being, 'And a lot of good it may do you,'" put in Helman shrewdly. He frowned again, added the word: "Stubborn" to the form before him. "It seems to me," he went on, "that both of us are behaving rather childishly. Mutual antagonism profits no one. Why can't we adopt the right attitude towards each other? Let's be frank, eh?" He smiled, revealing bright dentures. "I'll put my cards on the table and you put yours."

"Let's see yours."

Helman's smile vanished as quickly as it had appeared. He looked

momentarily pained. "Distrustful" went down on the form. He spoke, choosing his words carefully.

"I take it that you learned a lot about the Empire during your trip here. You know that it is a mighty organization of various forms of intelligent life, most of them, as it happens, strongly resembling yours and mine, and all of them owing allegiance to the particular solar system in which you're now located. You have been told, or should have been told, that the Empire sprang from here, that throughout many, many centuries it has spread over four thousand worlds, and that it's still spreading."

"I've heard all of that," admitted the other.

"Good! Then you'll be able to understand that you're no more than a temporary victim of our further growth, but, in many ways, a lucky man."

"I fail to perceive the luck."

"You will, you will," soothed Helman. "All in good time." Mechanically, his smile had returned, and he was making an attempt at joviality. "Now I can assure you that an organization so old and so widespread as ours is not without a modicum of wisdom. Our science has given us incredible powers, including the power to blow whole worlds apart and desiccate them utterly, but that doesn't make us disregard caution. After a wealth of experience covering a multitude of planets, we've learned that we're still not too great to be brought low. Indeed, for all our mighty power, we can err in manner disastrous to us all. So we step carefully."

"Sounds as if someone once put a scare into you," commented Harold Harold-Myra.

Helman hesitated, then said, "As a matter of fact, someone did. I'll tell you about it. Many decades ago we made a first landing on a new planet. The ship failed to take off. Our exploratory vessels always travel in threes, so a second vessel went down to the aid of its fellow. That didn't take off either. But the third ship, waiting in space, got a despairing message warning that the world held highly intelligent life of an elusive and parasitic type."

"And they confiscated the bodies you'd so kindly provided," suggested Harold.

"You know all about this life form?" Helman asked. His fingers slid toward an invisible spot on the surface of his desk.

"It's the first I've heard of them," replied the other. "Confiscation was logical."

"I suppose so," Helman admitted with some reluctance. He went

on, his keen eyes on his listener. "They didn't get the chance to take over everyone. A few men realized their peril in the nick of time, locked themselves in one vessel away from the parasites and away from their stricken fellows. There weren't enough of them to take off, so they beamed a warning. The third ship saw the menace at once; if action wasn't taken swiftly it meant that we'd handed the keys to the cosmos to unknown powers. They destroyed both ships with one atomic bomb. Later, a task ship arrived, took the stern action we deemed necessary, and dropped a planet wrecker. The world dissolved into flashing gases. It was an exceedingly narrow squeak. The Empire, for all its wealth, ingenuity and might, could not stand if all citizens did not know the real nature of their neighbor."

"A sticky situation," admitted Harold Harold-Myra. "I see now where I come in—I am a sample."

"Precisely." Helman was jovial again. "All we wish to discover is whether your world is a safe one."

"Safe for what?"

"For straightforward contact."

"Contact for what?" Harold persisted.

"Dear me! I'd have thought a person of your intelligence would see the mutual advantages to be gained from a meeting of different cultures."

"I can see the advantages all right. I can also see the consequences."

"To what do you refer?" Helman's amiability began to evaporate.

"Embodiment in your Empire."

"Tut," said Helman impatiently. "In the first place, your world would join us only of its own free will. In the second place, what's wrong with being part of the Empire? In the third, how d'you know that your opinions coincide with those of your fellows? They may think differently. They may prove eager to come in."

"It looks like it since you've got two ships stuck there."

"Ah, then you admit that they're forcibly detained?"

"I admit nothing. For all I know, your crews may be sitting there congratulating themselves on getting away from the Empire—while my people are taking steps to throw them out."

Helman's lean face went a shade darker. His long, slender hands clenched and unclenched while his disciplined mind exerted itself to suppress the retort which his emotion strove to voice.

Then he said, "Citizens of the Empire don't run away from it. Those who do run don't get very far."

"A denial and an affirmative," commented Harold amusedly. "All in one breath. You can't have it both ways. Either they run or they don't."

"You know perfectly well what I meant." Helman, speaking slowly and evenly, wasn't going to let this specimen bait him. "The desire to flee is as remote as the uselessness of it is complete."

"The former being due to the latter?"

"Not at all!" said Helman sharply.

"You damn your ramshackle Empire with every remark you make," Harold informed. "I reckon I know it better than you do."

"And how do you presume to know our Empire?" inquired Helman. His brows arched in sarcastic interrogation. "On what basis do you consider yourself competent to judge it?"

"On the basis of history," Harold told him. "Your people are sufficiently like us to be like us—and if you can't understand that remark, well, I can't help it. On my world we're old, incredibly old, and we've learned a lot from a past which is long and lurid. We've had empires by the dozens, though none as great as yours. They all went the same way—down the sinkhole. They all vanished for the same fundamental and inevitable reasons. Empires come and empires go, but little men go on forever."

"Thanks," said Helman quickly. He wrote on the form: "Anarchistic," then, after further thought, added: "Somewhat of a crackpot."

Harold Harold-Myra smiled slowly and a little sadly. The writing was not within line of his vision, but he knew what had been written as surely as if he'd written it himself. To the people of his ancient planet it was not necessary to look at things in order to see them.

Pushing the form to one side, Helman said, "The position is that every time we make a landing we take the tremendous risk of presenting our secrets of space conquest to people of unknown abilities and doubtful ambitions. It's a chance that has to be taken. You understand that?" He noted the other's curt nod, then went on. "As matters stand at present, your world holds two of our best vessels. Your people, for all we can tell, may be able to gain a perfect understanding of them, copy them in large numbers, even improve on them. Your people may take to the cosmos, spreading ideas that don't coincide with ours. Therefore, in theory, the choice is war or

peace. Actually, the choice for your people will be a simple one: co-operation or desiccation. I hate to tell you this, but your hostile manner forces me to do so."

"Uncommunicative might be a better word than hostile," suggested Harold Harold-Myra.

"Those who're not with us are against us," retorted Helman. "We're not being dictatorial—merely realistic. Upon what sort of information we can get out of you depends the action we take regarding your world. You are, you must understand, the representative of your kind. We are quite willing to accept that your people resemble you to within reasonable degree, and from our analysis of you we'll decide whether—"

"We get canonized or vaporized," put in Harold.

"If you like." Helman refused to be disturbed. He'd now acquired the *sang-froid* of one conscious of mastery. "It is for you to decide the fate of your planet. It's an enormous responsibility to place on one man's shoulders, but there it is, and you've got to bear it. And remember, we've other methods of extracting from you the information we require. Now, for the last time, are you willing to subject yourself to my cross-examination, or are you not?"

"The answer is," said Harold carefully, "I am not!"

"Very well then." Helman accepted it phlegmatically. He pressed the spot on his desk. "You compel me to turn from friendly interrogation to forcible analysis. I regret it, but it is your own choice." Two attendants entered, and he said to them, "Take him to Stage Three."

The escorting pair left him in this third and smaller room and he had plenty of time to look around before the three men engaged therein condescended to notice him. They were all in white, this trio, but more alert and less automatic than the white-garbed personnel of the medical examination room. Two of them were young, tall, muscular, and hard of countenance. The third was short, thickset, middle-aged, and had a neatly clipped beard.

Briskly they were switching on a huge array of apparatus covering one wall of the room. The set-up was a mass of plastic panels, dials, meters, buttons, switches, sockets with corded plugs, and multi-connection pieces. From inside or close behind this affair came a low, steady hum. Before it, centrally positioned, was a chair.

Satisfied that all was in readiness, the bearded man said to Harold, "O.K., be seated." He signed to his two assistants who stepped forward as if eager to cope with a refusal.

Harold smiled, waved a negligent hand, sat himself in the chair. Working swiftly, the three attached cushioned metal bands to his ankles, calves, thighs, chest, neck, and head. Flexible metal tubes ran from the bands to the middle of the apparatus while, in addition, the one about his head was connected to a thin, multicore cable.

They adjusted the controls to give certain readings on particular meters, after which the bearded one fixed glasses on his nose, picked up a paper, stared at it myopically. He spoke to the subject in the chair.

"I am about to ask you a series of questions. They will be so phrased that the answers may be given as simple negatives or affirmatives. You can please yourself whether or not you reply vocally. It is a matter of total indifference to me."

He glanced at Harold and his eyes, distorted into hugeness behind thick-lensed glasses, were cold and blank. His finger pressed a button; across the room a camera whirred into action, began to record the readings on the various meters.

Disregarding everything else, and keeping his attention wholly on the man in the chair, the bearded one said, "You were discovered on a satellite—yes or no?"

Harold grinned reminiscently but did not reply.

"Therefore your people know how to traverse space?"

No reply.

"In fact they can go further than to a mere satellite. They can reach neighboring planets—yes or no?"

No reply.

"Already they have explored neighboring planets?"

No reply.

"The truth is that they can do even better than that—they have reached other solar systems?"

He smiled once more, enigmatically.

"Your world is a world by itself?"

Silence.

"It is one of an association of worlds?"

Silence.

"It is the outpost world of another Empire?"

Silence.

"But that Empire is smaller than ours?"

No response.

"Greater than ours?"

"Heavens, I've been led to believe that yours is the greatest ever," said Harold sardonically.

"Be quiet!" One of the young ones standing at his side gave him an irate thrust on the shoulder.

"Or what?"

"Or we'll slap your ears off!"

The bearded man, who had paused expressionlessly through this brief interlude, carried on nonchalantly.

"Your kind are the highest form of life on your planet? There is no other intelligent life thereon? You knew of no other intelligent life anywhere previous to encountering emissaries of the Empire?"

The questioner was in no way disturbed by his victim's complete lack of response, and his bearing made that fact clear. Occasionally peering at the papers in his hand, but mostly favoring his listener with a cold, owlish stare, he ploughed steadily on. The questions reached one hundred, two hundred, then Harold lost count of them. Some were substitutes or alternatives for others, some made cross reference with others asked before or to be asked later, some were obvious traps. All were cogent and pointed. All met stubborn silence.

They finished at length, and the bearded one put away his papers with the grumbling comment, "It's going to take us all night to rationalize this lot!" He gave Harold a reproving stare. "You might just as well have talked in the first place. It would have saved us a lot of bother and gained you a lot of credit."

"Would it?" Harold was incredulous.

"Take him away," snapped the bearded man.

One of the young men looked questioningly at the oldster, who understood the unspoken query and responded, "No, not there. Not yet, anyway. It mightn't be necessary. Let's see what we've got first." He took off his glasses, scratched his beard. "Put him in his apartment. Give him something to eat." He cackled gratingly. "Let the condemned man eat a hearty meal."

The apartment proved to be compact, well-appointed, comfortable. Three rooms: bathroom, bedroom, sitting room, the latter with a filled bookcase, a large electric radiator, sunken heating panels for extra warmth, and a magniscreen television set.

Harold sprawled at ease in a soft, enveloping chair, watched a short-haired, burly man wheel in a generous meal. Hungry as he

was, his attention didn't turn to the food. He kept it fixed on the burly man who, unconscious of the persistent scrutiny, methodically put out the meat, bread, fruit, cakes, and coffee.

As the other finished his task, Harold said casually, "What are those lizard-like things that wear black uniforms with silver braid?"

"Dranes." Short-hair turned around, gazed dully at the prisoner. His face was heavy, muscular, his eyes small, his forehead low. "We calls 'em Dranes."

"Yes, but what are they?"

"Oh, just another life form, I guess. From some other planet—maybe from one called Drane. I dunno. I used to know, but I've forgotten."

"You don't like them, eh?" suggested Harold.

"Who does?" He frowned with the unusual strain of thought, his small eyes shrinking still smaller. "I like to have ideas of my own, see? I don't care for any lizards reading my mind and telling the world what I'd sooner keep to myself, see? A man wants privacy—especially sometimes."

"So they're telepaths!" It was Harold's turn to frown. "Hm-m-m!" He mused anxiously. The other began to shove his empty meal trolley toward the door, and Harold went on hurriedly, "Any of them hereabouts?"

"No, it's too late in the evening. And there ain't a lot of them on this planet, thank Pete! Only a few here. They do some sort of official work, I dunno what. A couple of them got important jobs right in this dump, but they'll be home now. Good riddance, I says!" He scowled to show his intense dislike of the mysterious Dranes. "A guy can think what he likes while they're away." He pushed his trolley outside, followed it and closed the door. The lock clicked quietly, ominously.

Harold got on with his meal while he waited for angry men to come for him. Beardface and his two assistants had indicated that nothing more would be done with him before morning, but this last episode would speed things up considerably. He hastened his eating, vaguely surprised that he was getting it finished without interruption. They were less quick on the uptake than he'd anticipated. He employed the time usefully in working out a plan of campaign.

The apartment made his problem tough. He'd already given it a thorough scrutiny, noted that its decorated walls and doors were all of heavy metal. The windows were of armorglass molded in one

piece over metal frames with sturdy, closely set bars. It was more than an apartment; it was a vault.

There was a very tiny lens cunningly concealed in the wall high up in one corner. It would have escaped discovery by anyone with lesser powers of observation. He'd found another mounted on the stem of the hour hand of the clock. It looked like a jewel. He knew it to be a scanner of some kind, and suspected that there were others yet to be found. Where there were scanners there would also be microphones, midget jobs hard to dig out when you don't want to make a search too obvious. Oh, yes, they'd know all about his little conversation with Short-hair—and they'd be along.

They were. The lock clicked open just as he ended his meal. Helman came in followed by a huge fellow in uniform. The latter closed the door, leaned his broad back against it, pursed his lips in a silent whistle while he studied the room with obvious boredom. Helman went to a chair, sat in it, crossed his legs, looked intently at the prisoner. A vein pulsed in his forehead and the effect of it was menacing.

He said, "I've been on the televox to Roka. He swears that he's never mentioned the Dranes in your presence. He's positive that they've never been mentioned or described in your hearing by anyone on the ship. Nothing was said about them by the guards who brought you here. You've seen none in this building. So how d'you know about them?"

"Mystifying, isn't it?" commented Harold pleasantly.

"There is only one way in which you could have found out about the Dranes," Helman went on. "When the examiners finished with you in Stage Three an assistant pondered the notion of passing you along to Stage Four, but the idea was dropped for the time being. Stage Four is operated by the Dranes."

"Really?" said Harold. He affected polite surprise.

"The Dranes were never mentioned," persisted Helman, his hard eyes fixed on his listener, "but they were thought of. You read those thoughts. You are a telepath!"

"And you're surprised by the obvious?"

"It wasn't obvious because it wasn't expected," Helman retorted. "On four thousand worlds there are only eleven truly telepathic life forms and not one of them human in shape. You're the first humanoid possessing that power we've discovered to date."

"Nevertheless," persisted Harold, "it should have been obvious. My refusal to co-operate—or my stubbornness as you insist on call-

ing it—had good reason. I perceived all the thoughts behind your questions. I didn't like them. I still don't like them."

"Then you'll like even less the ones I'm thinking now," snapped Helman.

"I don't," Harold agreed. "You've sent out a call for the Dranes, ordered them to come fast, and you think they'll be here pretty soon. You expect them to suck me dry. You've great confidence in their powers even though you can't conceive the full extent of mine."

He stood up, smiled as Helman uncrossed his legs with a look of sudden alarm. He stared into Helman's black eyes, and his own were sparkling queerly. "I think," he said, "that this is a good time for us to go trundle our hoops—don't you?"

"Yes," Helman murmured. Clumsily he got to his feet, stood there with an air of troubled preoccupation. "Yes, sure!"

The guard at the door straightened up, his big hands held close to his sides. He looked inquiringly at the vacant Helman. When Helman failed to respond, he shifted his gaze to the prisoner, kept the gaze fixed while slowly the alertness faded from his own optics.

Then, although he'd not been spoken to, he said hoarsely, "O.K., we'll get along. We'll get a move on." He opened the door.

The three filed out, the guard leading, Helman in the rear. They moved rapidly along the corridors, passing other uniformed individuals without challenge or comment until they reached the main hall. Here, the man in myrtle green, whose little office held the lever controlling the automatic doors, sat at his desk and felt disposed to be officious.

"You can't take him out until you've signed him out, stating where he's being taken, and on whose authority," he enunciated flatly.

"On my authority," said Helman. He voiced the words in stilted tones as if he were a ventriloquist's dummy, but the officious one failed to notice it.

"Oh, all right," he growled. He shoved a large, heavy tome to one end of his desk. "Sign there. Name in column one, destination in column two, time of return in column three." He looked at the huge guard who was watching dumbly, emitted a resigned sigh, inquired, "I suppose you need a car?"

"Yes," said Helman mechanically.

The official pressed a button; a sonorous gong clanged somewhere outside the building. Then he pulled his tiny lever; the great doors swung open. The trio strolled out with deceptive casualness, waited a moment while the doors closed behind them. It was fairly

dark now, but not completely so, for a powdering of stars lay across the sky, and a steady glow of light emanated from the surrounding city.

Presently a jet car swept around one end of the building, stopped before them. The three got in. Harold sat at the back between Helman and the big guard, both of whom were strangely silent, ruminative. The driver turned around, showed them a face with raised eyebrows.

"Downtown," uttered Helman curtly.

The driver nodded, faced front. The car rolled toward the gates in the distant wall, reached them, but they remained closed. Two men in green emerged from the shadow of the wall, focused light beams on the vehicle's occupants.

One said, "Inquisitor Helman, one specimen—I guess it's O.K." He waved his light beam toward the gates which parted slowly and ponderously. Emitting a roar from its jets, the car swept through.

They dropped Harold Harold-Myra in the mid-southern section of the city where buildings grew tallest and crowds swarmed thickest. Helman and the guard got out of the car, talked with him while the driver waited out of earshot.

"You will both go home," Harold ordered, "remembering nothing of this and behaving normally. Your forgetfulness will persist until sunrise. Until you see the sun you will be quite unable to recall anything which has occurred since you entered my room. Do you understand?"

"We understand."

Obediently they got back into the car. They were a pair of automatons. He stood on the sidewalk, watched their car merge into the swirl of traffic and disappear. The sky was quite dark now, but the street was colorful with lights that shifted and flickered and sent eccentric shadows skittering across the pavement.

For a few minutes he stood quietly regarding the shadows and musing within himself. He was alone—alone against a world. It didn't bother him particularly. His situation was no different from that of his own people who formed a solitary world on the edge of a great Empire. He'd one advantage which so far had stood him in good stead; he knew his own powers. His opponents were ignorant in that respect. On the other hand, he suffered the disadvantage of being equally ignorant, for although he'd learned much about the people of the Empire, he still did not know the full extent of their

powers. And theirs were likely to be worthy of respect. Alliance of varied life forms with varied talents could make a formidable combination. The battle was to be one of *homo superior* versus *homo sapiens* plus the Dranes plus other things of unknown abilities—with the odds much in favor of the combine.

Now that he was foot-loose and fancy-free he could appreciate that guard's argument that there's no point in being free unless one knows where to nurse one's freedom. The guard, though, had implied something and overlooked something else. He'd implied that there were places in which freedom could be preserved, and he'd forgotten that escapees have a flair for discovering unadvertised sanctuaries. If his own kind were half as wise and a quarter as crafty as they ought to be, thought Harold, the tracing of such a sanctuary should not be difficult.

He shrugged, turned to go, found himself confronted by a tall, thin fellow in black uniform with silver buttons and silver braid. The newcomer's features were gaunt and tough, and they changed color from gold to blood-red as the light from a nearby electric sign flickered over it.

Harold could hear the other's mind murmuring, *"Queer, outlandish clothes this fellow's wearing. Evidently a recent importee—maybe a specimen on the lam,"* even as the thinker's mouth opened and he said audibly, "Let me see your identity card!"

"Why?" asked Harold, stalling for time. Curse the clothes. He'd not had time to do anything about them yet.

"It's the regulation," the other returned irritably. "You should know that every citizen must produce his card when called upon to do so by the police." His eyes narrowed, his mind spoke silently but discernibly. *"Ah, he hesitates. It must be that he doesn't possess a card. This looks bad!"* He took a step forward

Harold's eyes flamed with an odd glow. "You don't really want to see my card?" he said gently. "Do you?"

The policeman had a momentary struggle with himself before he answered, "No . . . no . . . of course not!"

"It was just your mistake?"

"Just my mistake!" admitted the other slowly. His mind was now completely muddled. A random thought, *"He's dangerous!"* fled wildly through the cerebral maze, pursued, outshouted, and finally silenced by other, violently imposed thoughts saying, *"Silly mistake. Of course he's got a card. I interfere too much."*

With shocking suddenness, another thought broke in, registering clearly and succinctly despite the telepathic hubbub of a hundred surrounding minds. *"By the Blue Sun, did you catch that, Gaeta? A fragment of hypnotic projection! Something about a card. Turn the car round!"*

A cold sweat beaded on Harold's spine, he closed his mind like a trap, sent his sharp gaze along the road. There was too great a flood of cars and too many swiftly changing lights to enable him to pick out any one vehicle turning in the distance. But he'd know that car if it came charging down upon him. Its driver might be of human shape, but its passengers would be lizardlike.

Machines whirled past him four, five, and sometimes six abreast. The eerie voice which had faded suddenly came back, waxed strong, faded away again.

It said, *"I might be wrong, of course. But I'm sure the amplitude was sufficient for hypnosis—No, it's gone now—I can't pick it up at all. All these people make too much of a jumble on the neural band!"*

Another thought, a new one, answered impatiently, *"Oh, let it pass, you're not on duty now. If we don't—"* It waned to indiscernibility.

Then the policeman's mind came back, saying, *"Well, why am I standing here like a dummy? Why was I picking on this guy? It must've been for something! I didn't stop him for the fun of it—unless I'm scatty!"*

Harold said quickly and sharply, "You didn't stop me. I stopped you. Intelligence Service, remember?"

"Eh?" The cop opened his mouth, closed it, looked confused.

"Wait a moment," added Harold, a strong note of authority in his voice. He strained his perception anxiously. A river of surrounding thoughts flowed through his mind, but none with the power and clarity of the invisible Gaeta and his alert companion. Could they, too, close their minds? There wasn't any way of telling!

He gave it up, returned his attention to the cop, and said, "Intelligence Service. I showed you my official warrant. Good heavens, man, have you forgotten it already?"

"No." The man in black was disconcerted by this unexpected aggressiveness. The reference to a nonexistent Intelligence Service warrant made his confusion worse confounded. "No," he protested,

"I haven't forgotten." Then, in weak effort to make some sort of a come-back. "But you started to say something, and I'm waiting to hear the rest."

Harold smiled, took him by the arm. "Look, I'm authorized to call upon you for assistance whenever needed. You know that, don't you?"

"Yes, sure, but—"

"What I want you to do is very simple. It's necessary that I change attire with a certain suspected individual and that he be kept out of circulation overnight. I'll point him out to you when he comes along. You're to tell him that you're taking him in for interrogation. You'll then conduct us somewhere where we can change clothes, preferably your own apartment if you've got one. I'll give you further instructions when we get there."

"All right," agreed the cop. He blinked as he tried to rationalize his mind. Thoughts gyrated bafflingly in his cranium. *"Not for you to reason why. Do your duty and ask no questions. Let higher-ups take the responsibility. This guy's got all the authority in the world —and he knows what he's doing."* There was something not quite right about those thoughts. They seemed to condense inward instead of expanding outward, as thoughts ought to do. But they were powerful enough, sensible enough, and he wasn't able to give birth to any contrary ideas. "All right," he repeated.

Studying the passers-by, Harold picked a man of his own height and build. Of all the apparel streaming past, this fellow's looked made to fit him to a nicety. He nudged the cop.

"That's the man."

The officer strode majestically forward, stopped the victim, said, "Police! I'm taking you in for interrogation."

"Me?" The man was dumfounded. "I've done nothing!"

"Then what've you got to worry about?"

"Nothing," hastily assured the other. He scowled with annoyance. "I guess I'll have to go. But it's a waste of time and a nuisance."

"So you think the Empire's business is a nuisance?" inquired Harold, joining the cop.

The victim favored him with a look of intense dislike, and complained, "Go on, try making a case against me. Having it stick will be something else!"

"We'll see!"

Cutting down a side street, the trio hit a broad avenue at its farther end. No cars here; it was solely for pedestrians. The road was

divided into six moving strips, three traveling in each direction, slowest on the outsides, fastest in the middle. Small groups of people, some chatting volubly, some plunged in boredom, glided swiftly along the road and shrank in the distance. A steady rumbling sound came from beneath the rubbery surface of the road.

The three skipped onto an outer slow strip, thence to the medium fast strip, finally to the central rapid strip. The road bore them ten blocks before they left it. Harold could see it rolling on for at least ten blocks more.

The cop's apartment proved to be a modernistic, three-roomed bachelor flat on the second floor of a tall, gray-stone building. Here, the captive started to renew his protests, looked at Harold, found his opinions changing even as he formed them. He waxed co-operative, though in a manner more stupefied than willing. Emptying the contents of his pockets on a table, he exchanged clothes.

Now dressed in formal, less outlandish manner, Harold said to the police officer, "Take off your jacket and make yourself at home. No need to be formal on this job. We may be here some time yet. Get us a drink while I tell this fellow what's afoot." He waited until the cop had vanished into an adjoining room, then his eyes flamed at the vaguely disgruntled victim. "Sleep!" he commanded, "sleep!"

The man stirred in futile opposition, closed his eyes, let his head hang forward. His whole body slumped wearily in its chair. Raking rapidly through the personal possessions on the table, Harold found the fellow's identity card. Although he'd never seen such a document before, he wasted no time examining it, neither did he keep it. With quick dexterity, he dug the cop's wallet out of his discarded jacket, extracted the police identity card, substituted the other, replaced the wallet. The police card he put in his own pocket. Way back on the home planet it was an ancient adage that double moves are more confusing than single ones.

He was barely in time. The cop returned with a bottle of pink, oily liquid, sat down, looked dully at the sleeper, said, "Huh?" and transferred his lackluster stare to Harold. Then he blinked several times, each time more slowly than before, as if striving to keep his eyes open against an irresistible urge to keep them shut. He failed. Imitating his captive, he hung his head—and began to snore.

"Sleep," murmured Harold, "sleep on toward the dawn. Then you may awake. But not before!"

Leaning forward, he lifted a small, highly polished instrument

from its leather case beneath the policeman's armpit. A weapon of some sort. Pointing it toward the window, he pressed the stud set in its butt. There was a sharp, hard crack, but no recoil. A perfect disk of glassite vanished from the center of the window. Cold air came in through the gap, bringing with it a smell like that of roasted resin. Giving the weapon a grim look, he shoved it back into its holster, dusted his fingers distastefully.

"So," he murmured, "discipline may be enforced by death. Verily, I'm back in the dark ages!"

Ignoring the sleepers, he made swift search of the room. The more he knew about the Empire's ordinary, everyday citizens the better it'd be for him. Knowledge—the right knowledge—was a powerful arm in its own right. His people understood the value of intangibles.

Finished, he was about to leave when a tiny bell whirred somewhere within the wall. He traced the sound as emanating from behind a panel, debated the matter before investigating further. Potential danger lurked here; but nothing ventured, nothing gained. He slid the panel aside, found himself facing a tiny loudspeaker, a microphone, a lens, and a small, circular screen.

The screen was alive and vivid with color, and a stern, heavily jowled face posed in sharp focus within its frame. The caller raked the room with one quick, comprehending glance, switched his attention to Harold.

"So the missing Guarda *is* indisposed," he growled. "He slumbers before a bottle. He awaits three charges; absent from duty, improperly dressed, and drunk! We'll deal with this at once." He thinned his lips. "What is your name and the number of your identity card, citizen?"

"Find out," suggested Harold. He slammed the panel before the tiny scanner could make a permanent record of his features—if he had not done so already.

That was an unfortunate episode: it cut down his self-donated hours of grace to a few minutes. They'd be on their way already, and he'd have to move out fast.

He was out of the apartment and the building in a trice. A passing car stopped of its own accord and took him downtown. Its driver was blissfully unaware of the helplessness of his own helpfulness.

Here, the city seemed brighter than ever mostly because the deeper darkness of the sky enhanced the multitude of lights. A few

stars still shone, and a string of colored balls drifted high against the backdrop where some unidentifiable vessel drove into space.

He merged with the crowds still thronging the sidewalks. There was safety in numbers. It's hard to pick one guy out of the mob, especially when he's dressed like the mob, behaves like the mob. For some time he moved around with the human swarm though his movements were not as aimless. He was listening to thoughts, seeking either of two thought-forms, one no more than slightly helpful, the other important. He found the former, not the latter.

A fat man wandered past him and broadcast the pleasurable notion of food shared in large company. He turned and followed the fat man, tracking him along three streets and another moving avenue. The fat man entered a huge restaurant with Harold at his heels. They took an unoccupied table together.

Plenty of active thoughts here. In fact the trouble was that there were far too many. They made a constant roar right across the telepathic band; it was difficult to separate one from another, still more difficult to determine who was emanating which. Nevertheless, he persisted in his effort to sort out individual broadcasts, taking his food slowly to justify remaining there as long as possible. Long after the fat man had left he was still seated there, listening, listening. There were many thoughts he found interesting, some revealing, some making near approach to the notions he sought, but none quite on the mark, not one.

In the end, he gave it up, took his check from the waiter. It was readily apparent what the waiter had on his mind, namely, this crazy stuff called money. Roka had told him a lot about money, even showing him samples of the junk. He remembered that Roka had been dumfounded by his ignorance concerning a common medium of exchange. With amusing superiority, the worthy lieutenant had assumed that Harold's people had yet to discover what they'd long since forgotten.

There had been some of this money—he didn't know just how much—in the pockets of this suit, but he'd left it all with the suit's hapless donor. There wasn't any point in snatching someone else's tokens. Besides, having managed without it all his life he wasn't going to become a slave to it now.

He paid the waiter with nothing, putting it into the fellow's hand with the lordly air of one dispensing a sizable sum. The waiter gratefully accepted nothing, put nothing into his pocket, initialed

the check, bowed obsequiously. Then he rubbed his forehead, looked vague and confused, but said nothing. Harold went out.

It was on the sidewalk Harold made the contact he was seeking, though not in the manner he'd expected. He was looking for a mutinous thinker who might lead him to the underworld of mutinous thinkers. Instead, he found a friend.

The fellow was twenty yards away and walking toward him with a peculiarly loose-jointed gait. He was humanoid in all respects but one—his skin was reptilian. It was a smooth but scaly skin of silvery gray in which shone an underlying sheen of metallic blue. The pupils of his eyes were a very light gray, alert, intelligent.

Those eyes looked straight into Harold's as they came abreast, a flood of amity poured invisibly from them as he smiled and said in an undertone, "Come with me." He walked straight on, without a pause. He didn't look back to see whether Harold followed.

Harold didn't wait to consider the matter. This was a time for quick decision. Swiveling on one heel he trailed along behind the speaker. And as he trod warily after the other, his mind was active with thoughts, and his thinking was done within a mental shell through which nothing could probe.

Evidently the scaly man was an outsider, a product of some other world. His queer skin was proof of that. There were other factors, too. He hadn't read Harold's mind—Harold was positive of that—yet in some strange, inexplicable way he'd recognized a kinship between them and had acknowledged it without hesitation. Moreover, he was strolling along with his mind wide open, but Harold was totally unable to analyze his thoughts. Those thoughts, in all probability, were straightforward and logical enough, but they oscillated in and out of the extreme edge of the neural band. Picking them up was like trying to get frequency modulation on a receiver designed for amplitude modulation. Those thought-forms might be normal, but their wave-forms were weird.

Still not looking back, the subject of his speculations turned into an apartment building, took a levitator to the tenth floor. Here he unlocked a door, gazed around for the first time, smiled again at his follower, motioned him inside.

Harold went in. The other closed the door after him. There were two similar entities in the apartment. One sat on the edge of a table idly swinging his legs; the other lounged on a settee and was absorbed in a magazine.

"Oh, Melor, there's a—" began the one on the settee. He glanced

up, saw the visitor, grinned in friendly fashion. Then his expression changed to one of surprise, and he said, "By the everlasting light, it's *you!* Where did you find him, Melor?"

This one's mind was fully as baffling and Harold found himself unable to get anything out of it. The same applied to the being perched upon the table: his thoughts wavered in and out of the borderline of detection.

"I found him on the street," replied the one called Melor, "and I invited him along. He has a most attractive smell." He sat down, invited Harold to do likewise. Looking at the one on the settee, he went on, "What did you mean by, 'Oh, it's *you*'? D'you know him?"

"No." The other switched on a teleset at his side. "They broadcast a call for him a few minutes ago. He's wanted—badly." He moved a second switch. "Here's the recording. Watch!"

The set's big screen lit up. A sour-faced man in flamboyant uniform appeared on the screen, spoke with official ponderousness.

"All citizens are warned to keep watch for and, if possible, apprehend an escaped specimen recently brought from the Frontier. Name: Harold Harold-Myra. Description—" He went on at great length, giving everything in minute detail, then finished, "His attire is noticeably unconventional and he has not yet been provided with an identity card. Citizens should bear in mind that he may possess attributes not familiar to Empire races and that he is wanted alive. In case of necessity, call Police Emergency on Stud Four. Here is his likeness."

The screen went blank, lit up again, showed Harold's features in full color. He recognized part of his former prison in the background. Those midget scanners had done their job!

"Tush!" scoffed the being on the settee. He switched off, turned to Harold. "Well, you're in good hands. That's something. We wouldn't give anyone in authority a magni-belt to hold up his pants. My name's Tor. The one industriously doing nothing on the table is Vern. The one who brought you here is Melor. Our other names don't matter much. As maybe you've guessed, we aren't of this lousy, over-organized world. We're from Linga, a planet which is a devil of a long way off, too far away for my liking. The more I think of it, the farther it seems."

"It's no farther than my own world," said Harold. He leaned forward. "Look, can you read my mind?"

"Not a possibility of it," Tor answered. "You're like the local

breed in that respect; you think pulsatingly and much too far down for us. Can you read ours?"

"I can't. You wobble in and out of my limit." He frowned. "What beats me is what made Melor pick me out if he can't read my thoughts."

"I smelled you," Melor put in.

"Huh?"

"That's not strictly correct, but it's the best way I can explain it. Most of the Empire's peoples have some peculiar faculty they call a sense of smell. We don't possess it. They talk about bad odors and sweet ones, which is gibberish to us. But we can sense affinities and oppositions, we can sort of 'smell' friends and enemies, instantly, infallibly. Don't ask me how we do it, for how can I tell you?"

"I see the difficulty," agreed Harold.

"On our world," Melor continued, "most life forms have this sense which seems peculiar to Linga. We've no tame animals and no wild ones; they're tame if you like them, wild if you don't. None would be driven by curiosity to make close approach to a hunter, none would flee timidly from someone anxious to pet them. Instinctively they know which is friend and which is enemy. They know it as certainly as you know black from white or night from day."

Tor put in, "Which is an additional reason why we're not very popular. Skin trouble's the basic one, d'you understand? So among an appalling mixture of hostile smells we welcome an occasional friendly one—as yours is."

"Do the Dranes smell friendly?"

Tor pulled a face. "They stink!" he said with much emphasis. Gazing ruminatively at the blank television screen, he went on, "Well, the powers-that-be are after your earthly body, and I'm afraid we can't offer you much encouragement though we're willing to give you all the help we can. Something like twenty specimens have escaped in the last ten or twelve years. All of them broke loose by suddenly displaying long-concealed and quite unexpected powers which caught their captors by surprise. But none stayed free. One by one they were roped in, some sooner than others. You can't use your strength without revealing what you've got, and once the authorities know what you've got they take steps to cope with it. Sooner or later the fugitive makes a try for his home planet—and finds the trappers waiting."

"They're going to have a long, long wait," Harold told him, "for I'm not contemplating a return to my home world. At least, not yet. What's the use of coming all the way here just to go all the way back again?"

"We took it that you hadn't much choice about the coming," said Tor.

"Nor had I. Circumstances made it necessary for me to come. Circumstances make it necessary for me to stay awhile."

The three were mildly surprised by this phlegmatic attitude.

"I'm more of a nuisance here," Harold pointed out. "This is the Empire's key planet. Whoever bosses this world bosses the Empire. It may be one man, it may be a small clique, but on this planet is the mind or minds which make the Empire tick. I'd like to retime that tick."

"You've *some* hopes!" opined Tor gloomily. "The Big Noise is Burkinshaw Three, the Lord of Terror. You've got to have forty-two permits, signed and countersigned, plus an armed escort, to get within sight of him. He's exclusive!"

"That's tough, but the situation is tougher." He relaxed in his chair and thought awhile. "There's a Lord of Terror on every planet, isn't there? It's a cockeyed title for the bosses of imperial freedom!"

"Terror means greatness, superior wisdom, intellect of godlike quality," explained Tor.

"Oh, does it? My mistake! We used the same-sounding word on my planet, and there it means fear." Suddenly a strange expression came into his face. He ejaculated, "Burkinshaw! Burkinshaw! Ye gods!"

"What's the matter?" Melor inquired.

"Nothing much. It's only that evidence is piling up on top of a theory. It should help. Yes, it ought to help a lot." Getting up, he paced the room restlessly. "Is there an underground independence movement on Linga?" he asked.

Tor grinned with relish, and said, "I'd not be far from the truth if I guessed that there's such a movement on every planet excepting this one. Imperially speaking, we're all in the same adolescent condition: not quite ripe for self-government. We'll all get independence tomorrow, but not today." He heaved a resigned sigh."Linga's been getting it tomorrow for the last seven hundred years."

"As I thought," Harold commented. "The same old set-up. The

same old stresses, strains, and inherent weaknesses. The same blindness and procrastination. We've known it all before—it's an old, old tale to us."

"What is?" persisted the curious Melor.

"History," Harold told him.

Melor looked puzzled.

"There's an ancient saying," Harold continued, "to the effect that the bigger they come the harder they fall. The more ponderous and top-heavy a structure the riper it is for toppling." He rubbed his chin, studied his listeners with a peculiarly elfish gaze. "So the problem is whether we can shove hard enough to make it teeter."

"Never!" exclaimed Tor. "Nor a thousand either. It's been tried times without number. The triers got buried—whenever there was enough to bury."

"Which means that they tried in the wrong way, and/or at the wrong time. It's up to us to push in the right way at the right time."

"How can you tell the right time?"

"I can't. I can choose only the time which, when everything's taken into account, seems the most favorable—and then hope that it's the right time. It'll be just my hard luck if I'm wrong." He reflected a moment, then went on, "The best time ought to be nine days hence. If you can help me to keep undercover that long, I'll promise not to involve you in anything risky in the meanwhile. Can you keep me nine days?"

"Sure we can." Tor regarded him levelly. "But what do we get out of it other than the prospect of premature burial?"

"Nothing except the satisfaction of having had a finger in the pie."

"Is that all?" Tor asked.

"That's all," declared Harold positively. "You Lingans must fight your way as we're fighting ours. If ever my people help you, it will be for the sake of mutual benefit or our own satisfaction. It won't be by way of reward."

"That suits me," Tor said flatly. "I like good, plain talk, with no frills. We're tired of worthless promises. Count us with you to the base of the scaffold, but not up the steps—we'd like to indulge second thoughts before we mount those!"

"Thanks a lot," acknowledged Harold gratefully. "Now here are some ideas I've got which—"

He stopped as the television set emitted a loud chime. Tor reached

over, switched on the apparatus. Its screen came to life, depicting the same uniformed sourpuss as before.

The official rumbled, "Urgent call! Citizens are warned that the escaped specimen Harold Harold-Myra, for whom a call was broadcast half an hour ago, is now known to be a telepath, a mesman, a seer, and a recorder. It is possible that he may also possess telekinetic powers of unknown extent. Facts recently brought to light suggest that he's a decoy and therefore doubly dangerous. Study his likeness; he must be brought in as soon as possible."

The screen blanked, lit up again, showed Harold's face for a full minute. Then the telecast cut off.

"What does he mean, a seer and a recorder?" inquired Harold, mystified.

"A seer is one who makes moves in anticipation of two, three, four, or more of his opponent's moves. A chessmaster is a seer."

"Heavens, do they play chess here, too?"

"Chess is popular all over the Empire. What of it?"

"Never mind," said Harold. "We'll stick the fact on top of the pile. Go on."

"A recorder," explained Tor, "is someone with a photographic memory. He doesn't write anything down. He remembers it all, accurately, in full detail."

"Humph! I don't think there's anything extraordinary about that."

"We Lingans can't do it. In fact, we know of only four life forms that can." Respect crept into Tor's snake-skinned face. "And do you really have telekinetic power as well?"

"No. It's a false conclusion to which they've jumped. They appear to think I'm a poltergeist or something—goodness only knows why." He mused a moment. "Maybe it's because of that analysis in Stage Three. I can control my heart beats, my blood pressure, my thoughts, and I made their analytical apparatus go haywire. They can get out of it nothing but contradictory nonsense. Evidently they suspect that I sabotaged its innards by some form of remote control."

"Oh!" Tor was openly disappointed.

Before any of them could venture a further remark, the television set called for attention and Sourpuss appeared for the third time.

"All non-native citizens will observe a curfew tonight from midnight until one hour after dawn," he droned. "During this period

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the police may call at certain apartments. Any non-native citizens found absent from their apartments and unable to give satisfactory reason therefor, or any non-native citizens who obstruct the police in the execution of their duty, will be dealt with in accordance with pan-planetary law." He paused, stared out of the screen. He looked bellicose. "The fugitive, Harold Harold-Myra, is in possession of identity card number AMB 307-40781, entered in the name of Robertus Bron. That is all."

"Bron," echoed Harold. "Bron . . . Burkinshaw . . . chessmasters. Dear me!"

The three Lingans were apprehensive, and Melor ventured, "You can see their moves. One: they're satisfied that by now you've found a hiding place. Two: they know you're hiding with outsiders and not with natives. Since there aren't more than sixty thousands of outsiders on this planet, sharing one third that number of apartments, it's not impossible to pounce on the lot at one go." His forehead wrinkled with thought. "It's no use your fleeing elsewhere because this curfew is planet-wide. It covers everywhere. I reckon your easiest way out would be to hypnotize a native and stay in his apartment overnight. If, as they say, you're a mesman, it should be easy."

"Except for one thing."

"What is that?"

"It's what they expect me to do. In fact, it's what they're trying to make me do."

"Even so," persisted Melor, "what's to stop you?"

"The routine. A master race always has a routine. It's drilled into them; it's part of their education. Having been warned that a badly wanted specimen is on the loose and about to bolt, they will take the officially prescribed precautions." He grinned at them reassuringly, but they didn't derive much comfort from it. "I can only guess what that routine will be, but I reckon it'll include some method of advertising my presence in a native's apartment even though its occupant is helpless. Scanners coupled to the Police Emergency system and switched in by the opening of a door, or something like that. When I take risks, I pick my own. It's asking for trouble to let the opposition pick 'em for you."

"Maybe you're right," agreed Melor. "We do know that local people have certain facilities denied to outsiders."

"Now if a couple of cops come along to give this place a look over, and I take control of their minds and send them away convinced

that I'm just another Lingan, the powers-that-be will have been fooled, won't they?"

"I hadn't thought of that," put in Tor. He was disgusted with his own lack of imagination. "It was so obvious that I didn't see it."

"So obvious," Harold pointed out, "that the authorities know that's just what would occur should they find me here."

"Then why the curfew and the search?"

"Bluff!" defined Harold. "They hope to make me move or, failing that, put scare into those harboring me. They're banging on the walls hoping the rat will run. I won't run! With your kind permission, I'll sit tight."

"You're welcome to stay," Tor assured. "We can find you a spare bed, and if you—"

"Thanks!" Harold interrupted, "but I don't need one. I don't sleep."

"You don't!" They were dumfounded.

"Never slept a wink in my life. It's a habit we've abandoned." He walked around the room, studying its fittings. "Impatience is the curse of plotters. Nothing bores me more than waiting for time to ripen. I've simply got to wait nine days. Are you really willing to put up with me that long or, if not, can you find me some place else?"

"Stay here," said Tor. "You repay us with your company. We can talk to each other of homes beyond reach. We can talk about the freedom of subject peoples and of things it is not wise to discuss outside. It is sweet to dream dreams. It is good to play with notions of what one might do if only one could find a way to do it."

"You're a little pessimistic," gibed Harold.

On the fourth day his idleness became too much to bear. He went out, strolled along the streets of the city. Two more irate broadcasts had advertised his extended liberty, but the last of them had been three days before. Since then, silence.

His trust reposed in the inability of the public to remember that morning's broadcast, let alone the details of the twentieth one before it, and his confidence was not misplaced. People wandered past him with vacant expressions and preoccupied minds. In most cases, their eyes looked at him without seeing him. In a few cases, his features registered, but no significance registered with them. The farther he walked, the safer he felt.

Downtown he found a smart, modernistic store well stocked with

scientific instruments. This simplified matters. He'd been trying to solve the problem of how to get Melor to shop for him without using this silly stuff called money. The Lingan's respect for it equalled his own contempt for it, therefore he couldn't ask his hosts to spend their own on his behalf. Instinct rather than deliberate reasoning had made him recognize this simple ethic of a moneyed world.

Boldly entering the store, he examined its stock. Here were some things he wanted, others capable of ready adaption to what he desired. Different cultures evolved differing modes of manufacture. Conventional jobs would need alteration to become conventional according to his other-worldly notions, but the simplest tools would enable him to deal with these. Making a list of his requirements, he prowled around until it was complete, handed it to a salesman.

The latter, a shrewd individual, looked the list over, said sharply, "This stuff is for microwave radiation."

"I know it," said Harold blandly.

"It is not for sale to the public except on production of an official permit," he went on. Then, stiffly, "Have you such a permit? May I see your identity card?"

Harold showed him the card.

"Ah!" mouthed the salesman, his manner changing, "the police!" His laugh was apologetic and forced. "Well, you didn't catch me disregarding regulations!"

"I'm not trying to catch you. I've come to get some necessary equipment. Pack it up and let me have it. I'm on urgent business and in a hurry."

"Certainly, certainly." Bustling to and fro, anxious to placate, the salesman collected the equipment, packaged it. Then he made careful note of the name and number on Harold's identity card. "We charge this to the Police Department, as usual?"

"No," Harold contradicted. "Charge it to the Analysis Division of the Immigration Department, Stage Three."

He had a satisfied smile as he went out. When the Bearded One got the bill he could stick it in his analyzer and watch the meters whirl, which reminded him, now that he came to think of it, there didn't seem to be overmuch of a sense of humor on this world.

Safely back in the Lingans' apartment, he unloaded his loot, got started on it. His hosts were out. He kept the door locked, concentrated on his task and progressed with speed and dexterity which would have astounded his former captors. When he'd been at work an hour the set in the corner chimed urgently, but he ignored it and

was still engrossed in his task when the Lingans came in some time later.

Carefully closing and fastening the door, Melor said, "Well, they've got worried about you again?"

"Have they?"

"Didn't you catch the recent broadcast?"

"I was too busy," explained Harold.

"They've discovered that you've got a police card and not the card they first announced. They broadcast a correction and a further warning. The announcer was somewhat annoyed."

"So'd I be," said Harold, "if I were Sourpuss."

Melor's eyes, which had been staring absently at the litter of stuff on which Harold was working, suddenly realized what they saw.

"Hey, where did you get all that?" he asked, with alarm. "Have you been outdoors?"

"Sure! I had to get this junk somehow or other and I couldn't think of how to get it any other way. I couldn't wish it into existence. We've not progressed quite *that* far—yet!" He glanced at the uneasy Lingan. "Take it easy. There's nothing to worry about. I was out for less than a couple of hours, and I might have been born and bred in this city for all the notice anyone took of me."

"Maybe so." Melor flopped into a chair, massaged his scaly chin. Ripples of underlying blueness ran through it as his skin moved. "But if you do it too often you'll meet a cop, or a spaceman, or a Drane. Cops are too inquisitive. Spacemen recognize outsiders and rarely forget a face. Dranes know too much and can divine too much. It's risky." He looked again at the litter of apparatus. "What're you making, anyway?"

"A simple contactor."

"What's that for?"

"Making contact with someone else." Harold wangled an electric iron into the heart of the mess, deftly inserted a condenser smaller than a button, linked it into the circuit with two dabs of solder. "If two people, uncertain of each other's whereabouts, are seeking each other within the limits of the same horizon, they can trace each other with contactors."

"I see," said Melor, not seeing at all. "Why not make mental contact?"

"Because the telepathic range is far too short. Thoughts fade swiftly within distance, especially when blanketed by obstacles."

The three were still watching him curiously when he finished the

job shortly before midnight. Now he had a small transmitter-receiver fitted with three antennae, one being a short, vertical rod, the second a tiny silver loop rotatable through its horizontal plane, the third a short silver tube, slightly curved, also rotatable horizontally.

"Now to tune it up," he told them.

Connecting the set-up to the power supplies, he let it warm through before he started tuning it with a glassite screwdriver. It was a tricky job. The oscillatory circuit had to be steered a delicate margin past peak so that it would swing dead on to resonance when hand-capacity was removed. And, strangely enough, hand-capacity was greater on this planet. The correct margin had to be discovered by trial and error, by delicate adjustment and readjustment.

He manipulated the tuning with fingers as firm and sensitive as any surgeon's. His jawbone ached. Tuning the set onward, he took his hand away. The circuit swung short. He tried again and again. Eventually he stood away from the apparatus, rubbed his aching jaw in which dull pain was throbbing, switched off the power.

"That'll do," he remarked.

"Aren't you going to use it now?" Melor inquired.

"I can't. Nobody's looking for me yet."

"Oh!" The trio were more puzzled than ever. They gave it up and went to bed.

Putting away his apparatus, Harold took a book on ancient history from the Lingans' small but excellent library, settled himself down to the fourth successive night of self-education. There was dynamite in these books for those who had eyes to see. No Lord of Terror had seen them in the light in which he saw them!

The ninth day dawned in manner no different from any other. The sun came up and the Empire's boss city stirred to officially conducted life.

When Melor appeared, Harold said to him, "I believe that this is your free day. Have you any plans for it?"

"Nothing important. Why?"

"The fun starts today, or ought to start if my calculations are correct. I could do with your help."

"In what way?"

"You're going to be mighty useful if I come up against someone who can control his thoughts or shield them entirely. Hatred or animosity aren't thoughts—they're emotions of which antagonistic

thoughts are born. You Lingans respond to such emotions. You can go on reading the heart long after the mind is closed to me."

"I get the point but not the purpose," confessed Melor.

"Look," said Harold patiently, "when I say the fun starts I don't mean that there's going to be wholesale violence. We've found better ways. It's possible, for instance, to talk oneself into anything or out of anything provided one says the right things to the right person at the right time. The waving blade hasn't half the potency of the wagging tongue. And the tongue isn't messy." He smiled grimly. "My people have had more than their fill of messy methods. We don't bother with them these days. We're grown up."

"So?" prompted Melor.

"So I need you to tell me how I'm doing if, mayhap, I'm working on someone with a closed mind."

"That's easy. I could tell you when hatred, fear, or friendliness intensifies or lessens by one degree."

"Just what I need," enthused Harold. "My form of life has its shortcomings as well as its talents, and we don't let ourselves forget it. Last time some of us forgot it, the forgetters thought themselves a collective form of God. The delusion bred death!"

His tongue gently explored a back tooth as his gaze went to the transmitter-receiver waiting at one side of the room.

Nothing happened until midday. The two sat out the morning, the fugitive expectant and alert, his host uneasy and silently speculative. At noon the television set chimed and Melor switched it on.

Helman came on the screen. He stared straight at the watching pair in manner suggesting that he saw them as clearly as they saw him. His dark features were surly.

"This is a personal broadcast for the benefit of the specimen known as Harold Harold-Myra," Helman enunciated, "or to any citizen illegally maintaining contact with him. Be it known, Harold Harold-Myra, that a summary of all the available data on your world type has been laid before the Council of Action, which Council, after due consideration thereof, has decided that it is to the essential interest of the Empire that your life form be exterminated with the minimum of delay. By midday tomorrow an order will be sent to appropriate war vessels requiring them to vaporize your native planet—unless, in the meantime, you have surrendered yourself and provided new evidence which may persuade the Council of Action to reconsider its decision."

Helman stopped, licked his lips. His air was that of one still nursing a severe reprimand.

He went on, "This notification will be rebroadcast in one hour's time. Watchers in touch with the fugitive are advised to bring it to his attention as this will be the last warning." His surliness increased as he finished, "In the event of his prompt surrender, the Council of Action will extend gracious pardon to those who have been harboring this specimen."

The screen blanked.

"Mate in one move," said Melor glumly. "We told you that it was a waste of time to sit and plot. They get 'em all, one way or another."

"It's check—and your move."

"All right then—what's your move?"

"I don't know yet. We've still got to wait. If you sit by the chimney long enough, Santa Claus comes down."

"In the name of the Blue Sun, who is Santa Claus?" asked Melor peevishly.

"The man with a million lollies."

"Lollies?"

"Things you lick."

"Oh, cosmos!" said Melor. "What madman wants to own a million things to lick? Is this anything to do with your sermon about wagging tongues? If so, *we're* licked!"

"Forget it," Harold advised. "I talk in riddles to pass the time."

A pain suddenly pulsed in his jawbone. It brought an exclamation from him which stirred the nervous Melor. Putting two fingers into his mouth, Harold unscrewed the crown of a back molar, took it out, put it on the table. A tiny splinter of crystal glittered within the base of the crown. The crystal was fluorescent. Melor gaped at it fascinatedly.

Swiftly powering the transmitter-receiver, Harold let it warm up. A faint, high-pitched whistle crept into its little phone. He swung the loop slowly while the whistle strengthened, then weakened, finally faded out. Slightly offsetting the loop to bring back the signal, he pressed a stud. The note grew stronger.

"That side," he murmured,indicating the face of the loop nearest to the watching Melor.

Returning the loop to fade-out position, he switched in the transmitter, swung its curved tube antenna until it paralleled the direction faced by the receiver's loop. Again he offset the loop, and the

signal returned. He waited expectantly. In a little while, the signal broke into three short pips then resumed its steady note. He flipped his transmitter switch three times.

For half an hour the two sat and waited while the whistle maintained itself and gave triple pips at regular intervals. Then, suddenly, it soared up in power and gave one pip.

Carefully, Harold repeated all the rigmarole with the antenna, this time obtaining a different direction. Three pips came as his reward, and again he switched his transmitter in acknowledgment. Another long wait. Then, slowly, weakly and distantly, a voice crept into his mind.

*"A blue car. A blue car."*

Going to the window, he looked down into the street. From his height of ten floors he had a clear view extending several blocks in both directions. He found a score of automobiles on the street, half a dozen of them blue.

*"Stop, step out, get in again,"* he thought. He repeated the mental impulse, driving it outward with maximum intensity.

A car stopped, a human shape got out, looked around, stepped back into the vehicle. It was a blue car.

Harold crossed the room, disconnected the contactor, and returned to the window. Looking downward, he thought powerfully.

*"I believe I've got you. Drive on slowly . . . slowly . . . here you are . . . stop there! The building immediately on your right. Ten floors up."*

He continued to keep watch as the car pulled in by the opposite sidewalk. Two men emerged from it, crossed the road with casual nonchalance, disappeared beneath him. No other cars halted, nobody followed the men into the building. A voice reached him strongly, *"Are we dragging anything?"*

*"Not that I can see."*

*"Good!"*

Melor said plaintively, "I know that you're communicating with someone. Santa Claus, I presume? How can you read each other's toothache is a mystery to me."

"Our throbs are no worse than your wobbles."

"You bounce around," said Melor, "and, according to you, we dither. Some day we'll come across some other life form which spins around in circles, like a mental dervish. Or even an entity capable of logical reasoning without thought at all; a sort of Bohr-thinker who skips straight from premise to conclusion without covering the

intervening distance." His eyes found the crystal still on the table, noted that it had ceased to glow. "Better plant your key-frequency back in your face before somebody sets it in a ring."

Harold smiled, took up the crystal, screwed it back into place. Opening the door, he looked out just as the pair from the car arrived on the landing. He beckoned them in, locked the door behind them, introduced them to the Lingan.

"This is Melor, a friend from Linga. Melor, meet George Richard-Eve and Burt Ken-Claudette."

Melor looked askance at the newcomers' neat space uniforms and the Silver Comet insignia glittering on their epaulettes. He commented, "Well, they smell as good as they look bad. You'll produce a pally Drane next!"

"Not likely!" Harold assured.

Burt sat down, said to Harold, "You know the locals by now. Are they crafty enough to have drawn a bead on that transmission and, if so, how long d'you think they'll give us? If time's short, we can beat it in the car and delay matters a little."

"They know how I got the stuff, where I got it, and its purpose, and they're not too dopey to listen out," Harold replied. "As I guess, I give them half an hour."

"That'll do."

Melor put in, "Talk mentally if it suits you better. I don't mind."

"You're in this," Harold told him, "so we'll talk vocally. You're entitled to listen." He turned to Burt. "What's cooking?"

"There's fun and games on four out of the five. The fifth proved useless for our purpose: it held nothing but a few time-serving bureaucrats on high pay. But four should do, I reckon."

"Go on."

"All the appointed ones have gone beyond and the first of them ought to have reached their destinations by now. It's six days to the nearest system, so they've a good margin." He smoothed his dark hair, looked reminiscent. "*Nemo* is due to pop off any moment now. That was a tough job! We took forty people off it, but had to scour the place from end to end to find the last pair of them. We got 'em, though. They've been dumped in safety."

"Good!"

"This has been an education," Burt went on. "Better than going to the zoo. There's an underground message system on number three, for instance, which has to be seen to be believed. By 'under-

ground' they mean ten thousand feet up! How d'you think they do it?"

"I've no idea," said Harold.

"With birds! Among the minority life forms there is one which is beaked and feathered. They talk with birds. They chirrup and squawk at them, and every bird understands what's said."

"Orniths," informed Melor. "They came originally from Gronat, the Empire's eight hundredth conquest. They're scattered around and there are a few of them here, maybe a dozen or so. When you've had time to tour the Empire you'll find it contains even stranger forms. And the humanoids don't even dislike them all."

"It would seem that the humanoids don't even like each other much," Burt commented. "To most of them, a brother from a neighboring planet is a foreigner."

"Still in the school-kid stage," said Harold. "Rah-rah and all that."

Burt nodded and continued, "As you know, we've had to move too fast in too little time to put over anything really drastic, but what's been done ought to be enough to show what could be done—which is all that matters." A faraway look came into his eyes. "When we triumphantly cast our bread upon the waters we little thought it'd come back—all wet."

"So you've found confirmation of that?"

"Plenty," Burt replied. "Have you?"

"Any amount of it." Harold went to the bookshelf, selected a heavy tome titled *The Imperial Elect*. He skimmed through its pages, found an illustration, showed it to Burt. "Look!"

*"Phew!"* said Burt.

"The Budding Cross," breathed George, looking over Burt's shoulder. "And the Circle of Infinity!"

"That shelf is crammed with stuff," Harold told them as he replaced the book. "I've been going through it like a man in a strange dream." He came back, sat down. "Anything more to report?"

"Not much. Jon has stayed on number three. He had a stroke of luck and got at the Lord, a fat personage named Amilcare. Temporarily, His Eminence doesn't know which shoe is on which foot."

Harold opened his mouth to comment, closed it without saying anything. His mental perception perked up, listened intently. Burt and George listened likewise. Melor began to fidget. For the first

time, Harold noticed that a fringe of fine hairs lay along the rims of the Lingan's ears, and that these hairs were now fully extended and quivering.

"There's a stink of hostility," complained Melor uneasily. In his lithe, loose-jointed gait, he went to the window.

A hubbub lay across the ether, a confused mixture of thoughts from which it was impossible to extract more than odd, disjointed phrases.

*"Line 'em across that end . . . rumble, rumble . . . yes, take the ground floor . . . rumble, buzz, buzz . . . work upward . . . rumble . . . ten of you . . . look out for . . . rumble . . . they may be . . ."*

"I expect visitors," remarked George easily. He joined Melor at the window.

The others followed, and the four looked down at the street. It was a hive of activity. A dozen cars were drawn across one end, blocking it completely. Another dozen jockeyed for position to block the opposite end. Cars plugged the three side streets in between. Something invisible droned steadily overhead; it sounded like a squadron of helicopters. More than two hundred black-uniformed men were scattered along the sidewalk in little groups.

"Their bearings must have been rough." Burt pulled a face at the cohort below. "It got them this section of the street but not the building. I'd be ashamed of such a sloppy job."

"It's good enough," Harold answered. He filtered the telepathic surge once again. It was entirely human, involuntary, and nonreceptive. "We could go down and save them some bother, but I'm a bit curious about those butterfly minds down there. Surely they'd have brought something potent along with them."

"Test it," suggested Burt.

Dropping their mental shields, the three let their thoughts flow forth bearing a perfect picture of their location. Instantly the hubbub was overwhelmed by an alien mind which imposed itself upon the ether. It was clear, sharp, penetrating, and of remarkable strength.

*"They're in that building there! Ten floors high! Three of them and a Lingan. They contemplate no resistance!"*

"A Drane!" said Harold.

It was impossible to locate the creature amid the mass of men and automobiles beneath, neither could he sense its general direction

for, having said all it considered essential, it had closed its mind and its powerful impulse was gone.

"Judging by the throb, there was a Drane down there," offered Melor belatedly. "Did you hear it? I couldn't understand what it said."

"It got us fixed. It identified your erratic thought-flow and said that a Lingan was with us."

"And what are we going to do about it? Do we stand like sheep and wait to be taken away?"

"Yes," Harold informed.

Melor's face registered approaching martyrdom, but he offered no further remark.

There wasn't an immediate response to the Drane's revelation. For reasons unknown to the watchers, a short time-lag intervened. It ended when a car roared along the street with a silver-spangled official bawling orders from its side window. As one man, the uniformed clusters made a determined rush for the front entrance of the building.

It was Melor who opened the door and admitted a police captain and six men. All seven wore the strained expressions of people called upon to deal with things unimaginable, and all seven were armed. Little blasters, similar to the one Harold had found so objectionable, were ready in their hands.

The captain, a big, burly man, but pale of face, entered the room with his blaster held forward, and gabbled hastily through his prepared speech.

"Listen to me, you four, before you try any tricks. We've reversed the controls on these guns. They stay safe while they're gripped but go off immediately our hands loosen—and hypnosis causes involuntary relaxation of the muscles which you can't prevent!" He swallowed hard. "Any clever stunts will do no more than turn this place into a shambles. In addition, there are more men outside, more on every floor, more in the street. You can't cope with the lot!"

Smiling amiably, Harold said, "You tempt us to persuade you to toss those toys out of the window, and your pants after them. But we want to talk to the Council of Action and have no time for amusement. Let's go."

The captain didn't know whether to scowl or look relieved. Cautiously he stood to one side, his gun held level, as the four filed out through the door. The escorts were equally leery. They surrounded

the quartet, but not too closely, bearing themselves with the air of men compelled to nurse vipers to their bosoms.

As they marched along the landing toward the levitators Burt nudged the nearest guard and demanded, "What's your name?"

The fellow, a lanky, beetle-browed individual, was startled and apprehensive as he answered, "Walt Bron."

"Tut!" said Burt.

The guard didn't like that "tut." His brows came down, his small eyes held a stupefied expression as his mind said to itself, *"Why should he want my name? Why pick on me? I ain't done him any harm. What's he up to now?"*

Burt smiled broadly and his own mind reached out to George's and Harold's, saying, *"Something has got them worried, though the higher-ups aren't likely to have told them much."*

*"Yes—it looks as if there's irritation in influential circles and the cops got bawled out in consequence. Evidently news is coming through."* Pause. *"Did you feel any probe?"*

*"No."*

*"Neither did we. That Drane must have gone."* Pause. *"Pity we can't talk with Melor this way. He's walking behind like a fatalist pacing to certain death."* Pause. *"Got plenty of guts, the way he's taken us on trust."*

*"Yes—but we'll look after him!"*

They reached the levitators. The entire landing was now solid with armed police and a number of them were pressing eagerly into the deserted apartment, intent on thorough search.

Herded into a levitator, the captured quartet and their escort of seven crammed it to capacity. The glassite doors slid shut. The burly captain pressed a button and the levitator soared smoothly upward while its occupants watched the rising indicator with offhand interest. They stopped at the twenty-seventh floor.

The captain didn't permit the doors to open. He stood with his attention fixed upon the indicator while slowly his beefy face changed color. Suddenly, he rammed his big thumb on the ground-level button and the levitator shot downward.

Harold: *"Who did that?"*

Burt: *"Me. I couldn't resist it."* Then, vocally, and loudly, "I didn't notice any guns go off. Did you?"

The other captives grinned. The captain glared at the up-flying shaft but said nothing. The escort's uneasiness registered more openly on their faces.

A veritable guard of honor had lined up between the front entrance and the waiting car. About sixty guns were held in readiness on either side—in flat disregard of the fact that one had only to start something and let the fire of one rank bring down half the opposite rank, thus providing plentiful company in death.

The four got into the car, and its driver, a thin-featured, pessimistic individual, looked even less happy for their arrival. He had a cop for company in front. The car blew its jets and started off with half a dozen cars leading and a full dozen following. It was a cavalcade worthy of the year's best burial, and its pace was suitably funereal as it wended its way through a succession of side streets to the outskirts of the city. A thousand feet above them a helicopter and two gyros drifted along, carefully following every bend and turn on their route.

The destination proved to be an immense, needle-like skyscraper, tall, slender, graceful. It soared majestically from spacious, well-tended grounds around which stood a high wall surmounted by the spidery wiring of a photoelectric telltale system. As they swept through the great gateway, the prisoners caught a glimpse of the telltale marker-board in the granite lodge and a group of heavily armed guards lounging behind the gates.

"The palace of the Council," Melor informed. "This is where they make worlds and break them—or so they claim."

"Be quiet!" snapped the cop in front. Then, in a high, squeaky voice, he added, "There are fairies at the bottom of my garden!"

"Indeed?" said Burt, affecting polite surprise.

The cop's sour face whitened. His grip tightened on his blaster, forgetting in his emotion that a stronger hold was supposed to be ineffective.

*"Let him alone, Burt!"* thought Harold.

*"I don't like him,"* Burt came back. *"His ears stick out."*

"How he smells of fury!" criticized Melor, openly.

Conversation ended as the procession halted in front of the skyscraper's ornate entrance. The quartet climbed out, paraded through another wary guard of honor, entered the building. Here, more black-uniformed men conducted them two levels below ground, ushered them into an apartment which, ominously, had a beryllium-steel grille in lieu of a door. The last man out turned a monster key in the grille and departed.

Before the inmates had time thoroughly to examine their new prison, an attendant appeared, thrust packaged foods through the

bars of the grille, and told them, "I haven't got the key and don't know who has. Neither can I find out. If you want anything, call for me, but don't think you can make me open up. I couldn't do it even if I wanted to—which I don't!"

"Dear me," said Burt, "that's unkind of you." Going to the grille, he swung it open, looked out at the astounded attendant and continued, "Tell the Council that we are very comfortable and appreciate their forethought. We shall be pleased to call upon them shortly."

The attendant's scattered wits came together. He took to his heels as if the breath of death was on his neck.

"How did you do that?" demanded Melor, his eyes wide. He ambled loose-jointedly to the grille, looked at its lock, swung it to and fro on its hinges.

"The gentleman with the key locked it, then unlocked it, and wandered away satisfied that duty had been done." Burt released a sigh. "Life is full of delusions." Opening a packet, he examined its contents. "Calorbix!" he said disgustedly, and tossed the package on a table.

"Here they come," George announced.

A horde arrived. They locked the grille, put two heavy chains around its end post, padlocked those. The four watched in amused silence. A pompous little man, with much silver braid strewn over his chest, then tried the grille, shaking it furiously. Satisfied, he scowled at the four, went away, the horde following.

Burt mooched restlessly around the room. "There are scanners watching us, microphones listening to us and, for all I know, some cockeyed gadget tasting us. I'm fed up with this. Let's go see the Council."

"Yes, it's about time we did," George agreed.

"The sooner the better," added Harold.

Melor offered no comment. The conversation of his friends, he decided, was oft confusing and seemingly illogical. They had a habit of going off at the queerest slants. So he contented himself with staring at the grille through which nothing but some liquid form of life could pass, while he wondered whether Tor and Vern had yet been dragged into the net. He hoped not. It was better to execute one Lingan than three.

A minute later the man with the keys came back accompanied by two guards and a tall, gray-haired official clad in myrtle green. The badge of the Silver Comet glittered on the latter's shoulder straps.

His keen gaze rested on the warden as that worthy surlily unlocked the padlocks, withdrew the chains, freed the grille.

Then he said to the four, "Most remarkable!" He waited for a response, but none came, so he carried on. "This warder hasn't the least notion of what he's doing. As the Council expected, you influenced him to return and unlock the gate. We kept him under observation. It has been an interesting demonstration of what hypnosis can achieve." His smile was amiable. "But you didn't expect him to return accompanied, eh?"

"What does it matter?" Harold answered. "Your brain advertises that the Council is ready to deal with us."

"I waste my breath talking." The official made a gesture of futility. "All right. Come with me."

The Council looked small—it's strength a mere eight, all but two of them human. They sat at a long table, the six humans in the middle, a non-human at each end. The thing on the extreme right had a head like a purple globe, smooth, shining, hairless, possessing no features except a pair of retractable eyes. Below was a cloaked shapelessness suggesting no shoulders and no arms. It was as repulsive as the sample on the left was beautiful. The one on the left had a flat, circular, golden face surrounded by golden petals, large and glossy. The head was supported by a short, fibrous green neck from the knot of which depended long, delicate arms terminating in five tentacles. Two black-knobbed stamens jutted from the face, and a wide, mobile mouth was visible beneath them. It was lovely, like a flower.

Between this table and the staring captives hung a barrier of wire. Harold, Burt, and George could *see* that it was loaded, and their perceptions examined it gingerly. They diagnosed its purpose simultaneously: it bore an alternating current imposed upon a pulsing potential. Two hundred cycles per second, with a minimum pressure of four thousand volts rising to peak points of seven thousand every tenth cycle.

*"Hypnocast jammer!"* reported Burt. He was puzzled. "But that doesn't blank neural sprays. They're different bands. Can you hear what they're thinking?"

"Not a thing," answered Harold. "Neither could I get your thoughts while you were speaking."

"I've lost contact, too," put in George. "Something which isn't that screen is droning out a bass beat note that makes a mess of the telepathic band."

Sniffing with distaste, Melor said, "This is where I come in. I know what's the matter. There's a Drane in the room. He's doing it."

"Are you sure of that?"

"I can sense him." He pointed at the flowerlike being on the left. "Furthermore, Dranes can't speak. They've no vocal cords. The Florans function as their interpreters—that's why this one's here."

One of the humans on the Council, a bull-headed, heavily jowled man, leaned forward, fixed glittering eyes on the four. His voice was harsh.

"The Lingan is right. Since we are not assembled to be entertained by your alien antics, nor to listen to your lies, but solely for the purpose of weighing fresh truths with justice and with wisdom, we find it necessary to employ a Drane."

So saying, he made a dramatic gesture. The Floran reached a tentacled hand down behind the table, lifted the hidden Drane, placed it on the polished surface.

Mental visualization, Harold realized, had proved correct with regard to shape and appearance but had misled him in the matter of size. He'd taken it for granted that a Drane possessed bulk comparable with his own. But this creature was no larger than his fist. Its very smallness shocked him.

It was lizardlike, but not so completely as first appeared, and now that he could see it closely, its tiny but perfect uniform looked absurd. While they regarded it, the thing sat there and stared at them with eyes like pin points of flaming crimson, and as it stared the strange beat note disappeared, a psychic flood poured through the screen and lapped around their minds.

But already the three shields were up, while the fourth—the Lingan—felt the force only as an acute throb. The pressure went up and up; it was amazing that such a midget brain could emit so mighty a mental flow of power. It felt and probed and thrust and stabbed, its violence increasing without abatement.

Perspiration beaded the features of the trio as they gazed fixedly at the same spot on the Drane's jacket while maintaining their shields against its invisible assault. Melor sat down, cradled his head in his arms, began to rock slowly from side to side. The Council watched impassively. The Drane's optics were jewels of fire.

"Keep it up," whispered Harold. "It's almost on the boil."

Like the lizards it resembled, the Drane's pose was fixed, unmov-

ing. It had remained as motionless as a carved ornament since it had reached the table, and its baleful eyes had never blinked. Still its psychic output went up.

Then, suddenly, it pawed at its jacket, snatched the paw away. A thin wisp of smoke crawled out of the cloth. The next instant, the creature had fled from the table, the mental pressure collapsing as its source disappeared. Its sharp, peaky voice came into their minds as the thing snaked through a tiny door, fled along the outer passage. The voice faded with distance.

*"Burning . . . burning . . . burning!"*

The Council member who had spoken originally, now sat staring through the screen at the prisoners. His hand was on the table, and his fingers rapped its surface nervously. The other members maintained blank expressions. He turned his head, looked at the Floran.

"What happened?"

"The Drane said he was burning," enunciated the mouth in the flowerlike head. Its tones were weak, but precise. "His mind was very agitated. The peril destroyed his ability to concentrate, and he had to flee lest worse befall."

"Pyrotics!" said the Council member incredulously. "There are legends of such." His attention returned to the captives. "So you're pyrotics—fire-raisers!"

"Some of your people can do it—but don't know it themselves," Harold told him. "They've caused most of any seemingly inexplicable fires you've experienced." He made a gesture of impatience. "Now that we've got rid of that Drane how about giving way to what's on your mind? We can read what is written there, and we know the next move: you're to call Burkinshaw, Helman, and Roka, after which the parley will start."

Frowning, but making no retort, the Council member pressed a red button on his desk. His attitude was one of expectancy.

In a short time, Helman and Roka entered the room, took seats at the table. The former's bearing was surly and disgruntled. The latter grinned sheepishly at the quartet, even nodded amiably to Harold.

One minute after them, Burkinshaw Three, the Supreme Lord, came in and took the center seat. His awesome name and imposing title fitted him like somebody else's glove, for he was a small, thin man, round-shouldered, narrow-chested, with a pale, lined face. His balding head had wisps of gray hair at the sides, and his eyes peered

myopically through rimless pince-nez. His whole appearance was that of a mild and perpetually preoccupied professor—but his mind was cold, cold.

That mind was now wide open to the three. It was a punctilious mind, clear and sharp in form, operating deliberately and calculatingly through the mixed output of the other humans at the Council table.

Arranging some papers before him, and keeping his gaze fixed upon the top sheets, Burkinshaw spoke in measured, unhurried tones, saying, "I don't doubt that you can read my mind and are reading it now, but in justice to the Lingan, who cannot do so, and for the benefit of my fellows who are not telepathic either, I must use ordinary speech." He adjusted the pince-nez, turned over a sheet of paper and continued.

"We, of the Imperial Council of Action, have decided that the safety of the Empire demands that we obliterate the planet known to us as KX-724 together with any adjacent planets, satellites, or asteroids harboring its dominant life form. We are now met to consider this life form's final plea for preservation, and it is the duty of each of us to listen carefully to what new evidence may be offered, weighing it not with favor or with prejudice, but with justice."

Having thus spoken, the Supreme Lord removed his pince-nez, polished each lens, clipped them carefully on his nose, and stared owlishly over their tops at the prisoners. His eyes were a very pale blue, looked weak, but were not weak.

"Have you chosen your spokesman?"

Their minds conferred swiftly, then Harold said, "I shall speak."

"Very well then." Burkinshaw relaxed in his seat. "Before you commence, it is necessary to warn you that our grave decision concerning the fate of your people is neither frivolous nor heartless. In fact, it was reached with the greatest reluctance. We were driven to it by the weight of evidence and, I regret to say, additional data which we've recently gained is of a nature calculated to support our judgment. Bluntly, your kind of life is a menace to our kind. The responsibility now rests with you to prove otherwise—to our satisfaction."

"And if I can't?" queried Harold.

"We shall destroy you utterly."

"If you can," said Harold.

The assembled minds reacted promptly. He could hear them, aggressive and fuming. The purple thing exuded no thoughts but

did give out a queer suggestion of imbecilic amusement. The Floran's attitude was one of mild surprise mixed with interest.

Burkinshaw wasn't fazed. "If we can," he agreed blandly, while his brain held little doubt that they could. "Proceed in your own way," he invited. "You have about fourteen hours in which to convince us that our decision was wrong, or impracticable."

"You've tempted us into giving minor demonstrations of our powers," Harold began. "The Drane was planted here for a similar purpose: you used him as a yardstick with which to measure our mental abilities. From your viewpoint, I guess, the results have strengthened your case and weakened ours. Only the yardstick wasn't long enough."

Burkinshaw refused to rise to the bait. Placing his fingertips together as if about to pray, he stared absently at the ceiling, said nothing. His mind was well disciplined, for it registered no more than the comment, *"A negative point."*

"Let it pass," Harold went on, "while I talk about coincidences. On my world, a coincidence is a purely fortuitous lining-up of circumstances and either is isolated or recurs haphazardly. But when a seeming coincidence repeats itself often enough, it ceases to be a coincidence. You know that, too—or ought to know it. For example, let's take the once-alleged coincidence of meteoric phenomena appearing simultaneously with earthquakes. It occurred so frequently that eventually one of your scientists became curious, investigated the matter, discovered solar-dynamic space-strain, the very force which since has been utilized to boost your astrovessels to supraspatial speeds. The lesson, of course, is that one just can't dismiss coincidences as such when there are too many of them."

*"A thrust—toward where?"* mused the Floran.

*"No point yet apparent,"* thought Burkinshaw.

*"I don't like the way he gabbles,"* said Helman's mind uneasily. *"He's talking to gain time. Maybe the three of them are trying to push something through that screen. They burned the Drane through it, didn't they?"* He fidgeted in his seat. *"I don't share B's faith in that screen. Curses on Roka and all the rest of the pioneering crowd—they'll be the end of us yet!"*

Smiling to himself, Harold continued, "We've found out that the game of chess is generally known all over the Empire."

"Pshaw!" burst out the harsh-voiced man seated on Burkinshaw's left. "That's no coincidence. It spread from a central source as anyone with a modicum of intelligence should have deduced."

"Be quiet, Dykstra," reproved Burkinshaw.

"Which source?" Harold asked him.

Dykstra looked peeved as he replied, "Us! We spread it around. What of it?"

"We had it long before you contacted us," Harold told him.

Dykstra opened his mouth, glanced at Burkinshaw, closed his mouth and swallowed hard. Burkinshaw continued to survey the ceiling.

Harold pursued, "We've had it so long that we don't know how long. The same board, same pieces, same moves, same rules. If you work it out, you'll find that that involves a very large number of coincidences."

They didn't comment vocally, but he got their reactions.

Four of the Council were confused.

*"Surprising, but possible,"* mused the Floran.

*"What of it, anyway?"* inquired Dykstra's mind.

*"No point yet apparent,"* thought Burkinshaw coolly.

The purple thing's brain emitted a giggle.

"Bron," said Harold. "Walt Bron, Robertus Bron, and umpteen other Brons. Your directory of citizens is full of them. My world, likewise, is full of them, always coupled with the other parent's name, of course, and occasionally spelled Brown, but pronounced the same. We've also got Roberts and Walters." He looked at Helman. "I know four men named Hillman." He shifted his gaze to the Supreme Lord. "And among our minor musicians is one named Theodore Burkinshaw-May."

Burkinshaw removed his stare from the ceiling and concentrated on the wall. *"I see where he's going. Reserve judgment until he arrives."*

"The vessel which brought us here was named the *Fenix,* in characters resembling those of our own alphabet," Harold continued. "And in days long gone by, when we had warships, there was one named the *Phoenix*. We found your language amazingly easy to learn. Why? Because one-fifth of your vocabulary is identical with ours. Another fifth is composed of perversions of our words. The remainder consists of words which you have changed beyond all recognition or words you've acquired from the peoples you've conquered. But, basically, your language is ours. Have you had enough coincidences?"

"Nonsense!" exclaimed Dykstra loudly. "Impossible!"

Burkinshaw turned and looked at Dykstra with eyes that were

reproving behind their lenses. "Nothing is impossible," he contradicted mildly. "Continue," he ordered Harold, while his thoughts ran on, *"The pleader is making the inevitable point—too late."*

"So you can see where I'm going," Harold remarked to him. "Just for one final coincidence, let me say I was stupid enough to misunderstand the imperial title. I thought they called themselves Lords of Terror. A silly mistake." His voice slowed down. "Their title is a mystic one rooted deep in your past. They call themselves Lords of Terra!"

"Dear me," said Dykstra, "isn't that nice!"

Ignoring him, Harold spoke to Roka. "You're awake by now. Last night something clicked in your mind and you found yourself remembering things you didn't know you'd forgotten. Do you remember what my people call their parent planet?"

"Terra," Roka responded promptly. "I reported it to the Supreme Lord this morning. You call yourselves Terrestrials."

Dykstra's heavy face went dark red, and accusations of blasphemy were welling within his mind when Burkinshaw beat him to it.

"This morning's revised report of Lieutenant Roka and certain survivors of his crew now lies before the Council." He indicated the papers on the table. "It has already been analyzed by the police commissioner, Inquisitor Helman, and myself. We now believe that the pleader's assertions are founded in truth and that in discovering KX. 724 we have discovered our long-lost point of origin. We have found our mother planet. The *Fenix,* unknown to any of us, was homeward bound!"

Half the Council were dumfounded. The purple creature was not; it registered that human rediscoveries were of little consequence to purple things. The Floran thought similarly. Dykstra's mind was a turmoil of confusion.

"A difference of three light-years has separated us for two thousand centuries," Harold told them quietly. "In that tremendous past we'd grown great and venturesome. We sent several convoys of colonists to the nearest system four and a half light-years away. We never knew what happened to them, for then followed the final atomic war which reduced us to wandering tribes sunk lower than savages. We've been climbing back ever since. The path of our climb has been very different from yours, for roving particles had done strange things to us. Some of those things died out, some were rooted out, others persisted and made us what we are today."

"What are you?" inquired the member next to Roka.

"Humanity metamorphosed," Burkinshaw answered for him.

"In the awful struggle for life on new and hostile worlds, you, too, sank," Harold continued. "But you climbed again, and once more reached for the stars. Naturally, you sought the nearest system one and a half light-years away, for you had forgotten the location of your home which was spoken of only in ancient legends. We were three light-years farther away than your nearest neighboring system. Logically, you picked that—and went away from us. You sank again, climbed again, went on again, and you never came back until you'd built a mighty Empire on the rim of which we waited, and changed, and changed."

Now they were all staring at him fascinatedly. Even Dykstra was silent, his mind full of the mighty argosy across the ages. Half of it was school-book stuff to him, but not when presented in this new light.

"Those of you who are of the Brotherhood of the Budding Cross know that this is true—that you have completed the circle and reached the Seat of Sol." He made a swift and peculiar sign. Two of his audience responded automatically.

*"It's of little use,"* Burt's thought came over strongly. *"They're too factual."*

*"Wait!"*

The Council was silent a long time, and eventually the Floran said, "All this is very touching—but how touching will it be when they take over our Empire?" To which its mind added, *"And we Florans swap one master for another. I am against it. Better the devil you know than the devil you don't."*

Resting his thin arms on the table, Burkinshaw Three blinked apologetically at the Terrans and spoke smoothly. "If they knew what we know, the Empire's sentimentalists might be against your destruction. However, the fabric or our cosmic edifice cannot be sustained by anything so soft as sentiment. Moreover, the prodigal sons have no intention of presenting this fatted calf to their long-lost fathers. Your removal from the scheme of things appears to me as necessary as ever—perhaps even more necessary—and that it will be patricide makes no difference to the fact." His thin, ascetic face held an ingratiating wish to please. "I feel sure that you understand our position. Have you anything more to say?"

"No luck," whispered Melor. "The hatred has gone—to be replaced by fear."

Harold grimaced, said to the Supreme Lord, "Yes, I'd like to say

that you can blast Terra out of existence, and its system along with it, but it'll do you no good."

"We are not under the delusion that it will do us any good," declared Burkinshaw. "Nor would we sanction so drastic an act for such a purpose." He removed his pince-nez, screwed up his eyes as he looked at his listeners. "The motive is more reasonable and more urgent—it is to prevent harm."

"It won't do that, either."

"Why not?"

"Because you're too late."

"I feared you'd say that." Burkinshaw leaned back in his seat, tapped his glasses on a thumbnail. *"If he can't satisfy me that his claim is well-based, I shall advance the hour!"* Then he said, "You'll have to prove that."

"There's trouble on four out of the five other planets in this system. You've just had news of it. Nothing serious, merely some absenteeism, sabotage, demonstrations, but no violence. It's trouble all the same—and it could be worse."

"There's always trouble on one planet or another," put in Helman sourly. "When you're nursing four thousand of them, you get used to unrest."

"You overlook the significance of coincidences, I fear. Normal troubles pop up here and there, haphazardly. These have come together. They've kept an appointment in time!"

"We'll deal with them," Helman snapped.

"I don't doubt it," said Harold evenly. "You'll also deal with an uproar in the next system when you get news of it soon. You'll deal with four planets simultaneously, or forty planets—simultaneously. But four hundred planets—simultaneously—and then four thousand! Somewhere is the number that'll prove too much for even the best of organizations."

"It's not possible," Helman asserted stubbornly. "Only two dozen of you Terrans got here. Roka told us that. You took over his ship, substituted two dozen Terrestrials for part of his crew, impressed false memories on his and the others' minds causing them to suspect nothing until their true memories suddenly returned." He scowled. The pulse in his forehead was beating visibly. "Very clever of you. Very, very clever. But twenty-four aren't enough."

"We know it. Irrespective of relative powers, some numbers are needed to deal with numbers." Harold's sharp-eyed gaze went from Helman to Burkinshaw. "If you people are no more and no less hu-

man than you were two hundred thousand years ago—and I think that your expansive path *has* kept you much the same—I'd say that your bureaucrats still live in watertight compartments. So long as supposedly missing ships fail to observe the officially prescribed rigmarole for reporting, it's taken that they're still missing. And, ten to one, your Department of Commerce doesn't even know that the Navy has mislaid anything."

It was a tribute to the Supreme Lord's quick-wittedness that his mind was way ahead of his confreres', for he acted while they were still stewing it over. He switched on the televisor set in the wall on one side.

Looking at its scanner, he said sharply, "Get me the Department of Commerce, Movements Section."

The screen colored, a fat man in civilian attire appeared. An expression of intense respect covered his ample features as he identified his caller.

"Yes, your excellency?"

"The Navy has reported two vessels immobilized beyond the Frontier. They're the *Callan* and the *Mathra*. Have they been recorded recently in any movements bulletins?"

"A moment, your excellency." The fat man disappeared. After some time, he came back, a puzzled frown on his face. "Your excellency, we have those two ships recorded as obsolete war vessels functioning as freighters. Their conversion was assumed by us, since they are transporting passengers and tonnage. The *Callan* has cleared four ports in the Frontier Zone, Sector B, in the last eight days. The *Mathra* departed from the system of Hyperion after landing passengers and freight on each of its nine planets. Its destination was given as external to the Frontier Zone, Sector-J."

"Inform the Navy Department," Burkinshaw ordered, and switched off. He was the least disturbed individual at the table. His manner was calm, unruffled as he spoke to Harold. "So they're busily bringing in Terrans or Terrestrials or whatever you call yourselves. The logical play is to have those two vessels blown out of existence. Can it be done?"

"I'm afraid not. It depends largely upon whether the ships getting such an order have or have not already come under our control. The trouble with warships and atom bombs and planet-wreckers is that they're useful only when they work when and where you want them to work. Otherwise, they're liabilities." He gestured to indicate Burt and George. "According to my friends, the bomb allo-

cated to Terra is on the ship *Warcat* clearing from your third neighbor. Ask Amilcare about it."

It required some minutes to get the third planet's Lord on the screen, and then his image was cloudy with static.

"Where's the *Warcat?*" rasped Burkinshaw.

The image moved, clouded still more, then cleared slightly. "Gone," said Amilcare jovially. "I don't know where."

"On whose authority?"

"Mine," Amilcare answered. His chuckle was oily and a little crazy. "Jon wanted it so I told him to take it. I couldn't think of anything you'd find more gratifying. Don't you worry about Jon—I'm looking after him for you."

Burkinshaw cut him off. "This Jon is a Terran, I suppose?"

"A Terrestrial," Harold corrected.

"Put a call out for him," urged Dykstra irefully. "The police won't all be bereft of their senses even if Amilcare is."

"Let me handle this," Burkinshaw said. Then, to Harold, "What has he done with the *Warcat?*"

"We have put somebody on it to control the crew and they'll be giving you a demonstration of what a nuisance planet-wreckers can be when they drop where they shouldn't."

"So your defense is attack? The bloodshed has started? In that case, the war is on, and we're all wasting our—"

"There will be no bloodshed," Harold interrupted. "We're not so infa tile as that. None's been shed so far, and none will be shed if it can be avoided. That's what we're here for—to avoid it. The fact that we'd inevitably win any knock-down and drag-out affair you care to start hasn't blinded us to the fact that losers can lose very bloodily." He waved a hand toward the televisor. "Check up with your watertight bureaucrats. Ask your astronomers whether that refueling asteroid of yours is still circling."

Burkinshaw resorted to the televisor for the third time. All eyes were on its screen as he said, "Where is *Nemo* now?"

"*Nemo?* Well, your excellency, at the present moment it is approaching alignment with the last planet *Drufa* and about twenty hours farther out."

"I'm not asking where it ought to be! I want to know whether it's actually there!"

"Pardon me, your excellency." The figure slid off the screen and was gone a long time. When it returned, its voice crept out of the speaker hushed and frightened. "Your excellency, it would seem

that some strange disaster has overtaken the body. I cannot explain why we've failed to observe—"

"Is it there?" rapped Burkinshaw impatiently.

"Yes, your excellency. But it is in gaseous condition. One would almost believe that a planet-wrecker had—"

"Enough!" Without waiting to hear the rest, he switched off.

Lying back in his chair, he brooded in complete disregard of the fact that his mind was wide open to some even though not to all. He didn't care who picked up his impressions.

*"We may be too late. Possibly we were already too late the day Roka came back. At long last we've fallen into the trap we've always feared, the trap we avoided when we vaporized that world of parasites. Nevertheless, we can still destroy Terra—they can't possibly have taken over every world and every ship and we can still wipe her out. But to what avail? Revenge is sweet only when it's profitable. Will it profit us? It all depends on how many of these people have sneaked into our ranks, and how many more can get in before we destroy their base."*

Helman thought, *"This is it! Any fool could tell it had to come sooner or later. Every new world is a risk. We've been lucky to get through four thousand of them without getting in bad. Well, the end could have been worse. At least, these are our own kind and should favor us above all other shapes."*

Melor murmured, "Their hate has weakened, and their fear turns to personal worry. Excepting the Purple One and the Floran. The Purple One, who was amused, is now angry. The Floran, who was interested and amiable, now fears."

"That's because we're not of their shape. Racial antagonisms and color antagonisms are as nothing to the mutual distrust between different shapes. There lies the Empire's weak spot. Every shape desires mastery of its own territory. So far as we're concerned, they can have it," Harold commented.

Putting his glasses back on his nose, Burkinshaw sighed and said, "Since you intend to take over the Empire, our only remaining move is to issue a general order for the immediate destruction of Terra. No matter how many confiscated ships try to thwart my purpose, obedience by one loyal vessel will suffice." His hand reached out toward the televisor switch.

"We aren't taking over your Empire," Harold told him swiftly. "Neither do we wish to do so. We're concerned only that you don't take over our world. All we want is a pact of non-interference in

each other's affairs, and the appointment of a few Lingans to act as ambassadors through whom we can maintain such contact as suits us. We want to go our own way along our own path, we've the ability to defend our right to do so, and the present situation is our way of demonstrating the fact. No more than that. If, peevishly, you destroy our world, then, vengefully, we shall disrupt your ramshackle collection of worlds, not with our own strength, but by judiciously utilizing yours! Leave us in peace and we shall leave you in peace."

"Where's our guarantee of that?" asked Burkinshaw cynically. "How do we know that a century of insidious penetration will not follow such a pact?" He stared at the four, his blue eyes shrewd and calculating to a degree not apparent before. "In dealing with us you've been able to use an advantage you possess which Florans, Lingans, Rethrans, and others have not got, namely, you know us as surely as you know your own kith and kin." He bent forward. "Likewise, *we* know *you!* If you're of sound and sane mind, you'll absorb gradually what you can't gulp down in one lump. That's the way we acquired the Empire, and that's the way you'll get it!"

"We've proved to you that we can take it over," Harold agreed evenly, "and that is our protection. Your distrust is the measure of ours. You'll never know how many of us are within your Empire and you'll never find out. But obliteration of our parent world will no longer obliterate our life form. We have made our own guarantee. Get it into your head, there is no winner in this game. It's stalemate!" He watched interestedly as Burkinshaw's forefinger rested lightly on the switch. "You're too late, much too late. We don't want your Empire because we're in the same fix—we're too late."

Burkinshaw's eyes narrowed and he said, "I don't see why it's too late for you to do what you've been so anxious to prove you can do."

"The desire doesn't exist. We've greater desires. It's because we have wended our way through a hell of our own creation that we have changed, and our ambitions have changed with us. Why should we care about territorial conquests when we face prospects infinitely greater? Why should we gallivant in spaceships around the petty limits of a galaxy when some day we shall range unhampered through infinity? How d'you think we knew you were coming, and prepared for you, even though we were uncertain of your shape and unsure of your intentions?"

"I'm listening," observed Burkinshaw, his fingers still toying with the switch, "but all I hear is words. Despite your many differences

from us, which I acknowledge, the ancient law holds good: that shape runs true to shape."

Harold glanced at Burt and George. There was swift communion between them.

Then he said, "Time has been long, and the little angle between the paths of our fathers has opened to a mighty span. Our changes have been violent and many. A world of hard radiation has molded us anew, has made us what you cannot conceive, and you see us in a guise temporarily suitable for our purpose." Without warning, his eyes glowed at the Purple One. "Even that creature, which lives on life force and has been sucking steadily at us all this time, would now be dead had he succeeded in drawing one thin beam of what he craves!"

Burkinshaw didn't bother to look at the purple thing, but commented boredly, "The Rethran was an experiment that failed. If he was of any use, he'd have got you long before now." He rubbed his gray side-hairs, kept his hand on the switch. "I grow tired of meaningless noises. You are now hinting that you are no longer of our shape. I prefer to believe the evidence of my eyes." His optics sought the miniature time-recorder set in a ring on his finger. "If I switch on, it may mean the end of us all, but you cannot hypnotize a scanner, and the scene registered in this room will be equivalent to my unspoken order—death to Terra! I suspect you of playing for time. We can ill afford further time. I give you one minute to prove that you are now as different from us as is this Floran or this Rethran or that Lingan. If you do so, we'll deal with this matter sensibly and make a pact such as you desire. If not," he waggled the switch suggestively, "the slaughter starts. We may lose—or we may not. It's a chance we've got to take."

The three Terrestrials made no reply. Their minds were in complete accord and their response was simultaneous.

Dykstra sobbed, "Look! Oh, eternity, look!" then sank to his knees and began to gabble. The purple creature withdrew its eyes right into its head so that it could not see. Burkinshaw's hand came away from the switch; his glasses fell to the floor and lay there, shattered, unheeded. Roka and Helman and the other humans on the Council covered their faces with their hands which slowly took on a tropical tan.

Only the Floran came upright. It arose to full height, its golden petals completely extended, its greenish arms trembling with ecstasy.

All flowers love the sun.

"THE PLANETARIUM'S 'Passenger Briefing' warned that the moon is no such warm romantic place as it might seem over Miami, but rather a chill, arid spot, covered with a layer of dustlike pumice several feet thick, where conversation would be impossible, climate problematical, and locomotion difficult. While working up to a record speed of 3,621 m.p.h., those with high blood pressure might suffer momentary blackouts.

"By last week, the planetarium had received more than 18,000 reservations and requests for information. A man from Munich, Germany wanted to build a hotel on the moon, and a bellhop from Marion, Ohio a skating rink on Venus. A New York fur broker asked about trapping rights; a radio cowboy saw a chance 'to get in on the ground floor of radio business on Venus.'

"Sixth graders from a school in Santa Ana, envisioning an extension of Californianism, were 'interested in opening a concession on the moon to supply hot dogs, cokes, etc., to tourists.' A Catholic missionary from West Pakistan, who had heard there is no water on the moon, proposed to carry some with him for baptizing the newborn he would meet. An uncelestial Cuban reserved seats for himself and two women 'because if we might settle somewhere, it is better for the passengers to be mixed.' "—*Time,* October 16, 1950.

# The Ordeal of Professor Klein

*by L. Sprague de Camp*

THERE HAS BEEN much loose talk about Dr. Alphonse Klein's mental illness and its connection with our expedition last year to the city of Gdoz on the planet 61 Cygni A VI, or Kterem, to use a native name. Irresponsible journalists and rumormongers have spoken and written rashly of hereditary taints and instabilities, of horrors in this lost city too frightful for mere human beings to contemplate, and of the subtle effect of the poisons with which the amiable natives anoint their arrows.

There have been speculations to the effect that Dr. Klein read a mouldering inscription at Gdoz whose dreadful prophecies unseated his reason. The surmises have even hinted darkly that Dr.

Klein's nervous breakdown was somehow brought on by his assistant; that, for instance, this assistant stole, for his own felonious purposes, a priceless manuscript to the search for which Dr. Klein had devoted a lifetime of work . . .

As that assistant, it is therefore incumbent upon me to set the record straight. First be it understood that this is no sensational horror-story but a sober record of the Klein-O'Gorman expedition. And while our experience was certainly trying and disconcerting enough, and contributed without doubt to Dr. Klein's unfortunate indisposition, the use of such highly colored terms as "horrible" and "ghastly" betoken a hopelessly unscientific approach to the question and will therefore be rigorously eschewed.

The reason that I have not made these events public before this is that I was forbidden to do so by my contractual relationship with Dr. Klein.

Some years ago Dr. Alphonse François Klein retired from academic work as a professor of paleography at the University of London to devote his entire time to exploration and paleographic research. Though by frugal living and shrewd investment policies he had amassed a modest competence in addition to his pension, he nevertheless found it necessary to defray the cost of his expeditions by such means as are open to professional explorers: the publication of books and articles and the delivery of lectures.

As is customary in such cases, he required any assistants who accompanied him to agree as a condition of their employment that they would not, for a specified period after their return to Terra, deliver lectures or sell books or articles about the subject expedition without his express permission. This precaution was necessary to prevent unscrupulous or over-enthusiastic assistants from competing directly with the doctor and thereby depriving him of the means for continuing his exploratory career. Inasmuch as the stipend which he paid his assistants came from the money that he earned in this manner, the restriction cannot be considered unfair, expecially as Dr. Klein has always been most generous in his interpretation of this clause in his contracts.

Upon returning to Terra and proceeding as I had planned to take my Doctorate of Philosophy,* I should in the normal course of events have observed the restrictions of the contract without cavil. How-

* See my Ph.D. thesis, *Notes on the Homotaxis of the Lacustrine Biota of the Severak Region of 61 Cygni A VI,* by Bernard Seumas O'Gorman; Belfast: University Press, 2192, xvi + 237 pp.

ever, as a result of the aforementioned speculations and rumors, I found myself handicapped in the employment of my talents. I therefore visited Dr. Klein in the sanitarium where he resides to ask for a waiver of the no-publicity clause so that I could explain the true cause of our misfortune.

When I was shown into his room he seemed quite lucid. He rose and greeted me warmly: a tall man of middle age, with a stooped posture, a shuffling walk, and a deeply-lined face beneath receding gray hair worn rather long. Though his manner is superficially vague, he misses little. He has one slight but disconcerting peculiarity: being an Alsatian by birth, he speaks English sometimes with a French and sometimes with a German accent, depending upon the language in which he happens to be thinking.

"How are you, Barney my boy?" he exclaimed heartily, and then told the male nurse: "You may go, Withers. I have matters to discuss with my colleague, Dr. O'Gorman."

The male nurse rose, but scarcely had he left the room when an alarming change took place in Dr. Klein's manner. He leaped to the wash-stand, snatched up the bar of soap lying thereon, and rushed towards me brandishing this object and screaming "Soap! Soap! Soap!"

Inferring from my unfortunate colleague's gestures that his intent was to force the bar down my throat, I grasped his wrists and restrained him until professional help arrived. I could do this because, though half a head shorter than Dr. Klein, I am heavier than he, not to mention considerably younger. When the attendants had subdued the distraught paleographer, I withdrew to consider my situation.

This seemed discouraging indeed until I learned that a guardian had been appointed for Dr. Klein pending the completion of his cure. I accordingly visited this guardian, an old friend of Dr. Klein named Professor Le Sage, and made arrangements with him for the publication of this article with the understanding that the proceeds of its sale should be paid to him in trust for Dr. Klein. I am reliably informed that Dr. Klein's cure, though reasonably certain, is likely to take at least another nine months to a year, and I cannot afford to wait that long before setting the true facts of the case before the public and more especially before my professional colleagues.

When we first planned this project, Dr. Klein explained the purpose of the expedition: "Barney," he said, "this will the big-

gest thing in my line in years be! This Kamzhik, whom I met in Sveho, has been to Gdoz, through the country of the Znaci and back again with a whole skin. And there, in the ruins of the royal library of the Hrata Empire, he swears he saw a manuscript written in both the Skhoji script and the Hrata Pictographic."

"Yes?" I said, for being a biologist I am a bit hazy on the finer distinctions of paleography.

Klein explained: "No authentic history has survived from the Hrata Empire; nothing, that is, but a scattering of legends comparable to our own Charlemagne and Trojan cycles and probably about as historical. Many ruins of the Hrata Age bear inscriptions in what is taken to be a pictographic signary, but nobody can read it. There are also a few inscriptions and manuscripts from the end of the Hrata period, before the barbarians like the Znaci overthrew them, in the phonetic Skhoji writing. We can read this all right, but we have yet to find a bilingual inscription comparable to the Rosetta Stone or the Behistun Inscription to serve as a key."

I asked: "But the Hrata language survives, does it? So why can't we be matching the known words of it with the pictures until we find a meaningful combination?"

"Because it would take forever, the number of possible combinations being astronomical, and when you got your meaningful combination you would have no means of checking it. It is believed that the signary is partly ideographic and partly syllabic, but even that is not certain. There have been a few surmises as to the meaning of some of the pictographs. This one, for instance," (he opened a monograph on the subject and pointed to something that looked like a pregnant lizard) "is thought by Le Sage to mean the syllable *shi,* but I think it more likely that it stands for the syllable *psa* and also the word *psalo8on,* 'maybe'."

"Don't the other Kteremian languages do any good?"

"Not a bit. Znaci and its related dialects are as different from the Hrata group as Japanese, let us say, is from the English and the other Teutonic tongues."

"Then how about this thing in Gdoz?" I inquired.

"As I say, this Kamzhik asserts that he found a sheet of zahalov-parchment inscribed on one side with the Skhoji writing and having a lot of pictures on the other. He did not bring it with him, not realizing its value, nor did he look at it very intently since the Znaci were hunting him. Although the Kteremians are all strictly bark-eaters, the Znaci have the disagreeable habit of cutting visitors

up and performing magical rituals with the parts to make their food-trees grow, and it was to this infamous use that they wished to put Kamzhik. But if that sheet is still there—and the stuff is practically indestructible—it may give us the key to all those inscriptions in the Hrata Pictographic."

We landed, as everyone does, at the spaceport city of Sveho on Kterem, where we saw at first-hand the effects of a large Terran colony upon the Kteremians. Though interesting to a student of cultural interpenetration, these effects were depressing to one who would regard Kteremian culture as an integral object of aesthetic contemplation. Even I found it difficult to retain an attitude of purely scientific detachment.

For it is obvious that the influence of the Terrans upon the Kteremians is much greater than the influence in the reverse direction, as is to be expected in view of the technical superiority of Terran culture. Also, of course, the culture-traits most readily transmitted are those which a subjective point of view would term the vices of earthly culture.

We saw Kteremians wearing jackets and trousers in imitation of Terrans. These garments are cut to fit their entirely inhuman forms but serve no useful purpose, since the Kteremians' feathery pelts provide them with adequate protection against variations in temperature. We saw them frequenting places of amusement patterned after those of Terra, gambling, becoming intoxicated, making grotesque attempts in imitated Earthly dances, and so on.

Dr. Klein did not pretend to view this evidence of the breakdown of the native culture with unemotional objectivity. Somewhat of a Rousseauan romantic primitivist, he remarked one day: "Once we get out of this stinking city, my dear Barney, things will be better. Finding old inscriptions is only half the reason I go on these expeditions. The other half is the joy of getting away from human so-called civilization and back to Mother Nature. Look at that! A magazine-stand, with comic-books even!" He pointed to a large slick-paper American magazine, reprinted locally from microfilm brought from Terra, whose policies he particularly deplored. "Sentimental slush! And look at that garish advertising sign! If I dared I would chop it up and burn it myself, that one!"

At this point Dr. Klein launched into his usual tirade against advertisers, calling them professional liars and so forth. The sign in question adjured all who read it in several languages (both Terran

and Kteremian) to be sure to smoke the Russian goverment's Astrakhan brand cigarettes. I could see Klein's point of view, even while I privately deplored it as unscientific.

At length, after filling out the usual dekaliter of forms in octuplicate, we were allowed to fly to the outpost of Severak where we met Klein's Kteremian acquaintance Kamzhik and the helpers whom he had rounded up for us. Kamzhik was small for a Ktere-mian, hardly taller than Klein, and a garrulous fellow who talked continuously with a strong accent. Of the helpers, Slunko, Nyeya, and Tsha5, none spoke any Terran language, wherefore I had to communicate with them through Kamzhik. Klein spoke their dialect fairly well, though lacking their great incisor chisel-teeth he could only roughly imitate the whistling sounds that comprise an element of their phonology and which are represented in the conventional transliteration by Arabic numerals.

In Severak Dr. Klein made arrangements to rent a small aircraft to fly to the neighborhood of Gdoz. It is a misapprehension to consider Gdoz a "lost" city. It has long been known from aerial observation, but had never (except for an abortive treasure-hunting party) been visited by Terrans because of the difficulties of reaching it on the ground. Its situation makes the alighting of aircraft in its immediate neighborhood hazardous or impossible. Gdoz stands in a narrow valley, the Valley of Plashce, amidst steeply irregular mountains, and the strong prevailing winds make the air so turbulent in the neighborhood of these jagged peaks that a landing there would be merely an unnecessarily costly form of suicide.

Dr. Klein, however, took Kamzhik and Tsha5 and me in the aircraft to the vicinity of Gdoz. We could plainly see the city lying in its narrow valley, and after hours of hovering and circling we found a small plateau where the wind was steady enough to permit a landing, where the ground was bare enough to obviate the danger of the nyikh-vine's swarming over the machine in our absence and clogging the tubes and jamming the controls, and where the situation was high enough to prevent the wild Znaci from seeing us and smashing up our machine by way of paying their respects.

Dr. Klein then returned to Severak and ferried the remaining helpers and supplies in two more trips. From this plateau to Gdoz was a good three days' hike, for though the distance was less than twenty-five kilometers in a straight line, the extreme ruggedness of the terrain necessitated a circuitous approach. This distance, however, was short enough so that the Kteremians could carry all our

food for the round trip, and therefore it was not necessary to resort to the more complicated measures with which expeditions meet logistical difficulties: the staging of supplies, the peeling off of fractions of the party who have been carrying food for the rest, and the planting of caches for the return trip. Food for the Kteremians presented no problem, as they could always live on the bark of the ambient trees. They have however acquired such a taste for Earthly coffee that no explorer can induce them to accompany him unless he will share his supply of this beverage with them.

I will not detail our experiences on this three-day scramble, for though interesting to one with a taste for narratives of outdoor adventure they have little bearing on the final outcome of our journey.

I shall merely mention that we were nearly drowned in a bottomless swamp, and were chased by an uyedna twice the size of a Terran elephant. We heard the war-drums of the Znaci and were stalked by them, receiving a shower of poisoned crossbow-bolts without ever seeing the arbalestiers. One missile struck Tsha5, who died in great pain from the poison.

We fired a few shots at random into the bush and pressed on to more open country at the outlet of the Valley of Plashce. The drums died out behind us. We could not be sure whether the Znaci gave up the pursuit because the thinning of the vegetation would have made it necessary for them to expose themselves to our fire to get within crossbow-range, or whether, as Kamzhik averred, "Znaci no go near Gdoz; afraid of evil spirit of Hrata king."

Despite his years, Dr. Klein proved himself a woodsman of uncommon resource, adroitness, and endurance. At the end of a long day, when I was reeling with fatigue, he would be slouching along without visible sign of abatement of his powers.

Towards the end of the third day we reached the ruin. I must testify that for somber magnificence it puts such Terran cognates as Ankgor Vat and Petra and Copán to shame. Moreover I became aware of a growing feeling of uneasiness within me, as if Kamzhik's primitive gossip about the evil ghost of King Zahal the Fiendish were to be taken seriously. Of course I immediately dismissed all such unscientific feelings as mere subjective illusions begotten by fatigue and childhood complexes. With an effort I managed to retain my unemotional objectivity.

The city of Gdoz has of course suffered greatly with time and dilapidation, especially from the sack of the city by the Kalcimvi army

846 Kteremian years ago, when the Hrata dynasty was extinguished, and again from the depredations of that band of Terran treasure-hunters forty-odd years ago. We learned from Kamzhik that these adventurers found no treasure and were captured by the Znaci, who employed them in their immemorial magical rituals. My colleague was heard to mutter: "Serves those *scélérats* right!"

Now Dr. Klein became greatly excited over the hundreds of inscriptions on the still-standing walls of Gdoz. These appeared to be all in the Hrata Pictographic writing. Dr. Klein dashed from one to another, exclaiming over them and bemoaning the fact that the day was too far gone to start photographing them.

"If we can only find a bilingual inscription," he cried, "we shall rank with Champollion and Rawlinson! Where is this library, Kamzhik?"

The Kteremian led us down one overgrown street after another, scrambling over or skirting around the great blocks of stone that had fallen into the street from the buildings flanking it. At length he halted before a big building half of which still stood, though its stones were fire-blackened. Then he led us inside. We trod softly as if the vibration of our footsteps might bring down the teetery remains of the structure upon our heads.

Here and there we saw a few charred and crumbling remains of the wooden stacks projecting up out of the thick dust, from which the books had long since vanished. We understood that those that had not been destroyed at the time of the sack were all taken away as loot, then or later. A few of these still exist, either the originals or copies, but all are written in the Skhoji script which had then replaced the much more difficult pictographic signary, and none sheds any very clear light upon the history of the Hrata Empire.

"Well?" said Klein, dancing in his eagerness.

"Is over this way," said Kamzhik, and led us to where a pile of rubble in one corner had been pulled apart to expose a genuine Hrata book.

As you probably know, Kteremian books take the form of a codex with all sheets bound together, as with all Terran books of the present day, but the binding is across the top instead of at the side. Therefore one reads such a book by flipping the pages upwards as if it were a stenographic pad.

The present book was large but thin, with covers of thin ftse-bark about 25 by 35 centimeters. Across the front of the cover were written a number of characters in the Skhoji script.

Klein explained: "A periodical. That word in the large characters is *4azhov,* 'existence,' and the legend below it is a date in the old Hrata sacred calendar. This is evidently a copy of a magazine; the Hrata had them, you know."

With trembling hands Klein raised the cover. Inside there was only one sheet of zahalov-parchment, all the others having been torn out at some remote time. Over Klein's shoulder I could see that this sheet was covered on its upper side with Skhoji writing. Klein raised the page to look at the back.

The back bore, as Kamzhik had promised, pictures—but not, obviously, characters in the Hrata Pictographic script. I do not believe that Kamzhik deliberately misled us in this matter; he simply did not know the difference. Instead there was a cluster of illustrations in the center of the page, and a border of Skhoji characters around it. Klein stared, turned the book this way and that, and then went back to the first side of that one page. His hands trembled violently and he spoke in a strangled voice.

"My Barney, shall I read it to you, this one? It is part of a story, and the text on this page begins as follows: *'Rákaslun tsese8 háda lig doznvi khvesil nvev shi* . . . He clasped her to his feathery bosom with his brawny arms and affectionately nibbled her ear with his great pink incisors. She trembled with ecstasy. But then a frown clouded her broad clear forehead and she drew back modestly. "But Vzdal, dear," she breathed, "what about your other wife?" ' It goes on and on like that! *Herrgott!"*

I asked: "What about the back?"

"Do you want to know what the back is?" shouted Klein, the veins standing out on his forehead. "The text around the margin reads: 'Use Prvnyi's excellent soap! Cleans cleaner! Cleans whiter! No more back-breaking toil for Mother! Buy from Prvnyi!' And these woodcuts in the middle show a female Kteremian employing the soap to cleanse her offspring, house, and other properties! Soap! Soap! Soap!"

Dr. Klein's voice rose to a scream as he flung the remains of the book from him. Knowing his reverence for relics of antiquity I was astounded, and then alarmed as he burst into a fit of maniacal laughter, rolling about in the deep dust of the floor.

"Help me tie him up!" I cried to Kamzhik. "He's gone mad!"

But the native refused to take any part in securing my unfortunate colleague. After all, he had only my word that I was the sane one of the pair, and he saw no reason for getting involved in a dis-

pute between other-worldlings. I therefore was compelled to complete this distasteful task myself. I received a black eye in the process, for Dr. Klein proved deceptively strong and agile in close combat.

After a nightmarish return journey, during which I came perilously near to losing my scientific objectivity altogether, I delivered my colleague to competent medical care, under which he is now well on the road to recovery. The Hratan magazine is in the British Museum awaiting Dr. Klein's eventual attention, though it seems improbable that the study of its one remaining sheet will shed much significant light upon the multifarious problems of Hratan history.

That is the story of the Klein-O'Gorman expedition. It is, as you see, a quite unspectacular one, altogether unworthy of the lurid surmises and rumors that unprincipled gossip-mongers have circulated in recent months. I trust, therefore, that this clarification will terminate the proliferation of these ridiculous canards once and for all.

"NOT CONTENT with spreading life in the macroscopic world alone, nature has made the microscopic world the scene of its activities—heaping existence upon existence. Just about the time that the invention of the telescope showed us innumerable worlds with possible inhabitants moving in the infinite depths, the invention of the microscope showed us that there are innumerable inhabited worlds below the range of visibility on the earth. The telescope brought into view worlds and stars with probable worlds as numerous as the drops of water which make up the great seas. The microscope brought into view a world in almost every drop of water. Every time we breathe, we devour enormous quantities of invisible animal and vegetable organisms, living and dead. There is a swarming population hidden in every drop of brackish water. And a piece of ill-smelling cheese shows a planet teeming with inhabitants.

"If nature has the power to constitute all kinds of life suitable to every piece of matter on the earth, it would seem that the habitation of the planets is a necessary complement of their existence and that the marvelous diversity which distinguishes the gigantic worlds out in space should not be regarded as an objection to life on those worlds. Certainly such diversity has not restricted life on the earth. It is likely that life *as we know it* must have approximately our type of environment. But it is highly probable that other planets have their own life which is adapted to the special planetary conditions. It does not seem possible that nature has the power to create gigantic globes at incredible distances with varie-
gated environments and, having done this, not to have power to organize them with appropriate beings. It would also appear that other life does not need to be strictly different from ours. There may be all gradations between. Differences in physical conditions would be the controlling factor. Such evidence of men of other planets is revealed to everyone who loves and studies nature."—KENNETH HEUER, *Men of Other Planets.*

# Repetition

*by A. E. Van Vogt*

HIS EYES ached. He kept blinking them as he flew, striving to keep in sight the glitter of hurtling metal that was the power-driven spacesuit of his guide.

The man was desperately hard to see against the blazing brilliance of the remote disk of the incredibly small and gemlike sun, rising higher and higher from the fantastic horizon of Europa. It was almost, Thomas told himself, as if the guide were deliberately holding himself into the glare of the morning sun to distract his (Thomas') wearying mind and dull his strength.

More than a mile below, a scatter of forest spread unevenly over a grim, forbidding land. Pock-marked rock, tortured gravel, and occasionally a sparse, reluctant growth of Jupiter grass that showed as brown and uninviting as the bare straggle of forest—and was gone into distance as they sped far above, two shining things of metal, darting along with the speed of shooting stars.

Several times Thomas saw herds of the tall, dapple-gray grass eaters below; and once, far to the left, he caught the sheeny glint of a scale-armored, bloodsucker gryb.

It was hard to see his speedometer, built into the transparent headpiece of his flying space armor—hard because he had on a second headpiece underneath, attached to his electrically heated clothes; and the light from the sun split dazzlingly through the two barriers. But now that his suspicions were aroused, he strained his eyes against that glare until they watered and blurred. What he saw tightened his heavy jaw into a thin, hard line. He snapped into his communicators, his voice as cold and hard as his thoughts: "Hey, you ahead there—what's your name? Barkett, Birkett—"

"Bartlett, sir!" a young man's voice sounded in his communicators; and it seemed to the older man's alert hearing that the accent on the "sir" held the faintest suggestion of a sneer, and a definite hostility. "Ray Bartlett! What is it, sir?"

"You told me this trip would be five hundred and twenty-one miles or—"

"Or thereabouts!" The reply was swift, but the sneer was stronger, the hostility more apparent, more intentional.

Thomas' eyes narrowed to steely gray slits. "You said five hundred and twenty-one miles. The figure is odd enough to be presumed exact, and there is no possibility that you would not know the exact distance from the Five Cities to the platinum mines. We have now traveled five hundred and twenty-nine miles—more every minute—since leaving the Five Cities a little over an hour ago, and—"

"So we have!" interrupted the young man with unmistakable insolence. "Now isn't that too bad, Mr. Famous Statesman Former Explorer Thomas."

Thomas was silent, examining the situation for its potential menace. His first indignant impulse was to pursue the unexpected arrogance of the other, but his brain, suddenly crystal-clear, throttled the desire and leaped ahead in a blaze of speculation.

There was murder intent here. His mind ticked coldly, with a sense of something repeated; for the threat of death he had faced before, during those bold, tremendous years when he had roamed the farthest planets. It was icily comforting to know that this was but a repetition of what he had previously experienced—comforting to remember that he had conquered in the past. In murder, as in everything else, experience counted.

Thomas began to decelerate against the fury of built-up velocity. It would take time—but perhaps there still was time, though the other's attitude suggested the crisis was dangerously near. There was no more he could do till he had slowed considerably. Thomas quieted his leaping pulses and said gently:

"Tell me, is the whole community in on this murder? Or is it a scheme of your own?"

"There's no harm in telling you now!" Bartlett retorted. "We knew in advance that your visit here was a farce. Ostensibly you came to find out for the Earth government if this moon of Jupiter were worth fighting about; actually, the government had decided in advance that they weren't going to fight, and you, with your terrific reputation, were to come here and put the thing over, pretending to be fair, but—"

His voice broke in a flare of hate: "You sneaking coward! What about the folks who've been trying to make a living here, slaving, hoping, dreaming, planning, creating for the future? And for what! So that a bunch of cynical politicians can sell us down the river to a dirty, arrogant gang of Martians."

Thomas laughed, a hard, humorless but understanding laugh that hid the slow caution with which he slanted toward the ground. The strain of the curving dive racked his body, tore at his lungs, but he held to it grimly. He was alone in the sky now; the shining spacesuit of the guide had vanished into the dim distance. Evidently the man had not turned his head or noticed the deviation on his finder. Anxious for the discovery to be as long delayed as possible, Thomas said:

"So that's it. I see that I am now confronted with the emotional immaturities of a bunch of child minds. I wonder if the human race will ever grow up. Don't you know that at one time the world

was divided into warring nations, and before that into fiercely patriotic States; and before that human beings owed their loyalties to towns? Will we always have such fools to contend with? Well-meaning fools, who understand nothing of political, social, or vital economy, and are perpetually victims of their own undisciplined desires and emotional incoherencies."

"Yaah!" Ray Bartlett snarled. "That kind of talk may go over big in the drawing rooms of London and New York, but it's plain rot to the men and women who stand to lose their homes. You're going to die because we're not letting you get back with any living story about Europa. We're going to fake up some notes in your handwriting—we've got a handwriting expert—and then we'll give the notes to the newspapers; and let the government try to back out after that. With you dead—"

Thomas asked grimly: "And how are you going to kill me?"

"In about ten seconds," the young man began tautly, "your engine—" He broke off. "Hah, you're not behind me any more. So you're trying to land. Well, it won't do you any good, damn your soul! I'll be right back that way—"

Thomas was only fifty feet from the bleak rock when there was a sudden grinding in the hitherto silent mechanism of his atomic motor. The deadly swiftness of what happened then left no time for more than instinctive action. He felt a pain against his legs, a sharp, tearing pain, a dizzy, burning sensation that staggered his reason—and then he had struck the ground—and with a wild, automatic motion jerked off the power that was being so horribly short-circuited, that was burning him alive. Darkness closed over his brain like an engulfing blanket—

The blurred world of rock swaying and swirling about him—that was Thomas' awakening! He forced himself to consciousness and realized after a moment of mental blankness that he was no longer in his spacesuit. And, when he opened his eyes he could see without a sense of dazzle, now that he had only the one helmet—the one attached to his electrically heated clothes. He grew aware of something—an edge of rock—pressing painfully into his back. Dizzily, but with sane eyes, he looked up at a lean-faced young man, who was kneeling beside him.

The young man—Ray Bartlett—returned his gaze with unsmiling hostility, and said curtly, "You're lucky to be alive. Obviously you shut off the motor just in time. It was being shorted by lead grit, and

burned your legs a little. I've put some salve on, so you won't feel any pain; and you'll be able to walk."

He stopped and climbed to his feet. Thomas shook his head to clear away the black spots, and then gazed up at the other questioningly, but he said nothing. The young man seemed to realize what was in his mind. "I didn't think I'd be squeamish with so much at stake," he confessed almost roughly, "but I am. I came back to kill you, but I wouldn't even kill a dog without giving him a chance. Well, you've got your chance, if it's worth anything."

Thomas sat up, his eyes narrowed on the young man's face inside the other's helmet. Ray Bartlett was a handsome young fellow with a pleasing countenance that ordinarily must have been frank and open. It was an honest face, twisted now with resentment and a sort of dogged determination.

Frowning with thought, Thomas looked around; and his eyes, trained for detail, saw a lack in the picture.

"Where's your spacesuit?"

Ray Bartlett nodded his head skyward. His voice held no quality of friendliness as he said: "If your eyes are good, you'll see a dark spot, almost invisible now, to the right of the sun. I chained your suit to mine, then gave mine power. They'll be falling into Jupiter about three hundred hours from now."

Thomas pondered that matter-of-factly. "You'll pardon me if I don't quite believe that you've decided to stay and die with me. I know that men will die for what they believe to be right. But I can't quite follow the logic of why you should die. No doubt you have made arrangements to be rescued."

Ray Bartlett flushed, his face growing dark with the turgid wave of angry color. "There'll be no rescue," he growled from his throat. "I didn't like what you said about undisciplined desires and emotional immaturities. I know what you meant—that we of the Five Cities were thinking selfishly of ourselves, blind to the general welfare. I'm going to prove to you that, in this matter, no individual in our community thinks of himself. I'm going to die here with you because, naturally, we'll never reach the Five Cities on foot, and as for the platinum mines, they're even farther away."

"Pure bravado!" Thomas said. "In the first place your staying with me proves nothing but that you're a fool; in the second, I am incapable of admiring such an action. However, I'm glad you're here with me, and I appreciate the salve on these burns."

Thomas climbed gingerly to his feet, testing his legs, first the right, then the left, and felt a little sickening surge of dizziness that he fought back with an effort. "Hm-m-m," he commented aloud in the same matter-of-fact manner as before. "No pain, but weak. That salve ought to have healed the burns by dark."

"You take it very calmly," said Ray Bartlett acridly.

Thomas nodded his powerfully built head. "I'm always glad to realize I'm alive; and I feel that I can convince you that the course being pursued by the government of which I am a minister is the only sane one."

The young man laughed harshly. "Fat chance. Besides, it doesn't matter. You don't seem to realize our predicament. We're at least twelve days from civilization—that's figuring sixty miles a day, which is hardly possible. Tonight, the temperature will fall to a hundred below freezing, at least, though it varies down to as low as a hundred and seventy-five below, depending on the shifting of Europa's core, which is very hot, you know, and very close to the surface at times. That's why human beings—and other life—can exist on this moon at all. The core is jockeyed around by the Sun and Jupiter, with the Sun dominating, so that it's always fairly warm in the daytime and why, also, when the pull is on the other side of the planet, it's so devilish cold at night. I'm explaining this to you, so you'll have an idea of what it's all about."

"Go on," Thomas replied without comment.

"Well, if the cold doesn't kill us, we're bound to run into at least one bloodsucker gryb every few days. They can smell human blood at an astounding distance; and blood for some chemical reason drives them mad with desire. Once they corner a human being it's all up. They tear down the largest trees, or dig into caves through solid rock. The only protection is an atomic gun, and ours went up with our suits. We've got only my hunting knife. Besides all that, our only possible food is the giant grass-eater, which runs like a deer at the first sight of anything living, and which, besides, could kill a dozen unarmed men if it were cornered. You'll be surprised how hungry it is possible to get within a short time. Something in the air—and, of course, we're breathing filtered Europan air—speeds up normal digestion. We'll be starving to death in a couple of hours."

"It seems to give you a sort of mournful satisfaction," Thomas said dryly.

The young man flashed: "I'm here to see that you don't get back alive to the settlement, that's all."

Thomas scarcely heard him. His face was screwed into a black frown. "The more you tell me, the more I am convinced that the human beings on Europa are a sorry lot, no true pioneers. They've been here fifty years, and they've built their cities with machines, and machine-operated their mines—and not a single individual has rooted himself in the soil. No one has learned to exist without the luxuries that were brought from Earth. You talk of their having slaved and created. Bah! I tell you, Ray Bartlett, this is a terrible indictment of these so-called pioneers of yours, who simply moved the equivalent of an Earth city here and live an artificial life, longing for the day, no doubt, when they're wealthy enough to get back to the real thing."

The young man retorted grimly: "Yes. Well, you try living off the soil of this barren moon—try killing a gryb with your bare hands."

"Not my hands," replied Thomas as grimly. "My brains and my experience. We're going to get back to the Five Cities in spite of these natural obstacles, in spite of you!"

In the silence that followed, Thomas examined their surroundings. He felt his first real chill of doubt as his eyes and mind took in that wild and desolate hell of rock that stretched to every horizon. No, not every! Barely visible in the remote distance of the direction they would have to go was a dark mist of black cliff. It seemed to swim there against the haze of semi-blackness that was the sky beyond the horizon. In the near distance the piling rock showed fantastic shapes, as if frozen in a state of writhing anguish. And there was no beauty in it, no sweep of grandeur, simply endless, desperate miles of black, tortured *deadness*—and silence!

He grew aware of the silence with a start that pierced his body like a physical shock. The silence seemed suddenly alive. It pressed unrelentingly down upon that flat stretch of rock where they stood. A malevolent silence that kept on and on, without echoes, without even a wind now to whistle and moan over the billion caves and gouged trenches that honeycombed the bleak, dark, treacherous land around them. A silence that seemed the very spirit of this harsh and deadly little world, here under that tiny, cold, brilliant sun, little more than a dazzling, distorted point in the blue-black sky.

"Gets you, doesn't it?" Ray Bartlett said, and there was a sneer in his voice.

Thomas stared at him, without exactly seeing him. His gaze was far away. "Yes," he said thoughtfully. "I'd forgotten what it felt

like; and I hadn't realized how much I'd forgotten. Well, we'd better get started."

As they leaped cautiously over the rock, assisted by the smaller gravitation of Europa, the young man said: "Perhaps you'll understand better how we, who've built cities and homes on this far-away moon, feel about the prospect of being handed over to another government?"

"I am not," said Thomas curtly, "prepared to discuss the matter with a person who does not understand psychology, sociology, history, and political economy. There is nothing more futile than arguing with someone who has no basis for his opinions but a vague backwash of emotions."

"We know what's right and what's human," Ray Bartlett replied icily. "We've got our scientists, too, and our engineers and teachers; and I'm here to see that their decision to kill you is carried out."

"You have only a knife now," Thomas commented, "and if you attacked me with that I'd have to show you the method employed by the Martian plainsmen to disarm a man with a knife. It's very simple, really, and consistently effective."

"Yeah!" Ray Bartlett said roughtly, his lean face tight, his formidable body tense. "What good would that do? I could still tear you apart with my bare hands."

Thomas slowed in his swift walking to glance at the other. "I venture to suggest that, with my wide experience in my favor, you could do nothing against me. However," he said hastily as the young man's dark eyes flashed with unfriendly intent, "I apologize for making a provocative remark. My words might properly be construed as a dare—in fact, all threats, however veiled behind apparent reason and moral uplift, are dares—and history teaches that such provocation produces an inevitable physical conflict. Tell me, what do you do for a living?"

"I'm a metal engineer!" Ray Bartlett said gruffly.

"Oh," Thomas' voice held a note of pleased surprise. "I see that I've been underestimating you. No one will understand better than you the metal end of this business of Mars taking over Europa."

"Mars isn't taking over Europa!" Bartlett snapped. "And don't try to pull any flattery about how easy it should be for me to understand your subtle reasoning. I can see through that kind of stuff."

Thomas ignored him. "Here are the figures. The Earth uses ten billion tons of steel every year; Mars two billion—"

"That's proof," Bartlett interjected, "that they wouldn't dare go to war with us, because even as it is, we sell them half their steel. If we cut that out, they couldn't maintain their industries to supply peace-time needs, let alone wartime. We can tell them to go stick it."

"You're quite wrong. Your reasoning is that of a newspaper correspondent who totals up the armaments of opposing sides and then says, 'Look, we've got more!' War is the great unknown, the unpredictable. A military genius with a million men can lick a proportionately well-armed two million men. Up to a certain point, war is a science like astronomy, then it becomes astrology. So far as science can help us, our general staff has decided that, strategically, we are in a bad way. While we do not actually believe we would lose, we could not guarantee a victory."

"That is the argument of conservative old women. They wouldn't dare to fight."

"Here's the breakdown of figures," Thomas went on calmly. "Half our steel, as well as the billion tons we sell to Mars, is mined with great difficulty on Jupiter. We couldn't operate those mines in case of war because the mines are hopelessly vulnerable to attack. That leaves us five billion. We couldn't operate the mines on Titan, which provide a scanty fifty million tons of steel, and, of course, Europa would be captured within a month of the war's beginning. The reason for all this is that it is militarily impossible for our ships to maintain the spacelanes between Earth and Jupiter, except at certain seasons of the year, when Mars was on the other side of the Sun from Jupiter. The Martians, however, would not start the war until the situation was favorable to them.

"Now, naturally, the Martians won't be able to operate the Jupiter mines under war conditions, but they should have no difficulty continuing operations on Ganymede, Io, Callisto, as well as Europa after they take it, and Titan, after they take that. Meantime, we'd have the supplies of Venus, the Moon, and Earth, sufficient to supply us with some four billion tons a year. Considering the greater size of Earth, and the larger populations on Venus and Earth, they, with their smaller normally necessary needs, would actually have the advantage of us with their twelve hundred million tons.

"And all these mighty forces would be unleashed into a trillion-dollar war for what? To retain a paltry hundred million tons of steel—and other metals in proportion—from Europa. Naturally,

we decided it wasn't worth it when we saw the way the political situation on Mars was tending toward one disastrous and inevitable end."

"You damned cowards!" Ray Bartlett snarled. "We're not fighting for steel. We're fighting to the last man and woman for our cities and our homes. Now, let's not talk about it any more. You make me sick with your cold, inhuman reasoning. Using human beings like pawns. Well, let me tell you, they're the only ones who count. Thank Heaven, you and I haven't a chance of getting out of this alive."

Two hours later the Sun was high in those dark, gloomy heavens. It had been two hours of silence. Two hours while they tramped precariously along thin stretches of rock between fantastic valleys that yawned on either side, while they skirted the edges of caves whose bleak depths sheered straight down into the restless bowels of the Moon. Two hours of desolation.

The great black cliff, no longer misted by distance, loomed near and gigantic. As far as the eye could see it stretched to either side; and from where Thomas toiled and leaped ever more wearily, its wall seemed to rear up abrupt and glassy and unscalable.

He gasped: "I didn't realize I was so out of condition. I hate to confess it, but I'm not sure I can climb that cliff."

The young man turned a face toward him that had lost its brown healthiness in a gray, dull fatigue. A hint of fire came into his dark eyes.

"It's hunger!" he said curtly. "I told you what it would be like. We're starving."

Thomas pressed on, but after a moment slackened his pace, and said: "This grass-eater—it also eats the smaller branches of trees, doesn't it?"

"Yes. That's what its long neck is for. What about it?"

"Is that all it eats?"

"That and Jupiter grass!"

"Nothing else?" Thomas' voice was sharp with question, his powerfully built face drawn tight with insistence. "Think, man!"

Ray Bartlett bridled. "Don't take that tone to me. What's the use of all this, anyway?"

"Sorry—about the tone, I mean. What does it drink?"

"It licks ice. They always stay near the rivers. During the brief melting periods each year, all the water from the forests runs into the rivers and freezes. The only other thing it eats or drinks is salt.

Like Earth animals, they absolutely have to have salt, and it's pretty rare."

"Salt! That's it!" Thomas' voice was triumphant. "We'll have to turn back. We passed a stretch of rock salt about a mile back. We'll have to get some."

"Go back! Are you crazy?"

Thomas stared at him, his eyes gray pools of steely glitter. "Listen, Bartlett, I said awhile ago that I didn't think I could climb those cliffs. Well, don't worry, I'll climb them. And I'll last through all today, and all tomorrow and the other twelve or fifteen or twenty days. I've put on about twenty-five pounds during the last ten years that I've been a cabinet minister. Well, dammit, my body'll use that as food, and by Heaven, I'll be alive and moving and going strong when you're staggering like a drunken sailor. I'll be alive when you're dead and buried for a hundred miles. But if we expect to kill a grass-eater and live decently, we've got to have salt. I saw some salt, and we can't take a chance on passing it up. So back we go."

They glared at each other with the wild, tempestuous anger of two men whose nerves are on ultimate edge. Then Bartlett drew a deep breath and said: "I don't know what your plan is, but it sounds crazy to me. Have you ever seen a grass-eater? Well, it looks something like a giraffe, only it's bigger, and faster on its feet. Maybe you've got some idea of tempting it with salt, and then killing it with a knife. I tell you, you can't get near it— But I'll go back with you. It doesn't matter, because we're going to die, no matter what you think. What I'm hoping is that a gryb sees us. It'll be quick that way."

"There is something," said Thomas, "pitiful and horrible about a young man who is determined to die."

"You don't think I want to die!" the young man flashed. "Why, I had everything to live for, until you came along with your miserable—"

His passionate voice died abruptly, but Thomas knew better than to let so much fierce feeling die unexplored. "No doubt," he ventured softly, "there is a girl you love—"

He saw by the wretched look on the young man's face that he had struck home.

"Ah, well," said Thomas, "she'll probably marry someone else. There's always a second man who desires to taste of the manifold delights and charms of a beautiful and intelligent girl."

The young man said nothing; and Thomas realized his words had

started a cruel train of thought in the other. He felt no compunction. It was imperative that Ray Bartlett develop a desire to live. In the crisis that seemed all too near now, his assistance might easily be the difference between life and death.

It was odd, the fever of talk that came upon Thomas as they laboriously retraced their steps to the salt rock. It was as if his tongue, if all of his body, had become intoxicated; and yet his words, though swift, were not incoherent, but reasoned and calculated to convince the younger man.

"Look at it this way. Your people, over a period of fifty years, have built five cities, with a total population of a million. You produce from your mines a hundred million tons of steel, a thousand tons of platinum, and about a hundred million tons of other metals —about two hundred million tons altogether. Of course, that's per year. Now, your engineers pointed out that estimates of Europa's recoverable metals indicated that in a thousand years the supply will be exhausted. In other words, there are two hundred billion tons of metal on this little moon, equal to twenty years of the normal needs of Earth. The value of the entire thousand years' supply, at an average of twenty dollars per ton, is four thousand billion dollars. I need hardly tell you that a war between Earth and Mars would cost ten times that much for each year that it lasted, not counting the hundred to two hundred million lives that would be destroyed in every conceivable horrible manner, the brutalizing of minds that would take place, the destruction of liberty that would ensue. Did the leaders of your community consider that in their deliberations?"

"I tell you," Ray Bartlett contended stubbornly, "the Martians won't fight, if you stand up to them and—"

"You keep repeating that like a parrot!" Thomas snapped. "The internal political situation on Mars has reached an explosive point. There are two groups on the planet—one ferociously hostile to Earth, the other—the government—believing in negotiation. We want that government to stay in power, but they haven't a chance in the elections this year unless they can show material progress. Europa will be their answer—"

"Here's your salt!" Bartlett interrupted him curtly.

The salt rock composed a narrow ledge that protruded like a long fence which ran along in a startlingly straight line and ended abruptly at a canyon's edge, the fence rearing up, as if cringing back in frank dismay at finding itself teetering on the brink of an abyss.

Thomas picked up two pieces of salt rubble and slipped them into

the capacious pockets of his plainsmanlike coat—and started back toward the dark wall of cliff nearly three miles away. He took up the thread of his argument where he had left off.

"And remember this, it's not only Europa's recoverable metals that will be used up in a thousand years, but also the metal resources of the entire Solar System. That's why we must have an equitable distribution now, because we can't afford to spend the last hundred of those thousand years fighting over metal with Mars. You see, in that thousand years we must reach the stars. We must develop speeds immeasurably greater than that of light—and in that last, urgent hundred years we must have their co-operation, not their enmity. Therefore they must not be dependent on us for anything; and we must not be under the continual mind-destroying temptation of being able to save ourselves for a few years longer if we sacrifice them."

Ray Bartlett said, rage nearly choking his voice: "I can see what you're trying to do—pretending that you're capable of thinking of the long-run welfare of the world. Well, forget it; you're not God. People get to believe they are, you know; and that they can so manipulate the strings of their puppet ideas and puppet men that everything will inevitably happen as they desire. But we're not puppets, we human beings. In a thousand years, anything can happen."

He finished roughly: "And now I tell you again to shut up! I don't want to hear your arguments. You said before that the basis of our beliefs is different. You're damned right it is. So shut up, damn you! I'm so hungry that I can hardly stand up."

"Well," Thomas asked wearily, "what is the basis of your opinions? I am willing to debate on your basis."

The young man made no answer. They trudged along in silence.

Thomas' body ached in every muscle, and every nerve pulsed alarms to his brain. He clung with a desperate, stubborn strength to each bit of rock projecting from the cliff wall, horribly aware that a slip meant death. Once he looked down, and his brain reeled in dismay from the depths that fell away behind him.

Through blurred vision he saw the young man a few feet away, the tortured lines of his face a grim reminder of the hunger weakness that was corroding the very roots of their two precariously held lives.

"Hang on!" Thomas gasped. "It's only a few more yards."

They made it, and collapsed on the edge of that terrific cliff, too weary to climb the gentle slope that remained before they could look over the country beyond, too exhausted to do anything but lie there, sucking the life-giving air into their lungs. At last Ray Bartlett

gasped: "What's the use? If we had any sense we'd jump off this cliff and get it over with."

"We can jump into a deep cave any time," Thomas retorted. "Let's get going."

He rose shakily to his feet, took a few steps, then stiffened and flung himself down with a hissing intake of his breath. His fingers grabbed the other's leg and jerked him back brutally to a prone position.

"Down for your life. There's a herd of grass-eaters half a mile away. And they *mean* life for us."

Bartlett crawled up beside him, almost eagerly; and the two peered cautiously over the knob of rock out onto a grassy plain. The plain was somewhat below them, Thomas saw. To the left, a scant hundred yards away, like a wedge driven into the grassland, was the pointed edge of a forest. The grass beyond seemed almost like a projection of the forest growth. It, too, formed a wedge that petered out in bleak rock. At the far end of the grass was a herd of about a hundred grass-eaters.

"They're working this way!" Thomas said. "And they'll pass close to that wedge of trees."

A faint ire of irony edged Bartlett's voice as he said: "And what will you do—run out and put salt on their tails? I tell you, Thomas, we haven't got a thing that—"

"Our first course," said Thomas, unheeding, seeming to think out loud, "is to get into that thick belt of trees. We can do that by skirting along this cliff's edge, and putting the trees between us and the animals. Then you can lend me your knife."

"O.K.!" the young man agreed in a tired voice. "If you won't listen, you'll have to learn from experience. I tell you, you won't get within a quarter of a mile of those things."

"I don't want to," Thomas replied. "You see, Bartlett, if you had more confidence in *life,* you'd realize that this problem of killing animals by cunning has been solved before. It's absolutely amazing how similarly it has been solved on different worlds, and under widely differing conditions. One would almost suspect a common evolution, but actually it is only a parallel situation producing a parallel solution. Just watch me."

"I'm willing," said Ray Bartlett. "There's almost any way I'd rather die than by starving. A meal of cooked grass-eater is tough going, but it'll be pure heaven. Don't forget, though, that the blood-

sucker grybs follow grass-eater herds, get as near as possible at night, then kill them in the morning when they're frozen. Right now, with darkness near, a gryb must be out there somewhere, hiding, sneaking nearer. Pretty soon he'll smell us, and then he'll—"

"We'll come to the gryb when he comes for us!" said Thomas calmly. "I'm sorry I never visited this moon in my younger days; these problems would all have been settled long ago. In the meantime, the forest is our goal."

Thomas' outward calmness was but a mask for his inner excitement. His body shook with hunger and eagerness as they reached the safety of the forest. His fingers were trembling violently as he took Bartlett's knife and began to dig at the base of a great, bare, brown tree.

"It's the root, isn't it," he asked unsteadily, "that's so tough and springy that it's almost like fine tempered steel, and won't break even if it's bent into a circle? They call it eurood on Earth, and it's used in industry."

"Uh-huh!" Bartlett agreed. "What are you going to do—make a bow? I suppose you could use a couple of grass blades in place of catgut. The grass is pretty strong and makes good rope."

"No," said Thomas. "I'm not making a bow and arrow. Mind you, I can shoot a pretty mean arrow. But I'm remembering what you said about not being able to get within a quarter of a mile of the beasts."

He jerked out a root, which was about an inch in thickness, cut off a generous two-foot length, and began to sharpen, first one end, then the other.

It was hard going, harder than he had expected, because the knife skidded along the surface almost as if it were metal. Finally it obtained a cutting hold. "Makes a good edge and point," he commented. "And now, give me a hand in bending this double, while I tie some grass blades around to keep it that way."

"O-oh!" said Bartlett wonderingly. "I see-e-e! Say, that is clever. It'll make a mouthful about six inches in diameter. The grass-eater that gets it will gobble it up in one gulp to prevent any of the others getting the salt you're going to smear on it. His digestive juices will dissolve the grass string, the points will spring apart and tear the wall of his stomach, producing an internal hemorrhage."

"It's a method," said Thomas, "used by the primitives of Venus to kill the elusive Paamer deer; the Martian plainsman kills the water

gopher with it, and, last but not least, our own Eskimo back on Earth uses it on wolves. Naturally, they all use different kinds of bait, but the principle is the same."

He made his way cautiously to the edge of the forest. From the shelter of a tree he flung the little piece of bent wood with all his strength. It landed in the grass a hundred and fifty feet away.

"We'd better make some more!" Thomas said. "We can't depend on one being found."

The eating was good; the cooked meat tough but tasty; and it was good, too, to feel the flow of strength into his body. Thomas sighed at last and stood up, glanced at the sinking Sun, an orange-sized ball of flame in the western sky.

"We'll have to carry sixty Earth pounds of meat apiece; that's four pounds a day for the next fifteen days. Eating meat alone is dangerous; we may go insane, though it really requires about a month for that. We've got to carry the meat because we can't waste any more time killing grass-eaters."

Thomas began to cut into the meaty part of the animal, which lay stretched out on the tough grass; and in a few minutes had tied together two light bundles. By braiding grass together, he made himself a pack sack and lifted the long shank of meat until it was strapped to his back. There was a little adjustment necessary to keep the weight from pressing his electrically heated clothes too tightly against him; when he looked up finally, he saw that the young man was looking at him peculiarly.

"You realize, of course," Bartlett said, "that you're quite insane now. It's true that, with these heated suits, we may be able to live through the cold of tonight, provided we find a deep cave. But don't think for a second that, once a gryb gets on our trail, we'll be able to throw it a piece of sharpened wood and expect it to have an internal hemorrhage."

"Why not?" Thomas asked; and his voice was sharp.

"Because it's the toughest creature ever spawned by a crazy evolution, the main reason I imagine why no intelligent form of life evolved on Europa. Its claws are literally diamond hard; its teeth can twist metals out of shape; its stomach wall can scarcely be cut with a knife, let alone a crudely pointed wood."

His voice took on a harsh note of exasperation: "I'm glad we've had this meal; starving wasn't my idea of a pleasant death. I want the quick death that the gryb will give us. But for heaven's sake, get it out of your head that we shall live through this. I tell you, the

monster will follow us into any cave, cleverly enlarge it wherever he has difficulty; and he'll get us because eventually we'll reach a dead end. They're not normal caves, you know, but meteor holes, the result of a cosmic cataclysm millions of years ago, and they're all twisted out of shape by the movement of the planet's crust. As for tonight, we'd better get busy and find a deep cave with plenty of twists in it, and perhaps a place where we can block the air currents from coming in. The winds will be arriving about a half an hour before the sun goes down, and our electric heaters won't be worth anything against those freezing blasts. It might pay us to gather some of the dead wood lying around, so we can build a fire at the really cold part of the night."

Getting the wood into the cave was simple enough. They gathered great armfuls of it, and tossed it down to where it formed a cluttering pile at the first twist in the tunnel. Then, having gathered all the loose wood in the vicinity, they lowered themselves down to the first level, Thomas first in a gingerly fashion; the young man—Thomas noticed—with a snap and spring. A smile crinkled the lips of the older man. The spirit of youth, he reflected, would not be suppressed.

They were just finishing throwing the wood down to the next level when suddenly a shadow darkened the cave mouth. Thomas glanced up with a terrible start and had a fleeting glimpse of great fanged jaws and glowing eyes that glared from a hideous head; a thick red tongue licked out in unholy desire, and a spray of saliva rained down upon their transparent metal helmets and leather-like clothes. And then Ray Bartlett's leather-covered hands bit like sharp stones into Thomas' arm; he felt himself dragged over the edge.

They landed unhurt among the loose pile of branches below; and scrambled frantically to throw it farther down. A great mad clawing and horrible bass mewing above them whipped them to desperate speed. They made it, as that enormous head peered down from the second level, visible only by the phosphorescent glow of its eyes, like two burning coals a foot and a half apart.

There was a terrific scrambling sound behind the two men as they pushed wildly down to the next level; a rock bounced down, narrowly missing them as it clattered past; and then, abruptly, silence and continuing darkness.

"What's happened?" Thomas asked in bewilderment.

There was bitterness in Ray Bartlett's voice as he replied: "It's

wedged itself in, because it's realized it can't get us in the few minutes left before it freezes for the night; and, of course, now we won't be able to get out past it, with that great body squeezed against the rock sides. It's really a very clever animal in its way. It never chases grass-eaters, but just follows them. It has discovered that it wakes up a few minutes before they do; naturally, it thinks we, too, will freeze, and that it will wake up before we will. In any event, it knows we can't get out. And we can't. We're finished."

All that long night, Thomas waited and watched. There were times when he dozed, and there were times when he thought he was dozing, only to realize with a dreadful start that the horrible darkness had played devil's tricks on his mind.

The darkness during the early part of the night was like a weight that held them down. Not the faintest glimmer of natural light penetrated that Stygian night. And when, at last, they made a fire from their pile of brush, the pale, flickering flames pushed but feebly against the pressing, relentless force of the darkness and seemed helpless against the cold.

Thomas began to notice the cold, first as an uncomfortable chill that ate into his flesh, and then as a steady, almost painful, clamminess that struck into his very bones. The cold was noticeable, too, in the way white hoarfrost thickened on the walls. Great cracks appeared in the rock; and not once, but several times, sections of the ceiling collapsed with a roar that threatened their lives. The first clatter of falling débris seemed to waken Bartlett from a state of semi-coma. He jerked to his feet; and Thomas watched him silently as he paced restlessly to and fro, clapping his gloved, heated hands together to keep them warm.

"Why not," Thomas asked, "go up and build a fire against the gryb's body? If we could burn him—"

"He'd just wake up," Bartlett said tersely, "and besides, his hide won't burn at ordinary temperatures. It has all the properties of metallic asbestos, conducts heat, but is practically noncombustible."

Thomas was silent, frowning; then: "The toughness of this creature is no joke—and the worst of it all is that our danger, the whole affair, has been utterly useless. Fake handwriting or not, my colleagues will know the truth and will suspect foul play. Rumors to that effect will spread automatically through the press and develop into open vilification of the murderous Five Cities. Before you know it, there will be a swelling murmur of demand for retribution; and

in such a dark atmosphere it will be the simplest matter in the world to hand Europa over to Mars. You think that's far-fetched, don't you?"

"It's crazy!" half whispered Ray Bartlett shakily.

"You may not realize it even now," Thomas went on, "but the person to have concentrated upon was myself. I don't think I am exaggerating when I say that any solution which I proposed would have been accepted. My reputation has been the product of a peculiar set of circumstances, but, once established, it acquired rocklike qualities. The report of my death will create a sensation and have all the effects that I have described."

"Well, what should we have done?" Ray Bartlett exclaimed with dark bitterness. "We showed you all our resources because we were determined to leave you no excuse. But what could we do against a person who thought in billions where we thought in millions? To you everything was small, unimportant. The full capacity of all our mines was just a drop in the tremendous maw of Earth's metal furnaces. What could we do?"

"Accept the situation!" Thomas shrugged. "What's the difference whether you sold your metal hereafter to Mars or to Earth; all you ever see are the big freight ships that come here and load up. There would be no objection to making a stipulation that the community have submitted to them the names of governors that Mars would place here, from which they could take their choice. We could also stipulate that the Martians live in separate cities to begin with, and that all business relations between individuals be on a purely voluntary basis; and, oh, a hundred other stipulations could be made, to be effective during, say, the first fifty years."

"I don't really suppose it matters," the young man said gloomily. "I suppose we are stupid fools to object to being handed over like a herd of sheep. It's our pride, and, in a kind of way, I can see your point about the unfairness of the distribution of natural resources. Oh, Lord, here I am talking again. What's the use of you and I arguing on this subject? It's too late. In a few hours that damn thing that's got us sealed in here will wake up and finish us. There's nothing we've got that can hold it back one inch, or one second."

"Don't be so sure of that!" Thomas said. "I admit the toughness of this monster has got me worried sick, but don't forget what I've said: these problems have been solved before on other planets."

"You're mad! I tell you, sir, even with an atomic gun it's touch

and go getting the gryb before it gets you. Its hide is so tough it won't begin to disintegrate until your heart's in your boots. What can we do against a thing like that when all we've got is a knife?"

"Let me have the knife," Thomas replied. "I want to sharpen it."

His face twisted into a wry smile. Perhaps it didn't mean much, but the young man had called him "sir" quite unconsciously. There were psychological implications in the use of the word.

The sustained darkness of that night, the insistent crackle of the palely flickering fire seemed to become more and more alive as the nervous hours twitched by. It was Thomas who was pacing now, his medium-tall, powerful body restless and tense with anxious uncertainty.

It was getting distinctly warmer; the white hoarfrost was melting in places, yielding for the first time to the heat of the spluttering flame; and the chill was no longer reaching clammily through his heated clothes.

A scatter of fine ashes lay on the ground, indication of how completely the fuel had burned away; but even as it was the cave was beginning to show a haze of smoke fumes, through which it was difficult to see properly.

Abruptly there was a great stirring above them; and then a deep, eager mewing, and a scrambling, scratching sound. Ray Bartlett jerked erect from where he had been lying and leaped to his feet. He gasped: "It's awake, and it's remembered."

"Well," said Thomas grimly, "this is what you've been longing for."

From across the fire the young man stared at him moodily. He said harshly: "You don't think I want to die, do you? Besides, I'm beginning to see that killing you will solve nothing. It was a mad scheme."

"You agree, then," said Thomas, "that people who have not rooted themselves into a land, but are simply exploiting it, have no right to expect the living, vital organism of the people to which they belong, to risk a death blow in order to protect them and their purely artificial structure?"

"Oh, I don't know what I think!" Ray Bartlett exclaimed. "For heaven's sake, let's quit quibbling. That damned thing—"

A rock bounded down and crashed between them, missing the fire, then vanishing noisily into the darkness beyond. There followed a horrible squeezing, a rasping sound as of brittle scales scraping rock;

and then, terribly near, the drumming sound as of a monstrous sledge hammer at work.

"He's breaking off a piece of rock!" Bartlett panted. "Quick! Get into a concavity against the wall. Those rocks may come tumbling down here, and they won't miss us forever— What are you doing?"

"I'm afraid," said Thomas in a shaky voice, "I've got to risk the rock. There's no time to waste."

His leather-covered hands trembled with the excitement that gripped him as he hastily unfastened one of the glove extensions. He winced a little as his hand emerged into the open air, and immediately jerked it over the hot flame of the fire.

"Phew, it's cold. Must still be about ninety below. I'll have to warm this knife or it'll stick to my skin."

He held the blade into the flame, finally withdrew it, made a neat incision in the thumb of his bare hand, and wiped the blood onto the knife blade, smearing it on until his hand, blue with the cold, refused to bleed any more. Then he quickly slipped it back into its glove.

It tingled as it warmed, but in spite of the pain he picked up a flaming faggot by its unburned end and walked along into the darkness, his eyes searching the floor. He was vaguely aware of the young man following him.

"Ah," Thomas said, and even in his own ears his voice sounded wrenched from him. He knelt quiveringly beside a thin crack in the rock. "This'll be just about right. It's practically against the wall, protected from falling rocks by this projecting edge of wall."

He glanced up at Bartlett. "The reason I had us camp here last night instead of farther down was because this ledge is nearly sixty feet long. The gryb is about thirty feet long from tail to snout, isn't it?"

"Yes!"

"Well, this will give it room to come down and walk a few feet; and besides, the cave is wide enough here for us to squeeze past it when it's dead."

"When it's dead!" the young man echoed with a groan. "You must be the world's prize fool—"

Thomas scarcely heard him. He was carefully inserting the handle of the knife into the crack of the rock, wedging it in. He tested it.

"Hm-m-m, it seems solid enough. But we'll have to make doubly sure."

"Hurry!" Bartlett exclaimed. "We've got to get down to the next level. There's just a chance that there is a connection somewhere below with another cave."

"There isn't! I went down to investigate while you were sleeping. There are only two more levels after this."

"For Heaven's sake, man, it'll be here in a minute."

"A minute is all I need!" Thomas replied, struggling to calm his clamoring heart, to slow the convulsive gasping of his lungs. "I want to pound these slivers of rock beside the knife to brace it."

And Thomas pounded, while Bartlett danced frantically from one foot to another in a panic of anxiety. He pounded while that scrambling from above became a roaring confusion, so near now that it was deafening. He pounded while his nerves jangled and shook from the hellish bass mewing that blasted down from the ravenous beast.

And then, with a gasp, he flung aside the piece of rock with which he had been hammering; and the two men lowered themselves recklessly over the edge—just as two great glowing eyes peered down upon them.

The firelight revealed the vague outlines of a dark, fanged mouth, a thick, twisting tongue; and then there was a scaly glitter as the monstrosity plunged downward right onto the fire.

Thomas saw no more. He let go his hold and skittered downward for nearly twenty feet before he struck bottom. For a minute he lay there, too dizzy to realize that the scrambling noise from above had stopped.

Instead there was a low grunting of pain, and then a sucking sound.

"What the dickens!" Ray Bartlett muttered.

"Wait!" Thomas whispered tensely.

They waited what must have been five minutes, then ten—half an hour. The sucking sound above was weaker. An overtone of wheezing accompanied it, and the grunts had stopped. Once there was a low, hoarse moan of agony.

"Help me up!" Thomas whispered. "I want to see how close it is to death."

"Listen," snapped Ray Bartlett, "either you're mad or I'm going to be. For heaven's sake, what's it doing?"

"It smelled the blood on the knife," Thomas replied, "and began to lick it. The licking cut its tongue into ribbons, which whipped it into a frenzy, because with every lick more of its own blood would

flow into its mouth. You say it loves blood. For the last half hour it's been gorging itself on its own blood. Primitive stuff, common to all planets. Civilized men, apparently, never think of things like that."

"I guess," Ray Bartlett said in a queer voice after a long moment, "there's nothing now to prevent us getting back to the Five Cities."

Thomas stared with narrowed eyes at the other's vague bulk in the darkness. "Nothing, except—you!"

They climbed in silence to where the gryb lay dead. Thomas was aware of Bartlett watching him as he gingerly removed the knife from where it was wedged into the rock. Then abruptly, harshly, Bartlett said: "Give me that!"

Thomas hesitated, then handed the knife over. It was possible he would have to take the terrific risk of telling young Bartlett the truth about this whole business. For undoubtedly the younger man was once again all enemy.

Outside, the morning greeted them, bleak, yet somehow more inviting. The little red Sun was well above the horizon, and something else was in the sky, too: a huge red ball of pale fire, Jupiter the giant, sinking now toward the western horizon.

The sky, the world of Europa, was lighter, brighter; even the rocks didn't look so dead, nor so black. A strong wind was blowing; and it added to the sense of life. The morning seemed cheerful after the black night, as if hope were once again possible.

"It's a false hope," thought Thomas. "The Lord save me from the stubborn duty sense of an honest man. He's going to attack."

Yet the fury of attack, when it came, surpassed his expectations. He caught the movement, the flash of the knife out of the corner of his eye—and whipped aside.

The knife caught the resisting fabric of the arm of his electrically heated suit, scraped a foot-long scar on that obstinate, half-metallic substance, and then Thomas was dancing away along a ledge of firm rock.

"You . . . silly . . . fool!" he gasped. "You don't know what you're doing."

"You bet I know!" Bartlett ground out. "I've got orders to kill you, and I'm going to in spite of your silver tongue. You're the devil himself for talking, but now you die."

He leaped forward, knife poised, and Thomas let him come. There was a way of disarming a man with a knife, provided the man did not know the method and provided it worked the first time.

Bartlett grunted as he leaped; his free hand grabbed at Thomas, and that was all Thomas needed. Just a damned amateur who didn't know knife fighters didn't try for holds.

Thomas snatched at the clawlike spread of that striking hand, caught it with grim strength and jerked the young man past him with every ounce of his power. As Bartlett shot by him, propelled by his own momentum as well as by that arm-wrenching pull, Thomas twisted along with him. At the last instant he braced himself for the shock and sent the two-hundred-pound body spinning along like a top.

Frantically, Ray Bartlett fought for balance. But there was no mercy in that rough ground. Upjutting rock snagged his feet; he fell with mind-stunning violence, kicked weakly and lay still.

Thomas picked up the knife from where it had fallen.

"I'll keep this," he said when the other's glazed eyes began to show animation. "But what am I going to do with you? We've got twelve days, at least, during which I'll be at your mercy a score of times a day. A swiftly heaved rock to smash my head, a sudden shove as we skirt some crater—"

"I'll . . . do . . . it . . . too."

Thomas frowned. "At least, you're honest. That makes it possible for me not to kill you, but to trust you with a secret so important that if the barest hint of it got out in advance it would shatter the greatest diplomatic stroke of the ages. But I must have your most sacred word of honor that not one word will escape you under any circumstances."

"I guess I can promise that!" Ray Bartlett said in a thick, unsteady voice; then, with more fire: "But I'll see you in hell before I change my mind."

"You promise, nevertheless."

"Yes, I promise, but there's nothing—"

Thomas cut him short: "There has never been a more enlightened group of men on Mars than the present government. If we hand over Europa to prove our good will to the doubters among the opposition, that government will, immediately on re-election, vote to join the Earth-Venus union. I need hardly tell you that the thing is so tremendous that it staggers the imagination. For the first time in the history of men—"

"Suppose they lose the election?"

"We can trust that crew of rabble-rousers to encroach immediately on the rights of the Europans, as defined by the agreement we will

draw up. Whereupon we shall declare the agreement null and void and take over Europa."

"Bah! That means war, and you wouldn't have the nerve."

Thomas' steely eyes gazed unflinchingly at the younger man. "Let me tell you that I am the dominating minister in the present Earth-Venus government; and I hope I have convinced you that fear is not one of my characteristics. My colleagues and I do not fear, but hate, war. However, we are convinced that war will not be necessary. The government on Mars will win the election; and I think that you agree with me there."

Bartlett muttered: "Getting Europa handed to them on a platter ought to swing any election, I guess."

Thomas ignored his surliness, and in a voice that was queerly husky he said: "I have talked of repetition being a rule of life. But somewhere along the pathway of the Universe there must be a first time for everything, a first peaceful solution along sound sociological lines of the antagonisms of great sovereign powers.

"Some day man will reach the stars, and all the old, old problems will repeat themselves. When that day comes, we must have established sanity in the very souls of men, so firmly rooted that there will be an endless repetition of peaceful solutions."

He stood up. "Think it over, and then decide for yourself whether you've got the nerve to face the recriminations of your friends for letting me come in alive. There's a dark, bitter period ahead for Europa, and the agony of your people will be heaped on your head. It's a hard choice."

In the west, mighty Jupiter was being engulfed by the blue, dark horizon, an age-old cycle repeating. The strong wind died, and there was quiet upon that wild, fantastic land. Thomas was aware of the young man walking behind him—too aware; it made him less alert for what was ahead.

Abruptly he stumbled to the edge of a jagged black hole that fell away into sheer, dreadful depths. He hung there, teetering, frantic, over the abyss.

And then two iron-hard hands caught his shoulder, jerked him back from that desperate danger.

"Be careful, sir!" breathed the anxious voice of Ray Bartlett. "Be careful, or you'll be killed."

# *Invasion*

"ASSUME, said Hogben, that the earth's 'E. T. N.' (Extraterrestrial Neighbors) can perceive or record radiation in some part of the electromagnetic spectrum (light, heat, radio waves, etc.). Also assume that the earth can send such radiation strongly enough to reach the nearest planets. After all, radio waves are being beamed to the moon as a matter of routine, and their feeble reflections, bounced back to earth, are heard easily.

"But what can earthlings say that their Extraterrestrial Neighbors will understand? Let's begin, said Hogben, by some small talk about numbers, whose properties do not vary from planet to planet. Most numerical systems (the Roman, Chinese, Mayan) grew out of simple tally marks. One mark stood for 'one'; two marks for 'two,' etc. Probably the Neighbors passed through a similar stage in their early intellectual development and have records of it. So Hogben's first message into space would be an equation in simplified Roman numerals:

" 'I plus II plus III equals IIIIII.'

"The numbers are 'dashes' (single strokes repeated), and the plus signs and equals sign are 'flashes.' By flashes Hogben means easily recognized groups of radio signals, rather like the letters of the Morse code.

"When the Neighbors have heard this equation, repeated often enough, they ought to understand its meaning. By taking it apart, they can learn the first few words of the interplanetary language. More complicated equations will teach them more words."—*Time,* April 14, 1952.

# "Breeds There a Man . . . ?"

*by Isaac Asimov*

Police Sergeant Mankiewicz was on the telephone and he wasn't enjoying it. His conversation was sounding like a one-sided view of a firecracker.

He was saying, "That's right! He came in here and said, 'Put me in jail, because I want to kill myself.'

". . . I can't help that. Those were his exact words. It sounds crazy to me, too.

". . . Look, mister, the guy answers the description. You asked me for information and I'm giving it to you.

". . . He has exactly that scar on his right cheek and he said his name was John Smith. He didn't say it was Doctor anything-at-all.

". . . Well, sure it's a phony. Nobody is named John Smith. Not in a police station, anyway.

". . . He's in jail now.

". . . Yes, I mean it.

". . . Resisting an officer; assault and battery; malicious mischief. That's three counts.

". . . I don't care who he is.

". . . All right. I'll hold on."

He looked up at Officer Brown and put his hand over the mouthpiece of the phone. It was a ham of a hand that nearly swallowed up the phone altogether. His blunt-featured face was ruddy and streaming under a thatch of pale-yellow hair.

He said, "Trouble! Nothing but trouble at a precinct station. I'd rather be pounding a beat any day."

"Who's on the phone?" asked Brown. He had just come in and didn't really care. He thought Mankiewicz would look better on a suburban beat, too.

"Oak Ridge. Long Distance. A guy called Grant. Head of somethingological division, and now he's getting somebody else at seventy-five cents a min . . . Hello!"

Mankiewicz got a new grip on the phone and held himself down.

"Look," he said, "let me go through this from the beginning. I want you to get it straight and then if you don't like it, you can send someone down here. The guy doesn't want a lawyer. He claims he just wants to stay in jail and. brother, that's all right with me.

"Well, will you listen? He came in yesterday, walked right up to me, and said, 'Officer, I want you to put me in jail because I want to kill myself.' So I said, 'Mister, I'm sorry you want to kill yourself. Don't do it, because if you do, you'll regret it the rest of your life.'

". . . I *am* serious. I'm just telling you what I said. I'm not saying it was a funny joke, but I've got my own troubles here, if you know what I mean. Do you think all I've got to do here is to listen to cranks who walk in and—

". . . Give me a chance, will you?" I said, 'I can't put you in jail for wanting to kill yourself. That's no crime.' And he said, 'But I don't want to die.' So I said, 'Look, bud, get out of here.' I mean if a guy wants to commit suicide, all right, and if he doesn't want to, all right, but I don't want him weeping on my shoulder.

". . . I'm *getting* on with it. So he said to me, 'If I commit a

crime, will you put me in jail?' I said, 'If you're caught and if someone files a charge and you can't put up bail, we will. Now beat it.' So he picked up the inkwell on my desk and before I could stop him, he turned it upside down on the open police blotter.

". . . That's right! Why do you think we have 'malicious mischief' tabbed on him? The ink ran down all over my pants.

". . . Yes, assault and battery, too! I came hopping down to shake a little sense into him, and he kicked me in the shins and handed me one in the eye.

". . . I'm not making this up. You want to come down here and look at my face?

". . . He'll be up in court one of these days. About Thursday, maybe.

". . . Ninety days is the least he'll get, unless the psychoes say otherwise. I think he belongs in the loony-bin myself.

". . . Officially, he's John Smith. That's the only name he'll give.

". . . No, sir, he doesn't get released without the proper legal steps.

". . . O.K., you do that, if you want to, bud! I just do my job here."

He banged the phone into its cradle, glowered at it, then picked it up and began dialing. He said, "Gianetti?", got the proper answer and began talking.

"What's the A. E. C.? I've been talking to some Joe on the phone and he says—

". . . No, I'm not kidding, lunk-head. If I were kidding, I'd put up a sign. What's the alphabet soup?"

He listened, said, "Thanks" in a small voice and hung up again.

He had lost some of his color. "That second guy was the head of the Atomic Energy Commission," he said to Brown. "They must have switched me from Oak Ridge to Washington."

Brown lounged to his feet, "Maybe the F. B. I. is after this John Smith guy. Maybe he's one of these here scientists." He felt moved to philosophy. "They ought to keep atomic secrets away from those guys. Things were O.K. as long as General Groves was the only fella who knew about the atom bomb. Once they cut in these here scientists on it, though—"

"Ah, shut up," snarled Mankiewicz.

Dr. Oswald Grant kept his eyes fixed on the white line that marked the highway and handled the car as though it were an enemy

of his. He always did. He was tall and knobby with a withdrawn expression stamped on his face. His knees crowded the wheel, and his knuckles whitened whenever he made a turn.

Inspector Darrity sat beside him with his legs crossed so that the sole of his left shoe came up hard against the door. It would leave a sandy mark when he took it away. He tossed a nut-brown penknife from hand to hand. Earlier, he had unsheathed its wicked, gleaming blade and scraped casually at his nails as they drove, but a sudden swerve had nearly cost him a finger and he desisted.

He said, "What do you know about this Ralson?"

Dr. Grant took his eyes from the road momentarily, then returned them. He said, uneasily, "I've known him since he took his doctorate at Princeton. He's a very brilliant man."

"Yes? Brilliant, huh? Why is it that all you scientific men describe one another as 'brilliant'? Aren't there any mediocre ones?"

"Many. I'm one of them. But Ralson isn't. You ask anyone. Ask Oppenheimer. Ask Bush. He was the youngest observer at Alamogordo."

"O.K. He was brilliant. What about his private life?"

Grant waited. "I wouldn't know."

"You know him since Princeton. How many years is that?"

They had been scouring north along the highway from Washington for two hours with scarcely a word between them. Now Grant felt the atmosphere change and the grip of the law on his coat collar.

"He got it in '43."

"You've known him eight years then."

"That's right."

"And you don't know about his private life?"

"A man's life is his own, Inspector. He wasn't very sociable. A great many of the men are like that. They work under pressure and when they're off the job, they're not interested in continuing the lab acquaintanceships."

"Did he belong to any organizations that you know of?"

"No."

The inspector said, "Did he ever say anything to you that might indicate he was disloyal?"

Grant shouted, "No!" and there was silence for a while.

Then Darrity said, "How important is Ralson in atomic research?"

Grant hunched over the wheel and said, "As important as any one man can be. I grant you that no one is indispensable, but Ral-

son has always seemed to be rather unique. He has the engineering mentality."

"What does that mean?"

"He isn't much of a mathematician himself, but he can work out the gadgets that put someone else's math into life. There's no one like him when it comes to that. Time and again, Inspector, we've had a problem to lick and no time to lick it in. There were nothing but blank minds all around until he put some thought into it and said, 'Why don't you try so-and-so?' Then he'd go away. He wouldn't even be interested enough to see if it worked. But it always did. Always! Maybe we would have got it ourselves eventually, but it might have taken months of additional time. I don't know how he does it. It's no use asking him either. He just looks at you and says, 'It was obvious,' and walks away. Of course, once he's shown us how to do it, it *is* obvious."

The inspector let him have his say out. When no more came, he said, "Would you say he was queer, mentally? Erratic, you know."

"When a person is a genius, you wouldn't expect him to be normal, would you?"

"Maybe not. But just how abnormal was this particular genius?"

"He never talked, particularly. Sometimes, he wouldn't work."

"Stayed at home and went fishing instead?"

"No. He came to the labs all right; but he would just sit at his desk. Sometimes that would go on for weeks. Wouldn't answer you, or even look at you, when you spoke to him."

"Did he ever actually leave work altogether?"

"Before now, you mean? Never!"

"Did he ever claim he wanted to commit suicide? Ever say he wouldn't feel safe except in jail?"

"No."

"You're sure this John Smith is Ralson?"

"I'm almost positive. He has a chemical burn on his right cheek that can't be mistaken."

"O.K. That's that, then I'll speak to him and see what he sounds like."

The silence fell for good this time. Dr. Grant followed the snaking line as Inspector Darrity tossed the penknife in low arcs from hand to hand.

The warden listened to the call-box and looked up at his visitors. "We can have him brought up here, Inspector, regardless."

"No," Dr. Grant shook his head. "Let's go to him."

Darrity said, "Is that normal for Ralson, Dr. Grant? Would you expect him to attack a guard trying to take him out of a prison cell?"

Grant said, "I can't say."

The warden spread a calloused palm. His thick nose twitched a little. "We haven't tried to do anything about him so far because of the telegram from Washington, but, frankly, he doesn't belong here. I'll be glad to have him taken off my hands."

"We'll see him in his cell," said Darrity.

They went down the hard, barlined corridor. Empty, incurious eyes watched their passing.

Dr. Grant felt his flesh crawl. "Has he been kept *here* all the time?"

Darrity did not answer.

The guard, pacing before them, stopped. "This is the cell."

Darrity said, "Is that Dr. Ralson?"

Dr. Grant looked silently at the figure upon the cot. The man had been lying down when they first reached the cell, but now he had risen to one elbow and seemed to be trying to shrink into the wall. His hair was sandy and thin, his figure slight, his eyes blank and china-blue. On his right cheek there was a raised pink patch that tailed off like a tadpole.

Dr. Grant said, "That's Ralson."

The guard opened the door and stepped inside, but Inspector Darrity sent him out again with a gesture. Ralson watched them mutely. He had drawn both feet up to the cot and was pushing backwards. His Adam's apple bobbled as he swallowed.

Darrity said quietly, "Dr. Elwood Ralson?"

"What do you want?" The voice was a surprising baritone.

"Would you come with us, please? We have some questions we would like to ask you."

"No! Leave me alone!"

"Dr. Ralson," said Grant, "I've been sent here to ask you to come back to work."

Ralson looked at the scientist and there was a momentary glint of something other than fear in his eyes. He said, "Hello, Grant." He got off his cot. "Listen, I've been trying to have them put me into a padded cell. Can't you make them do that for me? You know me, Grant. I wouldn't ask for something I didn't feel was necessary. Help me. I can't stand the hard walls. It makes me want to . . . bash—" He brought the flat of his palm thudding down against the hard, dull-gray concrete behind his cot.

Darrity looked thoughtful. He brought out his penknife and unbent the gleaming blade. Carefully, he scraped at his thumbnail, and said, "Would you like to see a doctor?"

But Ralson didn't answer that. He followed the gleam of metal and his lips parted and grew wet. His breath became ragged and harsh.

He said, "Put that away!"

Darrity paused, "Put what away?"

"The knife. Don't hold it in front of me. I can't stand looking at it."

Darrity said, "Why not?" He held it out. "Anything wrong with it? It's a good knife."

Ralson lunged. Darrity stepped back and his left hand came down on the other's wrist. He lifted the knife high in the air. "What's the matter, Ralson? What are you after?"

Grant cried a protest but Darrity waved him away.

Darrity said, "What do you want, Ralson?"

Ralson tried to reach upward, and bent under the other's appalling grip. He gasped, "Give me the knife."

"Why, Ralson? What do you want to do with it?"

"Please. I've got to—" He was pleading. "I've got to stop living."

"You want to die?"

"No. But I must."

Darrity shoved. Ralson flailed backward and tumbled into his cot, so that it squeaked noisily. Slowly, Darrity bent the blade of his penknife into its sheath and put it away. Ralson covered his face. His shoulders were shaking but otherwise he did not move.

There was the sound of shouting from the corridor, as the other prisoners reacted to the noise issuing from Ralson's cell. The guard came hurrying down, yelling, "Quiet!" as he went.

Darrity looked up. "It's all right, guard."

He was wiping his hands upon a large white handkerchief. "I think we'll get a doctor for him."

Dr. Gottfried Blaustein was small and dark and spoke with a trace of an Austrian accent. He needed only a small goatee to be the layman's caricature of a psychiatrist. But he was clean-shaven, and very carefully dressed. He watched Grant carefully, assessing him, blocking in certain observations and deductions. He did this automatically, now, with everyone he met.

He said, "You give me a sort of picture. You describe a man of

great talent, perhaps even genius. You tell me he has always been uncomfortable with people; that he has never fitted in with his laboratory environment, even though it was there that he met the greatest of success. Is there another environment to which he has fitted himself?"

"I don't understand."

"It is not given to all of us to be so fortunate as to find a congenial type of company at the place or in the field where we find it necessary to make a living. Often, one compensates by playing an instrument, or going hiking, or joining some club. In other words, one creates a new type of society, when not working, in which one can feel more at home. It need not have the slightest connection with what one's ordinary occupation is. It is an escape, and not necessarily an unhealthy one." He smiled and added, "Myself, I collect stamps. I am an active member of the American Society of Philatelists."

Grant shook his head. "I don't know what he did outside working hours. I doubt that he did anything like what you've mentioned."

"Um-m-m. Well, that would be sad. Relaxation and enjoyment are wherever you find them; but you must find them somewhere, no?"

"Have you spoken to Dr. Ralson, yet?"

"About his problems? No."

"Aren't you going to?"

"Oh, yes. But he has been here only a week. One must give him a chance to recover. He was in a highly excited state when he first came here. It was almost a delirium. Let him rest and become accustomed to the new environment. I will question him, then."

"Will you be able to get him back to work?"

Blaustein smiled. "How should I know? I don't even know what his sickness is."

"Couldn't you at least get rid of the worst of it; this suicidal obsession of his, and take care of the rest of the cure while he's at work?"

"Perhaps. I couldn't even venture an opinion so far without several interviews."

"How long do you suppose it will all take?"

"In these matters, Dr. Grant, nobody can say."

Grant brought his hands together in a sharp slap. "Do what seems best then. But this is more important than you know."

"Perhaps. But you may be able to help me, Dr. Grant."

"How?"

"Can you get me certain information which may be classified as top secret?"

"What kind of information?"

"I would like to know the suicide rate, since 1945, among nuclear scientists. Also, how many have left their jobs to go into other types of scientific work, or to leave science altogether."

"Is this in connection with Ralson?"

"Don't you think it might be an occupational disease, this terrible unhappiness of his?"

"Well—a good many have left their jobs, naturally."

"Why naturally, Dr. Grant?"

"You must know how it is, Dr. Blaustein. The atmosphere in modern atomic research is one of great pressure and red tape. You work with the government; you work with military men. You can't talk about your work; you have to be careful what you say. Naturally, if you get a chance at a job in a university, where you can fix your own hours, do your own work, write papers that don't have to be submitted to the A. E. C., attend conventions that aren't held behind locked doors, you take it."

"And abandon your field of specialty forever."

"There are always non-military applications. Of course, there was one man who did leave for another reason. He told me once he couldn't sleep nights. He said he'd hear one hundred thousand screams coming from Hiroshima, when he put the lights out. The last I heard of him he was a clerk in a haberdashery."

"And do you ever hear a few screams yourself?"

Grant nodded. "It isn't a nice feeling to know that even a little of the responsibility of atomic destruction might be your own."

"How did Ralson feel?"

"He never spoke of anything like that."

"In other words, if he felt it, he never even had the safety-valve effect of letting off steam to the rest of you."

"I guess he hadn't."

"Yet nuclear research must be done, no?"

"I'll say."

"What would you do, Dr. Grant, if you felt you *had* to do something that you *couldn't* do."

Grant shrugged. "I don't know."

"Some people kill themselves."

"You mean that's what has Ralson down."

"I don't know. I do not know. I will speak to Dr. Ralson this evening. I can promise nothing, of course, but I will let you know whatever I can."

Grant rose. "Thanks, Doctor. I'll try to get the information you want."

Elwood Ralson's appearance had improved in the week he had been at Dr. Blaustein's sanitarium. His face had filled out and some of the restlessness had gone out of him. He was tieless and beltless. His shoes were without laces.

Blaustein said, "How do you feel, Dr. Ralson?"

"Rested."

"You have been treated well?"

"No complaints, Doctor."

Blaustein's hand fumbled for the letter-opener with which it was his habit to play during moments of abstraction, but his fingers met nothing. It had been put away, of course, with anything else possessing a sharp edge. There was nothing on his desk, now, but papers.

He said, "Sit down, Dr. Ralson. How do your symptoms progress?"

"You mean, do I have what you would call a suicidal impulse? Yes. It gets worse or better, depending on my thoughts, I think. But it's always with me. There is nothing you can do to help."

"Perhaps you are right. There are often things I cannot help. But I would like to know as much as I can about you. You are an important man—"

Ralson snorted.

"You do not consider that to be so?" asked Blaustein.

"No, I don't. There are no important men, any more than there are important individual bacteria."

"I don't understand."

"I don't expect you to."

"And yet it seems to me that behind your statement there must have been much thought. It would certainly be of the greatest interest to have you tell me some of this thought."

For the first time, Ralson smiled. It was not a pleasant smile. His nostrils were white. He said, "It is amusing to watch you, Doctor. You go about your business so conscientiously. You must listen to me, mustn't you, with just that air of phony interest and unctuous sympathy. I can tell you the most ridiculous things and still be sure of an audience, can't I?"

"Don't you think my interest can be real, even granted that it is professional, too?"

"No, I don't."

"Why not?"

"I'm not interested in discussing it."

"Would you rather return to your room?"

"If you don't mind. No!" His voice had suddenly suffused with fury as he stood up, then almost immediately sat down again. "Why shouldn't I use you? I don't like to talk to people. They're stupid. They don't see things. They stare at the obvious for hours and it means nothing to them. If I spoke to them, they wouldn't understand; they'd lose patience; they'd laugh. Whereas you must listen. It's your job. You can't interrupt to tell me I'm mad, even though you may think so."

"I'd be glad to listen to whatever you would like to tell me."

Ralson drew a deep breath. "I've known something for a year now, that very few people know. Maybe it's something no *live* person knows. Do you know that human cultural advances come in spurts? Over a space of two generations in a city containing thirty thousand free men, enough literary and artistic genius of the first rank arose to supply a nation of millions for a century under ordinary circumstances. I'm referring to the Athens of Pericles.

"There are other examples. There is the Florence of the Medicis, the England of Elizabeth, the Spain of the Cordovan Emirs. There was the spasm of social reformers among the Israelites of the Eighth and Seventh centuries before Christ. Do you know what I mean?"

Blaustein nodded. "I see that history is a subject that interests you."

"Why not? I suppose there's nothing that says I must restrict myself to nuclear cross-sections and wave mechanics."

"Nothing at all. Please proceed."

"At first, I thought I could learn more of the true inwardness of historical cycles by consulting a specialist. I had some conferences with a professional historian. A waste of time!"

"What was his name; this professional historian?"

"Does it matter?"

"Perhaps not, if you would rather consider it confidential. What did he tell you?"

"He said I was wrong; that history only appeared to go in spasms. He said that after closer studies the great civilizations of Egypt and

Sumeria did not arise suddenly or out of nothing, but upon the basis of a long-developing sub-civilization that was already sophisticated in its arts. He said that Periclean Athens built upon a pre-Periclean Athens of lower accomplishments, without which the age of Pericles could not have been.

"I asked why was there not a post-Periclean Athens of higher accomplishments still, and he told me that Athens was ruined by a plague and by a long war with Sparta. I asked about other cultural spurts and each time it was a war that ended it, or, in some cases, even accompanied it. He was like all the rest. The truth was there; he had only to bend and pick it up; but he didn't."

Ralson stared at the floor, and said in a tired voice, "They come to me in the laboratory sometimes, Doctor. They say, 'How the devil are we going to get rid of the such-and-such effect that is ruining all our measurements, Ralson?' They show me the instruments and the wiring diagrams and I say, 'It's staring at you. Why don't you do so-and-so? A child could tell you that.' Then I walk away because I can't endure the slow puzzling of their stupid faces. Later, they come to me and say, 'It worked, Ralson. How did you figure it out?' I can't explain to them, Doctor; It would be like explaining that water is wet. And I couldn't explain to the historian. And I can't explain to you. It's a waste of time."

"Would you like to go back to your room?"

"Yes."

Blaustein sat and wondered for many minutes after Ralson had been escorted out of his office. His fingers found their way automatically into the upper right drawer of his desk and lifted out the letter-opener. He twiddled it in his fingers.

Finally, he lifted the telephone and dialed the unlisted number he had been given.

He said, "This is Blaustein. There is a professional historian who was consulted by Dr. Ralson some time in the past, probably a bit over a year ago. I don't know his name. I don't even know if he was connected with a university. If you could find him, I would like to see him."

Thaddeus Milton, Ph.D., blinked thoughtfully at Blaustein and brushed his hand through his iron-gray hair. He said, "They came to me and I said that I had indeed met this man. However, I have had very little connection with him. None, in fact, beyond a few conversations of a professional nature."

"How did he come to you?"

"He wrote me a letter; why me, rather than someone else, I do not know. A series of articles written by myself had appeared in one of the semi-learned journals of semi-popular appeal about that time. It may have attracted his attention."

"I see. With what general topic were the articles concerned?"

"They were a consideration of the validity of the cyclic approach to history. That is, whether one can really say that a particular civilization must follow laws of growth and decline in any matter analogous to those involving individuals."

"I have read Toynbee, Dr. Milton."

"Well, then, you know what I mean."

Blaustein said, "And when Dr. Ralson consulted you, was it with reference to this cyclic approach to history?"

"U-m-m-m. In a way, I suppose. Of course, the man is not an historian and some of his notions about cultural trends are rather dramatic and . . . what shall I say . . . tabloidish. Pardon me, Doctor, if I ask a question which may be improper. Is Dr. Ralson one of your patients?"

"Dr. Ralson is not well and is in my care. This, and all else we say here, is confidential, of course."

"Quite. I understand that. However, your answer explains something to me. Some of his ideas almost verged on the irrational. He was always worried, it seemed to me, about the connection between what he called 'cultural spurts' and calamities of one sort or another. Now such connections have been noted frequently. The time of a nation's greatest vitality may come at a time of great national insecurity. The Netherlands is a good case in point. Her great artists, statesmen, and explorers belong to the early Seventeenth Century at the time when she was locked in a death struggle with the greatest European power of the time, Spain. When at the point of destruction at home, she was building an empire in the Far East and had secured footholds on the northern coast of South America, the southern tip of Africa, and the Hudson Valley of North America. Her fleets fought England to a standstill. And then, once her political safety was assured, she declined.

"Well, as I say, that is not unusual. Groups, like individuals, will rise to strange heights in answer to a challenge, and vegetate in the absence of a challenge. Where Dr. Ralson left the paths of sanity, however, was in insisting that such a view amounted to confusing cause and effect. He declared that it was not times of war and dan-

ger that stimulated 'cultural spurts,' but rather vice versa. He claimed that each time a group of men showed too much vitality and ability, a war became necessary to destroy the possibility of their further development."

"I see," said Blaustein.

"I rather laughed at him, I am afraid. It may be that that was why he did not keep the last appointment we made. Just toward the end of the last conference he asked me, in the most intense fashion imaginable, whether I did not think it queer that such an improbable species as man was dominant on earth, when all he had in his favor was intelligence. There I laughed aloud. Perhaps I should not have, poor fellow."

"It was a natural reaction," said Blaustein, "but I must take no more of your time. You have been most helpful."

They shook hands, and Thaddeus Milton took his leave.

"Well," said Darrity, "there are your figures on the recent suicides among scientific personnel. Get any deductions out of it?"

"I should be asking you that," said Blaustein, gently. "The FBI must have investigated thoroughly."

"You can bet the national debt on that. They *are* suicides. There's no mistake about it. There have been people checking on it in another department. The rate is about four times above normal, taking age, social status, economic class into consideration."

"What about British scientists?"

"Just about the same."

"And the Soviet Union?"

"Who can tell?" The investigator leaned forward. "Doc, you don't think the Soviets have some sort of ray that can make people want to commit suicide, do you? It's sort of suspsicious that men in atomic research are the only ones affected."

"Is it? Perhaps not. Nuclear physicists may have peculiar strains imposed upon them. It is difficult to tell without thorough study."

"You mean complexes might be coming through?" asked Darrity, warily.

Blaustein made a face. "Psychiatry is becoming too popular. Everybody talks of complexes and neuroses and psychoses and compulsions and what-not. One man's guilt complex is another man's good night's sleep. If I could talk to each one of the men who committed suicide, maybe I could know something."

"You're talking to Ralson."

"Yes, I'm talking to Ralson."

"Has *he* got a guilt complex?"

"Not particularly. He has a background out of which it would not surprise me if he obtained a morbid concern with death. When he was twelve he saw his mother die under the wheels of an automobile. His father died slowly of cancer. Yet the effect of those experiences on his present troubles is not clear."

Darrity picked up his hat. "Well, I wish you'd get a move on, Doc. There's something big on, bigger than the H-Bomb. I don't know how anything *can* be bigger than that, but it is."

Ralson insisted on standing. "I had a bad night last night, Doctor."

"I hope," said Blaustein, "these conferences are not disturbing you."

"Well, maybe they are. They have me thinking on the subject again. It makes things bad, when I do that. How do you imagine it feels being part of a bacterial culture, Doctor?"

"I had never thought of that. To a bacterium, it probably feels quite normal."

Ralson did not hear. He said, slowly, "A culture in which intelligence is being studied. We study all sorts of things as far as their genetic relationships are concerned. We take fruit flies and cross red eyes and white eyes to see what happens. We don't care anything about red eyes and white eyes, but we try to gather from them certain basic genetic principles. You see what I mean?"

"Certainly."

"Even in humans, we can follow various physical characteristics. There are the Hapsburg lips, and the hemophilia that started with Queen Victoria and cropped up in her descendants among the Spanish and Russian royal families. We can even follow feeble-mindedness in the Jukeses and Kallikaks. You learn about it in high-school biology. But you can't breed human beings the way you do fruit flies. Humans live too long. It would take centuries to draw conclusions. It's a pity we don't have a special race of men that reproduce at weekly intervals, eh?"

He waited for an answer, but Blaustein only smiled.

Ralson said, "Only that's exactly what we would be for another group of beings whose life span might be thousands of years. To them, we would reproduce rapidly enough. We would be short-lived creatures and they could study the genetics of such things as musical

aptitude, scientific intelligence, and so on. Not that those things would interest them as such, any more than the white eyes of the fruit fly interest us as white eyes."

"This is a very interesting notion," said Blaustein.

"It is not simply a notion. It is true. To me, it is obvious, and I don't care how it seems to you. Look around you. Look at the planet, Earth. What kind of a ridiculous animal are we to be lords of the world after the dinosaurs had failed? Sure, we're intelligent, but what's intelligence? We think it is important because we have it. If the Tyranosaurus could have picked out the one quality that he thought would ensure species domination, it would be size and strength. And he would make a better case for it. He lasted longer than we're likely to.

"Intelligence in itself isn't much as far as survival values are concerned. The elephant makes out very poorly indeed when compared to the sparrow even though he is much more intelligent. The dog does well, under man's protection, but not as well as the housefly against whom every human hand is raised. Or take the primates as a group. The small ones cower before their enemies; the large ones have always been remarkably unsuccessful in doing more than barely holding their own. The baboons do the best and that is because of their canines, not their brains."

A light film of perspiration covered Ralson's forehead. "And one can see that man has been tailored, made to careful specifications for those things that study us. Generally, the primate is short-lived. Naturally, the larger ones live longer, which is a fairly general rule in animal life. Yet the human being has a life span twice as long as any of the other great apes; considerably longer even than the gorilla that outweighs him. We mature later. It's as though we've been carefully bred to live a little longer so that our life cycle might be of a more convenient length."

He jumped to his feet, shaking his fists above his head. "A thousand years is a day—"

Blaustein punched a button hastily.

For a moment, Ralson struggled against the white-coated orderly who entered, and then he allowed himself to be led away.

Blaustein looked after him, shook his head, and picked up the telephone.

He got Darrity. "Inspector, you may as well know that this may take a long time."

He listened and shook his head. "I know. I don't minimize the urgency."

The voice in the receiver was tinny and harsh. "Doctor, you *are* minimizing it. I'll send Dr. Grant to you. He'll explain the situation to you."

Dr. Grant asked how Ralson was, then asked somewhat wistfully if he could see him. Blaustein shook his head gently.

Grant said, "I've been directed to explain the current situation in atomic research to you."

"So that I will understand, no?"

"I hope so. It's a measure of desperation. I'll have to remind you—"

"Not to breathe a word of it. Yes, I know. This insecurity on the part of you people is a very bad symptom. You must know these things cannot be hidden."

"You live with secrecy. It's contagious."

"Exactly. What is the current secret?"

"There is . . . or, at least, there might be a defense against the atomic bomb."

"And that is a secret? It would be better if it were shouted to all the people of the world instantly."

"For heaven's sake, no. Listen to me, Dr. Blaustein. It's only on paper so far. It's at the E equals mc square stage, almost. It may not be practical. It would be bad to raise hopes we would have to disappoint. On the other hand, if it were known that we *almost* had a defense, there *might* be a desire to start and win a war before the defense were completely developed."

"That I don't believe. Wars are not started; they happen. But, nevertheless, I distract you. What is the nature of this defense, or have you told me as much as you dare?"

"No, I can go as far as I like; as far as is necessary to convince you we have to have Ralson—and fast!"

"Well, then tell me, and I, too, will know secrets. I'll feel like a member of the Cabinet."

"You'll know more than most. Look, Dr. Blaustein, let me explain it in lay language. So far, military advances have been made fairly equally in both offensive and defensive weapons. Once before there seemed to be a definite and permanent tipping of all warfare in the direction of the offense, and that was with the invention of gunpow-

der. But the defense caught up. The medieval man-in-tank-on-treads, and the stone castle became the concrete pillbox. The same thing, you see, except that everything has been boosted several orders of magnitude."

"Very good. You make it clear. But with the atomic bomb comes more orders of magnitude, no? You must go past concrete and steel for protection."

"Right. Only we can't just make thicker and thicker walls. We've run out of materials that are strong enough. So we must abandon materials altogether. If the atom attacks, we must let the atom defend. We will use energy itself; a force field."

"And what," asked Blaustein, gently, "is a force field?"

"I wish I could tell you. Right now, it's an equation on paper. Energy can be so channeled as to create a wall of matterless inertia, theoretically. In practice, we don't know how to do it."

"It would be a wall you could not go through, is that it? Even for atoms?"

"Even for atom bombs. The only limit on its strength would be the amount of energy we could pour into it. It could even theoretically be made to be impermeable to radiation. The gamma rays would bounce off it. What we're dreaming of is a screen that would be in permanent place about cities; at minimum strength, using practically no energy. It could then be triggered to maximum intensity in a fraction of a millisecond at the impingement of short-wave radiation; say the amount radiating from a mass of plutonium large enough to be an atomic war head. All this is theoretically possible."

"And why must you have Ralson?"

"Because he is the only one who can reduce it to practice, if it can be made practical at all, quickly enough. Every minute counts these days. You know what the international situation is. Atomic defense *must* arrive before atomic war."

"You are so sure of Ralson?"

"I am as sure of him as I can be of anything. The man is amazing, Dr. Blaustein. He is always right. Nobody in the field knows how he does it."

"A sort of intuition, no?" The psychiatrist looked disturbed. "A kind of reasoning that goes beyond ordinary human capacities. Is that it?"

"I make no pretense of knowing what it is."

"Let me speak to him once more then. I will let you know."

"Good." Grant rose to leave; then, as if in afterthought, he said,

"I might say, Doctor, that if you don't do something, the Commission plans to take Dr. Ralson out of your hands."

"And try another psychiatrist? If they wish to do that, of course, I will not stand in their way. It is my opinion, however, that no reputable practitioner will pretend there is a rapid cure."

"We may not intend further mental treatment. He may simply be returned to work."

"That, Dr. Grant, I will fight. You will get nothing out of him. It will be his death."

"We get nothing out of him anyway."

"This way there is at least a chance, no?"

"I hope so. And by the way, please don't mention the fact that I said anything about taking Ralson away."

"I will not, and I thank you for the warning. Good-by, Dr. Grant."

"I made a fool of myself last time, didn't I, Doctor?" said Ralson. He was frowning.

"You mean you don't believe what you said then?"

*"I do!"* Ralson's slight form trembled with the intensity of his affirmation.

He rushed to the window, and Blaustein swiveled in his chair to keep him in view. There were bars in the window. He couldn't jump. The glass was unbreakable.

Twilight was ending, and the stars were beginning to come out. Ralson stared at them in fascination, then he turned to Blaustein and flung a finger outward. "Every single one of them is an incubator. They maintain temperatures at the desired point. Different experiments; different temperatures. And the planets that circle them are just huge cultures, containing different nutrient mixtures and different life forms. The experimenters are economical, too—whatever and whoever they are. They've cultured many types of life forms in this particular test tube. Dinosaurs in a moist, tropical age and ourselves among the glaciers. They turn the sun up and down and we try to work out the physics of it. Physics!" He drew his lips back in a snarl.

"Surely," said Dr. Blaustein, "it is not impossible that the sun can be turned up and down at will."

"Why not? It's just like a heating element in an oven. You think bacteria know what it is that works the heat that reaches them? Who knows? Maybe they evolve theories, too. Maybe they have their cos-

mogonies about cosmic catastrophes, in which clashing light-bulbs create strings of Petri dishes. Maybe they think there must be some beneficent creator that supplies them with food and warmth and says to them, 'Be fruitful and multiply!'

"We breed like them, not knowing why. We obey the so-called laws of nature which are only our interpretation of the not-understood forces imposed upon us.

"And now they've got the biggest experiment of any yet on their hands. It's been going on for two hundred years. They decided to develop a strain for mechanical aptitude in England in the seventeen hundreds, I imagine. We call it the Industrial Revolution. It began with steam, went on to electricity, then atoms. It was an interesting experiment, but they took their chances on letting it spread. Which is why they'll have to be very drastic indeed in ending it."

Blaustein said, "And how would they plan to end it? Do you have an idea about that?"

"You ask *me* how they plan to end it. You can look about the world today and still ask what is likely to bring our technological age to an end. All the earth fears an atomic war and would do anything to avoid it; yet all the earth fears that an atomic war is inevitable."

"In other words, the experimenters will arrange an atom war whether we want it or not, to kill off the technological era we are in, and to start fresh. That is it, no?"

"Yes. It's logical. When we sterilize an instrument, do the germs know where the killing heat comes from? Or what has brought it about? There is some way the experimenters can raise the heat of our emotions; some way they can handle us that passes our understanding."

"Tell me," said Blaustein, "is that why you want to die? Because you think the destruction of civilization is coming and can't be stopped?"

Ralson said, "I *don't* want to die. It's just that I must." His eyes were tortured. "Doctor, if you had a culture of germs that were highly dangerous and that you had to keep under absolute control, might you not have an agar medium impregnated with, say, penicillin, in a circle at a certain distance from the center of inoculation? Any germs spreading out too far from that center would die. You would have nothing against the particular germs who were killed;

you might not even know that any germs had spread that far in the first place. It would be purely automatic.

"Doctor, there is a penicillin ring about our intellects. When we stray too far; when we penetrate the true meaning of our own existence, we have reached into the penicillin and we must die. It works slowly—but it's hard to stay alive."

He smiled briefly and sadly. Then he said, "May I go back to my room now, Doctor?"

Dr. Blaustein went to Ralson's room about noon the next day. It was a small room and featureless. The walls were gray with padding. Two small windows were high up and could not be reached. The mattress lay directly on the padded floor. There was nothing of metal in the room; nothing that could be utilized in tearing life from body. Even Ralson's nails were clipped short.

Ralson sat up. "Hello!"

"Hello, Dr. Ralson. May I speak to you?"

"Here? There isn't any seat I can offer you."

"It is all right. I'll stand. I have a sitting job and it is good for my sitting-down place that I should stand sometimes. Dr. Ralson, I have thought all night of what you told me yesterday and in the days before."

"And now you are going to apply treatment to rid me of what you think are delusions."

"No. It is just that I wish to ask questions and perhaps to point out some consequences of your theories which . . . you will forgive me? . . . you may not have thought of."

"Oh?"

"You see, Dr. Ralson, since you have explained your theories, I, too, know what you know. Yet I have no feeling about suicide."

"Belief is more than something intellectual, Doctor. You'd have to believe this with all your insides, which you don't."

"Do you not think perhaps it is rather a phenomenon of adaptation?"

"How do you mean?"

"You are not really a biologist, Dr. Ralson. And although you are very brilliant indeed in physics, you do not think of everything with respect to these bacterial cultures you use as analogies. You know that it is possible to breed bacterial strains that are resistant to penicillin or to almost any bacterial poison."

"Well?"

"The experimenters who breed us have been working with humanity for many generations, no? And this particular strain which they have been culturing for two centuries shows no signs of dying out spontaneously. Rather, it is a vigorous strain and a very infective one. Older high-culture strains were confined to single cities or to small areas and lasted only a generation or two. This one is spreading throughout the world. It is a *very* infective strain. Do you not think it may have developed penicillin immunity? In other words, the methods the experimenters use to wipe out the culture may not work too well any more, no?"

Ralson shook his head. "It's working on me."

"You are perhaps non-resistant. Or you have stumbled into a very high concentration of penicillin indeed. Consider all the people who have been trying to outlaw atomic warfare and to establish some form of world government and lasting peace. The effort has risen in recent years, without too awful results."

"It isn't stopping the atomic war that's coming."

"No, but maybe only a little more effort is all that is required. The peace-advocates do not kill themselves. More and more humans are immune to the experimenters. Do you know what they are doing in the laboratory?"

"I don't want to know."

"You *must* know. They are trying to invent a force field that will stop the atom bomb. Dr. Ralson, if I am culturing a virulent and pathological bacterium; then, even with all precautions, it may sometimes happen that I will start a plague. We may be bacteria to them, but we are dangerous to them, also, or they wouldn't wipe us out so carefully after each experiment.

"They are not quick, no? To them a thousand years is as a day, no? By the time they realize we are out of the culture, past the penicillin, it will be too late for them to stop us. They have brought us to the atom, and if we can only prevent ourselves from using it upon one another, we may turn out to be too much even for the experimenters."

Ralson rose to his feet. Small though he was, he was an inch and a half taller than Blaustein. "They are really working on a force field?"

"They are trying to. But they need you."

"No. I can't."

"They must have you in order that you might see what is so ob-

vious to you. It is not obvious to them. Remember, it is your help, or else—defeat of man by the experimenters."

Ralson took a few rapid steps away, staring into the blank, padded wall. He muttered, "But there must be that defeat. If they build a force field, it will mean death for all of them before it can be completed."

"Some or all of them may be immune, no? And in any case, it will be death for them anyhow. They are trying."

Ralson said, "I'll try to help them."

"Do you still want to kill yourself?"

"Yes."

"But you'll try not to, no?"

"I'll *try* not to, Doctor." His lip quivered. "I'll have to be watched."

Blaustein climbed the stairs and presented his pass to the guard in the lobby. He had already been inspected at the outer gate, but he, his pass, and its signature were now scrutinized once again. After a moment, the guard retired to his little booth and made a phone call. The answer satisfied him. Blaustein took a seat and, in half a minute, was up again, shaking hands with Dr. Grant.

"The President of the United States would have trouble getting in here, no?" said Blaustein.

The lanky physicist smiled. "You're right, if he came without warning."

They took an elevator which traveled twelve floors. The office to which Grant led the way had windows in three directions. It was soundproofed and air-conditioned. Its walnut furniture was in a state of high polish.

Blaustein said, "My goodness. It is like the office of the chairman of a board of directors. Science is becoming big business."

Grant looked embarrassed. "Yes, I know, but government money flows easily and it is difficult to persuade a congressman that your work is important unless he can see, smell, and touch the surface shine."

Blaustein sat down and felt the upholstered seat give way slowly. He said, "Dr. Elwood Ralson has agreed to return to work."

"Wonderful. I was hoping you would say that. I was hoping that was why you wanted to see me." As though inspired by the news, Grant offered the psychiatrist a cigar, which was refused.

"However," said Blaustein, "he remains a very sick man. He will have to be treated carefully and with insight."

"Of course. Naturally."

"It's not quite as simple as you may think. I want to tell you something of Ralson's problems, so that you will really understand how delicate the situation is."

He went on talking and Grant listened first in concern, and then in astonishment. "But then the man is out of his head, Dr. Blaustein. He'll be of no use to us. He's crazy."

Blaustein shrugged. "It depends on how you define 'crazy'. It's a bad word; don't use it. He has delusions, certainly. Whether they will affect his peculiar talents one cannot know."

"But surely no sane man could possibly—"

"Please. Please. Let us not launch into long discussions on psychiatric definitions of sanity and so on. The man has delusions and, ordinarily, I would dismiss them from all consideration. It is just that I have been given to understand that the man's particular ability lies in his manner of proceeding to the solution of a problem by what seems to be outside ordinary reason. That is so, no?"

"Yes. That *must* be admitted."

"And other scientists here?"

"How can you and I judge then as to the worth of one of his conclusions. Let me ask you, do *you* have suicidal impulses lately?"

"I don't think so."

"No, of course not."

"I would suggest, however, that while research on the force field proceeds, the scientists concerned be watched here and at home. It might even be a good enough idea that they should not go home. Offices like these could be arranged to be a small dormitory—"

"Sleep at work. You would never get them to agree."

"Oh, yes. If you do not tell them the real reason but say it is for security purposes, they will agree. 'Security purposes' is a wonderful phrase these days, no? Ralson must be watched more than anyone."

"Of course."

"But all this is minor. It is something to be done to satisfy my conscience in case Ralson's theories are correct. Actually, I don't believe them. They *are* delusions, but once that is granted, it is necessary to ask what the causes of those delusions are. What is it in Ralson's mind, in his background, in his life that makes it so necessary for him to have these particular delusions? One cannot answer that sim-

ply. It may well take years of constant psychoanalysis to discover the answer. And until the answer is discovered, he will not be cured.

"But, meanwhile, we can perhaps make intelligent guesses. He has had an unhappy childhood, which, in one way or another, has brought him face to face with death in very unpleasant fashion. In addition, he has never been able to form associations with other children, or, as he grew older, with other men. He was always impatient with their slower forms of reasoning. Whatever difference there is between his mind and that of others, it has built a wall between him and society as strong as the force field you are trying to design. For similar reasons, he has been unable to enjoy a normal sex life. He has never married; he has had no sweethearts.

"It is easy to see that he could easily compensate to himself for this failure to be accepted by his social milieu by taking refuge in the thought that other human beings are inferior to himself. Which is, of course, true, as far as mentality is concerned. There are, of course, many, many facets to the human personality and in not all of them is he superior. No one is. Others, then, who are more prone to see merely what is inferior, just as he himself is, would not accept his affected pre-eminence of position. They would think him queer, even laughable, which would make it even more important to Ralson to prove how miserable and inferior the human species was. How could he better do that than to show that mankind was simply a form of bacteria to other superior creatures which experiment upon them. And then his impulses to suicide would be a wild desire to break away completely from being a man at all; to stop this identification with the miserable species he has created in his mind. You see?"

Grant nodded. "Poor guy."

"Yes, it is a pity. Had he been properly taken care of in childhood — Well, it is best for Dr. Ralson that he have no contact with any of the other men here. He is too sick to be trusted with them. You, yourself, must arrange to be the only man who will see him or speak to him. Dr. Ralson has agreed to that. He apparently thinks you are not as stupid as some of the others."

Grant smiled faintly. "That is agreeable to me."

"You will, of course, be careful. I would not discuss anything with him but his work. If he should volunteer information about his theories, which I doubt, confine yourself to something noncommittal, and leave. And at all times, keep away anything that is sharp and

pointed. Do not let him reach a window. Try to have his hands kept in view. You understand. I leave my patient in your care, Dr. Grant."

"I will do my best, Dr. Blaustein."

For two months, Ralson lived in a corner of Grant's office, and Grant lived with him. Gridwork had been built up before the windows, wooden furniture was removed and upholstered sofas brought in. Ralson did his thinking on the couch and his calculating on a desk pad atop a hassock.

The "Do Not Enter" was a permanent fixture outside the office. Meals were left outside. The adjoining men's room was marked off for private use and the door between it and the office removed. Grant switched to an electric razor. He made certain that Ralson took sleeping pills each night and waited till the other slept before sleeping himself.

And always reports were brought to Ralson. He read them while Grant watched and tried to seem not to watch.

Then Ralson would let them drop and stare at the ceiling, with one hand shading his eyes.

"Anything?" asked Grant.

Ralson shook his head from side to side.

Grant said, "Look, I'll clear the building during the swing shift. It's important that you see some of the experimental jigs we've been setting up."

They did so, wandering through the lighted, empty buildings like drifting ghosts, hand in hand. Always hand in hand. Grant's grip was tight. But after each trip, Ralson would still shake his head from side to side.

Half a dozen times he would begin writing; each time there would be a few scrawls and then he would kick the hassock over on its side.

Until, finally, he began writing once again and covered half a page rapidly. Automatically, Grant approached. Ralson looked up, covering the sheet of paper with a trembling hand.

He said, "Call Blaustein."

"What?"

"I said, call Blaustein. Get him here. Now!"

Grant moved to the telephone.

Ralson was writing rapidly now, stopping only to brush wildly at his forehead with the back of a hand. It came away wet.

He looked up and his voice was cracked, "Is he coming?"

Grant looked worried. "He isn't at his office."

"Get him at his home. Get him wherever he is. *Use* that telephone. Don't play with it."

Grant used it; and Ralson pulled another sheet toward himself.

Five minutes later, Grant said, "He's coming. What's wrong? You're looking sick."

Ralson could speak only thickly, "No time— Can't talk—"

He was writing, scribbling, scrawling, shakily diagramming. It was as though he were driving his hands, fighting it.

"Dictate!" urged Grant. "I'll write."

Ralson shook him off. His words were unintelligible. He held his wrist with his other hand, shoving it as though it were a piece of wood, and then he collapsed over the papers.

Grant edged them out from under and laid Ralson down on the couch. He hovered over him restlessly and hopelessly until Blaustein arrived.

Blaustein took one look. "What happened?"

Grant said, "I think he's alive," but by that time Blaustein had verified that for himself, and Grant told him what had happened.

Blaustein used a hypodermic and they waited. Ralson's eyes were blank when they opened. He moaned.

Blaustein leaned close. "Ralson."

Ralson's hands reached out blindly and clutched at the psychiatrist. "Doc. Take me back."

"I will. Now. It is that you have the force field worked out, no?"

"It's on the papers. Grant, it's on the papers."

Grant had them and was leafing through them dubiously. Ralson said, weakly, "It's not *all* there. It's all I can write. You'll *have* to make it out of that. Take me back, Doc!"

"Wait," said Grant. He whispered urgently to Blaustein, "Can't you leave him here till we test this thing? I can't make out what most of this is. The writing is illegible. Ask him what makes him think this will work."

"Ask *him?*" said Blaustein, gently. "Isn't he the one who always knows?"

"Ask me, anyway," said Ralson, overhearing from where he lay on the couch. His eyes were suddenly wide and blazing.

They turned to him.

He said, "*They* don't want a force field. *They!* The experimenters! As long as I had no true grasp, things remained as they were.

But I hadn't followed up that thought—*that* thought which is there in the papers—I hadn't followed it up for thirty seconds before I felt . . . I felt— Doctor—"

Blaustein said, "What is it?"

Ralson was whispering again, "I'm deeper in the penicillin. I could feel myself plunging in and in, the further I went with that. I've never been in . . . so deep. That's how I knew I was right. Take me away."

Blaustein straightened. "I'll have to take him away, Grant. There's no alternative. If you can make out what he's written, that's it. If you can't make it out, I can't help you. That man can do no more work in his field without dying, do you understand?"

"But," said Grant, "he's dying of something imaginary."

"All right. Say that he is. But he will be really dead just the same, no?"

Ralson was unconscious again and heard nothing of this. Grant looked at him somberly, then said, "Well, take him away, then."

Ten of the top men at the Institute watched glumly as slide after slide filled the illuminated screen. Grant faced them, expression hard and frowning.

He said, "I think the idea is simple enough. You're mathematicians and you're engineers. The scrawl may seem illegible, but it was done with meaning behind it. That meaning must somehow remain in the writing, distorted though it is. The first page is clear enough. It should be a good lead. Each one of you will look at every page over and over again. You're going to put down every possible version of each page as it seems it might be. You will work independently. I want no consultations."

One of them said, "How do you know it means *anything,* Grant?"

"Because those are Ralson's notes."

"*Ralson!* I thought he was—"

"You thought he was sick," said Grant. He had to shout over the rising hum of conversation. "I know. He is. That's the writing of a man who was nearly dead. It's all we'll ever get from Ralson, any more. Somewhere in that scrawl is the answer to the force field problem. If we can't find it, we may have to spend ten years looking for it elsewhere."

They bent to their work. The night passed. Two nights passed. Three nights—

Grant looked at the results. He shook his head. "I'll take your

word for it that it is all self-consistent. I can't say I understand it."

Lowe, who, in the absence of Ralson, would readily have been rated the best nuclear engineer at the Institute, shrugged. "It's not exactly clear to me. If it works, he hasn't explained why."

"He had no time to explain. Can you build the generator as he describes it?"

"I could try."

"Would you look at all the other versions of the pages?"

"The others are definitely not self-consistent."

"Would you double-check?"

"Sure."

"And could you start construction anyway?"

"I'll get the shop started. But I tell you frankly that I'm pessimistic."

"I know. So am I."

The thing grew. Hal Ross, Senior Mechanic, was put in charge of the actual construction, and he stopped sleeping. At any hour of the day or night, he could be found at it, scratching his bald head.

He asked questions only once, "What is it, Dr. Lowe? Never saw anything like it? What's it supposed to do?"

Lowe said, "You know where you are, Ross. You know we don't ask questions here. Don't ask again."

Ross did not ask again. He was known to dislike the structure that was being built. He called it ugly and unnatural. But he stayed at it.

Blaustein called one day.

Grant said, "How's Ralson?"

"Not good. He wants to attend the testing of the Field Projector he designed."

Grant hesitated, "I suppose we should. It's his after all."

"I would have to come with him."

Grant looked unhappier. "It might be dangerous, you know. Even in a pilot test, we'd be playing with tremendous energies."

Blaustein said, "No more dangerous for us than for you."

"Very well. The list of observers will have to be cleared through the Commission and the FBI, but I'll put you in."

Blaustein looked about him. The field projector squatted in the very center of the huge testing laboratory, but all else had been cleared. There was no visible connection with the plutonium pile which served as energy-source, but from what the psychiatrist heard

in scraps about him—he knew better than to ask Ralson—the connection was from beneath.

At first, the observers had circled the machine, talking in incomprehensibles, but they were drifting away now. The gallery was filling up. There were at least three men in generals' uniforms on the other side, and a real coterie of lower-scale military. Blaustein chose an unoccupied portion of the railing; for Ralson's sake, most of all.

He said, "Do you still think you would like to stay?"

It was warm enough within the laboratory, but Ralson was in his coat, with his collar turned up. It made little difference, Blaustein felt. He doubted that any of Ralson's former acquaintances would now recognize him.

Ralson said, "I'll stay."

Blaustein was pleased. He wanted to see the test. He turned again at a new voice.

"Hello, Dr. Blaustein."

For a minute, Blaustein did not place him, then he said, "Ah, Inspector Darrity. What are you doing here?"

"Just what you would suppose." He indicated the watchers. "There isn't any way you can weed them out so that you can be sure there won't be any mistakes. I once stood as near to Klaus Fuchs as I am standing to you." He tossed his pocketknife into the air and retrieved it with a dexterous motion.

"Ah, yes. Where shall one find perfect security? What man can trust even his own unconscious? And you will now stand near to me, no?"

"Might as well." Darrity smiled. "You were very anxious to get in here, weren't you?"

"Not for myself, Inspector. And would you put away the knife, please."

Darrity turned in surprise in the direction of Blaustein's gentle head-gesture. He put his knife away and looked at Blaustein's companion for the second time. He whistled softly.

He said, "Hello, Dr. Ralson."

Ralson croaked, "Hello."

Blaustein was not surprised at Darrity's reaction. Ralson had lost twenty pounds since returning to the sanitarium. His face was yellow and wrinkled; the face of a man who had suddenly become sixty.

Blaustein said, "Will the test be starting soon?"

Darrity said, "It looks as if they're starting now."

He turned and leaned on the rail. Blaustein took Ralson's elbow

and began leading him away, but Darrity said, softly, "Stay here, Doc. I don't want you wandering about."

Blaustein looked across the laboratory. Men were standing about with the uncomfortable air of having turned half to stone. He could recognize Grant, tall and gaunt, moving his hand slowly to light a cigarette, then changing his mind and putting lighter and cigarette in his pocket. The young men at the control panels waited tensely.

Then there was a low humming and the faint smell of ozone filled the air.

Ralson said harshly, "Look!"

Blaustein and Darrity looked along the pointing finger. The projector seemed to flicker. It was as though there were heated air rising between it and them. An iron ball came swinging down pendulum fashion and passed through the flickering area.

"It slowed up, no?" said Blaustein, excitedly.

Ralson nodded. "They're measuring the height of rise on the other side to calculate the loss of momentum. Fools! I *said* it would work." He was speaking with obvious difficulty.

Blaustein said, "Just watch, Dr. Ralson. I would not allow myself to grow needlessly excited."

The pendulum was stopped in its swinging, drawn up. The flickering about the projector became a little more intense and the iron sphere arced down once again.

Over and over again, and each time the sphere's motion was slowed with more of a jerk. It made a clearly audible sound as it struck the flicker. And eventually, it *bounced*. First, soggily, as though it hit putty, and then ringingly, as though it hit steel, so that the noise filled the place.

They drew back the pendulum bob and used it no longer. The projector could hardly be seen behind the haze that surrounded it.

Grant gave an order and the odor of ozone was suddenly sharp and pungent. There was a cry from the assembled observers; each one exclaiming to his neighbor. A dozen fingers were pointing.

Blaustein leaned over the railing, as excited as the rest. Where the projector had been, there was now only a huge semi-globular mirror. It was perfectly and beautifully clear. He could see himself in it, a small man standing on a small balcony that curved up on each side. He could see the fluorescent lights reflected in spots of glowing illumination. It was wonderfully sharp.

He was shouting, "Look, Ralson. It is reflecting energy. It is reflecting light waves like a mirror. Ralson—"

He turned, "Ralson! Inspector, where is Ralson?"

"What?" Darrity whirled. "I haven't seen him."

He looked about, wildly. "Well, he won't get away. No way of getting out of here now. You take the other side." And then he clapped hand to thigh, fumbled for a moment in his pocket, and said, "My knife is gone."

Blaustein found him. He was inside the small office belonging to Hal Ross. It led off the balcony, but under the circumstances, of course, it had been deserted. Ross himself was not even an observer. A senior mechanic need not observe. But his office would do very well for the final end of the long fight against suicide.

Blaustein stood in the doorway for a sick moment, then turned. He caught Darrity's eye as the latter emerged from a similar office a hundred feet down the balcony. He beckoned, and Darrity came at a run.

Dr. Grant was trembling with excitement. He had taken two puffs at each of two cigarettes and trodden each underfoot thereafter. He was fumbling with the third now.

He was saying, "This is better than any of us could possibly have hoped. We'll have the gun-fire test tomorrow. I'm sure of the result now, but we've planned it; we'll go through with it. We'll skip the small arms and start with the bazooka levels. Or maybe not. It might be necessary to construct a special testing structure to take care of the ricocheting problem."

He discarded his third cigarette.

A general said, "We'd have to try a literal atom-bombing, of course."

"Naturally. Arrangements have already been made to build a mock-city at Eniwetok. We could build a generator on the spot and drop the bomb. There'd be animals inside."

"And you really think the field in full power would hold the bomb?"

"It's not just that, General. There'd be no noticeable field when the bomb is dropped. The radiation of the plutonium would have to energize the field before explosion. As we did here in the last step. That's the essence of it all."

"You know," said a Princeton professor, "I see disadvantages, too. When the field is on full, anything it protects is in total darkness, as far as the sun is concerned. Besides that, it strikes me that the enemy can adopt the practice of dropping harmless radioactive missiles to

set off the field at frequent intervals. It would have nuisance value and be a considerable drain on our pile as well."

"Nuisances," said Grant, "can be survived. These difficulties will be met eventually, I'm sure, now that the main problem has been solved."

The British observer had worked his way toward Grant and was shaking hands. He said, "I feel better about London already. I cannot help but wish your government would allow me to see the complete plans. What I have seen strikes me as completely ingenious. It seems obvious now, of course, but how did anyone ever come to think of it?"

Grant smiled, "That question has been asked before with reference to Dr. Ralson's devices—"

He turned at the touch of a hand upon his shoulder. "Dr. Blaustein! I had nearly forgotten. Here, I want to talk to you."

He dragged the small psychiatrist to one side and hissed in his ear, "Listen, can you persuade Ralson to be introduced to these people? This is his triumph."

Blaustein said, "Ralson is dead."

*"What!"*

"Can you leave these people for a time?"

"Yes . . . yes— Gentlemen, you will excuse me for a few minutes?"

He hurried off with Blaustein.

The Federal men had already taken over. Unobtrusively, they barred the doorway to Ross' office. Outside there were the milling crowd discussing the answer to Alamogordo that they had just witnessed. Inside, unknown to them, was the death of the answerer. The G-man barrier divided to allow Grant and Blaustein to enter. It closed behind them again.

For a moment, Grant raised the sheet. He said, "He looks peaceful."

"I would say—happy," said Blaustein.

Darrity said, colorlessly, "The suicide weapon was my own knife. It was my negligence; it will be reported as such."

"No, no," said Blaustein, "that would be useless. He was my patient and I am responsible. In any case, he would not have lived another week. Since he invented the projector, he was a dying man."

Grant said, "How much of this has to be placed in the Federal files? Can't we forget all about his madness?"

"I'm afraid not, Dr. Grant," said Darrity.

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"I have told him the whole story," said Blaustein, sadly.

Grant looked from one to the other. "I'll speak to the Director. I'll go to the President, if necessary. I don't see that there need be any mention of suicide or of madness. He'll get full publicity as inventor of the field projector. It's the least we can do for him." His teeth were gritting.

Blaustein said, "He left a note."

"A note?"

Darrity handed him a sheet of paper and said, "Suicides almost always do. This is one reason the doctor told me about what really killed Ralson."

The note was addressed to Blaustein and it went:

"The projector works; I knew it would. The bargain is done. You've got it and you don't need me any more. So I'll go. You needn't worry about the human race, Doc. You were right. They've bred us too long; they've taken too many chances. We're out of the culture now and they won't be able to stop us. I know. That's all I can say. I know."

He had signed his name quickly and then underneath there was one scrawled line, and it said:

"Provided enough men are penicillin-resistant."

Grant made a motion to crumple the paper, but Darrity held out a quick hand.

"For the record, Doctor," he said.

Grant gave it to him and said, "Poor Ralson! He died believing all that trash."

Blaustein nodded. "So he did. Ralson will be given a great funeral, I suppose, and the fact of his invention will be publicized without the madness and the suicide. But the government men will remain interested in his mad theories. They may not be so mad, no, Mr. Darrity?"

"That's ridiculous, Doctor," said Grant. "There isn't a scientist on the job who has shown the least uneasiness about it at all."

"Tell him, Mr. Darrity," said Blaustein.

Darrity said, "There has been another suicide. No, no, none of the scientists. No one with a degree. It happened this morning, and we investigated because we thought it might have some connection with today's test. There didn't seem any, and we were going to keep it quiet till the test was over. Only now there seems to be a connection.

"The man who died was just a guy with a wife and three kids. No reason to die. No history of mental illness. He threw himself under a

car. We have witnesses, and it's certain he did it on purpose. He didn't die right away and they got a doctor to him. He was horribly mangled, but his last words were, 'I feel much better now' and he died."

"But who was he?" cried Grant.

"Hal Ross. The guy who actually built the projector. The guy whose office this is."

Blaustein walked to the window. The evening sky was darkening into starriness.

He said, "The man knew nothing about Ralson's views. He had never spoken to Ralson, Mr. Darrity tells me. Scientists are probably resistant as a whole. They must be or they are quickly driven out of the profession. Ralson was an exception, a penicillin-sensitive who insisted on remaining. You see what happened to him. But what about the others; those who have remained in walks of life where there is no constant weeding out of the sensitive ones. How much of humanity *is* penicillin-resistant?"

"You *believe* Ralson," asked Grant in horror.

"I don't really know."

Blaustein looked at the stars.

Incubators?

"THE U. S. Southwest, land of rockets, atom bombs, and flying saucers, had another sensation last week: green fireballs streaking across the sky, behaving like nothing ever seen by earthlings before. In 13 days, eight brilliant objects dazzled Southwesterners. According to Dr. Lincoln La Paz, head of the Institute of Meteorites at the University of New Mexico, a fall of nine bright meteorites in a year over a comparable area would be considered exceptional . . .

"Dr. La Paz pointed out that meteors big enough to penetrate the lower atmosphere do not occur in showers. The so-called meteor showers are caused by very small particles that burn out quickly far above the earth. The green color is unusual, too. Meteorites generally roar like jet planes as they approach the earth, but most observers insisted that these odd objects were completely silent. Though some of them seemed to hit the surface with a flash, brilliant even in daylight, search parties so far have found no remains of the mysterious fireballs."—*Time,* November 19, 1951.

# Meteor

*by John Benyon Harris*

THE HOUSE shook, the windows rattled, a framed photograph slipped off the mantel-shelf and fell into the hearth. The sound of a crash somewhere outside arrived just in time to drown the noise of the breaking glass. Graham Toffts put his drink down carefully and wiped the spilt sherry from his fingers.

"That sort of thing takes you back a bit," he observed. "A present from Joe, first instalment, would you think?"

Sally shook her head, spinning the fair hair out a little so that it glistened in the shaded light.

"I shouldn't think so. Not like the old kind, anyway—they used to come with a sort of double bang as a rule," she said.

She crossed to the window and pulled back the curtain. Outside there was complete darkness and a sprinkle of rain on the panes.

"Could have been an experimental one gone astray?" she suggested.

Footsteps sounded in the hall. The door opened, and her father's head looked in.

"Did you hear that?" he asked, unnecessarily. "A small meteor, I fancy. I thought I saw a dim flash in the field beyond the orchard." He withdrew. Sally made after him. Graham, following more leisurely, found her firmly grasping her father's arm.

"No!" she was saying, decisively. "I'm not going to have my dinner kept waiting and spoiled. Whatever it is, it will keep."

Mr. Fontain looked at her, and then at Graham.

"Bossy; much too bossy. Always was. Can't think why you want to marry her," he said.

After dinner they went out to search with electric lamps. There was not much trouble in locating the scene of the impact. A small crater, some eight feet across, had appeared almost in the middle of the field. They regarded it without learning much while Sally's terrier, Mitty, sniffed over the newly turned earth. Whatever had caused it had presumably buried itself in the middle.

"A small meteorite, without a doubt," said Mr. Fontain. "We'll set a gang on digging it out tomorrow."

*Extract from Onns' Journal:*

As an introduction to the notes which I intend to keep, I can scarcely do better than give the gist of the address given to us on the day preceding our departure from Forta* by His Excellency Cottafts. In contrast to our public farewell, this meeting was deliberately made as informal as a gathering of several thousands can be.

His Excellency emphasized almost in his opening words that though we had leaders for the purposes of administration, there was, otherwise, no least amongst us.

"There is not one of you men and women † who is not a volunteer," looking slowly round his huge audience. "Since you are individuals, the proportions of the emotions which led you to volunteer may differ quite widely, but, however personal, or however altruistic your impulses may have been, there is a common denominator for all—and that is the determination that our race shall survive.

* Onns gives no clues to Forta's position, nor as to whether it is a planet, a moon, or an asteroid.

† The terms "men" and "women" are not used biologically, but in the sense of the dominant species referring to its own members.

"Tomorrow the Globes will go out.

"Tomorrow, God willing, the skill and science of Forta will break through the threats of nature.

"Civilization is, from its beginning, the ability to co-ordinate and direct natural forces—and once that direction has been started, it must be constantly maintained. There have been other dominant species on Forta before ours: they were not civilized, they did not direct nature: they dwindled and died as conditions changed. But we, so far, have been able to *meet* conditions as they have changed, and we flourish.

"We flourish, moreover, in such numbers as undirected nature could never have sustained. In the past we have surmounted problem after problem to make this possible, but now we find ourselves faced with the greatest problem yet. Forta, our world, is becoming senile, but we are not. We are like spirits that are still young, trapped in a failing body . . .

"For centuries we have kept going, adapted, substituted, patched, but now the trap is closing faster, and there is little left to prop it open with. So it is now, while we are still healthy and strong, that we must escape and find ourselves a new home.

"I do not doubt that great-grandchildren of the present generation's great-grandchildren will be born on Forta, but life will be harder for them: they will have to spend much more labor simply to keep alive. That is why the Globes must go now, while we have strength and wealth to spare.

"And for you who go in them—what? Even guesses are vain. The Globes will set out for the four corners of the heavens, and where they land they may find anything—or nothing. All our arts and skills will set you on your courses. But, once you have left, we can do no more than pray that you, our seed, will find fruitful soil."

He paused, lengthily. Then he went on.

"Your charge you know, or you would not have offered yourselves. Nevertheless, it is one which you will not be able to learn too well, nor teach too often. In the hands of each and every one of you lies a civilization. Every man and woman of you is at once the receptacle and the potential fountain of all that Forta signifies. You have the history, the culture, the civilization of a planet. Use it. Use it well. Give it to others where it will help. Be willing to learn from others, and improve it if you can. Do not try to preserve it intact; a culture must grow to live. For those who cling

too fondly to the past there is likely to be no future. Remember that it is possible that there is no intelligence elsewhere in the universe, which means that some of you will hold a trust not only for our race, but for all conscious life that may evolve.

"Go forth, then. Go in wisdom, kindliness, peace, and truth.

"And our prayers will go out with you into the mysteries of space . . ."

. . . I have looked again through the telescope at our new home. Our group is, I think, lucky. It is a planet which is neither too young nor too old. Conditions were better than before, with less cloud over its surface. It shines like a blue pearl. Much of the part I saw was covered with water—more than two-thirds of it, they tell me, is under water. It will be good to be in a place where irrigation and water supply are not one of the main problems of life. Nevertheless, one hopes that we shall be fortunate enough to make our landing on dry ground or there may be very great difficulties . . .

I looked, too, at some of the places to which other Globes are bound, some small, some large, some new, with clouded surfaces that are a mystery. One at least is old, and in not much better case than our own poor Forta—though the astronomers say that it has the ability to support life for several millions of years. But I am glad that our group is going to the blue, shining world: it seems to beckon us, and I am filled with a hope which helps to quiet my fears of the journey.

Not that fears trouble me so much now; I have learnt some fatalism in the past year. I shall go into the Globe, and the anaesthetic gas will lull me to sleep without my being aware of it. When I wake again it will be on our shimmering new world. If I do not wake, something will have gone wrong, but I shall never know that . . .

Very simple, really—if one has faith . . .

This evening I went down to look at the Globes; to see them objectively for the last time. Tomorrow, in all the bustle and preparation there will be no time for reflection—and it will be better so.

What a staggering, amazing—one had almost said impossible—work they are! The building of them has entailed labor beyond computation. They look more likely to crush the ground and sink into Forta herself than to fly off into space. The most massive things ever built! I find it almost impossible to believe that we can

have built thirty of these metal mountains, yet there they stand, ready for tomorrow . . .

And some of them will be lost . . .

Oh, God, if ours may survive, let us never forget. Let us show ourselves worthy of this supreme effort . . .

It can well be that these are the last words I shall ever write. If not, it will be in a new world and under a strange sky that I continue. . . .

"You shouldn't have touched it," said the Police Inspector, shaking his head. "It ought to have been left where it was until the proper authorities had inspected it."

"And who," inquired Mr. Fontain, coldly, "are the proper authorities for the inspection of meteors?"

"That's beside the point. You couldn't be sure it was a meteor, and these days a lot of other things besides meteors can fall out of the sky. Even now you've got it up you can't be sure."

"It doesn't look like anything else."

"All the same, it should have been left to us. It might be some device still on the Secret List."

"The police, of course, knowing all about things on the Secret List?"

Sally considered it time to break in.

"Well, we shall know what to do next time we have a meteor, shan't we? Suppose we all go and have a look at it? It's in the outhouse now, looking quite unsecret."

She led the way round to the yard, still talking to stave off a row between the Inspector and her father.

"It only went a surprisingly short way down, so the men were soon able to get it out. And it turned out to be not nearly as hot as we'd expected, either, so they could handle it quite easily."

"You'd not say 'quite easily' if you'd heard the language they used about the weight of it," observed her father.

"It's in here," Sally said, leading the party of four into a musty, single-storey shed.

The meteor was not an impressive sight. It lay in the middle of the bare board floor; just a rugged, pitted, metallic-looking sphere something over two feet in diameter.

"The only kind of weapon that it suggests to me is a cannon ball," said Mr. Fontain.

"It's the principle," retorted the Inspector. "We have standing or-

ders that any mysterious falling object is to remain untouched until it has been examined by a War Office expert. We have already informed them, and it must not be moved again until their man has had a look at it."

Graham who had hitherto taken no part, stepped forward and put his hand on it.

"Almost cold now," he reported. "What's it made of?" he added, curiously.

Mr. Fontain shrugged.

"I imagine it's just an ordinary chunk of meteoric iron. The only odd thing about it to me is that it didn't come down with more of a bump. If it were any kind of secret weapon, it would certainly be an exceedingly dull one."

"All the same, I shall have to give orders that it is not to be moved until the W. O. man has seen it," said the Inspector.

They started to move back into the yard, but on the threshold he paused.

"What's that sizzling sound?" he inquired.

"Sizzling?" repeated Sally.

"Kind of hissing noise. Listen!"

They stood still, the Inspector with his head a little on one side. Undeniably there was a faint, persistent sound on a note just within the range of audibility. It was difficult to place. By common impulse they turned back to regard the ball uneasily. Graham hesitated, and then stepped inside again. He leaned over the ball, his right ear turned down to it.

"Yes," he said. "It is."

Then his eyes closed, and he swayed. Sally ran forward and caught him as he sagged. The others helped her to drag him out. In the fresh air he revived almost immediately.

"That's funny. What happened?" he asked.

"You're sure the sound is coming from that thing?" asked the Inspector.

"Oh, yes. Not a doubt about it."

"You didn't smell anything queer?"

Graham raised his eyebrows: "Oh, gas, you mean. No, I don't think so."

"H'm," said the Inspector. He turned a mildly triumphant eye on the older man. "Is it usual for meteors to sizzle?" he inquired.

"Er—I really don't know. I shouldn't think so," Mr. Fontain admitted.

"I see. Well, in the circumstances I suggest that we all withdraw—preferably to a well-shielded spot on the other side of the house, just in case—while we wait for the expert," announced the Inspector.

*Extracts from Onns' Journal:*

I am bewildered. I have just wakened. But has it happened—or have we failed to start? I cannot tell. Was it an hour, a day, a year, or a century ago that we entered the Globe? No, it cannot have been an hour ago; I am sure of that by the tiredness of my limbs, and the way my body aches. We were warned about that.

"You will know nothing," they said, "nothing until it is all over. Then you will feel physically weary because your bodies will have been subjected to great strains. That should pass quite soon, but we shall give you some capsules of concentrated food and stimulants to help you overcome the effects more quickly."

I have taken one capsule, and I begin to feel the benefit of it already, but it is still hard to believe that it is over.

It seems such a short time ago that we climbed the long passage into the interior of the Globe and dispersed as we had been instructed. Each of us found his or her elastic compartment, and crawled into it . . . I released the valve to inflate the space between the inner and outer walls of my compartment. As the lining distended I felt myself lifted on a mattress of air. The top bulged down, the sides closed in, and so, insulated from shock in all directions, I waited.

Waited for what? I still cannot say. One moment, it seems, I lay there fresh and strong: the next, I was tired and aching.

Only that, to indicate that one life has ended and a new one is about to begin. My compartment has deflated. The pumps have been exchanging the gas for fresh air. That must mean that we are now on that beautiful, shining blue planet, with Forta only a speck in our new heavens.

I feel different for knowing that. All my life hitherto has been spent on a dying planet where our greatest enemy was lethal discouragement. But now I feel rejuvenated. There will be work, hope and life here: a world to build, and a future to build it for. . . .

I can hear the drills at work, cutting a way out for us. What, I wonder, shall we find? We must watch ourselves closely. It may be easier for us to keep faith if we face hardships than if we find ourselves among plenty. But, whatever this world is like, faith *must*

be kept. We hold a million years of history, a million years of knowledge, that *must* be preserved.

Yet we must also, as His Excellency said, be ready to adapt ourselves. Who can tell what forms of life may already exist here. One could scarcely expect to find real consciousness on a planet so young, but there may be the first stirrings of intelligence here. We must watch for them, seek them out, cultivate them. They may be quite different from us, but we must remember that it is their world, and help them where we can. We must keep in mind that it would be a wicked thing to frustrate even an alien form of life, on its own planet. If we find any such beings, our task must be to teach, to learn, to co-operate with them, and perhaps one day we may achieve a civilization even greater than Forta's own. . . .

"And just what," inquired the Inspector, "do you think you're doing with that, Sergeant Brown?"

The police sergeant held the limp, furry body dangling by its tail.

"It's a cat, sir."

"That's what I meant."

"Well, I thought the W. O. gentleman might want to examine it, sir."

"What makes you think the War Office is interested in dead cats, Sergeant?"

The sergeant explained. He had decided to risk a trip into the outhouse to note developments, if any. Bearing in mind the Inspector's suggestion of gas, he had tied a rope round his waist so that he could be dragged back if he were overcome, and crawled in, keeping as low as possible. The precautions had proved unnecessary, however. The hissing or sizzling had ceased, and the gas had evidently dispersed. He had been able to approach the ball without feeling any effects whatever. Nevertheless, when he had come so close to it that his ear was almost against it, he had noticed a faint buzzing.

"Buzzing?" repeated the Inspector. "You mean sizzling."

"No, sir, buzzing." He paused, searching for a simile. "The nearest thing, to my mind, would be a circular saw, but as you might hear it from a very long way off."

Deducing from this that the thing, whatever it was, was still active, the sergeant had ordered his constables away to cover on the far side of an earth bank. He himself had looked into the shed from time to time during the next hour and a half, but observed no change.

He had noticed the cat prowl into the yard just as they were set-

tling down to a snack of sandwiches. It had gone nosing round the shed door, but he had not bothered about it. Half an hour later, when he had finished his meal and cigarette, he had gone across to take another look. He had discovered the cat lying close to the "Meteor." When he brought it out, he had found it was dead.

"Gassed?" asked the Inspector.

The sergeant shook his head. "No, sir. That's what's funny about it."

He laid the cat's body on top of a convenient wall, and turned the head to expose the under side of the jaw. A small circle of the black fur had been burnt away, and in the centre of the burn was a minute hole.

"H'm," said the Inspector. He touched the wound, and then sniffed at his forefinger. "Fur's burnt, all right, but no smell of explosive fumes," he said.

"That's not all, sir."

The sergeant turned the head over to reveal an exactly similar blemish on the crown. He took a thin, straight wire from his pocket, and probed into the hole beneath the jaw. It emerged from the other hole at the top of the head.

"Can you make anything of that, sir?" he asked.

The Inspector frowned. A weapon of minute bore, at point-blank range might have made one of the wounds. But the two appeared to be entrance and exit holes of the same missile. But a bullet did not come out leaving a neat hole like that, nor did it singe the hair about its exit. To all appearance, two of these microscopic bullets must have been fired in exactly the same line from above and below the head—which made no kind of sense.

"Have you any theories?" he asked the sergeant.

"Beats me, sir," the other told him.

"What's happened to the thing now? Is it still buzzing?" the Inspector inquired.

"No, sir. There wasn't a sound from it when I went in and found the cat."

"H'm," said the Inspector. "Isn't it about time that W. O. man showed up?"

*Extracts from Onns' Journal:*

This is a terrible place! As though we were condemned to some fantastic hell. Can this be our beautiful blue planet that beckoned

us so bravely? We cannot understand, we are utterly bewildered, our minds reel with the horror of this place. We, the flower of civilization, now cower before the hideous monstrosities that face us. How can we ever hope to bring order into such a world as this?

We are hiding now in a dark cavern while Iss, our leader, consults to decide our best course. None of us envies him his responsibility. What provisions can a man make against not only the unknown, but the incredible? Nine hundred and sixty-four of us depend on him. There were a thousand: this is the way it happened.

I heard the drill stop, then there was a clanking as it was dismantled and drawn from the long shaft it had bored. Soon after that came the call for assembly. We crawled out of our compartments, collected our personal belongings, and met in the center hall. Sunss, our leader then, himself called the roll. Everyone answered except four poor fellows who had not stood the strain of the journey. Then Sunss made a brief speech.

He reminded us that what had been done was irrevocable. No one yet knew what awaited us outside the Globe. If it should somehow happen that our party was divided, each group must elect its leader and act independently until contact with the rest was reestablished.

"We need long courage, not brief bravery," he said. "Not heroics. We have to think of ourselves always as the seed of the future; and every grain of that seed is precious."

He hammered home the responsibility to all of us.

"We do not know, and we shall never know, how the other Globes may have fared. So, not knowing, we must act as though we alone had survived, and as if all that Forta has ever stood for is in our hands alone."

It was he who led the way down the newly bored passage, and he who first set foot in the new land. I followed with the rest, filled with such a conflict of feelings as I have never known before.

And this world into which we have emerged: how can I describe it in all its alien qualities?

To begin with: it was gloomy and shadowed—and yet it was not nighttime. Such light as there was came from a vast, gray panel hanging in the dusky sky. From where we stood it appeared trapezoid, but I suspect that was a trick of perspective, and that it was in fact a square, bisected twice, by two dark bars, into four smaller

squares. In the murk over our heads it was possible to make out dimly faint darker lines intersecting at strange angles. I could not guess at their significance.

The ground we stood on was like nothing I had known. It was a vast level plain, but ridged, and covered with small, loose boulders. The ridges were somewhat like strata that had been laid side by side instead of one on another. They lay all one way, disappearing into gloomy distance before and behind. Close beside us was a crevasse, as wide as my own height, also running either way, in a perfectly straight line. Some considerable distance beyond it was another, similar crevasse running exactly parallel to it, and beyond that a third, and an indication of a fourth.

The man beside me was nervous. He muttered something about a geometrical world lit by a square sun.

"Rubbish!" I told him shortly.

"Then how do you explain it?" he asked.

"I do not rush into swift, facile explanations," I told him. "I observe, and then, when I have gathered enough data, I deduce."

"What do you deduce from a square sun?" he asked, but I ignored him.

Soon we were all assembled outside the Globe, and waiting for Sunss to give directions. He was just about to speak when we were interrupted by a strange sound—a kind of regular soft padding, sometimes with a rasping scratch accompanying it. There was something ominous about it, and for a moment we were all frozen with apprehension—then, before we could move, the most fearsome monster emerged from behind our Globe.

Every historic travelers' tale pales beside the reality of the thing we faced. Never would I have believed that such a creature could exist had I not seen it for myself. The first we saw of it was an enormous face, thrusting round the side of the Globe, hanging in the air far above us. It was a sight to make the bravest shudder.

It was black, too, so that in the darkness it was difficult to be certain of its outline; but it widened across the top, and above the head itself one seemed to catch a glimpse of two towering pointed ears. It looked down on us out of two vast, glowing eyes set somewhat aslant.

It paused for a moment, the great eyes blinked, and then it came closer. The legs which then came into view were like massive pillars, yet they moved with a dexterity and control that was amazing in anything so vast. Both legs and feet were covered with

close-set fibres that looked like strands of shining black metal. It bent its legs, lowering its head to look at us, and the fearful stench of its breath blew over us. The face was still more alarming at close quarters. It opened a cavern of a mouth; an enormous pink tongue flicked out and back. Above the mouth huge, pointed spines stood out sideways, trembling. The eyes which were fixed on us were cold, cruel, non-intelligent.

Until then we had been transfixed, but now panic took some of us. Those nearest to it fell back hurriedly, and at that one of the monstrous feet moved like lightning. A huge black paw with suddenly out-thrust claws smacked down. When it drew back, twenty of our men and women were no more than smears on the ground.

We were paralyzed, all of us except Sunss. He, forgetting his instructions about personal safety, ran towards the creature. The great paw rose, hovered, and struck again. Eleven more fell at that second murderous blow.

Then I noticed Sunss again. He was standing right between the paws. His fire-rod was in his hands, and he was looking up at the monstrous head above him. As I watched, he lifted the weapon, and aimed. It seemed such folly against that huge thing, heroic folly. But Sunss was wiser than I. Suddenly the head jerked, a tremor shook the limbs, and without a sound the monster dropped where it stood.

And Sunss was under it. A very brave man. . . .

Then Iss took charge.

He decided that we must find a place of safety as soon as possible in case there were other such monsters lurking near. Once we had found that we could start to remove our instruments and equipment from the Globe, and consider our next step. He decided to lead us forward down the broad way between two of the crevasses.

After traveling a considerable distance, we reached the foot of a towering and completely perpendicular cliff with curiously regular rectangular formations on its face. At the base of it we found this cavern which seems to run a great distance both inwards and to both sides, and with a height that is oddly regular. Perhaps the man who spoke about a geometrical world was not so stupid as he seemed. . . .

Anyway, here we have a refuge from monsters such as that which Sunss killed. It is too narrow for those huge paws to reach, and even the fearful claws could only rake a little way inside.

*Later.* A terrible thing has happened! Iss and a party of twenty

went exploring the cavern to see if they could find another way out other than on to the plain where our Globe lay.

Yes—lay! Past tense. That is our calamity.

After he had gone off, the rest of us waited, keeping watch. For some time nothing happened. Evidently and mercifully the monster had been alone. It lay in a great black mound where it had fallen, close to the Globe. Then a curious thing took place. More light suddenly poured over the plain. An enormous hooked object descended upon the slain monster, and dragged it away out of sight. Then there was a thunderous noise which shook everything about us, and the light dimmed again.

I do not pretend to explain these things: none of us can understand them. I simply do my best to keep a faithful record.

Another, much longer, period passed without any event. We were beginning to worry about what might have happened to Iss and his party for they had been a long time away, when almost the worst thing that could happen to us occurred without warning.

Again the plain became lighter. The ground beneath us set up a reverberating rumble and shook so violently to a series of shocks that we were hard put to keep on our feet. Peering out of the cavern I saw a sight that even now I can scarcely credit. Forms beside which our previous monster was insignificant; living, moving creatures reared up to three or four times the height of our vast Globe. I know this will not be believed—but it is the truth. Little wonder that the whole plain groaned and rumbled under the burden of four such. They bent over our Globe, they put their forelegs to it, and lifted it—yes, actually lifted that stupendous mass of metal from the ground. Then the shaking all about us became worse as they took its weight and tramped away on colossal feet.

The sight of that was too much for some of us. A hundred men ran out from our cavern, cursing, weeping, and brandishing their fire-rods. But it was too late, and the range was too great for them to do anything effective, besides, how could we hope to affect colossi such as these?

Now our Globe, with all its precious contents, is lost. Our inheritance is gone. We have nothing now; nothing, but our own few trifling possessions, with which to start building our new world. . . .

It is bitter, bitter to have worked so hard and come so far, for this. . . .

Nor was that the only calamity. Only a little later two of Iss's companions came back with a dreadful tale.

Behind our cavern they had discovered a warren of broad tunnels, foul with the smell of unknown creatures and their droppings. They had made their way down them with difficulty. Several times they had been beset by different varieties of six-legged creatures, and sometimes eight-legged ones, all of horrible appearance. Many of these were a great deal larger then themselves, armed with fearful jaws and claws, and filled with a vicious ferocity which made them attack on sight. Terrifying though they looked, it soon became clear, however, that they were only really dangerous when they made unexpected attacks, for they were non-sentient and the fire-rods made short work of them once they had been seen.

After a number of such encounters Iss had succeeded in reaching open country beyond the tunnels without the loss of a man. It had been when they were on the way back to fetch us that catastrophe had overtaken them. They had been attacked by fierce, gray creatures about half the size of our first monster, which they guessed to be the builders of the tunnels. It was a terrible fight in which almost all the party perished before the monsters were overcome. Iss himself had fallen, and of all his men only these two had been left in a fit condition to make the journey back to the rest of us.

This new, ghastly tragedy is starting to sap our spirits, and our courage. . . .

We have chosen Muin as our new leader. He has decided that we must go forward, through the tunnels. The plain behind us is quite barren, our Globe is gone, if we stay here we shall starve; so we must try to get through to the open country beyond, trusting that Iss's sacrifice has not been in vain, and that there are no more gray monsters to attack us. . . .

God grant that beyond the tunnels this nightmare world gives place to sanity. . . .

Is it so much that we ask—simply to live, to work, to build, in peace . . . ?

Graham looked in to see Sally and her father a couple of days later.

"Thought you might like an interim report on your 'meteor,' " he said to Mr. Fontain.

"What was it, actually?" asked the older man.

"Oh, I don't say they've got that far. They've established that it was no meteor; but just what it really was still has them absolutely guessing. I'd got pretty curious by the time they decided to take it away, and after I'd talked big and waved my wartime status at them a bit, they consented to stretch a point and take me along, too. So you'd better grade this as confidential.

"When we went over the thing carefully at the research place it appeared to be simply a solid ball of some metal on which there's been no report issued as yet. But in one place there was a hole, quite smooth, about half an inch in diameter, which went straight in, roughly to the middle. Well they scratched their heads about the best way to tackle it, and decided in the end to cut it in half and see what. So they rigged up an automatic sawing device in a pit and set it going, and we all retreated to a reasonable distance, just in case. Now they're all a bit more puzzled than they were before."

"Why, what happened?" Sally asked.

"Well, nothing actually *happened*. When the saw ran free we switched off and went back, and there was the ball lying in neat halves. But they weren't solid halves as we had expected. There was a solid metal rind about six inches thick, but then there was an inch or so of soft, fine dust, which has insulating qualities that seem to be interesting them quite a bit. Then inside a thinner metal wall was an odd formation of cells; more like a section of honeycomb than anything, only made of some flexible, rubbery material, and every one empty. Next a belt about two inches wide, divided into metal compartments this time, all considerably larger than the cells in the outer part, and all crammed with all sorts of things—packs of minute tubes, things that look like tiny seeds, different sorts of powders that have spilled about when the thing came apart, and which nobody's got around to examining properly yet, and finally a four-inch space in the middle separated into layers by dozens of paper-thin fins, and absolutely empty otherwise.

"So there is the secret weapon—and if you can make anything of that lot, I'm sure they'll be pleased to hear about it. Even the dust layer disappointed them by not being explosive. Now they're all asking one another what the hell such a thing could be remotely expected to do."

"That's disappointing. It seemed so like a meteor—until it started sizzling," said Mr. Fontain.

"One of them has suggested that in a way it may be. A sort of arti-

ficial meteor," Graham said. "That's a bit too fancy for the rest, though. They feel that if something could be sent across space at all, surely it would be something more intelligible."

"It would be exciting if it were," Sally said. "I mean, it would be such a much more hopeful thing than just another secret weapon—a sort of sign that perhaps one day we shall be able to do it ourselves. . . .

"Just think how wonderful it might be if we really could do that! Think of all the people who are sick to death of secret weapons, and wars, and cruelties setting out one day in a huge ship for a clean, new planet where we could start again. We'd be able to leave behind all the things that make this poor old world get boggier and boggier. All we'd want is a place where people could live, and work, and build, and be happy. If we could only start again somewhere else what a lovely, lovely world we might—" She stopped, breaking off suddenly at the sound of a frenzied yapping outside. She jumped up as it changed to a long-drawn howl.

"That's Mitty!" she said. "What on earth—?"

The two men followed her out of the house.

"Mitty! Mitty!" she called, but there was no sign of the dog, nor sound from it now.

They made round to the left, where the sound had seemed to come from. Sally was the first to see the white patch lying in the grass beside the outhouse wall. She ran towards it, calling; but the patch did not move.

"Oh, poor Mitty!" she said. "I believe she's dead!"

She went down on her knees beside the dog's limp body.

"She *is!*" she said. "I wonder what—" She broke off abruptly, and stood up. "Oh, something's stung me! Oh, it *hurts!*" She clutched at her leg, tears of anguish suddenly coming into her eyes.

"What on earth—" began her father, looking down at the dog. "What are all those things—ants?"

Graham bent down to look.

"No, they're not ants. I don't know what they are."

He picked one of the little creatures up and put it on the palm of his hand to look at it more closely.

"Never saw anything like that before," he said.

Mr. Fontain beside him peered at it, too.

It was a queer-looking little thing, under a quarter of an inch long. Its body seemed to be an almost perfect hemisphere with the flat side below and the round top surface colored pink, and as shiny

as a ladybird's wing-cases. It was insect-like, except that it stood on only four short legs. There was no clearly defined head; just two eyes set in the edge of the shiny dome. As they watched, it reared up on two of its legs, showing a pale, flat underside, with a mouth set just below the eyes. In its forelegs it seemed to be holding a bit of grass or thin wire.

Graham felt a sudden, searing pain in his hand.

"Hell's bells!" he said, shaking it off. "The little brute certainly can sting. I don't know what they are, but they're nasty things to have around. Got a spray handy?"

"There's one in the scullery," Mr. Fontain told him. He turned his attention to his daughter. "Better?" he inquired.

"Hurts like hell," Sally said, between her teeth.

"Just hang on a minute till we've dealt with this, then we'll have a look at it," he told her.

Graham hurried back with the spray in his hand. He cast around and discovered several hundreds of the little pink objects crawling toward the wall of the outhouse. He pumped a cloud of insecticide over them and watched while they slowed, waved feeble legs, and then lay still. He sprayed the locality a little more, to make sure.

"That ought to fix 'em," he said. "Nasty, vicious little brutes. Never saw anything quite like them—I wonder what on earth they were?"

"THE FORMS of life that now exist on the earth have developed through a long process of evolution to suit the particular physical conditions of our world, and we are justified in believing that life has adapted itself equally well to other worlds. Possibly Mercurians, or inhabitants of Mercury, may have cells which contain asbestos, which, unlike carbon, would permit them to endure the fiery heat of their planet. Moreover, it is entirely possible that there are strange chemical compounds not familiar to the earth on planets with vastly different physical conditions, so that there may even be life built up of chemical compounds unlike those of which matter on the earth is composed."—KENNETH HEUER, *Men of Other Planets.*

# And the Walls Came Tumbling Down . . .

*by John Wyndham*

REPORT NO. 1. From Mantus, Commanding No. 8 Expeditionary Party (Sol 3), to Zennacus, C-in-C Vanguard Emigration Forces (Electra 4).

Sir,

Craft State: Fully serviceable 4; Slightly damaged 1, Lost in action 2.

Casualty State: Fit personnel 220; unfit 28; lost in action 102.

Present Position: 54/28/4 x 23/9/10—Sol. 3.

Supply State: v. satisfactory. Equipment: Satisfactory.

Morale: Fair, improving.

Approach was made to Sol 3 at 28/11 (Electra 4 time). Signs of hostility were immediately encountered. Expedition withdrew without counter action. Approach made in other hemisphere. Signs of greater hostility encountered. Two ships were disintegrated with all aboard. Third ship sustained minor fractures, ditto 28 crew, 2 lost. Expedition withdrew. Signs of hostility in all inhabited places visited. Conference was called. It was decided to set down in uninhabited area, if suitable. Very suitable position located after search.

Expedition set down without interference 34/12 at reading given. In consideration of hostility encountered, construction of a redoubt was commenced immediately.

Dear Zenn, the above is for the official record but even from that you may judge that this planet, Earth, is one hell of a spot. Just my damned luck to draw Party No. 8. Serves me right for behaving like an honest fool when I could as easily have fiddled the draw.

I'll never get any place in politics, I'm afraid—even if I ever do get back from this grotesquely misconceived planet. I would sum it up as a disgusting and dangerous dump with the potentialities of a paradise.

To begin with the worst features—about two-thirds of the place is water-logged. This results in masses of suspended vapor forever hanging about in its atmosphere. Imagine the gloomy effect of that for a start!

But it is almost worse when the main masses of vapor clear, for then the humid air gives to the whole sky a hideously ominous shade of blue. Not, of course, that one would expect the place to look like home but there does seem to be a kind of wanton perversity over everything.

One would assume that development would take place in the most suitable and salubrious spots—but not here. The larger centers were not difficult to distinguish from above, being clearly of artificial construction with marks (some form of communications?) radiating from them. And all were remarkably ill-situated.

As we steered close to one, we had thought ourselves unperceived, but on our approach it was clear that preparations had been made against us. The defences were, indeed, already in action—without any attempt to inquire whether we came in good faith. One must assume from this that the inhabitants are of an abnormally suspicious or possibly a sheerly vicious disposition.

Considering it possible that other parts of this world might be uninformed about us, we moved halfway round the planet before making another approach. Here the centers of habitation were more frequent and had a more orderly appearance, many of them being laid out in lattice form.

They proved, however, to be even better defended, and over a considerable range. Indeed, so accurate was their estimate that two unfortunate vessels were completely disintegrated and another somewhat fractured.

We in the other four felt our craft and ourselves shaken so much,

and subjected to such stress and tension that we thought the end had come for us also. Luck, however, was with us and we were able to draw off to a safe distance with the loss of only certain fragile but unimportant objects.

After that we proceeded with great caution to investigate several other cities. We found every one of them embattled against us.

We do not understand why the inhabitants should, without provocation or enquiry, turn weapons upon us in this way. We have been given no chance to explain that we come with peaceful intentions—nor indeed any chance to attempt communication at all. It is a very disappointing and ominous climax to our long journey and it has depressed us.

I called a conference to decide on our next move. The views aired there were not encouraging. Every contribution to the debate endorsed that this planet is crazy beyond belief. Some compensations did emerge, however.

The concentration of civilization in unsuitable spots—moist humid areas, often alongside large bodies of water—cannot be accidental though its purpose is obscure. But it does, quite absurdly, mean that the most hospitable regions are without signs of life.

This observation, supported by several speakers, did much to raise our spirits. It was decided to set down in one such spot and there to build a redoubt where we can live safely until we shall have discovered some means of communicating with the inhabitants to assure them of our peaceable intentions.

This we have done at the position stated and I may explain the report on morale by saying that it has given everyone a great lift to be settled in a spot so rich, so lushly furnished with the good things of life. Imagine, if you can, an area composed almost entirely of silicates! This is sober fact. Never did I expect to see such a thing.

It is Eptus's opinion that the planet itself may consist almost entirely of silicates beneath the water and under a hideous green mould which covers most of the rest of its surface. It is difficult to believe in such a wonderful thing as that, so I am accepting his view with caution for the present.

If it were true, however, all our problems would be solved. A completely new era would open for us since we would be justified in assuming that the other planets of the Sol system are similar. In other words we should be able to report that we have found a whole system built of silicates in easily assimilable form and inexhaustible in extent.

This remains to be investigated and proved. It is not known to the rest of the company, who assume that this is a mere pocket delectably rich in silicates.

The exact site chosen lies between two large rocks, which will provide natural bastions to the north and south sides of the redoubt, making it unnecessary for us to do more than build the east and west walls between them and roof the space thus enclosed.

This should take no great length of time. Sol is close enough to exert considerable force here. Several members of the party were immediately detailed to assimilate silicates until they were extended to the required shape and pattern.

They then arranged themselves in a refractory formation bearing upon a remarkably pure quartz deposit. Fusing took place in quite a short time. Before long we had the material to make several furnace-lenses, and these are now fusing blocks of first-class boltik from the raw ingredients strewn all around us.

Since we set down we have seen nothing of the inhabitants, but several things lead us to suspect that the region, though neglected, is not entirely unknown to them. One is that a part of the ground surface has been hardened somewhat as though an exceedingly heavy weight of some kind had been dragged over it.

This mark lies in a line roughly east and west, passing between our two rocks. Westward it continues without feature for a great distance. To the east, however, it shortly joins a broader mark evidently made by the traction of a still heavier object.

A little on our side of this junction stands a curious formation which, by its regularity, we take to be artificial. It is made of an impermanent fibrous material and bears apparently intentional markings. Thus:

DESERT ROAD
CARRY WATER

We do not understand the significance of this—if it has any.

Since I began this account Eptus and Podas have brought me the most fantastic news yet. I have to believe it because they should know what they are talking about, and assure me that it is positively a fact.

It seems that Podas collected locally a few specimens for examination. Several of them were asymmetrical objects attached in some way to the ground. Another was of different type and showed some degree of symmetry. This latter was in the form of a soft cylinder,

having a blunt projection at one end and a tapered one at the other, and was supported by four further projections beneath.

It was by no means attached to the ground, being able to move itself with agility on the four lower projections. After examining them all carefully Podas declares that they are all living objects, and that the basis in both types is carbon! Don't ask me how such a thing can be but Eptus supports him, so I have to accept it.

It has further occurred to them as a result of this discovery that if all life on this planet is on a carbon basis it may well account for the neglect of this excellent silicate region. It does not, however, account for the immediate and unprovoked hostility of the inhabitants, which is a matter that interests me more at the moment.

Podas states that none of his specimens exhibited intelligence, though the cylindrical object displayed some clear reflexes to external stimuli.

I find it difficult to imagine what a carbon-based intelligence could possibly look like but I expect we shall find out before long. I must admit that I look forward to this event not only with some misgiving, but with a considerable degree of distaste.

Report No. 2. All states and positions: No change. Redoubt completed. No confirmed contact yet with intelligent forms.

Dear Zenn. Soon after the third rising of Sol enabled us to set the furnace-lenses to work again we produced enough boltik to finish our redoubt. The last block was fused into place halfway through the diurnal period, which is very short here. I am relieved that it has been completed without interruption. Now that we and our craft have this protection we can face the future with more confidence.

Podas and Eptus have examined more specimens. These confirm their earlier views but add little. So far we have not made contact with any intelligence here. After our earlier experiences we are not seeking it out but are waiting for it to come to us.

As a qualification I should add that Podas thinks we almost contacted an intelligence during the fourth Sol and still may do so. Eptus, however, disagrees with him and on the face of it one would say Eptus was right. What happened was this.

About the middle of the fourth Sol a cloud of dust was seen to the east of us above the long mark referred to in my last. It was soon evident that the creature responsible for the dust was traveling along this mark toward us.

We observed it with increasing amazement because it was clearly to be seen that this creature supported itself upon four disks. Its body was black and shining; at the front were metal appendages which shone like silver.

It moved at a moderate speed but clearly with discomfort since its disk supports transmitted the result of every inequality of the ground surface to its carcass. Eptus deduces from this that it evolved upon some level surface, possibly ice, and is ill adapted to this district.

That its intention was hostile there could be no doubt for it projected strongly against us. Luckily it was either ill-informed regarding us or was not capable of serious attack, for it operated upon a quite harmless range. Out of interest we let it come quite close before we turned the beam on it.

When we did we saw with astonishment—and I must admit some consternation—that nothing whatever resulted. We watched it with growing anxiety as it came on, still keeping close to the line. Two more beams were turned on to it, still without effect.

Podas said, "I don't think it can be sentient. It is coming as if we weren't here at all." And indeed it was.

In spite of our defences it continued to come until, without slackening speed in the least, it ran right into the side of the redoubt where the front of it was crushed and some pieces fell off.

We waited some moments, and then when it did not stir again, we left the redoubt to examine it. It appeared to be a composite creature. One part had become detached and projected forward against the wall by the sudden stop.

This we found to bear a generic resemblance to the cylinder spoken of in my last report but unlike in that it was covered with detachable teguments. Its forward blunt projection had encountered the side of the redoubt with some force. Possibly this was the cause of its de-animation.

Podas, investigating, found a smaller creature *inside* the body of the disked creature and unattached to it. Possibly this is some singular form of parturition natural to this planet. I could not say. It is hard enough in this crazy place to hang on to one's reason, let alone try to apply it to the utterly unreasonable.

Against the idea is the fact that neither of the smaller creatures showed any vestige of disks. Also both of these were covered in teguments which can scarcely be natural—especially in the case of the latter creature, where the tegument seemed designed with the pur-

pose of hampering the hinder limbs—though it may have some other purpose unguessed.

The two creatures were brought into the redoubt for closer examination. The parent or host—for Frinctus has put forward the theory that the two we have may be parasitic upon it—creature was left outside on account of its size.

More careful examination showed that our two new specimens were not identical though the differences are of no great importance. The shortness of the fibers on the blunt projection of one compared with those on the other could easily be due to some kind of accident, for instance.

Podas, who set about opening up the revoltingly squashy body of our first find with a scientific lack of disgust that I can only envy, reports that its internal arrangements, while quite incomprehensible to him, are on the same general lines as those of the small cylindrical creature referred to in my last.

Eptus is anxious to open the other for confirmation but Podas is against it. He says that we shall learn nothing more from it than from the other and that furthermore it is not entirely inactive. It inflates and deflates in a most curious rhythmic manner which interests him. As it is Podas' department, the matter rests there for the moment.

Meanwhile, Orkiss, our chief mathematician, who had out of curiosity been examining the supposed parent creature outside, returned to say that in his opinion it is not a creature at all but an artifact. Podas went back with him to look at it again and now concurs. Eptus reserves his opinion.

Podas has also tentatively suggested that our second specimen—the one with its nether limbs webbed by the odd tegument—may possibly be the vessel for an intelligence of some kind, since it was inside the artifact. To this Eptus objects strongly.

How, he asks, can any form of intelligence recognizable as such be expected from a sloppy collection of innumerable tubes slung on a hardened lime framework? Further, says he, reason presupposes at least the ability to comprehend a straight line. This type of creature has not a straight line in its make-up.

It is pudgy and squashy and would be almost amorphous but for its framework. Clearly it is not of a nature that could comprehend a straight line—and if it cannot do that it follows that it cannot be capable of mathematical nor, therefore, logical thinking. Which, I must say, sounds to me a very reasonable argument.

Podas replies that there are certainly straight lines in the construction of the artifact outside. Eptus says, *if* it is an artifact. Podas maintains that it definitely is an artifact and the product of some kind of reasoning. Eptus objects that the existence of a creature which is just a sack full of tubes is not reasonable in itself, let alone that it should generate reason.

And that, for the moment, is how things stand.

Report No. 3. All states and positions (except Casualty)—No Change. Casualty—One lost.

Little progress to report. One intelligent being of a kind has been discovered. Contact with it is not yet established. The term "intelligent" is here to be understood technically as being the power to influence reflexes to some extent.

Both ratiocination and perception are so restricted in the specimen observed as to make it appear unlikely that this can be the most advanced form here. The creature is hostile and has caused one casualty —Althis, engineer. Contact with more intelligent forms is still awaited.

Dear Zenn. Too much of the good things of life presents almost as many problems as too little. The temptation of such a wealth of easily assimilable silicates has proved too much for several of our party. A dozen have succumbed to it and indulged in what can only be described as an orgy of gourmandizing a little west of our position.

When discovered, they had already created a pit of some size and had increased themselves beyond possibility of their re-entering the redoubt. So there they will have to stay and take their chance. I drew the attention of the rest to the result of such intemperance with, I hope, salutary effect. We shall see.

Meanwhile Podas has turned out to be astonishingly justified in some of his deductions. Eptus is a trifle piqued about this and doggedly insists upon applying reason in what seems to me—and to Podas—an unreasonable way.

As I pointed out to him, this is by no means a reasonable planet. After what we have seen of it I, for one, would be by no means surprised to find that two and two make seven by the local rules. To this Eptus obstinately asserts that reason is absolute and universal and therefore must hold good on even the craziest planet. All I can say to that is that it just doesn't look that way from here.

Podas' second specimen—the one taken from the disked artifact

—after lying for some time doing nothing perceptible beyond expansion and contraction, then began for no discoverable reason to show signs of re-animation. It moved a little.

Then we observed that small flaps in the tegument—the permanent, not the dispensible tegument—covering the blunt projection were drawn back, uncovering a kind of lenses made, seemingly, of liquid. For a short while no more happened. But it was then that we realized that it did have intelligence of a kind.

We could feel its mind, which had apparently been absent or in some way diffused before, coalescing into some sort of form. Quite suddenly it raised its cylindrical main mass to the vertical on the rounded lower end—where, in this species, there is no tapered projection.

Immediate reflex concern filled its mind at the absence of the detachable teguments Podas had removed when examining it. This concern, however, was quickly replaced by another—an urgent fear of falling. It turned its lenses downward. There was immediate chaos in its mind but the dominant question seemed to be—why did it not drop to the ground some little distance beneath?

Well, why should it? It was supported on a solid block of boltik, which in turn rested on the solid boltik floor. This it presently discovered for itself by sliding one of its slender upper projections over the surface. At this its confusion grew rather than diminished.

Then we made the surprising discovery that its lenses were extraordinarily defective. Their range of vision was so limited that they were quite insensitive not only to boltik but to all our other materials, including ourselves! It had no means of detecting them or us except by touch.

Consequently, what it was now asking itself was how it came to be suspended above the ground in the middle of a desert. It gave a long look at the damaged artifact outside. It took hold of a part of itself, apparently with the intention of proving its own existence to itself.

Hostility is evidently instinctive to this species. Its weapon is concealed somewhere within it and is projected from an orifice a little below the lenses. It takes the form of a slot or a rough circle according to the force employed. It began to use it now, fortunately on a low power and register which caused us no more than a slight discomfort.

It moved one of its lower projections and found the edge of the block. Thence it felt downward to the floor. Assured by touch that

that existed it put down the matching projection—but instead of bringing down the other pair of projections, it remained balanced upon two!

At this point Eptus complained that he must be suffering from hallucinations. The creature was so manifestly top-heavy that it was against reason for it to remain stable in the position in which he now saw it.

We agreed in principle, but pointed out that we were seeing the same thing, so that we must accept its reality in spite of reason. Eptus declared that Podas must have overlooked a gyroscope somewhere in the tangle of tubes.

The creature remained vertical but stationary for a moment. It then began to make its way, by an ungainly swaying of its weight from one projection to the other, toward the disked artifact.

Not being able to perceive the wall of the redoubt it encountered it somewhat suddenly and with natural surprise. It continued its manifestations of hostility as it felt about the boltik surface in bewilderment. Then, discouraged, it turned back.

It was at that moment that it saw for the first time the other specimen which Podas' investigations had reduced to a rather disorderly condition.

It stopped. Its lenses widened. The slot below them also widened. In that instant we learned how terrible the attack of these creatures can be. Although it could not see us it must have sensed in some way that we were there—we could feel its awareness of danger—so it gave its weapon full power.

By misfortune, I think, rather than by design, it had the range of one of us exactly. Poor Althis, the engineer, was shattered in a twinkling and fell in a pile of dust. Simultaneously a fissure occurred in one of the interior walls of the redoubt.

Luckily the sharp report of Althis' disintegration startled the creature. It ceased the attack momentarily and stood looking round to see whence the sound had come. Before it could renew its attack we took action, holding the creature in such a way that it could not use its weapon.

Podas, with great presence of mind, cast a shape of boltik and cooled it—for we have found that the substance of these creatures calcines at quite low temperatures—and then fitted it to the creature in such a way that it could not open its slot and was thus virtually disarmed.

It is true that this did not pacify it, for it continued to attempt to

use its weapon, but its power was reduced to mere nuisance value. When we released it, it struck at us with its upper projections although it could not see us.

In doing so it cut its soft tegument on Eptus and left a smear of its red liquid upon him. The sight of this moving as he moved seemed to worry it a great deal. Finding that its soft members suffered in this way when they encountered us, it desisted and turned its attention to trying to rid itself of Podus' frame in order to attack us again.

This was, of course, far beyond its feeble power and in a short time it began to feel its way round the interior of the redoubt, apparently seeking for a way out and still making suppressed attempts to use its weapon.

It seemed also to have damaged its lenses in some way, for liquid from them was running down toward its slot. Its mind was so confused and disturbed that such thought processes as we could discern were by no means rational.

This was still going on when the approach of another disked artifact similar to the first was reported. It held to the mark in the same way but when it reached a point close behind the other it stopped. A part of it opened and a creature similar to our first specimen (i.e., the bifurcated, not the webbed type) emerged. It looked at the first artifact with obvious curiosity and peered within it.

Meanwhile, our specimen within the redoubt had also noticed the creature's approach. It tried to move toward it but was, of course, held back by the redoubt wall. It stood there, obviously trying to bring its weapon into use against one of its own kind, which puzzled us very much.

Presently the creature outside looked up and saw the one inside. For a moment we expected an attack. Its lenses widened quite remarkably, its slot dropped wide open—but oddly enough nothing came from it immediately. When it did it was surprisingly weak and harmless.

"We should catch it before it attacks," Eptus advised.

"It may not attack—unless we give it reason," Podas replied.

"Reason—*bah!*" said Eptus, irritably.

A sudden confusion came over our specimen. It picked up a piece of the tegument which Podas had removed and held it against itself.

The creature outside cleared its mind somewhat and began to project thoughts at the other. We found that when it made this direct form of address we could follow it concisely.

It said, "What a shame you're not real, honey. If mirages are like this, I've wasted my time on bathing beaches."

Why it said this we do not understand. But we observed the very curious fact that though its mind was by no means hostile it was making low-power aggression with its slot. We also observed that our specimen did not receive the message. It was, in fact, simultaneously putting out a confused plea for help which the other was not receiving—or was only faintly aware of.

"This is curious indeed," said Podas. "There seems to be no comprehension between the two—and ours is struggling hard to use its weapon, yet with no aggressive intent in its mind. Is it possible that these weapons have the secondary purpose of communication?"

"In this place anything is possible and everything is unlikely," said Eptus. "I have reached the state where I am prepared to believe that they normally communicate by battering one another to death if you claim that it is so."

The creature outside approached and encountered the wall of the redoubt. It rubbed the part of itself that had made contact, and explored the wall with both upper projections. Its mind was full of astonishment.

Meanwhile the creature inside appeared to be trying to push itself through the wall. Finding that futile, it started to make signs with its projections. It indicated itself, the artifact and the first specimen.

When the outside creature saw the first specimen, which, as I have said, Podas had left in a very untidy state, its mind hardened remarkably. It stepped back, and took something out of a slit in its tegument. It extended this object towards the redoubt. There was a crack—not dissimilar to the sound of a person disintegrating and therefore on a harmless range.

Something hit the wall and fell. The creature moved forward and picked up a round flat splash of metal. One could sense that it was extremely puzzled. Then it put its projections against the wall and felt carefully all the way along from the rock on one side to that on the other.

It was dismayed. It shifted the tegument on its blunt projection and tried to aid its thoughts by stimulating the surface exposed. It went back to its artifact and returned holding a squat cylinder. This proved to contain a black viscous substance which it daubed on our wall. The marks are still there. From our side they appear so:

WAIT! I'LL BE BACK.

Our creature comprehended this and made a sign.
The other re-entered its artifact and went away.
And so the situation rests.

Eptus now agrees that the disked affair *is* an artifact but contends that so squashy and semi-liquid a creature as our specimens cannot have made anything so hard. Therefore, he argues, there must be another and doubtless higher type of intelligence here, housed in a harder form capable of dealing with such materials.

Podas is still trying to communicate with our specimen. It has folded itself up against an angle of the wall and floor where it again tries quite desperately at intervals to removed the boltik frame which prevents it from using its weapon.

He is convinced that the slot is somehow linked with its transmission of thought. Eptus says this is nonsense—it has become quite clear to him that our wall interrupts these creatures' thought waves, so that they fall back on a secondary form of communication by marks.

Podas objects that we were able to distinguish the outside creature's thought waves—some of them very clearly. To which Eptus objects that it stands to reason that we are a great deal more sensitive than this soggy and revolting form of life.

Argument on such lines, it seems to me, not only can go on for some time but doubtless will.

Interim Report.

Dear Zenn, I have become worried by recent developments. The plain fact is that we do not know enough about these strange creatures here to keep the situation firmly in hand. There is now a crowd of them with their artifacts outside our east wall.

Several of our party have disintegrated and I fear that more may go at any moment. The creatures fling the most dangerous frequencies around, not only without effort but regardless of consequences.

Podas suggests that they may not know the danger in the frequencies since their pudgy bodies are unlikely to respond, that they are, in fact, naturally sound-absorbent. Fantastic as this may seem Eptus is for once inclined to support him. It is also apparently endorsed by our attempts to beam them.

We directed a most powerful beam upon them and ran it through

a range of highly destructive frequencies. One cannot say it was entirely without effect. For a moment they did check and we were gratified—we thought we were near a critical length.

They turned to look at one another with obvious puzzlement in their minds. Then they started to communicate—it does look as if Podas were right, for they invariably accompany thought projection with movement of their slots.

As far as we could interpret they were "saying" such things as, "Do you hear it too? . . . It's not just my ears, is it? . . . Like a funny kind of music—only it isn't music. . . . Not, not exactly music. . . . It's very queer. . . ."

That last seemed to be the most general reaction. So far from disintegrating them it did not seem, even at full power, to do more than disturb them slightly, and puzzle them. In other words this powerful weapon is useless against them. And we are left somewhat at a loss.

Not caring for the situation, I decided to anticipate my usual report time and give you this immediate current account.

The creature which had visited us previously returned accompanied by a number of similar artifacts. More followed later and indeed I can see still more approaching as I make this report.

Before that the creature we hold here had become listless. Podas was of the opinion that it required nourishment of some kind. Eptus put some silicates before it, but it was clearly uninterested. Podas, recalling its chemical basis, reduced some of the local growths to carbon, and offered it that—also without success.

We do not wish to cause the creature unnecessary distress but it is difficult to know what to do about it. We might try injecting some carbon into it if we were at all sure which of its several orifices it uses for purposes of assimilation.

However the return of the other creature stimulated it to some activity, so that it raised itself erect again.

Almost all the creatures that now arrived were the type with bifurcated teguments—a number of them being exactly similar in dark blue with metal attachments. Their reaction at the sight of our specimen was much the same as that of the other at first. It was then we discovered how rankly careless they are with their frequencies. Luckily, however, all were below danger level.

Like the other they began by feeling their way along the wall of the redoubt. All their minds were and still are full of astonishment. Having discovered the length of the wall, they set about determin-

ing the height, and presently there were some moving about on the roof above us.

Nearly all of them were given to stimulating their blunt, uppermost projections where they appear to carry their minds, by friction of their upper limbs. They made use of several metallic implements experimentally but the metal was, of course, far too soft to make any impression on boltik. They seemed as much at a loss to deal with us as we with them.

But not all of them were employed in the same way. One in particular remained close to its artifact, holding a small object before its slot, and making frequencies at it. It was clear from its mind that it was describing what went on—but to whom or to what or why we cannot perceive.

Thinking we might learn something new from an animate specimen of this type, we opened our door. One of them discovered the entrance as it felt along and came in. Podas had a frame ready to prevent it making distressing frequencies and we shut the door again behind it.

This seemed to cause some consternation to the others outside. By bringing the new specimen close to the other one, we established fairly conclusively the correctness of Podas' theory of slot-communication in the species. Both struggled to use them but, failing, remained out of communication.

Our attention was diverted from this interesting discovery by the arrival of more artifacts. Some of these contained creatures with webbed teguments. These are now established as the more dangerous. One of them, immediately upon emerging, uttered a frequency which was extremely painful to many of us.

Unfortunately Ankis and Falmus happened to hold just that critical periodicity and disintegrated on the spot. The sharp report of their simultaneous demise startled all the creatures, who began ineffectually to make a search for the source of it.

We cannot learn much from our new specimen yet. Its mind is quite chaotic with alarm. It seems particularly disorganized by the sight of Podas' work on the first specimen. I have already suggested to Podas that he should incinerate this untidy object. I shall now insist. . . .

I have done so. Unfortunately the result does not seem to have had a sedative effect upon the minds of either of our other specimens.

We continue to be greatly puzzled by the creature which never stops emitting noises at its instrument. At first we heard it alone. Now, however, we hear it considerably amplified, issuing from several of the disked artifacts. How can this be? Why should it be? There is no sense in it. The creatures here are observing for themselves the very facts he is communicating. And it is very wearing to us.

A row of the creatures outside is now trying to communicate with our two specimens. They emit very strongly on a harmless though disagreeable frequency without success. Now they are making marks on white surfaces to which our two are responding by signs.

Another artifact with a lensed machine on top has arrived. It is directed at us by a creature standing behind it. It is quite ineffective, and does not trouble us at all.

Still more disked artifacts continue to arrive. All the creatures are puzzled over what to do next. In one small group they are discussing whether they shall bring something—something that disintegrates violently—I do not understand clearly—against our wall but are afraid of destroying our two specimens at the same time. One of the creatures exploring our roof has discovered the further edge by falling off it. Others have come around to pick it up, so now they are on both sides of us.

Meanwhile, we are still trying to communicate with the specimens. Podas has arranged a battery of ten minds concentrating thought upon them simultaneously. The pressure is terrific—and entirely without effect. They are obtuse coarse hopeless clods, as insensitive to thought as they are to sound.

One of the webbed creatures outside has just emitted a frequency which has destroyed three of our party in a twinkling. This is a shocking business. We are going to try our beams again.

They are surprised—but no more. The talking creature has stopped talking. It is holding up its instrument as though to catch our beams. What? Stop! *Stop!* STOP!

That was dreadful. Somehow our beams were coming back at us. There's a fissure in our wall, cracks in our roof. Half a dozen more of us have disintegrated. I'm sure it was something to do with that talking creature and its instrument—but how? I don't understand. Now it has started talking again.

All the creatures are trying to trace the sounds of the disintegrations. They are very bewildered.

The talking creature has stopped talking—that's better. But the

reproduced sound from the disked artifacts has not stopped! How? Oh, it must be amplifying another creature now, the resonances are different. Queer!

It's the sound they make—but it means nothing. I can catch no thought-wave connected with it. It must originate somewhere else. I don't understand. . . . There, it has stopped now, and a good thing, too.

The— Oh, merciful heaven, what a sound from those reproducers! What excruciation! An appalling sound! Rhythmic, pulsating, piercing, devilish! This is killing us, damn them! It's—*oh!*—it's shaking us to pieces. . . .

Dreadful. . . . Agonizing. . . . Oh—*oh!*

A couple of dozen have gone—Podas with them. Now Eptus. . . .

The whole redoubt is trembling. . . . That frequency. . . . It's almost critical. . . . If it goes any higher. . . .

Too late! The boltik has shattered. It's falling in powder round what's left of us. . . .

Oh! That sound—that awful sound! I can't—oh, what agony! Almost on my frequency. . . .

Now it's—Oh!—OH!—*OH!*

"DR. RIEDEL'S arguments are reinforced by those of Dr. Maurice A. Biot, one of the leading aerodynamicists in the U. S. and a prominent mathematical physicist. From an aerodynamical viewpoint, says Dr. Biot, the saucer shape makes very little sense if the machine is to travel in the atmosphere. A disc has a high drag and is a poor airfoil unless stabilized; when whirled at high speed through the air, it 'wobbles' distressingly—a movement observed in several of the saucers sighted. However, for space travel, where there is no atmosphere to oppose, the disk has significant advantages. The sphere, theoretically better, presents several difficult problems of construction and utilization. The disk, easier to build, has almost all the virtues of the sphere and some of its own. Reviewing the evidence presented here, Dr. Biot said: 'The least improbable explanation is that these things are artificial and controlled. . . . My opinion for some time has been that they have an extraterrestrial origin.'

"There, at least, is a plausible explanation of the disk shape. But the real depths of the saucer mystery bemuse penetration, as the night sky swallows up a flashlight beam. What of the other shapes? Why do the things make no sound? How to explain their eerie luminosity? What power urges them at such terrible speeds through the sky? Who, or what, is aboard? Where do they come from? Why are they here? What are the intentions of the beings who control them?

"Before these awesome questions, science—and mankind—can yet only halt in wonder. Answers may come in a generation—or tomorrow. Somewhere in the dark skies there may be those who know."—*Life*, April 12, 1952.

# The Blinding Shadows

*by Donald Wandrei*

PASSING now from the ten-year period of reconstruction that salvaged what was left of civilization after the Third World War, we come to the phenomenon generally called "The Blinding Shadows." It is not easy to approach this topic, deserving though it is of a volume in itself, for much that brought it on, and indeed its very nature, are still and likely always to remain riddles.

The area involved roughly comprises what was formerly known as Greater New York, and includes a circle whose radius is some ten miles, even extending out into the harbor and the Atlantic. This area, now protected on land by great cement, steel, and barbed wire fortifications erected by the government, is dead ground, which tens of thousands of sightseers visit weekly to view the "lost" city and its strange conquerors, the Blinding Shadows.

One may stand upon the western wall, atop the Jersey palisades, and look through barbed wire at a deserted city, where a vast and immeasurable fortune in gold, jewels, merchandise of every description, real estate, art treasures, libraries, museums, and the very cream of man's wealth, lies forever beyond human hands. No ship has sailed into New York harbor in ten years, nor has even dared try to break the pontoon barrier that curves beyond Staten and Ellis Islands, southwest to the Jersey coast, and northwest to Long Island. It is a matter of cosmic irony that New York, the dream city that withstood war and all natural forces of destruction, has fallen before a mysterious, extra-natural enemy who remains unidentified. It may be that the scientists who have labored for a decade will eventually solve the puzzle and liberate New York, but in this year of writing, the solution seems as far off as ever.

The Blinding Shadows first appeared on a May morning.

As nearly as has been ascertained, however, their origin dates back to a year when Professor G. M. Dowdson of the University of Minnesota delivered a paper which created a sensation among learned societies. Dowdson was professor of mathematics, and also held degrees qualifying him as a doctor of optics, and of philosophy. An infant prodigy, he received his B. A. at fifteen, his M.A. at sixteen, and his Ph. D. at eighteen. He achieved international fame for his researches into optical laws and the invention of lenses which made possible the great Mount Everest Observatory. He taught mathematics, evidently pursuing his researches in private until he read his celebrated paper.

The occasion was the meeting of the International Scientific Academy at the University of Minnesota. On the afternoon of the second day of the session, his paper was presented. One may imagine the professor, a short, nervous, dyspeptic man of keen eyes and extraordinary energy, striding back and forth upon the rostrum while he electrified a gathering that in its small compass of three hundred delegates included the greatest investigators of the time, men who were outstanding in every field of science. Dowdson's paper is too

long to be quoted in full, but excerpts are interesting not only in themselves but for the light they shed upon the Blinding Shadows.

Shortly after his opening remarks, Dowdson stated, "One by one, our fundamental laws have been challenged as the boundaries of our knowledge have expanded. Among the few remaining was the ancient axiom: Two solids can not occupy the same space at the same time. Gentlemen, that axiom is a fallacy! Two bodies *can* occupy the same space at the same time! The experiments of Rutherford, Bohr, Ellingsem, and others, proved that so-called solids were actually composed of atoms with spaces between the constituent particles as great comparatively as those between the stars of our galaxy.

"What is to prevent another solid, but with its constituent particles in these gaps, from occupying the same space at the same time? What is to prevent many apparent solids from occupying the same space simultaneously?

"The skeptic will retort, if two or more bodies can occupy the same space at the same time, why do we not perceive them? My answer is, we can not perceive them because we have insufficient senses, because they are beyond our range of perceptions, or because they lie in a separate world.

"Gentlemen, there was a time long ago when objects were considered to have two dimensions, namely, length and breadth. After Euclid, it was discovered that length, breadth, and thickness comprised three dimensions. For thousands of years, man could visualize only two dimensions, at right angles to each other. He was wrong. Now, for more thousands of years, man has been able only to visualize three dimensions, at right angles to each other. May there not be a fourth dimension, perhaps at right angles to these, in some fashion that we can not yet picture, or perhaps lying altogether beyond our range of vision? Objects emitting infra-red rays, and lying in such a four-dimensional world, might easily be past our ability to see and our capacity to understand, while existing beside us, nay, in this very hall!"

Professor Bonnard was seen to turn red at this point, though he listened with polite deference. He had mathematically proved in the preceding session that no other than a three-dimensional universe was tenable.

Dowdson reached the crux of his paper with deep if skeptical attention from his audience. "A three-dimensional object casts a two-dimensional shadow. If such a thing as a two-dimensional object

existed, doubtless it would throw a one-dimensional shadow. And should a four-dimensional solid be extant, its shadow would be three-dimensional. In other words, gentlemen, it is entirely conceivable that in our very midst lies a four-dimensional world whose shadow, of itself, or could we construct a mirror to reflect or materialize it, would be characterized by three dimensions, though we might never have eyes to see or minds to understand the nature of the four-dimensional origin of that shadow!"

Later in his paper, Dowdson stated, "You may well ask why, if my theories are correct, no such shadow has ever been seen. The answer, I think, is fairly simple. Subject to laws alien to those we know, and imperceptible to our range of vision, it is quite probable that the object *does* cast such a shadow, but of such a color as to be also invisible. The alternative theory is that some intermediary, such as a mirror based upon radical principles, would reflect the shadow. One of my assistants is now working with infra-red photography. He may some day succeed in proving my theory with actual photographs. I myself am experimenting with lenses and mirrors of hitherto unknown refractive and reflective indices by which I will ultimately support or disprove my statements. Gentlemen, at next year's meeting of the International Scientific Academy, I hope to have a complete report, not only upon the principles underlying my mirror, and its construction, but also upon the results of my research."

If the flood of bitter debate started by this paper, the opportunity it gave to satirists and cartoonists, and the wide publicity it received influenced his actions, Dowdson did not show it. He made an extended tour that summer. Various records indicate that he circumnavigated the globe in a zig-zag course covering both hemispheres from pole to pole. We may assume that he was selecting a site for the completion of his experiment. It is noteworthy that those who knew him during this period, and they were few, remarked on his increasing testiness and irritability. He became secretive. In July, from Omsk, Siberia, he tendered his resignation to the University authorities. In August, he turned up at the Mount Everest Observatory and obtained a variety of astronomical data including photographs, records of celestial phenomena, charts, and miscellaneous information on displacements and other peculiarities in the motions of stars. Later in the month, he took the Sub-Pacific Corporation's regular descent by marine bell to the ruins of the lost continent Antiquus, lying in sunken valleys and mountain peaks around Easter Island.

He copies the famous diagrams of Loa-Thoth, those strange and undeciphered formulae and inscriptions which still incise a vast block of basalt at the Corporation's Descent Route Three.

August thirtieth found Dowdson computing magnetic fields and electrical phenomena at the South Pole. September sixth witnessed his arrival in Northwest Territory where he studied the Aurora Borealis and made several observations on the higher wave-length radiations which are peculiarly active in that region as a result of its tremendous deposits of intruded magnetic ores. The middle of September saw Dowdson back in New York. On September seventeenth, eighteenth, and nineteenth, he appeared at a number of firms and bought quantities of optical and electrical supplies.

On October third, he was reported missing. An intensive search failed to disclose his whereabouts. Despite the disruptions of the Great War, communication remained in a highly fluid state, but all the resources of public agencies failed to locate the missing man. So international a hunt may seem unusual, but it must be remembered that Dowdson was a leading figure in science, and that the scientists were the worlds rulers after the Peace Treaty.

It seems evident that his wanderings and disappearance were directly connected with his theories. These theories, it should be recalled, were that: the universe is four-dimensional; four-dimensional objects co-exist with our three-dimensional perceptions; a four-dimensional object may occupy at the same time the same space occupied by a three-dimensional object; such a four-dimensional object might be perceivable by human beings with their present sensory equipment, but only as a three-dimensional shadow; and since no such shadow had ever been recorded, some intermediary must be essential, such as a mirror of radical design.

These theories are repeated in order to clarify the following deposition. The statement was written and signed by Dowdson's assistant, Lawrence A. Gilroy. It is the only knowledge we possess of Dowdson's activities up to the appearance of the Blinding Shadows. The salient parts alone are quoted from his statement. The original lies alongside Dowdson's famous paper in the Hall of Documents in the National Museum at Washington.

After a brief résumé of identity and previous life, Gilroy continues, "I served as Professor Dowdson's assistant at the University of Minnesota. I had helped him develop the Earth-Eye which directly ended the Great War." (The Earth-Eye was the electrical

mirror that reproduced the scene on any part of the world's surface. It was operated by a complex series of keyboards that controlled each twenty feet of earth. The Eye made it possible for the Anglo-American-Soviet Union to witness, forestall, and defeat all plans of the Asiatic-African League, resulting in their conquest and virtual annihilation.) "After the war I made researches in infra-red photography and assisted in the construction of mirrors. I followed his computations. He was trying to reflect a four-dimensional world. None of the mirrors was successful. Altogether, I built four. One was a complete failure, one melted when the current was turned on, two showed only an unidentifiable blur.

"At the end of the spring quarter, I conferred with Dowdson. He asked me to keep in touch with him throughout the summer. In June, when he was about to begin a world trip, he asked me to dispose of my effects, close my affairs, and without saying a word to anyone, meet him at the Hotel Montesport in New York on September twentieth. I told him I would. Neither he nor I had immediate relatives or obligations. That was one reason why we had always made a good partnership.

"When I called upon him, we had a lengthy conversation that resulted in my agreeing to disappear from sight and help him perfect his experiment. He was afraid of the experiment itself, or of its success, though I do not know why. I also think he was secretive lest other scientists try to obtain his data and get ahead of him.

"From remarks he dropped occasionally, I learned that somewhere in the course of his travels, he had obtained formulae vital to the testing of his theories. I believe that this essential data is contained in the diagrams of Loa-Thoth, but if he finally deciphered those remarkable tables, he kept the translation a closely guarded secret.

"On the basis of the data he had collected, we began a new series of experiments. First, we built a mirror of prisms instead of the usual flat surface. The prisms were arranged with infinite variability upon concave, convex, flat, and other modified backings. The results were always striking. Sometimes distorted reflections of recognizable objects would appear. Again, there would only be a confusion of light. Once we saw a mirage. We never found its source and never succeeded in recapturing it. Only for a second, the prisms whirling through the complex variations made possible by a sequence of 496 numbers showed us the outline of some faraway and fantastic city, Cyclopean in size, of shining black architecture, inef-

fably strange, and apparently deserted, though I thought I saw a curious mechanical contrivance move and operate as if by unseen hands.

"For all his knowledge, Dowdson found it a physical impossibility to arrange four right-angles at right-angles to each other. He experimented with cubes, pyramids, tetrahedrons, parallelepipeds, cones, and other geometric solids, by themselves, and in combination through endless patterns of crystal.

"Then Dowdson hit on the idea of using prisms made out of other materials than glass and abandoned his previous work. He tried glyptol, which has the same refractive index, but with no better results. He also tried chromoberyllium and other metal alloys. At that time, the newly created elements above 92 were just becoming available. Number 95, a peculiarly brilliant and transparent compound of marked radioactivity, low ductility, high fracturability, and other unusual attributes, interested him. It was extremely heavy, fluorescent, and an exceptional conductor of electricity. In addition, its most noteworthy characteristic was its absorptive nature in that it apparently consumed about fifty per cent of the power fed into it. By that I mean that if we introduced a current of one thousand volts, for example, the resulting current was only five hundred volts. This energy was not grounded, was not transformed to heat, and did not pass off by ionization or other discharges. We made exhaustive tests without discovering what happened. In other words, a fifty per cent loss of energy occurred that was not accounted for. The best guess was that rhillium, number 95, transformed the energy into something indetectible, possibly an emitted ray or radiation of such a nature as to require special equipment to identify it. Because of its ease of fracture and its conchoidal fracture edges, rhillium was difficult to work, but Dowdson persisted and finally succeeded in cutting several hundred perfect prisms.

"Our laboratory lay in the safest of all hiding-places, the heart of New York City. It occupied a warehouse on Wendel Street near the North River. That grimy district of warehouses, piers, produce markets, and coffee pots was ideal as a retreat. There we lived and worked. I do not know how Dowdson got the place, but we were seldom outside, free of interruption, and never recognized during the seven or eight months we stayed.

"I will never forget the day when we completed the rhillium mirror. Against the south wall of Dowdson's laboratory stood the mirror, a concave reflector five feet in diameter, and composed of 681

prisms in absolute symmetry. Each rhillium prism was separately wired, power being supplied by a motor that rotated an endless belt that charged the surface of a hollow aluminum globe with static electricity. The globe was less than a foot from the cathode that would receive the charge and relay it to the rhillium mirror. In this way, by speeding the motor, the current could be built up to half a million volts if necessary. At various points were ammeters, volt-meters, interferometers, and so on, to record what happened at each key-point. Past the mirror was a final series of measuring equipment before the current was grounded. Everywhere stood vacuum tubes, retorts, discarded mirrors, reflectors, refractors, mercury discs, grinding and polishing materials, and miscellaneous equipment that we had been using. The laboratory was a confusion of electrical, optical, and astronomical supplies.

"When Dowdson started the motor, the globe began to shine. Little sparks danced upon its surface. A terrific flash blinded me. Intermittent at first, the man-made lightning roared. The air became pungent with ozone. The discharges grew more regular as the motor droned on, and the whirling belt began to sing a high song of its own. At last the discharge steadied, and an unbroken arc ripped from globe to cathode, though the flame danced in an ever-changing zigzag in space.

"The bluish flare of the current fascinated me no less than the crackling surface of the globe. Dowdson bent over to make sure that the instruments were registering properly. I heard the dynamo drone on monotonously. And now the many-faceted prisms of the mirror began to shine, and glowed like diamonds reflecting all the brilliant colors of the spectrum, and by the expression on Dowdson's face, I knew that the old phenomenon was recurring. Somewhere in the rhillium mirror, a fifty per cent loss of power occurred, and could not be explained. But I was more interested in the mirror itself. The prisms shaded through blues and oranges and reds and violets, even whites and blacks and all the tones between, a coruscation of many-varied color that played and shifted through more subtle harmonies than ever the Northern Lights or the Clavilux showed, a phantom and dazzling parade of hues. Then they softened and flowed into each other, and the prism-mirror became pearly as though one witnessed a rainbow disappearing into fog.

"The fog too cleared away. Then a curious thing happened. The mirror became strangely transparent. It flickered like a draft of hot air, but otherwise it was barely visible. I strained my eyes until they

ached, but all I could see was the elusive suggestion of heat waves where the mirror had been. Yet I could not see the wall behind it, hence this was a matter of more than mere transparency. I can only explain it by saying that I saw nothing—neither mirror, nor wall behind it, nor the outside world. I might have been looking at a blank spot in space.

"A half-hour passed, and nothing happened. I felt that we had another failure. There was a certain hypnotic effect in the sounds in the room, and the invisible mirror. I was recalled from my abstractions by a cry from Dowdson, 'Larry! Behind you! What is it?' I swung sharply around.

"Directly back of me lay the first of the Blinding Shadows.

"It was a three-dimensional shadow.

"I suppose I should have leaped with glee as Dowdson did at this verification of his theories, but I didn't. The shadow was of too sinister a nature. It was absolutely blinding, like an incandescent fire, and so intense that it could be watched only with smoked glasses, so that we were unable to determine its real color. Perhaps its blinding nature was only the effect of a new color which our optical nerves could not record. I sometimes think so. At any rate, the shadow hung for all the world as if it were stayed in the act of leaping at us. It occupied a space opposite the mirror, about three feet from the ground, and eight feet from me. It made me acutely uncomfortable to realize that that shadow was cast in spite of the fact that I stood between it and the mirror! It is imposisble for me to express my immediate reaction. The queer shadow hanging in mid-air roughly resembled a parallelepiped, slightly tilted downward from the mirror, or upward toward me. I believe that the true shadow would be a rectangular solid, but that there must have been present a distortion similar to the lengthening of a two-dimensional shadow when the light is shifted behind the object casting it.

"Dowdson and I walked to the shadow and passed our hands through it, not without qualms. Nothing happened. We judged it to be some five by two by two feet in size. We put screens between it and the mirror, turned all the lights off, turned even brighter lights on, tried to photograph it, subjected it to all sorts of tests, many sound but a few doubtless absurd, in our attempt to analyze it. Anyone who has ever seriously tried to test a two-dimensional shadow can imagine what we were up against. We found absolutely no clue to its nature or its origin.

"Then my guess about the object casting the shadow had a sud-

den corroboration. Without warning, as we were staring at the baffling shadow, a second blinding luminance leaped into being. It was a similar shadow, and several feet away. It hung below the first shadow, and seemed more fantastic still. There was a greater degree of distortion in its parallelepiped shape, and it curved through a thirty-degree arc. Now I knew that whatever objects cast these shadows were placed in different relationship to the unknown light, and consequently the shadows differed in appearance.

"I need not go into detail about that afternoon. Shadow after shadow appeared. Sometimes only one would come in an hour. Then a succession would materialize rapidly. They all remained, once they came. They all differed. There were thick, squat shadows, and shadows like torsos, some that curved weirdly, and others assuming the form of asymmetrical cones, helical spirals, and shapes for which geometry has no classification. Each shadow possessed the extraordinary brilliance. Most of them were poised in mid-air. As the long afternoon drew to a close, the laboratory blazed with the singular radiance of these shapes, and the dynamo droned on, and the lightning roared from globe to cathode, and the air became distressingly pungent with ozone, but we scarcely heeded, so fascinated were we by the rapid and sinister materialization of the Blinding Shadows. I think we both felt the invisible presence of whatever objects cast the shadows, but because the shadows varied so, we had no conception of what their source might be.

"There were seventeen shadows by nightfall. They radiated fanwise from the first shadow. Two or three overlapped. Some encompassed our laboratory apparatus. One shadow sprang into existence piercing Dowdson's body and terminating at an electric furnace.

"I remember Dowdson saying, 'Larry, we've opened the way to fields of investigation that may turn the whole course of civilization! Why, these are only shadows. The next step will be to find out what casts the shadow, and then to bring the fourth dimension to ours, or ours to theirs.'

"The shadows disturbed me. I couldn't share his enthusiasm. I said, 'What if they are hostile? This is new ground to science. How do we know that we aren't opening a Pandora's box of trouble?'

"Dowdson pooh-poohed my suggestion. 'Nonsense, we've only shadows to go on, and it may be months before we progress further. Besides, these beings are probably just as anxious to learn about us as we are about them, if the shadows are cast by living organisms as I think they are.'

"I had my doubts, but it was his experiment. The shadow bred in me a distaste akin to the unreasoning fear that children have of dark woods at night. There was something dreadful in the knowledge that something in this very room cast a three-dimensional shadow, and that we might study the shadows for all eternity without obtaining one clue to the real nature of the objects casting the reflection.

"I went out for sandwiches and coffee at midnight. We lunched hastily. Neither of us slept. All night long, we studied the Blinding Shadows. The dynamo hummed incessantly, the lightning sizzled, and the rhillium mirror, all but invisible, reflected those enigmatic shapes. There were thirty-three of them at dawn. They filled the laboratory. Of every size, form, and kind, they completely baffled us. Each remained fixed, once it appeared, but none was the same. Despite my goggles, my eyes burned from the intolerable and nameless glare of the Blinding Shadows.

"We were both pretty far gone when noon came. It was over thirty hours since we had slept, and the tension was unbelievable. What was the nature of the shadows? What beings cast them? How did the rhillium mirror function? Where did the loss of power occur and why? What accounted for the increase in the number of the shadows? Was their source material, or organic? Could those beings see us, and if so, what was their purpose and attitude?

" 'I've got a hunch,' Dowdson suddenly exclaimed. 'That unexplained loss of power represents energy that is transformed and sifted into the world where those shadows originate. It must be visible to them, and they are gathering around the dispersal point to watch!'

"I objected. 'Do you honestly think anyone would stand still for twenty-four hours? Remember, the first shadow hasn't moved one inch since we first saw it.'

" 'What of it? A day of our time may be only a second to them. You yourself have seen how the shadows literally leap out, as if something at a high speed from our standpoint shot in front of a beam of light and stopped, whereas it might merely be a living entity strolling to watch some oddity of nature in its world, some entity that has summoned its companions to see also. Larry, that's it! The beings are coming to watch a new energy in whatever fashion it registers in their world. And that unknown radiation at the same time reflects their shadow back to us through the rhillium mirror. Perhaps it it *our* shadow that *they* are watching. The rhillium mirror

may work two ways. Perhaps they'll be able to see us eventually and we them!'

" 'It sounds possible,' I agreed, more from weariness than anything else. 'I'd like some more coffee and sandwiches.'

" 'Good idea,' he muttered. 'Run out and bring me some.' He hovered around the apparatus like a demon, his eyes beneath the goggles bloodshot from lack of sleep. He walked through a couple of shadows and I thought it strange to see them intersecting his body. As I left, he was bending over the mirror. Ionization of the air, and the intermittent, innumerable spark of electrical discharges gave the only clue to the mirror's location.

"I saw Professor Dowdson only once more.

"I bought sandwiches and a container of coffee. Then I hurried back and climbed the single flight of stairs.

"A shriek greeted me as I opened the door.

"The terror came with that wordless cry. I had no more than entered when one of the shadows moved. It leaped on Dowdson and enfolded him. The dazzling shape vanished, and so did Dowdson. I think I dropped the sandwiches in my paralysis of fright. I don't know. I was exhausted and everything happened at once.

"Dowdson's cry still echoed when the strange shadow reappeared. But Dowdson did not come back. I sensed the shadow curving to spring at me. It was a dreadful feeling, what with the everlasting drone of the dynamo, the flaming shadows, the radiant, invisible mirror, the roar of electricity, the crackle of sparks and discharges, and the everchanging play of fire and color through all the intricate globes and prisms and parts of that damnable invention. And the Blinding Shadows, no longer still, marched alive and purposive. The same shadow that got Dowdson arced after me.

"I turned and took the whole flight in two bounds. I tore into the street. A couple of men were unloading a truck at the other end of the loft. I raced by them with a yell of warning but they only looked at me stupidly out of brutal faces. They saved my life unintentionally. I heard hoarse cries and looked around. The shadow, more dazzling than daylight, swerved and swallowed the men. In a flash it was gone and not a trace of the men remained. There were other people on the street, tradesmen and teamsters. I gasped and begged them to flee but they must have thought me a madman and I don't blame them. I turned the corner. My last look backward impressed on me a scene I shall never forget. The Blinding Shadows were pouring out of the loft, from its doors and windows, from the solid walls

themselves. Every person on the street was being attacked, surrounded, and engulfed. The light of the sun was darkness compared to the blaze of the destroyers. The disappearance and rematerialization of those cryptical reflections came with a fitful rapidity, but the people who vanished with them never came back, and hardly a cry but was cut off abruptly as the victim was stolen from our world, to a fate unknown. There had been forty-nine shadows in the laboratory. There were hundreds now swarming out.

"The next hours are a blank in my memory. For two days I had had no sleep. The shock of the tragedy upon my exhausted system evidently finished me. I came back to my senses late at night and in Jersey, speeding westward. My subconscious mind probably drove me from the scene and toward my birthplace. I got off at the next station and made my way back to New York.

"The city was a shambles. I never saw such black, enormous mobs of people evacuating any site even in the worst slaughter of the Great War. By hundreds of thousands they stormed every exit. The police-guards and troops were absolutely helpless in the tide of stampeding humanity. Panicky faces, the sputter of automobile engines, roar of airplanes, play of floodlights, and the endless torrent of beings, the mutters and shouts, all blending in a vast and continuous babble of sound and frenzy were as terrifying to me as the shadows. From the Jersey heights, I saw the lights of the city shining, but shining more brilliantly than all the lights together were those strange, blinding, voracious, three-dimensional shadows that charged through the streets, hounding every laggard and passing easily through stone, cement, steel, and all obstructions in their quest for prey.

"I convinced a captain at the Holland Tunnel that I could help explain the menace. He took me straight to a conference of the Mayor, the Police Commissioner, the Secretary of National Defense, and others.

"In their presence, at two A. M., on this morning of May tenth, of my own free will, I make this statement, repeating what I have just told them, to which is affixed my signature, with the signatures of the last three designated persons as witness.

(Signed) Lawrence A. Gilroy

(Witness) F. A. Waite
J. N. Norris
Arthur McCoy"

On May ninth, New York City was still the dream metropolis, raising its proud spires to the sky and seeming as eternal in stone and steel as Rome was in legend. On May tenth, by nightfall, New York was a wilderness where only the Blinding Shadows prowled, and no human being lived. Those who had not fled were swallowed. In one day, a great city became a tomb. For the first time, it was wholly silent, all its noise and sound and smoke, all its traffic and life stilled. All that enormous and infinitely varied wealth mentioned before, and concentrated within its limits, a wealth beyond estimate, though guesses have ranged all the way from twenty billions to one hundred billions of dollars, has tempted many but remains unreclaimed.

Gilroy's statement explained without solving. The Blinding Shadows ruled the city. That they did not overrun the state or the country, or indeed the world, can only be understood by a paragraph from Dowdson's famous lecture, "I have stated that two bodies can occupy the same space at the same time. This, of course, does not mean that they need necessarily do so. It is entirely conceivable that a four-dimensional world might overlap only some portion of our world, such as a continent, a country, or even a municipality, and that neither that world nor our world would have any points whatsoever of contact, identities, or communication, outside that overlapping area."

As this history is being written, ten years later, the catastrophe is sufficiently vivid in the mind of the nation to require no further details. A brief résumé of the government's attack upon the problem will be found in Appendix L.

No one, so far as is known, has ever seen the source of the Blinding Shadows, or, in other words, a four-dimensional being. None of the missing persons, whose total number runs into tens of thousands, has ever returned. Their fate is merely conjectural. The shadows halted within the limits of the area described, thus lending support to the theory that the world of their origin overlaps Earth only in a small section centering around New York.

Gilroy died at the hands of an infuriated mob, two days after he gave his statement. No successor to Dowdson has yet been found, though one million dollars in cash and the same sum annually throughout his life await the person who releases New York. Meanwhile, the Blinding Shadows roam restlessly about the streets, and prowl through deserted buildings, and hover in mid-air, waiting,

endlessly waiting. They pass through solids and lie upon the ground with equal ease. Their proportions change when they move. Their eternal silence is rivaled only by the eternal silence of the city that they have conquered. Why they remain and what they seek are unsolved riddles, nor indeed is there surety that somewhere, sometime, they may not flame outside the barriers and sweep onward, or that some other scientist may not unwittingly loose upon the rest of the world a horde of mysterious, ravenous, and Blinding Shadows, against which mankind is powerless and about whose source nothing is known. For ten years, the Blinding Shadows have possessed the dream city; and ten thousand times that many years are likely to sleep into oblivion, without one human tread in streets where not even the ravens hover, and where the hellish shadows endlessly rove.

"FOR THE last ten years, Astronomer Tsuneo Saeki of the Osaka observatory (90 miles from Hiroshima) has been keeping an eye on Mars. About 4 A.M. on Jan. 16, he saw a great grey cloud on the face of the red planet. It rose some 60 miles into the air, he estimated, and covered a roughly circular area about 900 miles in diameter. He watched it tensely for 30 minutes; then clouds in the earth's atmosphere cut off the view. When the weather finally cleared, the clouded side of Mars had turned away.

"Saeki reported his observation to top astronomers in Tokyo, who hold him in high regard. It was no ordinary Martian cloud, he said, but must be the product of a 'terrific explosion.' He added that he was not certain that the explosion could be of volcanic origin."—*Time,* February 6, 1950.

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# The Metamorphosis of Earth

*by Clark Ashton Smith*

IN THE YEAR 2197, the first intimation of a strange peril of world-wide scope and gravity came and passed unrecognized for what it really was in the form of a newspaper dispatch from the Sahara, reporting a standstorm of unprecedented fury. Several oases, according to the report, had been entirely blotted out, and a number of caravans had been lost in the sweep of the tremendous storm, which had towered to a height of twelve thousand feet and had covered many hundred square miles. No one caught in it had come out alive nor had any trace of the missing caravans been found. Subsequent dispatches brought the news that the affected region was full of minor upheavals for weeks after the cessation of the main disturbance, and that a furore of superstitious fear had been excited among the desert tribes, who believed that the end of the world was now imminent. But, in the surge and press of more sensational and apparently more important items then engaging the world's attention, no one, not even the most advanced and alert men of science, gave more than a passing thought to the sandstorm.

Toward the end of the same year, there came a fresh report from

the Sahara, this time of so strange and inexplicable a nature that it immediately aroused the curiosity of many scientists, who forthwith formed an expedition to investigate the conditions that had given rise to the report. The members of a caravan from Timbuctu, the first to venture into the path of the great storm, had returned within a week, half-mad with terror and telling incoherently of unaccountable changes that had taken place all through the disturbed area. They said that the long, rolling dunes of sand had all disappeared, to be replaced by solid earth and mineral forms such as no one had ever seen before. The earth consisted of great patches of a sort of violet-colored clay, very moist, and with a noxious odor that had almost overpowered those who ventured to walk upon it.

Also, there were outcroppings, immense ledges, and even hills of singular stone and metals. The stone was mainly crystallized, with red, black, blue, and dark-green colors, and the metals were white and iridescent. The members of the caravan swore that they had seen huge boulders heave visibly from the earth before their eyes, and had watched the crystals swell on the sides of these boulders. Over all the changed area, they said, there were vapors that arose continually, forming a dense canopy of cloud that shut out the sun. But, in spite of this fact, the heat was more intense than any they had ever known, and had an intolerably humid character. Another odd thing they had noticed was that the sand immediately contiguous to this area had become so fine and pulverized that it soared in high clouds at every step of their camels, who had almost been engulfed in it. They all believed implicitly that Iblees, the Mohammedan Satan, had come to establish his kingdom on earth, and, as a preparatory measure, was creating for himself and his subject demons a suitable soil and atmosphere resembling those of the infernal realms. Henceforth, the region was utterly shunned, till the arrival of the investigating scientists, headed by Roger Lapham, the most renowned American geologist of the period.

Lapham and his party, in which were several celebrated chemists as well as some fellow-geologists, had chartered two airplanes, and the trip to Timbuctu, where they paused to interview personally the members of the returned caravan, was a matter of only a few hours.

A new and unexpected angle was added to the strange story, when the scientists learned that eight of the twelve natives whom they desired to see had fallen dangerously ill in the interim since the sending of the last news dispatch. So far, no one had been able to

diagnose their illness, which presented a combination of symptoms no less inexplicable than unfamiliar. These symptoms were quite varied, and differed somewhat in the individual cases, though acute respiratory and mental disorders were common to all. Several of the men had shown a violent homicidal mania which they were already too weak and ill to carry to the point of action; others had tried to commit suicide in a sudden and delirious excess of melancholia and nervous terror; and six of the eight were afflicted with peculiar cutaneous disturbances which would have suggested leprosy if it had not been that the diseased portions, which developed and increased with remarkable rapidity, were of a bright green color instead of being white, and had purplish borders. The pulmonary symptoms were not dissimilar to those experienced by men who have inhaled some sort of deadly gas, and were marked by a swift eating-away of the tissues. Two of the men died on the evening of the same day that Lapham and his companions arrived in Timbuctu, and by noon of the following day the four who had been so far exempt were stricken down. They suffered all the symptoms presented by their fellows, with the addition, even during the earlier stages, of a form of locomotor ataxia and a queer disorder of vision which constituted an inability to see plainly in broad daylight, though their sight was normal at other times. They, as well as most of the others, now developed a terrible condition of necrosis involving the whole bony structure of the body, and within two days all were dead.

Lapham and his colleagues talked with these men and did what little could be done to palliate their agonies. No more could be learned, however, than the news dispatches had already proffered in the way of information, apart from the fact that the caravan members all attributed their illness to contact with the uncanny clay and minerals on which they had come in the heart of the Sahara. Those who had ventured the farthest into the strange area had been the first to develop this illness.

It became evident to the scientists that their proposed explorations might be accompanied by grave bodily dangers. One of the planes was immediately sent to England for a supply of gas masks, oxygen, and complete suits of an insulative material designed to protect against everything then known to science in the form of harmful radioactivity.

As soon as the planes returned, bringing the requisite supplies, the journey into the Sahara was resumed. Following at an altitude

of one thousand feet the northern caravan route toward Insalah and Ghadames, the scientists soon began to penetrate the Juf desert, amid whose golden-yellow dunes the affected area was said to lie.

An odd spectacle now presented itself to them. Far off on the horizon was a low-lying mass of clouds or vapors—a thing almost without precedent in that dry, rainless region. These clouds or vapors were of a pearly-gray color, and they covered not only hundreds of leagues of the rolling sand, or what had once been sand, but also seemed to encroach upon the rocky, weather-worn terrain to east of the Juf. Nothing could be seen of the geological changes that had taken place, till the airplanes had approached within a few miles of the vapor mass. Then the exploring party had a glimpse of the vari-colored soil and minerals described by the natives, now dimly discernible through the writhing fumes that still arose from them.

Before landing, the scientists flew slowly above the vapors to determine their extent and density. They found that the mass was circular in form and was at least a hundred miles in diameter. It constituted a level and uniform floor, dazzlingly bright in the sunshine, and with no breaks or variations anywhere.

After they crossed and circumnavigated the whole cloud mass, they made a landing near the southern verge, and the expedition proceeded to encamp. The day was still new, since they had made an early start; and Lapham and the others were eager to begin their investigations without delay. Putting on their insulative suits and equipping themselves with the gas masks and oxygen tanks, the whole party set out forthwith.

They had not gone far when they encountered the fine sand or dust of which the caravan members had spoken. They sank to the waist in this sand at every step, but its inconceivable lightness made their progress not so difficult as it would normally have been. At every footfall, at every touch or movement, the fine powder soared in a huge cloud, which, as they had occasion to observe, took hours to settle itself again. None of them had ever seen such dust before, and the chemists in the party could scarcely wait to analyze it.

At last, after much wandering and floundering in the dust cloud, through which they could see nothing, Lapham and his companions drew themselves out on a margin of the strange violet soil. The contrast of this wet, steaming clay with the gulfs of atom-like powder that surrounded it was so inexplicable, so utterly amazing as to baffle and dumfound all conjecture. The substance was unearthly

in its strangeness, and the heat that emanated from it was almost beyond endurance. The scientists had sweltered in their heavy air-tight suits while crossing the zone of dust, but now they were subjected to actual suffering.

At every step their astonishment grew, for the dim landscape beneath the vapors was such as no human eye had ever seen before. Gigantic ledges of crystallized rock forms arose in the foreground, and about the crystals there was something, even apart from their curious black, blue, red, and dark-green coloration, which served to differentiate them from anything classified by geologists. They were prodigious in size, and had innumerable facets and a look of geometrical complexity foreign to all normal rocks. There was a sinister vitality in their aspect, too, and the tale of the natives, who purported to have seen them grow and swell, became almost comprehensible. Somehow, they resembled living organisms as much as minerals. Everywhere, also, were outcroppings of the white and iridescent metals that had been described.

As the party advanced, the ledges grew larger, and towered overhead in cliffs and precipices and crags, among which the explorers found a tortuous, winding way. The crags were horned and beetling, and weird beyond imagination. It was like a scene in some other world; and nothing to which the scientists came in the course of their wanderings was in any manner suggestive of the familiar Terra Firma.

After groping their way through narrow rifts and along the rim of fantastic scarps where all foothold was precarious, they emerged from amid the crags, on the shelving shore of a lake of blackish-green water, whose full extent was indeterminate. Lapham, who was ahead of the others, half-lost in the coils of the rising vapors, cried out suddenly, and when his companions overtook him, they found him stooping above a queer plant with an etiolated fungus-like stalk and broad, serrate leaves of a carnal crimson, mottled with gray blotches. Around it, the pinkish tips of younger plants were protruding from the soil, and they seemed to wax visibly beneath the astounded gaze of the explorers.

"What on earth is it?" cried Lapham.

"As far as I can see, it isn't anything that could legitimately exist on earth," rejoined Sylvester, one of the chemists, who had made a side-line of botany. They all gathered about the queer plant and examined it minutely. The leaves and stalks were extremely fibrous in their texture and were full of deep pores like those of coral. But

when Lapham tried to break off a portion, it proved to be very tough and rubbery, and the use of a knife was necessitated before the branch could be severed. The plant writhed and twisted like a living creature at the touch of the knife, and, when the operation was finally accomplished, a juice that bore a startling resemblance to blood in its color and consistency, began to exude slowly. The severed section was placed in a knapsack for future analysis.

Now the scientists proceeded toward the margin of the lake. Here they found some plant growths of a different type, suggesting calamites, or giant reeds. These plants were twenty feet tall and were divided into a dozen segments with heavy, swollen-looking joints. They had no leaves, and their hues varied from a leaden purple to a leprous white with green shadowings and veinings. Although there was no wind, all of them were swaying a little, with a sound like the hissing of serpents. As Lapham and his confreres came closer, they saw that the reeds were covered with lip-like formations that recalled the suckers of an octopus.

Sylvester was now in advance of the others. As he neared the foremost plant, the thing swayed suddenly forward with all the suppleness and celerity of a python and encircled the chemist in a series of constricting coils. Sylvester screamed in terror as the coils tightened about him, and the others ran instantly to his aid, though dumfounded and well-nigh stupefied by the strangeness of the happening. Several of them carried clasp knives, and these were at once requisitioned in effecting his release. Lapham and two of the chemists began to hack and saw at the horrible coils, while the reed continued its constriction about the limbs and body of the helpless man.

The plant was amazingly tough and resistant, and Lapham's knife blade broke before he had sawed half through the section upon which he was engaged. His companions, however, were more successful, and at length the diabolical growth was severed in two places, one of which was not far from the root. But the coils still clung around their victim, who had gone suddenly pale and limp, and who now fell in a dead faint as his companions finished their task. It was found that some of the sucker-like formations had penetrated his insulative suit and were actually embedded in his flesh. Slowly, in squirming segments, the coils were cut away; but nothing could be done at present with the suckers, for want of the proper surgical instruments; and it was obviously imperative that Sylvester should be taken back to camp as quickly as possible.

Carrying the still unconscious man among them by turns, the explorers retraced their steps amid the crags and ledges of many-colored crystals, along the perilous rim of steaming cliffs and gulfs, and found their way through the zone of atomic dust, till they re-emerged, altogether exhausted and frightfully shaken, on the shore of the natural desert. In spite of their urgent haste, however, they took with them some specimens of the crystals, of the white and iridescent metals and the violet soil, as well as parts of the python-like reed, for future examination; and they greatly deplored their inability to secure also some of the water in the blackish-green lake. After the chemist's experience, no one would have dared to venture among the fringing reeds along its shore.

Sylvester required immediate attention, for he was white and bloodless as a vampire's victim, and his pulse beats were very slow and so feeble as to be almost undetectible. His clothing was removed and he was stretched on an improvised operating table. It was now seen that the portions of his limbs and trunk in which the suckers had implanted themselves were horribly swollen and discolored; and this swelling rendered the task of removal all the more difficult. There was nothing to do but cut the suckers out; and after the administration of an opiate, which seemed scarcely needful under the circumstances, the operation was performed by Dr. Adams, the physician of the party. It was evident that Sylvester had been dreadfully poisoned by the suckers, for even after their removal, the flesh in which they had sunk continued to swell, and soon turned to a putrescent black which threatened to involve his whole body. At no time did he recover full consciousness, though during the night after the explorers' return, he began to toss and mutter weakly in a sort of low delirium, which presently merged into a coma from which he did not awaken. At ten the next morning, Dr. Adams announced that Sylvester was dead. It was necessary to inter him at once, for his body presented the appearance and all the usual characteristics of a week-old corpse.

A sense of ominous gloom and oppression was thrown over the whole party by the chemist's fate, but it was of course felt that nothing should be permitted to delay, or interfere with, the work of investigation that had been undertaken. No sooner had the unfortunate Sylvester been laid to rest in a hurried grave amid the Saharan sands, than his fellow-scientists began eagerly their examination of the specimens they had secured. These were all studied under powerful microscopes and were subjected to chemical analysis

of the most searching and rigorous order. Many known constituents were found, but all of these were immingled with elements for which chemistry had no names. The molecular formation of the crystals was more intricate than that of any substance known on earth; and the metals were heavier than anything so far discovered. The cellular composition of the two plant-forms was oddly similar to that of animal bodies, and it was readily ascertained that they were intermediate between the animal and vegetable kingdoms, partaking of the character of both. How such minerals and plants could have appeared suddenly, in a location so obviously impossible even for the fostering of normal forms, was a theme of endless argument and inconclusive surmise between Lapham and his confreres. For awhile, no one could propound a theory that seemed at all plausible or credible. Apart from everything else, they were puzzled by the zone of fine dust about the changed area: this zone was found to consist of sand-particles whose very molecules had been partially broken up and disintegrated.

"It looks," said Lapham, "as if someone or something had blown up all the atoms in this part of the Sahara, and had then started a totally new process of re-integration and evolution, with the development of soil, water, minerals, atmosphere, and plants such as could never have existed on the earth during any of its geological epochs."

This startling theory was discussed pro and con, and was finally adopted as the only explanation that contained elements of possibility. But it remained to determine the agency of the geological and evolutionary changes; and of course no one could propound anything decisive as to the nature of this agency. The whole thing was enough to stagger the imagination of a Jules Verne; and with scientists of such indubitable certitude as Lapham and his fellows, the fantasies of lawless imagination had no place. They were concerned only with things that could be verified and proven according to natural laws.

Several days were devoted to analyzing, re-analyzing and theorizing. Then a report of the conditions that had been found was drawn up, and it was decided to send a summary of this report by radio to Europe and America. An attempt to use the radios carried by the party revealed a peculiar condition of absolute static that prevailed above the vapor-covered region. No messages could be sent or received across this region, though communication was readily established with points that were not in a direct line with the

new area, such as Rome, Cairo, Petrograd, Havana, and New Orleans. This condition of static was permanent—at least, many repeated efforts, at all hours of the day and night, were utterly ineffectual. One of the planes, carrying a radio apparatus, soared to a height of nine thousand feet above the encampment, and sought to establish the desired connection, but in vain. It was necessary for the plane to cross the whole cloud mass, to the northern side, before New York and London could receive and return its messages.

"It would seem," observed Lapham, "as if some sort of ultra-powerful ray, that prevents the passage of radio vibrations, had been turned on this part of the Sahara. Evidently there is a screen of interfering force."

While arguments as to the validity of this theory, the nature and origin of the conjectural rays, and their possible relation to the geologic changes, were still in progress, two members of the party complained of feeling ill. Both of them, on examination by Dr. Adams, were discovered to be afflicted with cutaneous symptoms resembling those that had been developed by many of the caravan from Timbuctu. The characteristic patches of bright green, with purplish borders, were spreading rapidly on their arms and shoulders, and soon invaded the exposed portions of the skin. The two men became mildly delirious within a few hours, and gave evidence of extreme nervous depression. Simultaneously with this turn of their illness, Dr. Adams himself grew conscious of a sudden feeling of indisposition. Obviously, the insulative clothing worn by the explorers had been inadequate for their protection against whatever lethal forces were inherent in the new soil, minerals and vapor-laden atmosphere. It was decided that the party must return to civilization immediately, before others should be stricken.

Camp was broken up, and the two planes were headed for Great Britain. During the brief journey, all of the scientists began to fall ill, and the pilot of one of the planes collapsed, allowing the controlless air-vessel to plunge into the Atlantic near the coast of Spain. The crew of the second plane, seeing the accident, flew gallantly to the rescue, and succeeded in saving Lapham and Dr. Adams, who were struggling in the waters. Their companions, including the sick pilot, were all drowned. It was a sad remnant of the expedition which landed at London.

In the meanwhile, the summary of the explorers' report, dispatched with so much difficulty by radio, had been published in all the leading dailies of the world and had aroused universal interest

amid the scientific fraternity. The press was full of theories and conjectures, some of them extremely wild and fantastic. One journal went so far as to insinuate that the Saharan manifestations were part of a plan for world dominion that was being put into practice by the United Oriental Federation, which then included China, Indo-China, Burma, and Japan; and others were inclined to name Russia as the instigator.

On the very same day when Lapham and his companions reached London, there came from the United States the news of a terrible and mysterious cataclysm, which had occurred in Missouri and which had involved at least half of this state. Though the time was still mid-winter and the ground was covered with unmelting snow, a tremendous storm of dust had appeared, in which many towns and cities, including St. Louis, had been utterly swallowed up. All communication with these towns and cities had been cut off, and no message, no living thing nor evidence of life, had come forth from the storm. There were great billowing clouds, that soared to a stupendous height, and from which emerged a sound like the rumbling of thunder, or the explosion of unaccountable tons of dynamite. The dust, of unbelievable fineness, settled upon many miles of the adjacent areas, and nothing could be done or determined for days, since all who dared to approach the raging storm were instantly lost and never returned. The terror and mystery of a cataclysm so unparalleled, so far beyond all explanation or imagination, fell like a black pall upon the United States and horrified the whole civilized world. The dust from the storm, which was analyzed at once, was found to consist of partially disintegrated molecules; and it required no great reach of fantasy for scientists, reporters, and the general public to associate the upheaval with the Saharan sandstorm that had given birth to a terrain of unearthly strangeness.

The news was brought to Lapham and his fellows in the hospital to which they had been taken from the plane. Several of the party were already too ill to comprehend what had taken place; but Lapham and Dr. Adams, both of whom were less severely stricken than the others, were at once prepared to comment on the report from America.

"I believe," said Lapham, "that some cosmic process has been instituted which may threaten the integrity and even the continued existence of our world—at least, of any world which we could call ours, and in which human beings could dwell and survive. I predict that within a few weeks, geological and atmospheric conditions sim-

ilar to those which we found in the Sahara will also prevail in Missouri."

This prophetic utterance, made to reporters from the *Times* and the *Daily Mail,* received considerable publicity and added to the world-wide consternation and terror that was being felt.

While dispatches announcing the continuation of the atomic storm were still agitating five continents, several of the returned explorers died from the unknown malady by which they had been seized. Their cases were characterized by nearly all the symptoms that had been noted in the members of the unfortunate caravan from Timbuctu, but lacked the pulmonary disorders, from which, it was evident, the use of oxygen tanks had saved the expedition. Extreme weakness, melancholia, the green, leprous patches, locomotor ataxia, partial blindness, and the final necrosis of the bones were all present, and little could be done to mitigate them by any of the attendant doctors, among whom were the most renowned specialists of Great Britain, France, and America. Lapham and Dr. Adams were the only members of the party who survived, and neither of them was ever wholly well at any future time. Till the end of their days, both men suffered from more or less mental depression and from recurrent outbreaks of the cutaneous symptoms.

An odd aftermath of the whole affair was that similar maladies were contracted in a milder degree by many scientists who examined the mineral and vegetable specimens that had been carefully brought back from Africa by the expedition. No one could isolate or identify the properties that gave rise to such disorders; but it was assumed that rays belonging to the ultra-violet or infra-red ranges, and more powerful than anything hitherto discovered, were being given off by the odd substances. These rays, it was all too evident, were deleterious to human health and life.

While Lapham and Dr. Adams were still lying in a hospital, fresh news items continued to come from America. One of these items was that two planes, driven by world-famous aviators, had tried to surmount the terrific dust-storm that still raged in Missouri. The storm, like its Saharan fellow, was about twelve thousand feet in height, and it was not thought that any difficulty would be encountered in crossing it at a sufficient altitude. Also, it was believed that some valuable data might be gathered thereby. The planes flew to an elevation of thirteen thousand feet before approaching the borders of the storm, but on passing above the rim of the involved area, they were both seen to disappear suddenly in mid-air by peo-

ple who were watching their flight with field-glasses. Neither of the planes ever returned to earth, nor could any sign of them be located.

"Fools!" cried Lapham, when he heard the news of their disappearance. "Of course, when they invaded the vertical area of the storm, they were exposed to the same disintegrative influences that are operating on the earth below. These influences, as I surmised, are coming from outer space. The planes and their aviators have been dissolved into sub-molecular dust."

No more attempts were made to cross the storm, and a widespread exodus of people from the adjacent regions, which had been going on ever since the initial cataclysm, became almost universal in the next few days. Hardly anyone remained, with the exception of a few redoubtable scientists, who wished to be on the ground for purposes of investigation when the upheaval should subside.

Within a week, the storm began to lessen in height and fury, and the clouds became broken and less dense. But, as in the case of the African disturbance, there were minor agitations and upswirlings for another week or more. Then it was perceived that masses of vapor were replacing the dust; and a solid canopy of pearly-gray cloud was soon formed above the whole region. All around this region, the winter snows were buried beneath a mile-wide zone of the submolecular powder.

In spite of the awful fate that had befallen the Timbuctu caravan and the geological expedition, there were several scientists brave enough to venture within the St. Louis area when the rising vapors gave proof that the processes of disintegration were at an end. They found the same exotic soil, the same minerals, metals and water that had been discovered in the heart of the Juf desert; but the alien plant forms had not yet begun to appear. Some of the water was secured for analysis: apart from the usual constituents of water, it was found to contain an element oddly similar to a certain synthetic gas, more lethal than anything hitherto devised, which had lately been invented for use in warfare. This element, however, was not decomposable into the separate elements from which its analogue had been formed by American chemists. Still another gaseous component was isolated, but could not be identified or allied with anything familiar to chemistry. Scarcely had the analysis been completed and its results given to the world, than the chemists who had undertaken the analysis, and also the investigators who had obtained the water, were all stricken down with an illness which

differed in certain ways from the one that had been undergone by their Saharan predecessors. All the usual symptoms were presented; and co-incidentally there was a falling-out of all the hair on the heads, faces, limbs, and bodies of those afflicted, till not even the finest down remained. Then the places where the hair had been were covered rapidly with a gray formation resembling mould. The formation, on being analyzed, was proved to consist of minute vegetable organisms which increased with remarkable fecundity and soon began to eat the skin and flesh beneath. No antiseptic could combat the ravages of the gray mould, and the victims died in atrocious agony within a few hours. It was surmised that the water must have given rise to these new symptoms, by some process of infection; but how the infection could have occurred was a mystery, since all manner of possible precautions had been taken in handling the water.

A little before the death of these hardy investigators, two singular astronomical discoveries were made. Lapham's theory that rays of an ultra-powerful type were being turned upon the earth from some ulterior source, had led to an intensive study of the neighboring planets, particularly of Mars and Venus, through the new telescopes with three hundred-inch reflectors, with which observatories in Colorado and the Spanish Pyrenees had been equipped. It was thought that the rays might be emanating from one of the planets. Mars, by this time, was definitely known to be inhabited, but little had been yet learned about Venus, on account of the cloudy envelope with which that world is surrounded. Now, under the close continual scrutiny to which it was subjected, three flashes of white light, occurring at intervals of seventy minutes and lasting for about ninety seconds, were seen to pierce the cloudy envelope, in a region not far from the equator of Venus. The three flashes emanated from the same spot. A little later during the same night, Dr. Malkin of the Colorado observatory, though all his interest was still centered upon the orb of Venus, now almost at meridian, was forced to observe within his field of vision a tiny satellite or asteroid which was apparently following the revolution of the earth. Observations were made, leading to the sensational discovery that this new satellite was no more than a thousand miles distant, and was paralleling the movement of the earth in a position exactly above the state of Missouri! Calculations revealed that it was about two hundred feet in diameter.

Dr. Malkin's two discoveries were announced to the world, and

were followed the next day by a report from the Pyrenean observatory, telling of another tiny body that had been located far in the south, directly above the vapor-shrouded region in northern Africa. In size, movement and distance from the earth, this body was similar to the American satellite. The two announcements were the cause of much public excitement, and many conjectures were made as to the origin and character of the two minute bodies, whose very positions made it natural for everyone to connect them at once with the geological phenomena in the subjacent areas. It remained, however, for Roger Lapham to predict that the three flashes on Venus, observed by Dr. Malkin on the same night as his discovery of the first body, would soon be followed by the appearance of three new satellites, and also by three more storms of dust in different parts of the world.

"I believe," said Lapham, "that the satellites are mechanical spheres that have been discharged from Venus, and that they contain living beings and also apparatus for the creation and use of the destructive and recompositive rays that have brought about the singular manifestations in Africa and America. The flashes that Dr. Malkin saw were doubtless caused by the discharge of new spheres. And if Venus had been under continual observation by the new telescopes, two earlier flashes would have been seen, one preceding the atomic storm in Africa and the other the storm in America. I am at a loss to understand, however, why the two spheres were not observed long ago, since it is probable that they have been within telescopic range ever since the onset of the atomic storms."

There was a great division of opinion among scientists, as well as among the general public, concerning the validity of Lapham's theory on the origin of the satellites; but no one felt any doubt regarding their problematic relation to the dust-storms and the new terrains. It was perceived that the two orbs were different in color, the African orb inclining to a ruddy tint and the American to a bluish tone. But suddenly, under Dr. Malkin's observation, two nights after the initial discovery, this latter orb took on the reddish hue of its African fellow. Lapham, on hearing of this, went so far as to venture a surmise that the changing colors of the sphere had some connection with the nature of the rays that were being emitted, and that probably the bluish color was associated with a ray promoting the integration of mineral forms, and the reddish with one that had relation to the development of vegetable life.

"What I think is," he went on, "that the people of Venus are trying to establish in certain parts of our world the geological, botanical and meteorological conditions that prevail in their own. The establishment of such conditions is no doubt preliminary to an attempt at invasion. The Venusians, it is likely, could no more exist under the conditions that are favorable to us, than we could under theirs. Therefore, before coming to earth, they must create for themselves a suitable environment in which their colonies can land. Certainly, the hot, steaming soil and vaporous atmosphere, found in the Sahara and in Missouri, are similar to those that characterize the planet Venus."

Though some were still incredulous, or unable to realize imaginatively what was taking place, a wave of terror inundated the world at the promulgation of this surmise. Henceforward, the cool theorizing of Lapham and other scientists went on side by side with outbursts of frantic fear and of old-time religious hysteria on the part of the multitude. No one could know when and where the weird, extra-planetary menace would strike next, nor the possible scope of its operations; and the dread anticipation of this menace became a demoralizing and paralyzing force that affected more or less the field of nearly all human activities. The men of science, the astronomers, the chemists, the physicists, the inventors, the medical brotherhood, were the only classes of society who, as a whole, went about their usual work with a quickening rather than a slackening of their faculties. Researches were rapidly begun in laboratories all over the world, to find medical agents that would be efficacious in fighting the new diseases caused by contact with the Venusian minerals, air, water, and vegetable forms; and in spite of the certain danger, many excursions were made into the vapor-hidden terrains to procure the needful substances for study in the various laboratories. The tale of resultant death and suffering was long and sad, and testified to the undauntable heroism of human scientists. Also, a number of inventors, who had long sought the secret of a process by which molecules and atoms could be broken up and re-integrated on a large scale, now redoubled their efforts in the hope of enabling humanity to combat the probable conversion of wide areas of the earth into foreign atomic patterns.

Four days after the publication of Lapham's latest prophecy, there came the news of the three fresh storms he had predicted, which began in widely separate regions at intervals of little more than an hour. The first storm was in Mesopotamia, and Baghdad

and Mosul were both lost in the towering columns of infinitesimal powder. The Tigris continued to flow into the area of the storm, but on the southern side it instantly ceased to run and soon became a dry bed till its junction with the Euphrates. The second storm occurred in the Black Forest, in Germany, and the third on the huge pampas of the Argentine. A new satellite, of a sulphur-yellow hue, was located above Germany by the Pyrenean telescope, as well as by those of many other observatories. The satellite above Mesopotamia was too far east to be within range of European astronomers; but the astronomers of two observatories in the Andes were successful in locating the Argentine body, which was also of a sulphur-yellow hue. This color, it was thought, might be associated with the production and use of the disintegrative ray.

The progress of a growing international panic was of course accelerated by the announcement of the new storms and satellites. People fled in numberless hordes from the neighborhood of the three disturbances, and grave social and economic conditions were created by this exodus. Certain industries were well-nigh paralyzed, traffic by air and land and water was seriously disordered; and the stock markets of the world were thrown into dire confusion, many standard stocks becoming suddenly worthless. Even at this early stage of the Venusian encroachment, there were many consequences of a far-reaching and oftentimes unexpected order, in all realms of mortal existence and effort.

All of the visible satellites were kept under close observation. On the night following the discovery of the sulphur-yellow orb above the Black Forest, it was found that the ruddy Saharan satellite had disappeared from its station; and no clue to its whereabouts could be obtained till the arrival of rumors from Timbuctu and Ghadames, telling of a strange meteor that had fallen in broad daylight upon the region of massed vapors in El Juf. It had been watched by many desert tribesmen, by several caravans, and had been visible at a great distance, falling with preternatural and deliberate slowness, in a vertical line. It had seemed to descend for nearly a minute before dropping into the vapors. Its color was a bright silver, it was round in form, and had not left the usual trail of flame that is made by a large meteor. The desert peoples looked upon it as a portent, foretelling the advent of Iblees and his demons.

"The first Venusian colony has landed," exclaimed Lapham, when these rumors were brought to him. "They have no doubt completed their evolutionary process, or have carried it to a degree that

would render the African terrain inhabitable from their viewpoint."

While abject fear prevailed among the multitudes of humanity, and while scientists were engaged in eager speculation as to the nature of the Venusians, the rays employed by them, and the manner in which their spheres had been propelled through space and held in suspension above the earth, a number of new flashes were perceived on Venus by the vigilant astronomers of Colorado and Spain. No less than nine of these flashes were detected at the customary intervals on the same night, and on the following night there were nine more. Others, however, must have occurred during the daylight hours, for within five days, no less than thirty additional storms of atomic dust were reported from all over the world.

The areas of many were conterminous with the regions already affected, and were destined to extend enormously these regions; but many others were remotely scattered, and were to form independent nuclei for future manifestations. There were three storms in Australia, seven in Africa, six in Europe, six in Asia, five in the United States, and three in South America. Many more satellites, all of a sulphur-yellow hue, were located by astronomers above the realms of devastation that were being established. The destruction wrought was appalling in its scope, for a dozen great cities and hundreds of towns in thickly peopled regions were turned into cosmic powder by the disintegrating force. Berlin, Vienna, Florence, Teheran, Jerusalem, Kabul, Samarkand, Chicago, Kansas City, St. Paul, and Pittsburgh, had become in an instant no more than memories. The Argentine tract was lengthening toward Buenos Aires; and the ravages in northern Africa had been extended as far as Lake Tchad, which had contributed a cloud of fine steam, twenty thousand feet in height, to the whirling tempest of minute sand particles. Even amid the universal horror and confusion, it was noted that nearly all the storms were in regions remote from the terrestrial seaboards. Lapham, on being appealed to for an explanation of this fact, made the following statement:

"The process that is being carried on must inevitably be slow and gradual, on account of its tremendous magnitude; and many years will doubtless be required for its completion. The Venusians have selected inland areas for the nuclei of the geopolitical and climatic metamorphosis, because the new atmospheres created above such areas will less readily be subject to immediate modification by the terrene oceans. However, if I am not mistaken, the seas themselves

will eventually be attacked and will be vaporized and recondensed with the addition of elements favorable to the maintenance of Venusian air. The full extension of this latter process, on account of the lethal gases inherent in such air, will prove fatal to all remaining animal, or perhaps even plant, life of terrene origin, even if the geological changes are left incomplete."

Absolute madness and pandemonium were the concomitants of the thirty new storms. From the vicinity of all the centers involved, unending throngs of people poured in all directions toward the littorals of five continents. The entire shipping of the world, both naval and aerial, was laden with men, women, and children who sought to flee the planetary peril; and those who were not fortunate enough to find room on any of the vessels, leapt into the surf or were driven from piers, cliffs, and beaches by the pressure of the crowds behind. Innumerable thousands were drowned, while the streams of refugees came on day by day, night by night, utterly crazed with insensate terror, as more of the deadly satellites were appearing and more storms were being instituted. Town after town, city after city, countryside after countryside, was emptied of its inhabitants, hordes of whom were caught in the onset of additional upheavals. Heroic efforts were made to re-establish some sort of order by the police and military forces of all the nations, but not much could be done, beyond organizing many of the North American, European and Asiatic throngs for migration toward the Arctic and sub-Arctic regions.

In the midst of all this pandemonium and destruction, however, the laboratories of the world continued their investigations, though one by one many of them were lost in the molecular cataclysms. When the progress of the tracts of devastation became more and more extensive, the chemists, inventors, and various other experimenters concluded that it would be folly to remain any longer at their present posts. It was thought, from the general distribution of the storms, that the Antarctic circle would be the last portion of the globe that the invaders would attack, and the scientists of all countries, uniting in a common cause, made immediate preparations to remove their equipments and build laboratories in the heart of the polar plateau. The work of removal, through the aid of giant airliners, was completed in an amazingly short period of time, though there were certain casualties and losses through the passage of planes above fresh regions that were being assailed by destructive rays.

Enough provisions for several years were carried along, and of course the wives and families of the various investigators accompanied them, as well as many thousands of people who were needed for work of a less expert, but essential, order. Whole towns of laboratories, as well as other buildings, were erected amid the Antarctic wastes, while the airliners returned to fetch more people and more supplies. The scientific colonies were joined by the passengers of hundreds of fugitive air vessels that had been wandering above the seas; and soon a goodly remnant of every nation had found shelter behind the southern barriers of ice and snow. Something was also done to house and provision the hordes that had fled to the north; and as much communication as possible was kept up between the two streams of humanity.

Roger Lapham, who was now in a state of tolerable convalescence, was invited to join the colonies of investigators, and went south in one of the first airliners. He had wished to lead another expedition into northern Africa, with the idea of again penetrating the Juf, where the supposed meteor had been seen to descend, but was finally dissuaded from this rash plan when word came that the African terrain was now surrounded on all sides by violent upheavals, one of which had destroyed Timbuctu.

To the colonies about the southern pole, there came the daily news of how the fearful work of planetary destruction and reintegration was progressing, from radio operators who were brave enough to remain at their posts till an unresponding silence offered proof that they had been annihilated one by one with the realms in which their stations had stood. The Venusian soil and air, with outlying fringes of atomic dissolution, were spreading like a series of cancers through the five continents, through regions that were almost emptied of human life by this time. The heavens were filled with the tiny satellites of changing colors, a score of which had descended to earth and had not been seen to rise again. What their occupants might now be doing was a mystery that intrigued all of the scientific fraternity. They felt the need of definite knowledge regarding these alien life forms, who were obviously possessed of a high type of intelligence, and who displayed mechanical resources and a mastery of physics to which humanity had not yet attained.

A radio dispatch from a lonely village in southern Florida brought to the Antarctic laboratories the news that one of the silver spheres had been seen close at hand by human beings for the

first time. An orange grower who had refused to abandon his plantation at the flight of nearly all his neighbors, with his twelve-year-old son, who had remained with him, had observed the sphere flying toward them within a mile of the earth's surface, in a southeasterly direction. Apparently it had emerged from a partially converted tract involving Kentucky, Tennessee, and the northern borders of Alabama, where more than one of the spheres had already been known to land. The thing was flying slowly, at less than thirty miles an hour when first noticed; and it came gently to earth within three hundred yards of the orange grower and his son, close to the edge of their orchard. The sphere seemed to be made of some whitish metal, was perfectly round, was at least two hundred feet in diameter, and had no visible projections anywhere. It resembled a miniature world or moon. When it approached the ground, a sort of framework consisting of four tripods of the same whitish metal, issued or unfolded from the sphere and served to support it when it came to rest. In this position, the lower part of the globe was no more than fifteen or twenty feet from the ground. A circular trap or manhole opened in the bottom, and from this a stairway of metal steps was let down to earth. Seven creatures of an unearthly type descended the stairs forthwith and proceeded to examine their environment with all the air of a party of investigating scientists. They were perhaps four feet in height, with globular bodies; and they possessed three short legs and four extremely supple and jointless arms that issued from the side and back of smaller globes that were presumably their heads. These arms were all long enough to reach the earth, and were used to a certain extent in locomotion and the maintenance of equilibrium. The creatures were either equipped with natural coverings like the shards of insects or else they wore some kind of armor or suiting made of red and green metals, for they glittered gorgeously in the sunlight. The orange grove seemed to interest them greatly, for they broke off several boughs laden with ripe fruit and one of their number forthwith carried the boughs into the sphere, holding them aloft with two of his odd arms. The other six roamed about the countryside and vanished from view for awhile, returning in less than an hour with numerous plant specimens and also with pieces of furniture, human clothing, and tin cans, which they must have collected from the buildings on some deserted plantation. They re-entered the sphere, the metal stairway was drawn up, the trap was closed, and the great orb retracted its four tripods and flew away toward the ocean at an increased

rate of speed that would soon bring it to the Bahama Islands. The orange grower and his son, who had hid themselves behind a pile of empty lug boxes and had scarcely dared to move for fear of attracting the Venusians' attention, now hurried to the local radio station, where the operator was still on duty, and sent a detailed report of what they had seen to the Antarctic laboratories.

A little later, the sphere was sighted from the Bahamas, but apparently it did not pause on any of these islands. Still later it was observed from Haiti, San Domingo, Martinique, and Barbados. Then it landed near Cayenne, where the natives were captured by the Venusians and taken aboard the sphere. Then the thing continued its southeasterly flight and was seen far out at sea from Pernambuco. An hour afterward it was sighted from St. Helena, and then it changed its course and flew directly south. It passed above Tristan de Cunha and disappeared from human observation for two days. Then a biplane, flying from the Sandwich Islands to the Antarctic, found the great orb floating in the sea, and reported this fact to the united scientists. It was at once surmised that the occupants had fallen ill and were perhaps dead, or at least were no longer able to operate the propulsive and levitative mechanism.

"Immediate contact with our soil and atmosphere," said Lapham, "has no doubt proved as dangerous for these beings as our own excursions into terrains formed after a Venusian pattern were dangerous for us. Probably they were a group of scientists who desired to gather data regarding terrestrial conditions, and were willing to chance the bodily peril."

Great excitement prevailed at the news of this find, and three armored planes with heavy guns and a supply of explosives were sent to watch the floating sphere. The huge orb was half-submerged in the water; and no sign of life, no movement other than that of natural drifting, was detectible. At length, after some hesitation, the crew of the planes decided to fire a seven-inch shell at the exposed portion, even at the risk of shattering machinery that might prove of intense interest and value to humanity. To the surprise of everyone, the shell made no impression on the sphere, beyond denting its side a little and increasing the speed of its drift along the waters. Finally it was resolved to tow the thing to land. On being approached, it revealed a number of small circular and oval windows, filled with semi-translucent materials of green, amber, and violet. It was beached on one of the South Shetland Islands. After vain attempts with milder explosives, the trap in the bottom was blasted

open with thorite, a terrible new compound of solidified gases, with which whole mountains had been shattered. Evidently, the metal of the sphere was stronger and harder than any substance found or invented by human beings, and it was likewise ascertained to be heavier.

When the fumes of the explosion had cleared away, several scientists entered the sphere by means of a ladder. Much damage had been done by the thorite, and certain highly intricate mechanisms around the trap were hopelessly ruined, to the extreme regret of the investigators. But the body of the sphere, and its contents, were still intact. The interior was divided into a great number of curious compartments with octagonal walls, and had probably accommodated more than a thousand of the interplanetary voyagers on its trip to the earth. A large room above the trap opened off into three others of equally capacious extent, filled with machinery whose use and method of operation could not easily be determined. In the center of each room there stood an enormous contrivance made of about fifty metal cubes all joined together by means of heavy quadrangular rods. These rods, in turn, were all correlated by single-stranded wires of varying thickness, forming a huge net. Three different metals, all unfamiliar, were noted in the composition of the cubes, rods and wires in the different rooms. From each of the central engineries there issued great curving tubes that ramified into scores of smaller tubes arching the roof of the room in all directions and terminating in a series of no less than ten keyboards with many square and spherelike knobs that were placed in a sort of elaborate rotation. The keyboards were attached to the walls. Before each of the circular windows, a device resembling a gigantic trumpet, with a hundred-angled lens of some glasslike material in its mouth, upreared from a tube that ran directly to the core of the cube contrivance. The windows in each room were of a different color; and none of them, as well as none of the other windows in the sphere, was clearly permeable to human vision. On the outside of the sphere, opposite the large apartments, were found three disks that had a vague likeness to radio transmitters. All three were connected with the interior mechanism. It was imagined that these mechanisms were the source of the various rays employed in molecular dissolution and re-construction.

Also it was thought that the machinery wrecked by the thorite had served to propel and levitate the sphere.

After examining the apparatus in the large rooms, the scientists

began an investigation of the smaller apartments, most of which had evidently been used as living quarters. The beds and furniture were truly strange. The former were round, shallow tubs, lined with downlike materials of incredible resiliency, in which the globe like bodies of the invaders had reposed, with their arms depending over the sides or coiled close to their trunks. There were eating rooms where, in metal troughs divided into bowl-like compartments, were the remains of bizarre and unidentifiable foods. The ceilings of the rooms were all low, in proportion to the stature of their inmates, and the investigators were often compelled to stoop. Mechanical resource and even luxury were manifest on every hand, and there were many special devices, of unknown use and operation, that had probably ministered to the comfort of these odd beings.

After a number of rooms had been explored, a terrific stench was perceived, emanating through an open door. The bodies of six Venusians were found lying together where they had died, on the floor of what appeared to be a kind of laboratory. The place was filled with test tubes of unfamiliar forms and materials and with all manner of scientific apparatus that aroused the interest and envy of the terrene investigators. The Venusians, when stricken, had manifestly been engaged in dissecting the body of one of the natives captured in Guiana, which was stretched and tied down on an operating table. They had flayed the dead Indian from head to foot and had laid open his entire viscera. The corpse of his companion was never found; but the contents of a number of tubes, on analysis, were discovered to represent the sundry chemical elements of which the human body is composed. Other tubes contained, in solution, the elements of oranges and of other terrestrial fruits and plant forms.

The dead Venusians were no longer clothed in the gorgeous green and red shards that the Florida planter had reported them as wearing. They were quite naked, with bodies and limbs of a dark-gray color. Their skin was without any sign of hair and was divided into rudimentary scales or plates, suggesting that they had evolved from a reptilian ancestor of some unearthly type. But nothing else in their anatomy was denotive of the reptile, or, indeed, of any terrene mammalian form. Their long, curving arms and round bodies with neckless, globular heads offered a vague hint of enormous tarantulas. The heads were equipped with two small, sucker-like mouths protruding from the lower part, and were without anything that suggested aural or nasal organs. They had a series of short, retractile

appendages, arranged at regular intervals about their whole circumference above the beginning of the four arms. In the end of each appendage was an eyeball with many crystal-like facets, and every eyeball was of a different color and possessed a different formation and disposition of facets.

When the mass of wrecked machinery was re-examined the seventh Venusian was found. His body had been blown into fragments and buried beneath a heap of twisted tubes and wires and disks. Apparently, when stricken down by the same illness as the others, he had been guiding the course of the great orb, and, perhaps in falling or in the throes of his culminative agony, had stopped the working of the propulsive mechanism. It was learned that all the Venusians had been slain by certain streptococci, comparatively harmless to human beings, with which they had been infected through contact with the dead Indians.

The finding and opening of the sphere created supreme interest and even aroused much hope among the united scientists. It was felt that if the principle of the disintegrative and re-constructive rays could be ascertained, much might be done to reconquer earth, or, at least, to stem the Venusian encroachments. But the three mechanisms of cubes, tubes and wires, and their manifold keyboards, baffled all ingenuity and all the mechanical science of the investigators for a long while. In the meantime, all those who had entered the sphere were smitten with unearthly diseases, and many died or were incapacitated for the remainder of their lives.

Weeks and months went by and lengthened somehow into a year. The metamorphosis of earth had gone slowly on, though after a term of three months no more of the deadly satellites had appeared from outer space. Lapham and others conjectured that perhaps the invasion from Venus had been undertaken with the sole idea of relieving a problem of over-population and had ceased with the solving of this problem. More than two hundred of the metal spheres had fallen under observation; and allowing only a thousand occupants for each, it was estimated that at least two hundred thousand of the hostile foreign entities had taken up their abode on earth. After partially converting all the continents, many of the spheres, as Lapham had predicted, they were now attacking the seas, and immense storms of vapor were reported daily from the Atlantic, Pacific, and Indian oceans. Even in the polar realms, the inevitable climatic and atmospheric changes were being felt. The air was al-

ready warmer and moister, and deleterious elements were invading it at the same time, causing a gradual increase of pulmonary maladies among the survivors of the human race.

However, in spite of all this, the situation had begun to present a few hopeful factors. Invention, beneath the spur of dread necessity, had made new progress, and some valuable scientific discoveries had occurred. Machinery for the direct utilization and conservation of solar energy on a large scale had been perfected, and gigantic refractors had been devised, by which the heat of the sun could be magnified and concentrated. With these refractors, large areas of eternal ice and snow were melted away, revealing a rich soil that was now utilized for agriculture and horticulture. With the resultant amelioration of living conditions, humanity proceeded to entrench itself firmly and with a fair degree of comfort, in regions that had once been deemed altogether uninhabitable.

Another valuable invention was a televisual instrument of range and power beyond anything hitherto devised, by which, without the aid of a transmitting apparatus, sight images could be picked up at any terrene distance. The use of a well-known ray in connection with this invention made it possible to penetrate the vaporous air that enshrouded the new terrains, and to watch the habits, movements, and daily life of the invaders. In this way, much astounding knowledge was soon acquired concerning them. It was found that they had built many cities, of a peculiar squat type of architecture, in which some of the buildings were septangular and octagonal and others were cylinder-like or spherical in form. The cities were wrought of synthetic minerals and metals, and all the houses were connected by tubes which were employed for purposes of traffic. Passengers, or any desired article, could be shot through them to a given point in a few instants. The buildings were illumined with lamps made of radioactive materials. The Venusians had also begun the growing of ultra-terrestrial fruits and vegetables and the breeding of certain creatures that were more like gigantic insects than animals. The vegetables were mainly fungoid, were of prodigious size and complicated structure, and many of them were grown in artificial caverns beneath the stimulation of green and amber rays produced from orblike mechanisms.

The habits and customs of the Venusians differed, as might be imagined, from those of human beings. It was learned that they required very little sleep, two or three hours being enough for the majority of them. Also, they did not eat more than once in four

days. After their meals, they were very torpid for half a day and did not engage in much activity. This, in the eyes of many scientists, gave support to the theory that they had evolved from a reptilian form. They were bisexual; and, in further support of the above theory, their young were hatched from eggs. Apart from the vegetables aforementioned, their foods consisted of a great number of substances formed through chemical processes of a recondite order. They had a sort of pictorial art, of a geometric type resembling cubism, and a written literature that seemed to be concerned mainly with scientific and mathematical problems. It could not be found that any religious customs or rites were observed among them; and their trend of mind was predominantly scientific and mechanical. They had evolved a purely materialistic civilization and had carried it to a point far beyond that of the earth peoples. Their knowledge of chemistry, physics, mathematics, and all other branches of science was so profound as to seem well-nigh supernatural. The sundry instruments, tools, and engines that they employed were a source of perpetual marvel to human inventors. There were optical instruments with a series of revolving lenses arranged above each other in metal frames, by means of which they apparently studied the heavens, in spite of the cloudy pall that hung forever upon their dominions. It was thought, however, that perhaps their myriad-faceted eyes were more or less televisual and could penetrate many materials impervious to human sight. In support of this theory, the semi-opaque windows of the fallen sphere were recalled.

That which evoked the keenest interest was the type of mechanism they had invented for the amplification of all sorts of cosmic rays, of solar light itself and even the most delicate and imperceptible emanations in the spectrum of remote stars. By a process of repercussion and concentration, such rays were compelled to afford power beyond that of steam or electricity. The magnified vibrations were employed in the breaking up of atoms and in their reconstruction. The breaking up, it was soon learned, could be done in more than one way, according to the intensity of the vibration used.

By means of the higher vibrations, a terrific explosion could be caused in destroying one or two molecules and reducing them to their ultimate electrons. But the milder vibrations caused a more slow and incomplete explosion, in which the atom formation was partially destroyed. This latter process was the one that had been used as a preliminary to the transformation of the world. Smaller mechanisms of a kind similar to those in the silver globe were in

common use among the invaders, and all their air vehicles, industrial machinery and various other appliances were run with power derived from the explosion of atoms by amplified cosmic rays. By watching the actual employment of these mechanisms, human scientists learned how the machinery in the derelict sphere had been operated. Also, the changing colors of the satellites were explained, for it was perceived that the generation of the various rays was accompanied by the production of an aura of color about the transmitting mechanism. As Lapham had surmised, yellow was the tone of destruction, blue the tint of mineral evolution, and red the hue of vegetable growth.

The invisibility of the two first spheres for a long period was likewise explained when it was learned that the Venusians could use at will, in connection with the other vibrations, a vibration that neutralized these customary colors. Probably, through motives of natural caution, they had wished to remain invisible till observation had convinced them that nothing was to be feared from the world they were attacking.

Now, with the knowledge acquired from their monstrous foes, human inventors were able to create similar machinery for destroying atoms and for reconstructing them in any desired pattern. Enormous planes were built and were fitted with this machinery, and a war of titanic destruction soon began. The Venusian territories of Australia were attacked by a fleet of four hundred planes, which succeeded in annihilating several of the metal spheres, as well as two cities of the enemy, and turned many hundred miles of vapor-covered land into a seething chaos of primeval dust. The invaders were totally unprepared, for evidently they had despised their human enemies and had not thought it worth while to watch their movements and activities at any time. Before they could rally, the planes had passed on to the shores of Asia, and had inflicted much damage in the Mesopotamian terrain.

At the present time, after twenty years of a warfare more stupendous than anything in human history, a fair amount of terriotry has been regained, in spite of terrible reprisals on the part of the Venusians. But the issue is still in doubt, and may not be decided for hundreds of years to come. The invaders are well-entrenched, and if re-enforcements should ever arrive from Venus, the tide may turn against humanity. The real hope lies in their limited number, and in the fact that they are not thriving physically in their new environment and are slowly becoming sterile as well as subject to a multi-

tude of maladies, due, doubtless, to the incomplete conversion of the earth and its atmosphere and the tendency of tellurian atom structures to re-establish themselves, even apart from the re-integration carried on by scientists. On the other hand, the vitiation of our seas and air by the introduction of deadly gases is not favorable to human life, and the powers of medical science are not yet able to cope fully with the unusual problems offered.

Roger Lapham, whose clear, logical brain and prophetic insight have always been a source of inspiration to his fellows, has died lately and is mourned by all. But his spirit still prevails; and even if humanity should lose in the long and catastrophic warfare with an alien foe, the tale of mortal existence and toil and suffering will not have been told in vain.

"VENUS MAY already be passing through carboniferous time, which was just such a period of a hot, humid atmosphere. Moreover, if life has come into existence, it would seem that it is in a very early phase of evolution. Perhaps there are primitive life forms somewhat like those of the earth hundreds of millions of years ago. If life is developing there along terrestrial lines, the Venusians may be the huge dragonflies and giant cockroaches so abundant in carboniferous time. There may be luxuriant plant growth . . ."—KENNETH HEUER, *Men of Other Planets.*

# The Ambassadors from Venus

*by Kendell Foster Crossen*

THE FIRST SHIP landed in a plowed field fifty miles from the city, just beyond the signs that warned of radiation. Rather circular in shape, it was fully sixty feet across and twenty feet in thickness, its color a burnished green. It came down swiftly until it was fifty feet from the ground; then a gush of flame poured from the under side and checked its fall. It settled to the soil, like a giant mushroom, and there was a smell of scorched earth in the air.

Max Carr was the first to see it. He was sitting under the gnarled apple tree in the front yard, and he watched the ship settle down on that tail of fire. He should have been out in the fields planting, but he wasn't. He hadn't worked in months, beyond milking the cows and tossing them wisps of hay. He knew that a hundred million people had died in America the day the bombs fell, that hundreds of millions more had died in Eruope the following day, and in Asia and Africa the day after, as American atomic bombs rocketed in reply to the sudden attack.

He knew that millions had died since, and were still dying as the radioactivity bit deep into their bones and flesh. He felt the clutch of death on himself, so he looked at the ship with little curiosity. It was a strange ship, but there was nothing it could do that had not already been done.

But when nothing happened, when no strange warriors came

swaggering from the ship, his sluggish interest uncoiled and took on life. He called his wife and children and they cautiously approached the ship. Still nothing happened. It seemed to be made of solid metal, with no windows or doors. They touched the strange metal and stared at the blackened ground, and then returned to the lethargy that was their daily fare.

The ship might have sat there in the field, forgotten for months, if a neighbor hadn't stopped by that evening. He saw the ship and asked questions and carried the news away with him. It was the first thing that had happened in months which was at least neutral, and he stopped at three houses to talk about it. He was tired of talking about death.

Three days later, they trudged into Max Carr's farm, some of them coming from as far as twenty miles away. A dozen men and women stood in the field and stared at the ship. Max Carr and his wife joined them.

"Big, huh?" one of the men said, but no one answered him. They were a small community in which everything had been said.

Two more men came along the road, their dragging feet kicking up little spurts of dust, and turned into the field. After fifteen minutes, another arrived. It was when he drew near the ship that it happened.

There was a loud click from somewhere inside the ship and a crack appeared in the side as a panel slid back. Soon there was an opening, large enough for a man to enter or leave. It was dark within. But no one came from the ship, nor was there a single step taken nearer it. The small group stood and waited.

"People of Earth," said a harsh voice from the ship, "you have just come through a war and there are few of you left alive. There is little hope for any of you, for the radioactivity is spreading over the entire face of your planet. This ship has come to invite those of you who are not sick to establish a colony on the planet which you call Venus. You may pick one of your group to represent you. If he is not already a victim of radiation, he will be permitted to enter this ship and learn more of this plan."

The voice cut off with an audible click.

The men and women in the field shuffled about in indecision. They stared at each other in fear. Who among them was not sick? There was doubt on every face and in everyone the thought that it would be better not to know. Then the self-searching ended as

though by common consent, with every eye swinging to a man who stood apart from the group.

Clyde Ellery was a scientist, one of the few to escape the death of their own making. On vacation, high in a mountain retreat, he had seen the sky turn angrily red, had watched the pall of smoke. He had hurried back, but there was nothing to do. There was no place that the Geiger counter did not purr its message, and all he could do was mark the dividing line between quick death and slow death. He had watched the faces turned toward him, burning anger checked by the knowledge that there was no punishment to fit the crime. Under the weight of those glances, the burden of being alone, Clyde Ellery's shoulders had stooped and rounded. He walked alone, and recognized its justice.

There was a difference in the looks now turned in his direction. He sensed it, even before he lifted his head. His gaze went swiftly from face to face and in those few silent seconds the appointment was made and accepted. Clyde Ellery's thin shoulders straightened and he stepped forward, walking through the small crowd to the ship. At the doorway, he stopped. There was a queer rigidity to his body, as if he were leaning against an invisible barrier. For a full minute he stood there, unmoving, being tested by others than his neighbors.

"This man has no sickness," the voice from the ship announced suddenly. "He may enter."

Clyde Ellery stepped through the door and was gone into the darkness beyond.

The sun glinted from the burnished green hull, but no light entered the blackness that was the doorway. There was nothing to see or hear. The men and women stood patiently in front of the ship and waited. They seemed unaware of the passage of time, for they lived in the stasis of a minute.

Shadows were longer by a foot or more when Clyde Ellery again appeared among them. There was an expression of hope on his face, but they stared back without understanding.

"We must leave the field," he told them. They followed him across the furrowed ground, accepting for the moment his leadership. Beyond the staggering rail fence, near to the once-red barn, he turned to look back at the strange ship.

The doorway was closed and once again there was only the smooth metal, looking green and alive against the brown earth. As they

watched, the ship quivered, then rose a few feet on a single leg of fire. It hung poised in the air as the fire fanned out, grew solid and orange. There was no sound, but they could feel the heat against their faces. The pillar of fire lengthened, pushing the ship against the sky. Then the fire lifted from the earth and the ship was flashing out of sight, leaving only the offal of blackened soil as proof of its visit.

Clyde Ellery turned and walked to where the gnarled apple trees guarded Max Carr's house. He dropped to the ground. The others seated themselves around him and waited. The children grouped near the pump and were silent.

"It'll be back," Clyde Ellery said, and there was confidence in his voice. The strength of words had been redeemed. "It has gone to other communities like this one—all over the world. But it will return—it and other ships like it."

He paused, but there were no questions. The hope that was within him found no new ground. They were aware of no questions that had not been answered by the bursting flame and mushrooming smoke he had helped to make. They expected no answers, yet they respected that which they saw in his face.

"This ship was empty," Clyde Ellery said after a while, "but there was a recording which told me everything. There is to be another chance for man—for those of us who are not yet radioactive."

They waited patiently, these men and women who had looked too long upon death to recognize life.

"The ship is from Venus—built by what, I don't know. Speech, as we know it, must be unknown, for the recording we all heard, and those that were played for me, were pieced together from words recorded here on earth. Almost every word was spoken by a different voice. They must have recorded many conversations here, then picked out the needed words and made up their message on new records. It indicates no spoken language, perhaps no vocal cords, but a high degree of intelligence.

"The ships are apparently remote-controlled," he said, and it was easy to see that he was dreaming of the science that had made such ships possible. "I suspect the ships are magnetic-powered, for the record said that the trip to Venus can be made very quickly—a matter of hours." He realized then that among his listeners there was not one who cared how the ship was powered. He said bluntly, "All the people of Earth who are still healthy are invited to go to Venus. One half of the entire planet will be given to us. We must take

with us our own animals and our own plant seeds, those that are also healthy. They will provide as many ships as are necessary.

"The ships are somehow built to detect the healthy and the unhealthy. It will be impossible for a person, an animal, or for any seed, to pass within the ship unless it is healthy. There will be no chance for the sickness to take root in the new colony."

They had come to accept death for all, and there was only fear at the thought that some of them might live. They stared stolidly at a point just above Clyde Ellery's head.

"The climate and the atmosphere on Venus are pretty much the same as here," Clyde Ellery continued. "There is more precipitation—more rain, but not too much. The soil is rich, and will not need fertilizers for years. One half of the planet—the half towards Earth—will be ours to cultivate and govern as we please. We may take as many personal possessions with us as we wish, as long as they are free from radioactivity. There—there is—" his voice faltered, then went on—"one other requirement in accepting their help. We cannot take any equipment or literature necessary to the making of weapons of war, including atomic bombs, and the record said that any attempt to make destructive weapons on Venus will bring death to those doing it. Other than that, there will be no interference. The ships will be here within a week."

A bird chirped feebly from the branches of the apple tree, but there was no other sound. The men and women sat quietly in the grass and looked at Clyde Ellery without emotion. From farther off, the children stared in futile imitation.

"That's all," Clyde Ellery said lamely. "The ships for this area will land in the same field. Within a week." He paused, then walked toward the road. He was alone again, a leader with no followers.

By ones and twos, the others left as the sun dropped lower. No words were given, no promises made, in the leaving. No man looked to his neighbor.

It was an uneventful week. The women still cooked meals automatically, and between meals they stared endlessly through windows; the men still did a few chores or sat in the shade and stared. Here and there a man might lift his head to the skies and feel a stirring of something like hope, but then he'd see a withered plant or walk through the fields to find a dead cow and he'd go back to sitting in the shade. And it was the same all over the world, whether the man was black or yellow or white.

The same ship returned to the field on Max Carr's farm. With it were a number of other ships, larger by far. They covered the field, like strange green growths, and the earth was black from their flames.

They stood there, empty and waiting for the people to come. And come they did, without hope and with little curiosity. Still they came, walking through the dry dust, riding in Fords and Cadillacs, driving horses and oxen and even goats. They came for days in an endless stream of plodding humanity, clutching personal possessions, carrying precious bags of seeds, driving livestock before them. Men and women and squawling children. Some wore scars where they could be seen, great livid welts that gave mute testimony to the progress of man; others bore their scars unseen. All were silent and looked away quickly if they met another's eye.

The doors of the ships opened and the recorded voice from the smaller ship told them to enter the other ships, taking with them their seed and their animals. In listless streams they poured through the nearest doorways, and some came out of one door and some from another. Some entered holding a bag of seed and came out holding two. There were husbands and wives who went in holding hands and came out by different doors. As they left the ships, they stood where the voice directed them. Slowly one group grew, one or two at a time adding to its numbers, while the other swelled out over the field.

Those in the smaller group looked to the larger and there were many who saw a beloved, a husband or wife, a child or parent, standing among the rejected. A hand that a moment before had gripped another now clutched the limp throat of a bag filled with dying seed. There were some who gazed across the field, then looked briefly through a mist of sadness and longing at the shimmering ships before stepping across to volunteer for death with those they could not leave. There were others who looked across to the larger group and turned away to weep, but stayed where they were.

For several days the sorting of seed and equipment, animals and people, continued. The two camps became little tent villages with smoldering fires. Thin rays of light, unseen during the day, soft blue at night, reached out from the ships between the two groups. Those from the smaller group could pass through the rays, but when two men tried to sneak in among the chosen they were stopped as though by a brick wall. Others tried going around the fingers of

light late at night, but the rays curved and drove them back. None of the rejected left, but camped there in silent resignation. One place was the same as another, and they had nothing to do but wait.

Clyde Ellery worked day and night, helping to form the lines, carrying children and packages, seeing that the campers had enough to eat. He almost forgot himself in the pressing needs of the exodus.

On the third day, the smaller ship again shot into the sky and vanished from sight. On the morning of the fourth day, just as the last of the sorting was being done, it returned. The door yawned blackly and the recorded voice spoke:

"Those who have shown no evidence of radiation will please enter the large ships." The small group stirred into life and began to file into the ships, prodding their animals before them. Here and there a man or woman waved in the direction of the larger group and looked quickly away; but the rest of them looked rigidly ahead as they went.

Clyde Ellery again helped, wondering if he should enter the last ship. Then the chosen were all loaded, while beyond the fence those who were to stay watched wordlessly. Children of the atom, Clyde Ellery thought fleetingly, and turned to enter the ship only to find his way barred by the closing panel. For a swift moment, he felt panic flooding him.

"The man," said the metallic voice from the small ship, "who first entered this ship will now enter again."

Clyde Ellery crossed the field quickly and stepped into the ship. On his first visit, he had turned to the right into a small chamber where the recorded voice had spoken to him. But this time he felt some unseen force turning him to the left. He followed the pressure and entered a large room. Weird flickering lights blazed from niches high on the rounded wall. Scattered around the room were various-sized pads similar in shape to chairs. A number of other men looked up as he entered.

The floor quivered beneath his feet. There was a quick surge of soundless power, and he knew they were taking off. His body was heavy and ungainly; there was a feeling of pressure which brought with it a quick nausea. Then, slowly, he was aware of an adjustment in the room. The pressure eased off, gravity returned to normal. The ringing in his ears stopped and his stomach righted itself. Having seen the ship take off, he knew that they were traveling at a rate of

speed never before known on Earth, yet he was soon unaware of movement at all. He stepped forward to become acquainted with the others.

He had seen at a glance that these were men from all over the world—their faces all colors and shapes. Slowly making his way around the room, he learned their names. It was an exotic roll call—Wang Chin Kwang, Anton Dubov, Jean-Paul Monet, David Hellman, Courtland Stokes, Riyad el Khoury, Kano Mbabane, Alexandre Spaak, Boleslaw Rzymowski, Vincent Ravielli, Mohandas Punjab, Konstantinos Piraeus. To it, he added the name of Clyde Ellery. Language was only a minor problem, for there was always someone who could translate when he was unable to understand. There were as many occupations and trades as there were faces. Some wore a look of guilt that faded slowly, and some still held confusion darkly in their eyes. But in all there was the slow-fuse of a new hope.

Each, Clyde Ellery found, had gone through much the same experience as he had. Each of them represented the science of his community, whatever its stage, ranging from Kano Mbabane, a witch doctor, to Ellery who was a nuclear physicist.

As the ship flashed silently on its journey, the men explored. The hull was of a metal unknown on Earth. They were able to groove deep scratches in its surface with an ordinary penknife, but within two minutes the scratch would vanish. It felt almost soft to the touch, but was obviously of great strength. They began to understand its purpose, if not its structure, when a section of the wall suddenly bulged inward more than a foot, then slowly smoothed out.

"Good heavens," exclaimed Courtland Stokes, as they stared at the retreating bulge, "that must have been a small meteorite! Imagine the uses of a metal with the strength to resist such a force. Why if we'd had this metal—"

He broke off, but the thought was there. This was a metal which might have resisted even the atom bomb.

Two of the men translated his remarks into the other languages.

*"Djen shi dje yang dy mo?"* Wang Chin asked dryly.

There was no need to translate the comment. They all understood the ironic tones. Stokes' thought had reminded them that if they and their kind had used atomic energy for the benefit of the world there would have been no need for a defense against it. They turned to other things within the ship in order to forget the thought.

Light for the interior of the ship came from shoulder-high recesses

around the wall. They looked into them, expecting an improved lighting system, surprised at finding only small steady-burning flames. The flames seemed to be coming from the center of a small green plant. One of the men stretched a hand toward a small flame only to withdraw it quickly with an exclamation of pain. The heat was intense for several inches around the flame, but then it dissipated quickly.

The remainder of the ship was just as strange. The seating arrangements around the interior of the ship seemed to be made of broad thick leaves, somehow fused together, yet still feeling alive. In the small compartment, where each of them had originally gone to listen to the recordings, they discovered a number of fibrous cones which were apparently the records. One was still in a position which indicated that it had not yet been used, while the others were dropped to one side. But they were unable to examine them, for there was some sort of energy belt which kept them at a distance.

There was another small compartment which was apparently the engine room, or what would have corresponded to it in an Earth ship. But there were no mighty motors, as might have been indicated by the power of the ship—only a small hopper into which another hopper fed a continuous stream of crimson pellets. Except for their color, these looked like large seeds. The men guessed that in some way the second hopper broke down the atomic structure of the pellets to convert them into power, but again they were frustrated in their attempts at closer examination by an invisible belt of energy.

Hardly had they finished their sketchy inspection when they felt the ship decelerate. A moment later, they were aware that the ship had come to rest. The door did not immediately open, so they turned expectantly toward the compartment of the cones. They did not have long to wait.

"You are now on the planet you know as Venus," the voice said in English, with that strange change of voice on almost every word. "You who have helped to organize your own kind for this trip are the first to arrive. The other ships will begin to arrive within an hour, so there will be time for you to do preliminary planning. As you leave the ship, you will notice that this half of the planet has been cleared of all native vegetation with the exception of a few trees. You will find that they are so arranged as not to interfere with the construction of your housing, so you are requested not to destroy them. They will not cross-breed with your own vegetation. You

will notice that arrangements have been made for the protection of the ships which brought you here; but for the rest—you are on your own, Earth-men. You may now leave the ship."

The door opened and the men hurried out, anxious to see the world which would become a new Earth.

"Strange," Stokes muttered to Clyde Ellery, as they filed through the door. "From the way that record was worded, it sounds as if the natives who sent the ships for us do not intend to show themselves at all. Deuced peculiar."

"Maybe not so strange," Clyde Ellery said. "Remember the theories that evolution on other planets may have followed an entirely different line than on Earth? This may be the case, and, knowing the tendency of humans to dislike anything different from themselves, the natives may have wisely decided to stay in hiding for the time being."

"Whatever they are," said David Hellman, who had been listening, "they are certainly more advanced than we, so any contact should be to our advantage."

"If our hosts ever decide that they want anything to do with us," Clyde Ellery said dryly. He waved ahead of them as they stepped to the ground. "And they apparently don't as yet."

Ahead of them stretched the broad, flat continent. With two exceptions, all there was to see was rich-looking, bare soil. There was a looseness to the soil which made it seem that not so long ago it had been cultivated, but now there was not so much as a blade of grass. The bareness of the black earth made the exceptions even more noticeable. Not far from where their ship was grounded, there were two rows of trees, about the width of an Earth city street apart. The trees were towering, half again as tall as the giant redwoods of Earth. The leaves, a delicate pink in color, were broad and oval, curling at the edges to form almost a perfect ball. These hung down from the limbs, swaying toward the ground. From each rounded leaf there were two waving tendrils, looking almost like antennae, ranging from a deep pink at the base to a light purple at their tips.

Back of where the ship had grounded, there was a rounded, dome-like structure, large enough to house several hundred of the ships. Green in color, it seemed to be built of broad, flat leaves. Around it were a number of trees, their limbs twisting far above the building. Their leaves were long and tapering, a deep orange in color, while the trunk and limbs were dark green. From each limb hung dozens of

pods, fully three feet long and a foot thick at the center, tapering to an end which seemed to have an opening three or four inches in diameter.

For the rest, there was only rich dark soil for almost as far as the eye could see. At a distance, where the curve of land met the sky, they could see the edge of what appeared to be almost a jungle. But, except for the tree leaves moving restlessly in the slight breeze, there was no movement, no sound.

Within the hour the other ships began arriving, in groups of two and three. First to land were those which had been loaded with material. As the passenger ships landed, the men were divided into two groups. One was set to putting up tents which could shelter them that night, while the other swiftly unloaded materials and began to throw up the prefabricated walls of the first Earth buildings.

When night came on the strange planet (darkness descending quickly, bringing with it a light pattering of rain), a city of tents had mushroomed across the Venusian plains and skeletal walls were already thrusting skyward near the double line of trees.

The Earthlings were up with the sun the following morning; small fires were blazing among the tents as the women busied themselves with breakfast. The men held a hasty meeting, and elected as a temporary council to govern them the men who had come in the first ship. They in turn elected Clyde Ellery as their first chairman.

That second day upon Venus was a hectic one. A hasty tabulation revealed that they were a little more than two hundred thousand strong—counting children and infants—all that were still healthy from Earth's once thriving billions. Architects and city planners were found among them and Earth City began to go up with a rush. As one building was being finished, the plans for the next one were being handed to the workers. Construction crews were followed by electricians; plumbing went into houses as cesspools were still being dug. Farms were laid out around the new city, all of them equal in size; and furrows were being turned while surveyors still sighted through their instruments.

For two weeks the work continued at the same mad pace. And that section of Venus more and more took on the look of Earth. The broad fields were sectioned in geometric patterns where already tender green plants and young grass shoots were thrusting their way through the soil. Within fenced plots, the cows and horses munched

on their hay and looked with longing at the tender shoots. Chickens scratched in the black dirt, and roosters greeted the Venusian sunrise with the same clarion voices as on Earth.

Within the city, which had now spread to almost ample size, flowers were already growing in the yards. Clothes, bought in Cleveland and Pinsk, in Surrey and Isfahan, hung side by side to dry in the Venusian sun. The main street, running between the two rows of strange trees with their curved and nodding leaves, was lined with stores bearing signs in almost every language of Earth. The colony had already issued its own money and business was flourishing. Earth City possessed every business and profession save one—they had no use for a mailman.

It was on the fifteenth day of their stay on Venus, when the work was slacking down to normal, that two of the colonists decided that if they had some extra wood they would build corncribs although it was still some time before they would have corn. They shouldered axes, mounted horses and rode off toward the line of jungle that marked the edge of the land given to Earth people.

Hours later, the two horses returned without the riders, and a search party was formed.

It was almost dark when the two men were found, lying unconscious not far from the edge of the strange and exotic forest. When they were revived, they remembered only that there had seemed to be some sort of barrier trying to keep them out of the forest. One of them described it as a strong wind, although there had been no wind blowing. But they had forced their way against it, shoving step by step within the jungle, and that was the last they remembered. Both had the impression that something must have struck them down. Much bruised and shaken, they were helped back to their homes, and the story of their experience spread rapidly.

That evening, a voice spoke to the colonists. It was a voice much like the one heard from the first ship to land on Earth, but this one sounded as if it came through several loudspeakers. Its message was simple.

"People of Earth," the voice said; "you were offered a generous portion of this planet, and ships were sent to bring you from your sickened homes, with the understanding that you would not attempt to enter the other portions, nor would you harm any of the life already existing here. Yet some of you have tried to break this agreement, intending to destroy local trees. Do not let this happen again."

There was no way to tell from where the voice came.

That night there was a town meeting; and by the time it was called it seemed that the entire colony was there and waiting. There were angry looks on many of the faces and on some the anger was mixed with fear. It was obvious that they had already talked among themselves about the earlier incident, for little time was lost once the meeting was called to order by Clyde Ellery. A big, redheaded man stood up in the center of the building.

"I'm Lennie Johnson," he said loudly, "but I reckon I'm talking for most of them here. And we don't like the way things are going."

"Are you referring to the accident that happened to Roberts and Sayyid?" Clyde Ellery asked.

"You're damned right I am," the redheaded man said, "and we don't think it was an accident. When we were first invited to come up here, most of us thought it was a pretty neighborly thing. We had the idea that there was a bunch of people up here, pretty much like ourselves, and they were acting the way any of us would if a neighbor was in trouble. But now we ain't so sure. Why was them ships sent down to us and why was this land turned over to us? And why ain't we seen anybody?"

A murmur from the crowd showed that others were thinking the questions he asked. Clyde Ellery rapped for order and said: "I'm afraid that we haven't been in a position to question our gift too strongly. It has been enough that we've had the opportunity of saving our lives."

"Have we now?" shouted the big redheaded man. "We're beginning to get a different idea about it. If this thing was on the up and up—if there was people up here who wanted to help us—why, then, they'd have been around to welcome us when we got here. They'd have showed up like honest men instead of skulking around in that jungle out there to knock out a couple of good men without so much as a by-your-leave."

"But Roberts and Sayyid were breaking the agreement—" Ellery began.

"And whose agreement?" demanded the man in the hall. "We never made no agreement, so it's nothing but orders. It's a free world and we don't have to take no such orders from anybody—on Earth or here. We'll go where we please and stay where we please."

Clyde Ellery was annoyed, but he tried not to show it. A glance at the other council members showed him they shared his reac-

tion. "What do you propose we do about it?" he asked the redheaded man.

"We don't care what you do about it," the man retorted, "but we're going back to Earth. "We know where we stand on Earth and we don't have to worry about a bunch of savages ambushing us every time we turn around."

"How do you intend to do this? The ships which brought us were remote-controlled."

"We've got pilots and mechanics. We'll find some way to make the damn things work."

"One more thing," Clyde Ellery said. "*If* some of you wish to leave, and *if* the ships can be made to operate, the matter will still have to be taken up by this council. We were duly elected to represent this community for its best interests, and we will not permit a few unruly characters to endanger the entire colony."

"Yeah?" the redheaded man said with a grin. He turned and looked around the hall. "Everybody who wants to go back to Earth," he shouted, "raise your hand, so these wise guys can see where they stand."

Almost every hand in the hall was raised.

"There's been a new election," the redheaded man said, turning back to the council. "You boys want to come along with the rest of us, or stay here until some Venusian cannibal decides you're fat enough to eat?"

*"Hey!"* a voice shouted from the back of the hall. *"Fire!"*

There was a red glare visible through the windows unnoticed until now. The crowd jammed and shoved their way out of the building, the council following as fast as they could. Once outside, they could see the flames leaping toward the sky as something beyond the edge of the city burned.

The crowd ran through the streets but when they reached the limits of Earth City they came to an abrupt halt and stared at the flames which were taking a decision out of their hands.

The huge domed structure which housed the strange space ships was a mass of writhing flames. The fire crackled and roared, flames twisting upward to lick against the orange leaves of the towering trees. And the crowd stood and watched, for they knew that there was nothing to be done. The colony had fire-fighting equipment, but nothing that would handle such a fire as this.

An hour later, the building was a blackened crater, and all that was left of the space ships were smoking lumps of the strange metal.

The crowd of colonists turned and walked silently through the streets of the untouched city.

There was a grimness about the Earth men the following morning. Clyde Ellery was first aware of the new note when he awakened to hear the plodding thump of many feet. He looked out of the window to see several hundred men marching down the main street. Every man in the group was armed in some crude fashion. Many carried axes and clubs, while others hefted sledge hammers and crowbars as they marched out of the city in the direction of the Venusian jungle. At the head of the group strode the redheaded man, an axe gleaming brightly over his shoulder.

Clyde Ellery hurriedly dressed and sought the other council members. Most of them had also seen the mob and were ready. Here and there within Earth City they were able to find a small handful of men who had not joined the others and these became the council's posse. Unarmed, they mounted horses and rode after the crowd. None of them was quite sure of what they could do, but felt that something had to be done.

They rode swiftly, but even so, too much time had elapsed. They were still several miles from the jungle when they saw the knot of men, the sun glinting from the weapons they carried, move resolutely into the green wall and vanish. As they spurred their horses forward, they heard the distant shout of the redheaded man as he led his troops forward. It seemed to them that the cry was cut off abruptly, and then there was silence except for the hoofbeats and labored breathing of the horses.

As they neared the jungle, the council was greeted by a sight which made them pull their horses up short. From the forest came the mob of men, the redheaded man still leading them, marching with the same vigor with which they had gone in. But the grimness had fled from their faces, to be replaced by a relaxed friendliness. They halted as they recognized the horsemen. The redheaded man looked up at Clyde Ellery with an easy grin.

"Out riding, Councilor Ellery?" he asked pleasantly.

"What happened in there?" Ellery asked, nodding toward the jungle.

"Why, nothing," the redheaded man said with surprise. "Why should anything happen?"

"What were you men doing in there?"

For a moment the redheaded man looked perplexed, his gaze shifting from Ellery to the jungle and then back to Ellery; then his

expression cleared. "Why, me and the boys were just looking around," he said. "Since we're going to be living here for the rest of our lives, we thought we might as well take a look at this jungle. We figured there might be some dangerous animals in it and if there was we ought to know about it. But it looks like everything's okay."

The council members exchanged glances. "But what about your idea of going back to Earth?" Clyde Ellery asked.

This time the redheaded man was really surprised. "You must be off your rocker, councilor," he said. "We like it here."

"Well, if you were only looking around," Ellery said, "why did each of you bring a weapon?"

The redheaded man glanced down at the axe he was carrying and frowned. "I'll be damned if I know," he said. "It just seemed like a good idea at the time. Well, councilor, me and the boys better be getting back to work. We'll be seeing you."

The councilors sat on their horses and watched the men march off toward the city with swinging strides. Then they rode silently along behind them.

Back in Earth City, the council members quartered their horses and went straight to the town hall, straight to the private room that served for their council meetings.

"What do you think happened?" Clyde Ellery asked slowly.

"Seems rather obvious," Courtland Stokes said, running a hand through his thinning hair. "They showed all the symptoms of having been hypnotized. Apparently, the minute they entered the forest with the intention of destruction, they were hypnotized and given a post-hypnotic block which made them completely forget their original reactions."

"Clever, these—Venusians," said Wang Chin Kwang, privately amused at the new usage of an old expression.

"However," Clyde Ellery said slowly, "the action of these men does bring up something which we have pretty much ignored since we landed—the question of our hosts. I confess I'm not too satisfied with the explanation that they are merely a strange life form which doesn't show itself to us because we may be prejudiced."

"Have any of you thought about that fire last night?" David Hellman asked. "It looked as if some intelligence knew that some of us were planning to leave and so deliberately burned the space ships."

"Yes," Stokes said dryly, "it occurred to me that the fire might be evidence that our—hosts were determined that we stay on Venus."

"But why?" demanded Clyde Ellery. There was no answer, and

for a moment the members of the council knew the same fear of the unknown which had been on the faces of the colonists the night before. Clyde Ellery cleared his throat. "For the moment," he said, "it would seem to me that our most pressing problem is one of finding some way of communicating with our hosts and determining the exact status we are to enjoy here. Are there any suggestions?"

There were none. After a few more pointless and nervous remarks, the council adjourned.

It was the next day that they were reminded of the corncribs which had started the whole thing. That morning Arthur Roberts, whose farm was nearest to the jungle, went out to find a number of sheets of metal lying in his field. They were obviously of the same material which had been used in the space ships. Stranger still, they were of the exact sizes to build the corncrib as Arthur Roberts had imagined it.

Most of the colonists took this as evidence of the good intentions of their unseen hosts, but it only served to increase the uneasiness of the council.

Two days later, they were quickly summoned by Jean-Paul Monet. Without offering an explanation, he insisted that they again mount their horses and ride toward the jungle. As they neared the giant wall of green, they heard a strange thumping noise ahead of them and once more pressed Monet for answers.

"You will soon see," he said grimly. "For two days I have stayed in the fields watching for the secret to the metal. Now, you will see what I witnessed early this morning."

A few minutes later, the men reined their horses to a stop and stared into the jungle, scarcely believing what they saw.

Near the outer edge of lush, living green, there was a huge vine. Its creepers, almost a foot thick and covered with cup-shaped thick leaves, seemed to enter the ground at intervals and then reappear to grow along the top. But the Earth men soon realized that the creepers were moving, as though growing at a tremendous rate. And each time one of the scarlet cup-shaped leaves appeared out of the ground it dumped a greenish lump of something on the ground. On looking closer, they saw that the ground here was covered with the broad flat leaves of some other plant.

Towering above this scene were a number of orange-leafed trees like those which had surrounded the field where the space ships first landed. As they watched, the green limbs of these trees swayed and bent until the huge green pods were directly over the lumps cast up

out of the ground. Then, from what they had thought were seed pods, came a gush of white fire, striking the lumps. Under that direct fire, so strong that the horses shied from the heat a hundred yards away, the lumps took on a fire of their own.

From the edge of the jungle there grew long stalks with what had seemed to be large square flowers on them. But, as the men watched, the stalks whipped forward and the flowers descended upon the heated lumps. It was this which was producing the thumping noise they'd heard, and each blow from the square flowers was helping to pound the lumps into sheets of metal.

As the men watched, the last lump of metal was cast up, heated, flattened and cast aside. The thumping ceased, the flames died out, and once more the jungle was a wall of exotic plants and trees swaying gently in the breeze. If it hadn't been for the sheets of metal on the ground, they might have imagined that what they had seen had been an illusion. But there were a good six dozen sheets of metal on the ground before them.

It was Clyde Ellery who finally dismounted and approached the jungle. The others sat on their horses and watched him. They saw him stoop to gaze intently at the giant creeper on the ground and then step briskly into the jungle. He did not go far, but seemed to stand there in an attitude of listening for several minutes. Then he turned and walked briskly back to where the others waited. He mounted his horse and turned its head toward the distant city.

"Well?" demanded Courtland Stokes, when Ellery still said nothing. "What happened in there?"

"Nothing," Clyde Ellery said. He seemed surprised that anyone should think that anything had happened. "I merely looked into the jungle and came back. After all, it was part of our agreement that we do not enter that part of the planet."

"But you stood there for several minutes," Stokes insisted.

"I'm afraid you must be wrong," Ellery said. "I believe I'm quite aware of what I'm doing when I do it. I merely glanced into the forest to see if there was any more metal there. The minute I saw there wasn't, I turned around. In fact, I distinctly remember that I didn't even stop walking."

The others exchanged glances, but said nothing more. When they reached Earth City, they agreed to hold a meeting that afternoon and then separated.

By the time the council met, Clyde Ellery was aware that he too had been hypnotized when he tried to enter the jungle. But he had

no memory of what had happened. It still seemed to him that he had merely glanced into the jungle and had then retraced his steps.

The meeting was delayed because of Alexandre Spaak, who at last came bustling in, his face tense with excitement.

"Wait until you hear this," he said in answer to the questioning looks. "You know my house is at the edge of town, not far from the spot where the space ships were kept? Well, this afternoon the kids were missing. I went looking for them and finally found them playing under those big Venusian trees with the orange leaves. You know, the same kind of trees we saw with flames shooting out of their pods to melt that metal? Well, take a guess what my kids were doing?"

"What was it?" Ellery said irritably. "Don't make us play guessing games."

"Among the foodstock my wife and I brought to Venus," Spaak said, "was a package of marshmallows. The kids had the marshmallows on the ends of sticks and there were little tiny flames coming out of the tree pods, roasting them. If you remember those trees at all, you'll remember the nearest pods were at least fifteen feet from the ground—which means the tree had to bend its limbs down to reach the marshmallows the children were holding."

"But how did your children control the flames?" Stokes asked. "Those flames we saw this morning would have blasted them to ashes within twenty feet."

"The children weren't controlling the flame," Spaak said. "The tree was controlling the flame for the benefit of the children."

"I have a feeling," said Jean-Paul Monet, "that the colonists were right the other night. We should leave this planet."

"How?" Wang Chin Kwang murmured.

"A minute, gentlemen," Alexandre Spaak broke in. "I believe I have solved the mystery of our hosts." He paused and looked around at the others. "Gentlemen, the intelligent life which invited us to this planet is the plant life of Venus."

"Impossible!" exclaimed Stokes. "The intelligent life which invited us here is one capable of building space ships—an engineering feat beyond even the highly advanced technical skill of Earth. You don't mean to say a plant could do that!"

"You forget," said Spaak, "that all of us stood in a field this morning and watched a plant dig ore out of the ground, another plant smelt the ore, a third plant flatten it into sheets of metal, using a fourth plant as an anvil. After seeing that flame tree in action, there

can be no doubt that the flame trees also deliberately destroyed the space ships when some of us were about to use them to leave Venus. No, gentlemen, I tell you that the intelligent and dominant life on this planet consists of trees, bushes, vines, and so on down to the smallest plant. That, incidentally, must be the reason we were told to bring our own plants and not to touch any of the plant life here."

*"You are right, Earth Man."*

For a moment, the thirteen men in the room sat, frozen, not daring to look at each other. It had not been a voice speaking this time, yet each had heard the thought within his head. As each of them realized that all had heard it, that the thought had not been a personal hallucination, they relaxed. Quickly, they looked around the room. But there was no one there except themselves.

"I have been expecting this," Alexandre Spaak said. "I knew that my theory was right—and I thought that once it was out, they might communicate with us."

"But who—where?" gasped Stokes. "There's no one else in this room—I mean, there isn't even a plant."

"No, but look out of the window," Spaak said. "Look at the trees lining both sides of the street—the trees with those curling leaves which look almost like heads—with tendrils waving from them, like antennae!"

They looked from the window, and it was true that the leaves on the trees did look like heads. They noticed that the antennae on the leaves of the nearest tree were all bent in the direction of their building, even though the wind was blowing away from it.

*"Ih dien buh tso!"* exclaimed Wang Chin Kwang.

"But it's impossible, really!" said Stokes. "That space ship, all of those records in the various languages, the clearing of the land here, everything!"

"Even if one does accept the idea of intelligent plants," Clyde Ellery said, "it does seem that some of the things which have happened would be beyond the ability of—say—a tree."

*"You are wrong, Earth Man,"* came the thought. *"We have been the dominant life on this planet for many thousands of years, by your reckoning of time. Long ago, we knew there was intelligent life on the third planet of our sun, for we could catch an occasional thought, and we knew that your science was less advanced than our own. But we didn't realize until much later that it was animal life which was dominant there. At first, we found it hard to believe our senses."*

"Then you did build the space ships?" Spaak asked.

*"Of course. It was not difficult. The Scarlet Diggers among us dug up the Llantl ore, even as you saw it done this morning. The Flame Tree processed it, and the Great Pounder hammered the hull into shape."*

"But how did you power the ship? What were those crimson pellets which we saw pouring into the hopper in the ship?" Clyde Ellery asked.

*"The seeds of the Flame Tree. They are a more powerful explosive than anything known to your science."*

"And the recordings?" asked Ellery.

*"The seed-bearing cones of our Repeater Tree. It took many trips of our first ship, for our message had to be made up of individual words from your languages. We could not communicate as we are now because of the distance."*

"How did you know that we needed help?" Ellery asked.

*"We felt the waves of force set up by the explosion of what you called atomic energy. We had felt these waves before, coming from other planets, and each time all thoughts gradually died out on those planets and we knew that the intelligent life there had died. The last time it happened was on the fourth planet of our sun, a long time ago."*

"And you were unable to save any of them?"

*"We could have saved them if we'd wished,"* came the thought.

"Which seems to bring us to the most important question of all," Clyde Ellery said with a wry smile. "Why did you save us?"

There was a hesitation, and then the thought came to them: *"The animal life on our planet died out because we could not, of course, permit it to feed on us. Yet, as you must know, we needed some form of animal life to maintain the balance of oxygen and carbon dioxide necessary to our lives. You seemed ideal for our purpose, for you could bring with you other animal life and your undeveloped plant life to feed yourselves."*

"And you did destroy the ships so that we could not leave?"

*"Of course."*

For several minutes, the men looked silently at each other and considered that which they had received.

"It's hard to accept," Clyde Ellery said to the others, "but I suppose it's not too surprising when you stop to think about it. Even on Earth, the actual boundaries between animals and plants were artificial, as shown by our one-celled animal life which often

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couldn't be told from a unicell plant. It was just a question of where this evolutionary accident happened."

*"Not an accident,"* came the thought swiftly. *"It was an accident that plants did not become dominant upon your planet. It is logical that we should be highest on the evolutionary scale. We are the only non-destructive form of life there is."*

"Oh, I say now!" protested Stokes.

*"Think, Earth Men. Animals are in reality a parasite upon plant life, needing to destroy plants in order to exist. But we plants can build our carbohydrates and proteins out of inorganic salt and so need to destroy nothing. Can you do that, Earth Men?"*

There was a moment of silence. Clyde Ellery turned to the others. "I suppose, in a way," he said, "they're right. Anyway, the important thing is that we are to live out our lives on a strange planet and must adapt ourselves to the conditions here. We mustn't forget that one of the things which led to the destruction of Earth was our attempt to believe that certain people—certain life forms, shall we say—were inferior to the rest of us. We must not let that happen again. . . . May I speak for all of us?"

The other twelve men looked to each other and then nodded. Clyde Ellery turned to face the window, looking embarrassed.

"I hardly know the proper way of addressing an intelligent tree," he began, "but you may inform the rest of the life on this planet that we men of Earth have learned our lessons. We are quite prepared to treat you as our equals, and to co-operate with you to our fullest extent."

There was a long moment of silence; and, when the answering thought came, it seemed to be tinged with surprise and something which might have been humor:

*"You misunderstand. It was pointed out to you that all animal life exists as a parasite upon plant life. In our case, unfortunately, we need you parasites in order to live, but that does not imply special privileges. So long as you continue to supply us with carbon dioxide and do not attempt to destroy any of us, we are content to leave you alone. But should you attempt to step out of your place, we will have to take measures. Those of you who have tried to enter our part of the planet have already experienced the weaker radiations of the one of us which you might call an energy tree. If you persist, you will be exposed to its full strength which will render you incapable of any action except what is needed for your survival."*

The thought softened. *"As your hosts—in a double sense, you might*

*say—we do not like to make a point of your inferiority, but we are sure you will understand our present reaction if you will consider how you might have felt if the fleas which infested your bodies, the viruses in your bloodstreams, had offered you equality and co-operation."*

The thought ceased. Outside, a heavy Venusian rain began, beating for a second upon the roof, before sliding to the ground and sinking to the level of thirsty roots.

# *Epilogue*

"AND THE LORD said to him: What hast thou done? the voice of thy brother's blood crieth to me from the earth.

"Now, therefore, cursed shalt thou be upon the earth, which hath opened her mouth and received the blood of thy brother at thy hand.

"When thou shalt till it, it shall not yield to thee its fruit: a fugitive and a vagabond shalt thou be upon the earth."—*Genesis* 4:10-12.

# To People a New World

*by Nelson Bond*

THIS WAS our way of life: We had a house which my father and mother had built with their own hands. It was a fine house made of logs charred to an even length and chinked with river clay; so sturdy were its walls that not even the blustering winds of the cold season could penetrate them. The roof was woven of deep, sweet-smelling long grass thickly knit on a mat of wattles; it was so cunningly thatched that only a prolonged rain could seep through to dampen the hard earth floors my mother had scraped and pounded to a flinty smoothness.

Gardens surrounded our house, and fields of grain, and pasture lands; all were enclosed within a staunch stockade. Our lands lay in the cleft of a river fork at the head of an intervale flanked on north and south by rolling hills which served as windbreaks. The forests which crowned these hills were rich with game, and at night the restless wild things gathered to drink at the upper ford of the river, so that at no time were we farther than strong bowshot from fresh meat.

My father was a middling huntsman, though. He never truly mastered the arts of the arrow and sling. At these, as at hurling the spear, my young brother and I excelled him always. Perhaps this was because we were bred to the use of such weapons, and he was not. When his stone missed its mark, or his arrow, badly aimed, sent a nicked buck crashing wildly into the brush with a precious goose-feathered dart dangling harmlessly from some fleshy, unvital part, my father would grumble and fret and swear.

"Oh, for a rifle!" he would groan. "Or a shotgun, or even a small revolver. This business of hunting like a savage—"

But for food we were never in want, for the woodlands abounded with game, and cold, firm-bodied fish swarmed the waters of the river that freshened our valley. In the land which my parents had broken grew vegetables and grain, and a stone's cast beyond the stockade grew orchards of fine fruit trees: apple and cherry, peach and pear and plum. The dells of the neighboring hills were fragrant with countless shrubs, so that in their season we were bountifully supplied with berries and barks and herbs, all ours for the gathering.

In their separate pastures grazed our herds: cattle for butter and cream; goats for rich milk; mares for their thick, strong, nourishing cheese; sheep for their fleece; and all for their leather and flesh. Chickens we raised, and turkeys, and foolish, squabbling guineas; and in the little pond below the spring swarm ducks and fat white geese. We had two dogs which my father had tamed; they guarded our flocks by day and our grounds by night; and so well had they taken to the domestic life that they seldom bit or even bared their fangs except when teased beyond the limit of their tempers, as by my brother when he was a child.

We were a healthy family and a strong one, kind to each other, and loving. The routine of our days was slow and simple; we did what work must be done and took a vast delight in playing between chores. We had the fields to roam, the woods to explore. We loved alike the cool of the river in summer and the warmth of the hearth in the cold months. We lived by the sun, rising and going to rest with its dawn and setting, like the children of nature my father said God meant man to be.

This was our way of life in the days that followed the Burning.

In the summer of each year, my father made a journey. Not in the spring, when there were fields to be harrowed and plowed, seeds to be dropped in the warm ripe hungry earth; nor in the fall, when there were crops to be gathered, soft fields of grain to fall before the scythe, bright-colored fruits to be plucked from the trees; nor in the winter, when the long way was longer still with ice and drifting snow. But in the lazy summer of each year my father laced strong sandals on his feet, packed a provision bag with flour and salt, and set off across the northern hills for his annual trip to the City of Death.

He would be gone from one full moon to next. When he returned,

we would hear his cheery *halloo* echoing down the hillside and spilling over the valley, and we would drop work or play and run to the edge of the stockade to watch him as he neared.

Through rifts in the green we would see him climbing down the forest trail; he would emerge at the river's edge, wade the north ford and hurry toward us, waving and shouting and smiling, and pointing with proud fingers at the bulging pack he carried on his shoulders.

Then my mother would laugh in tearful relief and my brother and I would answer his shouts with high, shrill screams of joy; we would leap and dance in a frenzy of anticipation, and could scarce restrain ourselves from rushing out to meet him and to pry with eager young hands into the depths of that mysterious, exciting bundle.

But my mother would not let us leave her side, nor would my father have let us approach him if we had escaped her. For it was not yet time; it was not safe. He would not come directly to our house, but would go, instead, to a tiny shack he had built on the riverbank. There he would live alone for seven days, eating the food that had been placed there against the day of his return, purifying himself.

Each morning of that week he would bathe in running water for an hour, scrubbing his sun-bronzed flesh with great handfuls of coarse sand. Afterward he would stand in the raw sunlight, stripped and lean, and in that fierce revealing glare examine himself painstakingly from tip to toe for any sign of the Sickness. And when at the end of the week he had satisfied himself that he was not infected, then at long last he would come home to us, proud and triumphant and joyful because again he had dared the Death and had returned to us unscathed with his bag of treasures from the old days.

There was a special way he kissed us at these times. It was a hard, rough, bristly way, with his great beard harsh upon our hairless cheeks, and his strong arms bruising our shoulders. But it was a good way, a way that was warm and loving.

Then followed the giving-of-gifts, and it was the high spot of each year when my father opened his bag to show us the things he had brought from the City of Death. A bolt of sheer, fine cloth, brightly tinted and wondrously unlike the drab linsey-woolsey my mother wove from the combings of the sheep; bowstrings and fishing lines, waxy and strong; straight candles in all colors of the rainbow; sandals and gloves and harnesses of leather; a smooth round

ball made of a strangely yielding substance known as rubber; long rolls of thumb-wide cloth, spotlessly white, which my mother used to bind our cuts and scratches so the blood would not leak out; these were but some of the wonders.

There were others. Blankets and cups and dishes; white paper for the copying of our lessons—for it was best, my father said, that we should not forget the customs of the old days—and thin cylinders of wood with black inside, called pencils, with which we wrote upon this paper. Then there were ovals of soap that made frothy meringues of lather in cold water; small boxes filled with tartar and spice; corked bottles of sweet syrup; all such things as these, things we could not raise or make ourselves, he brought to us.

And the most of his findings were useful, but for each of us each time my father would bring one special gift, impractical and gay: such trophies as the rubber ball I have already mentioned; a limp rag doll for my brother when he was very young; for my mother a sparkling trinket for her hair, or a tiny phial of liquid with the scent of a rain-drenched garden. Once he brought home a very special gift; it was a flat round circle of glass in which you could see yourself as in a quiet pool, only more clearly. My mother wept when she looked into this; wept and touched with slow, reluctant hands the straying wisps of hair, the wind-burned face, she saw reflected in the crystal pane.

"But I am old," she cried, "and worn and gray! Oh, husband—do I really look like this?"

Then my father laughed, but not unkindly, and took her in his arms and kissed away her tears and told her she was neither old nor worn, but beautiful as ever to his eyes, and sweet and brave and very, very dear. So her brief sadness ended, and again she smiled. But she did not hang the mirror in our house. She put it in some hidden, secret place. And if she ever looked into it again, I do not know. . . .

Once the gift my father brought to my brother and me was a chamois bag secured at the mouth with a draw-string and filled with smooth round brightly colored stones. These were called marbles; they were toys to play with. And it was from this gift we learned about metals, for at the bottom of the bag we found a flat brown disk the size of a fingernail, with a man's head carved upon one surface, and letters and designs upon the other.

When my brother and I had marveled at this object, passing it back and forth and wondering at its meaning for a time, we took

it to our parents and asked its purpose. Then there was great excitement and greater fear. My father struck the talisman from my hand; my mother broomed it swiftly from the house and into the yard; later my father buried it in the far woods, and my mother scoured the floor where it had rolled in scalding water strong with caustic lime.

My father took us, then, to the hut at the river's edge, and there for a week he lived with us, directing us in the acts of purification, each day inspecting us with anxious eyes, and most especially searching our fingers that had touched the disk for any sign of the Sickness. But God was good, and no red sores appeared. So at the end we returned to our home none the worse for our experience, and greatly the wiser. For in the long hours of our exile my father told us many things we had not known.

The object we had found, he said, was called a coin; it was a small copper which in the old days had been used for money. Money was a symbol with which men traded their labor for food, and money was made of metal. And metal was forbidden since the Burning.

My father told us, too, of the world as it had been before the Burning. In those days there were many men—as many as the stars in the midnight sky, or the leaves on the forest trees. These men and their families lived in great cities; the cities were conjoined into nations; and the nations covered the earth. The city to which my father made his annual pilgrimage was but one, the nearest, of thousands that once had been.

"They were great men and strong," he said, "who built those cities. They dwelt in homes that towered to the skies; their cities were linked by paved wide roads that arched the hills and spanned the widest streams. They laughed at miles, because they had wheeled cars to travel on the land, ships to cross the water, huge man-made birds to soar over the peaks. All these they had because metals were theirs for the using. In those days metals did not cause the Sickness.

"And they were wise," he said, "but not as wise as God. They did not use their wisdom to do good, but distorted their cunning to greed, their knowledge to the folly of destruction. In a world which had plenty for all, men strove to own more than they needed. So there was bitterness between the nations of men who lived far apart and did not speak the same language of the tongue or of the heart. And at the end, their hatred caused the war—the last great war that ended in the Burning."

"You mean," I asked, "men burned each other's cities as we burn the fields in the spring?"

"It was not that kind of burning. Such warfare men had waged in the past, and had survived. This was different. And it was fatal.

"They burned with something I cannot make clear to you because I was no scientist; I did not understand it myself. I know only that those who studied such mysteries had solved the secret of the atom, the building-block of nature, and had learned to loose its devasting powers—had learned to free, but not to control! And so it was that when, in the final war, great ships of the air swooped down like vultures to lay their deadly eggs on the cities of their foes, cities died in the Burning.

"Only the God who made us knows, in His infinite wisdom, what went wrong with their calculations. There was a term men used, only half-guessing its meaning; the term was 'chain reaction.' One atom explodes, disrupting all others about it. Something like that must have happened to the atoms comprising metals. For whatever men used of iron and copper and lead, of nickel and aluminum, all these were stricken in the days of the Burning. Strong buildings warped and toppled to the ground; the motors fused and burned to uselessness; the wires failed, and the guns, and the mighty girders; the framework of man's culture sickened and died."

My brother said: "But the coin we found—it had not died."

"Not wholly," acknowledged my father. "And that is the greater horror. The Burning was bad enough; it took the lives of many. But its aftermath was worse. The metals that did not burn took on a strange new life, a fearful vitality that was deadly to man. In the days that followed the Burning, raw sores appeared on the flesh of those exposed to the altered metals. These were the burns we call the Sickness. It was this which ended the war by destroying those who had warred.

"By the scores and the thousands they died: our kin, our friends and our neighbors. How it is that your mother and I survived, I do not know. By God's grace, surely. Also, perhaps, because we lived outside the city, and did not endure the Burning. Or perhaps because we were blessed with some strange immunity to the Sickness.

"I hope the latter." Here his eyes sought our hands. "And I hope we have transmitted that immunity to you, our children, remnants of mankind."

I asked with a sort of awe: "Then we four are alone in the world? No other survived the Burning?"

My father stroked his beard.

"I cannot say. It may be there are others living somewhere. It is more likely than not. The animals did not die; not all of them. But in the years that have passed since the Burning, we have seen no other men. So far as we know, we are the last on earth. The last—and the first."

"The first?"

"The first to people a new world," my father said. "If God so wills."

You have observed that my father was a devout man, humble and earnest in his worship of the Lord. This was his teaching to us: that we should strive to walk in the ways of our Maker, grateful for the mercy that had spared us, content with what we had, not eager for the knowledge man once had used to his destruction.

"It is not meant that man should know too much," he told us. "Once men aspired to such learning. Your mother and I beheld what came of it. We saw the Burning and the Sickness turn our brave clean world into a charnel house; we were compelled to flee the halcyon land and seek contentment in a simpler life.

"Simpler and better. If by God's will mankind should spring again from your young loins to repeople wasted earth, never again must men strive toward that kind of knowledge which breeds dissatisfaction."

He turned to me and nodded. "One day you too will make the trip to the City of Death. With your own eyes you will see the fate that befalls men who attempt too much."

His words brought a great leaping to my heart.

"I, Father? I will go to the City of Death? When?"

He studied me thoughtfully. "You are sixteen, and tall and strong. Perhaps this coming summer, if you wish."

"Oh, I do wish, Father!"

"There is great danger. The Sickness lingers in the metals, which must not be touched."

"I will be careful. I will be cautious as the hare in the glen, as wary as the pheasant in the gorse."

"Well, then," my father said.

My brother asked, "And I, Father? I may go too?"

"Not yet, my son. You must wait your turn. Your brother is your senior by four years."

"But I am strong too, Father, and almost as tall as my brother."

"Still, you must wait. Your brother can be spared. His fields will

need no tending in the hot, slow days of summer. You must remain to watch the fattening flocks."

"But Father—"

"Later, my son," my father told him firmly.

That winter I lived in a dream world of anticipation, my thoughts constantly upon the coming summer when I should make the journey. Sometimes I thought the snows would never end. And when at last they did, and the red earth was veiled with budding green, it seemed to me that never would we finish with the spring-time chores of plowing and planting, of pasturing the herds and repairing the damage wrought by winter ice.

But slowly, slowly, wheeled the midnight stars, until at last the Bear swung in the west. The forest bloomed; the gardens sprang up high; the days grew warm, and then at last the nights. And it was summer. Then with a knapsack high upon my back, I kissed my mother, bade my brother farewell, and in the footsteps of my father swung off along the swift-ascending trail that led up the northern hillside, into unguessed passages of mount and vale, and finally to the far, enticing City of Death.

I will not try to tell you of that trip. Enough to say the way was long and hard; there were high mountains to cross, and raging streams. There were days when drenching rains soaked our skins and turned the powdery dust beneath our feet into sucking quagmires of mud; there were nights when our campfire was a tiny sun encircled by a galaxy of red and baleful stars: bright stars in pairs that blinked and shone and stirred in fretful orbits around the flame they feared, watching us hopefully, hungrily. Such nights we slept by turns, with spears in hand.

I will not try to tell you of that trip, but only of its ending. At the twelfth dawn my father led the way across a peak that long had been our goal. Upon the crest he paused, and when I reached his side, he pointed with his arm.

"There," he said.

And in the valley, deep and broad below, I saw the sprawling memory of the past: The lonely and deserted City of Death. . . .

My father had spoken of high towers, but there were no towers here. None such, at least, as I had visioned in my mind. There were great mounds of brick and masonry, but these were no taller than the groping trees that, with their roots deep-sunk in crumbling stone, thrust their strong branches upward to the sun. Save for such trees and an occasional stark column projecting from the ruins like

a stone finger raised in grim admonishment, the city was a broad gray rolling plain.

As we approached it, clambering down the hill, the flatness took on pattern; I could see by troughs and swells where streets had been, and parks and avenues. As we moved closer, the furrowed ridges turned to rows of houses, faded and worn, but many still erect. Also, as we approached, my father's care increased. He repeated the warnings he had drilled in me throughout the days of our journey.

"Where is red rust or green, walk not; these are the colors of sick metals. Venture not where the earth is glazed and shining, but only where a coarse dullness sifts beneath your feet. Seek out the houses which were of wood and stone; in these is the least danger. Move slowly and with care, and when in doubt, touch not."

So we went into the city.

Now my story grows confused, for I cannot repeat all the marvels I saw, neither can I hope to describe things I do not understand. For wondrous were the accomplishments of those who lived in the old days. Dust though they be, and drifted with the wind, still proof of their great might endures in the city they had built.

To the heart of the city, where the Burning raged most fiercely, we dared not go. But around the city's rim were countless rows of houses; into these, because they were not built on frameworks of metal, we ventured. So it was that I learned the way in which the old ones lived.

How can I tell it? It is much too great. Their comforts brought a hunger to my heart. They did not sit, like us, on benches made of planks, or sleep as we do on pallets of husks and hay. Their chairs were wide and deep and very soft; their beds were broad, raised platforms of down. They did not walk on earth floors, hard and cold, but laid firm floors of wood, and these they covered with soft mats of colored cloth.

In their homes they had separate rooms for eating and cooking and sleeping, and even small, shining rooms for cleansing and relieving themselves. My father would not let me enter one of these, for there was much metal in them. But he told me that fresh water from the streams was caused to flow from a far source upward—yes, even upward!—to bring each home its individual spring.

Another room wherein I might not go was that in which they cooked; this was made mostly of metals, thus unsafe. My father said that when he made his first trip to the city a dozen years before, as he lay on the hillside in the black of night, looking down into the

valley, he could tell which room of each house had been its kitchen, for so sick then were the metals that they glowed in the dark with a cold green light like foxfire. This was no longer so. With the passing years much of the fever had departed the metals. Still it was not wise to venture into rooms so greatly made of them.

So the houses. There were other marvels. For each score of dwelling-houses was one which had been known as a "shop"; these were places where things were traded for money. There were all sorts of shops; some were stocked with food and some with goods. There were shops for the selling of clothes, of jewelry and furniture and drugs. My father said that in the days of his youth there were stores that dealt in toys and pets and songs, and even in the cutting of hair.

It was in these shops we made our richest finds. It did not take us long to gather things to fill our packs. Our problem was rather that of winnowing the wealth of good things, selecting those most useful and at the same time light enough to carry. I looked with longing on a host of things I wanted to take home, but a pack will hold just so much, and a man is not a horse. So in the end, those things which we selected were much like my father's choice of other years, except that now there were two of us, and we could carry twice as much.

When our bags were near filled to the top, my father called a stop. Now was the time, he said, when we should separate and—that we too might share in the surprise of gift-giving—individually make selection of those special presents we were to take home to the others. So for a time we parted, each going a different direction.

I was happy with the gifts I found my family. For my mother I chose a set of combs; of tortoise-shell they were, and bright and beautiful. I found for my father a wonderful new thing: black foot-and-leg coverings made of thick rubber. In them he would be able to wade a thigh-deep stream, or pluck wild berries in the marsh, without ever wetting his feet.

But it was in my brother's gift I took the greatest joy. I found it in no shop, but in a house. It was a bundle of white sheets of paper, cut to an equal size, bound in a cover of blue cloth. Each sheet was covered with printed words—words like those my father and mother taught us in our lessons, only longer and more difficult of meaning—and there were numbers, too, and many pictures. Pictures of things made and used by men before the Burning: bridges, and boats, and cars that ran on wheels, and winged machines that

flew, and garden tools. All of these things were drawn, and the way was told of making them. These things were made of metal. And the words on the front of this bundle said: *Applied Mechanics.*

I wrapped this present very carefully. It was the greatest wonder I had seen in the City of Death. I felt sure my brother would delight in it.

Of the long journey home there is no need to speak, nor of the week my father and I dwelt in the hut beside the river, I chafing with impatience to get home and show the gifts I had brought. Finally my father was satisfied that we had escaped the Sickness. We entered the stockade, and our family was one again.

I have said how I looked forward to the giving-of-gifts, and especially to witnessing my brother's pleasure in that which I had brought him. Now I must tell how wrongly I guessed. My brother did not have the chance to like or disapprove of my gift. Scarcely had I drawn it from my pack, barely had I unwrapped and offered it to him, than my father, his face darkening with anger, stepped forward and snatched it from my hands.

"This!" he cried thickly. "Where did you find it?"

"Why, in a house when I was seeking family gifts. It is a wonderful thing, Father. It has pictures and plans for making such things as were used in the old days."

My father frowned.

"It is a book, and books are evil things. It was by reading books that men brought on the Burning. Destroy it!"

"But it is my brother's gift, his special gift."

"It is no fitting gift. Here we live in God's way. In this house there shall be no books." He thrust it from his hands as if it scorched them. "Take it away—destroy it!"

"But, Father—"

"Go now, and swiftly. Burn it, and pray God's forgiveness, lest your hands have been stained with its venom!"

Sadly I left the house. I carried the book to the burning-place. This was a holy place my father had built; on it he placed as evidence of gratitude some portion of each thing God in his bounty provided for our fare: first fruits of the tree, first yield of the soil, first flesh of the increased flock. On it I started to place the book. But a breeze stirred the pages in my hands; the pictures from the past danced before my eyes, clouding my brain with dreams of what had been—and what might one day be again.

I could not burn the book. More easily could I have burned my own heart upon the fire. I stole into the woods and hid the book in a secret place known only to myself. Then I went home.

"It is done?" asked my father.

For the first time in my life I lied to him.

"It is done," I said.

This was the way in which the giving-of-gifts was marred.

Now is the bitter ending of my tale, the reason for its telling. Now it is summer no more, but drowsy autumn; the wheatfields are billows of gold, and the distant hills are blue with a smoky haze.

On this day the afternoon sun was low, and as had become my custom, I was hidden away in that secret place known only to myself, drinking the learning of the book.

It was on that day my brother chanced upon me. He did not know I was there; he stumbled on me as he searched for a lamb that had strayed. He burst through the thicket without warning, and before I could hide it from him, he saw the book in my hands. His eyes widened.

"That!" he exclaimed. "But it was to be burned!"

"I could not burn it," I told him. "I tried to, but could not. It is too great; it means too much to us."

"To us? What meaning has an evil thing to us? Our father said—"

"Our father is wrong. He remembers only the evil of the old knowledge; he has forgotten its good. You must believe me; I have read the book—read it not once, but many times. With it to help, we can rebuild the world, make it as it was in the days before the Burning."

"Are you mad? The book will destroy us as it did those who read it before."

"Not us. We have their fate as warning. This time we will build more wisely. We will not use the metals to make war, the elements to ravage."

"The metals? You think to use them? How can you use that which kills? The Sickness will eat your flesh and rot your bones."

"Not mine nor yours. Have we not learned that we are immune to the Sickness? Did we not touch the metal and survive? Has not our father returned a dozen times from the metal-laden City of Death?"

"And more," I reasoned desperately. "I do not believe the metals have power any longer to destroy. The fever has departed from

them. They no longer glow in the dark. They are free of the Sickness. They can be used again to build great houses, cities—"

My brother backed away, his eyes clouded and fearful.

"You talk wildly," he said. "The Sickness is in your brain, and the grace of God has left you. I will not listen to your evil talk. I will tell our father. He will know what to do."

"No!" I cried.

"Yes. The book must be burned. And then you must be purified again. You—"

"No!" I cried. "No! You must not tell on me. The book is mine. Look!" I seized a great stone from the ground. "You are my brother, and I love you well. But before I let you tell our father of my secret, I will crush your head with this stone."

"You are sick in the mind," he said. "You have become a madman and a brute. Our father must be told." He turned and started to run.

And it was then that I killed my brother.

They did not find us that afternoon, nor in the cool of evening, nor yet in the long black night that I spent in the glade, weeping and sick with a soul-tearing anguish, crouching beside the body of my brother. They did not see how I kissed his still cheeks and his responseless mouth, begging his breath to stir, his heart to beat; they did not hear how I wept and pleaded and prayed, offering God my life in trade for his, that long black night in the glade when I covered his body with mine against the damp night mists and felt my heart die within me as his flesh cooled against my own.

They found us the next morning. And I thought I had known the ultimate in agony during the night just passed, but nothing I had felt compared to the sick despair that gripped my heart when I looked in my mother's eyes as she saw my brother.

Her lips moved, then were gray and could not move. A little sound escaped her, and she sank to her knees beside him. My father stood as stricken, staring at the ugly wound in my brother's head, and the blood-stained rock beside him. He looked at me as at one he had never seen. He said in a dull, dazed voice, "My son—you did this thing?"

I said: "Pick up the stone, my father; slay me too. I have taken my brother's life. I do not want to live."

For a long moment my father stood there, swaying like a tree beset by storm. His eyes were mirrors of his tortured thoughts: anger

was in them and a sort of fear; hurt and uncertainty and sorrow. Then slowly he shook his head.

"It is no use. Your death would not bring him back. Yet—" He lifted his arms skyward in his pain—"yet I had hoped that in this new life there would be no more of hatred and of killing. But here it is again. Why, God—oh, why?"

My mother said: "Husband, what are we to do?"

"It is not ours to judge, nor to condemn. Life and its giving, life and its taking away—these are the concerns of God alone. But our son can no longer stay here with us—now. He must go away."

"But where is he to go?" my mother cried. "Here is food and shelter; outside is a silent world."

"It cannot be helped. He cannot stay with us, an unending reminder of what has happened, and a reproach. It may be that out there, somewhere, others live. I long have thought there must be life elsewhere. I do not know. But it is his to seek—and if God wills, to find. Go, son, who is no longer son of mine."

Then he turned away, and would not see my face.

And so it was I left the home of my birth, with my knapsack heavy on my shoulders, with food and clothes within the pack, with the book securely wrapped against the day when somewhere, somehow, finding other men, I might fulfill my dream of rebuilding a new world with the knowledge I had of the old.

So it was I left the home of my youth: the rolling pasture lands and flowering fields, the lowing herds and golden seas of grain, the gardens I had loved, the purling streams. I left in the gray of dawn, seeing these loved sights for the last time through a hot mist of tears, feeling the sorrow and home-hunger already fasten themselves upon me before I passed from the sight of those whose lips I might not press for a last time, not even in farewell.

So my last vision was the image of my mother far below, strained forward to watch me mounting the long hill, starting one time to raise her arm and wave, then faltering and letting it drop to her side. So I left, without kiss or blessing, with only my mother's last, dim, distant cry to ring forever in my aching heart:

"Good-by, my son. Oh, God go with you always, my son, Cain."