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Sunday is Three Thousand Years Away and Other SF Classics
by Raymond F. Jones
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Science Fiction

SUNDAY IS THREE THOUSAND YEARS AWAY
& Other Classic Science Fiction Novellas and Novelettes
By
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INTRODUCTION

Raymond F. Jones (1915-1994) spent most of his working life as an electronic and radio engineer, except for a short period devoted to full-time writing in the late 1940s. Jones was noted for his tales of "conceptual breakthrough," in which a scientific, psychological, or social advance takes place as the result of someone mentally transcending through the limits of a previous paradigm. As a result, Jones is primarily associated with _Astounding/Analog_ under the editorship of John W. Campbell, who specialized in printing such stories for the philosophical lesson they carried.

Jones was the author of nearly one hundred science fiction stories and novels. Highly popular in the 1940s and '50s, Jones story "Rat Race" was

nominated for the 1966 Hugo Award and his novel, _This Island Earth_ was adapted as a classic sf special effects extravaganza with a philosophic point. Yet, paradoxically only two collections of Jones' stories were published during his lifetime, and his stories rarely appeared in anthologies. This may be due to the fact that the short novel of 20,000 words was his forte, making a significant portion of his output too long for reprinting.

This collection contains a generous helping of Jones' short novels: "Sunday is 3000 Years Away," a romantic time travel story, "Alarm Reaction," a scientific puzzler with the future of Earth at stake, "The Unlearned," a classic of cultural misunderstanding, and "Discontinuity," one of his most popular novellas. It also showcases three novelettes -- "The Cat and the King," which recounts the unusual downfall of a tyrant, "The Farthest Horizon," the story of a woman who learned a new meaning of the word "home," and "The Person from Porlock," which explains why so many great works of art and scientific theory remain incomplete. Few of these stories were ever reprinted, representing a rare opportunity to sample the work of this science fiction master from his prime.

SUNDAY IS THREE THOUSAND YEARS AWAY

CHAPTER I: The Pen

George Brooks had once estimated that it cost Atlantic Engineering exactly one dollar and thirty-two cents every time Rena Corsen came in the door of Microwave Section.

He based his computation on the average rate of pay per minute received by the engineers and draftsmen multiplied by the fraction of a minute that it took Rena to walk from the front of the office to the rear where George's desk was located. During the time of her entrance no engineering was done. And for many minutes after her departure George seldom did much engineering. His thoughts were more on the high price of real estate, what part of their new house he could reasonably section off for his home lab, how he could convince her that the nursery should not be on the second floor.

There would be a nursery, of course. Well used, too. George considered himself the makings of quite a family man and Rena loved children.

He watched her coming toward his desk now. The heads of his fellow engineers slowly turned, then self-consciously jerked back to their work. It was like a wave in a wheat field bending before the wind, George thought.

She was tall but not so slender that people thought of her as a "tall gir!"-that synonym for gangling awkwardness. George had once said that he was going to work out the mathematical equations for her shape so that generations to come would know what a truly beautiful woman looked like.

She sat down across from him as George mentally chalked up another one thirty-two on the red side of Atlantic's ledger.

"The boys are sure going to be mad when you're married to me and can't come in here on official business any more."

"I hadn't noticed any sign outlawing wives," said Rena.

He checked a notebook. "According to my calculations you have cost the company just over seventy-eight dollars in the last year alone. It would have been as cheap to furnish dark glasses."

"What I like about you most, darling, is that you never talk sense!" She laid a copy of Electron Age on the desk and opened it to a technical article bearing her by-line.

"Mendon wants me to do a follow-up on this satellite-spotting radar piece of yours. There have been a lot of objections from your public, which doesn't like your math. I've got a list of the criticisms here. Can you give a rebuttal on them for the next issue?"

George shook his head slowly. "Any more than you already have is strictly on the verboten list. The only reason you were able to clear what you did is lost in the circularity of military thought, which is even now administering a kick, no doubt, to some rear echelon lieutenant for passing

the thing in the first place.

"It gets tougher all the time to make a living in this business. I think I'll get a job with some recipe journal. Have you got anything else that I can write about?"

He opened his lab book. "Carl and I have been doing some study on integral calculators. He's trying to cook up a new gimmick for a piece of equipment of his. We've got a tube using what he calls a 'time sense.' You can't say anything about the tube but maybe you can work up a space filler out of this math. There are a couple of new notions there!"

Rena looked at the scrawled pages with a polite groan. "Now I know I'm going to join a recipe journal. Who could make sense out of that?"

"You said Mendon wanted more math in his rag. There it is."

"I'll try but I don't think he will raise my salary for it." She wrinkled her brow in concentration over George's barely legible abstractions. After a few minutes she opened her own notebook and began copying.

George tried to return his attention to an urgent item concerning the production of one of his designs. It appeared that in a momentary lapse he had specified a closed sphere to be bolted to a flat plate with nothing said about getting the bolt or nut inside the sphere,

But that could wait --

He watched Rena's hands, fascinated by the grace of her long fingers. It would mystify him until the last hour of his life how she ever got into technical journal writing. As a model she could have made at least ten times as much but she had been more than mildly insulted when he suggested it.

Electronics reporting was her specialty, and she was the best in the field. Up to the time of her appearance at Atlantic, George Brooks had never been known to give any of his stuff to the female members of the profession. Hatchet-faced, flat-chested spinsters; he'd been known to call them, with Earth's nearest approach to pure vacuum located right between their ears.

But during the year 1, A.R.-after Rena, that is-his fellow engineers accused him of inventing just to have something for her to write about.

Maybe it was partly true, he thought. How could a guy be so lucky?

She looked up and smiled as if self-conscious under his stare. "You must have some work to do."

"Right-but why should I do it at a time like this?"

She started to close her book. "I can just as well borrow your book and bring it back in the morning. I'll go over this at home."

"Uh-uh. Wartime regulations again on that stuff. No lab books out of the plant any more. So settle down and let's enjoy ourselves."

She made a face and resumed copying the math. Fascinated, he watched the speed with which the symbols seemed literally to flow onto the pages of her book. Then he suddenly leaned forward. His abrupt movement startled her. "That pen-it wiggles!" He pointed to the pen in her hand.

She hesitated as if flustered by his abruptness. She raised the pen and looked at the point. "Oh, that-it's another of those seventeen-carbons-and no-original gadget, I think. Supposed to be good even in space-ships-if one should last that long."

"What kind of a swivel joint have they got behind that point? Let me see it!"

"It's supposed to make writing faster."

He touched the point to paper and wrote, My name is George Brooks. I love Rena.

"Well, I'll be jiggered." It had taken about half the time of a short breath to write that many words. "The darn thing seems to almost go by itself."

"Yes-but how about me getting finished here? I've got to get a permanent this afternoon yet." She reached for the pen.

"I'm going to get one of those dinguses. Where did you buy it?"

"Hank's Drug in town. A dollar ninety-eight."

He resumed his unbelieving stare and Rena resumed writing and the

symbols flowed again from the point-that incredible point that he'd have sworn wiggled all by itself.

He was still in that indolent position when Sykes, the section chief, came up. "Look, Rena," said Sykes. "Can't you either marry this guy right away or do your homework somewhere else?

"Look what you've got him doing-designing spheres to be bolted down and no bolts. A subconscious representation of his own head, no doubt. How about it, George? Drafting wants the change order on this today."

"Maybe you could put him in a little cell all by himself while I finish up here at his desk," suggested Rena.

"Good idea," said Sykes. "My own personal cell. Come on, George."

"Hey, now wait a minute -- " In less than that length of time he was installed up front in the glass-enclosed cubicle that was Sykes' own personal office-and the rest of the department was enjoying its own faint measure of revenge.

* * * *

When Rena left she walked past George with only a slight sidelong look in his direction. He got up from the desk-and found that Sykes had locked the door.

The completion of the change order was then only a matter of minutes. He gained his freedom by waving the paper as Sykes went by.

Sykes grinned. "She's a nice girl, George."

He returned to his desk and sat down morosely. He appreciated a boss like Sykes, who was an old married man himself but not too old to understand how it was with a guy's wedding only a week away-especially to a girl like Rena.

George opened his lab book to resume his studies on the integrator math. He picked up a pencil and scanned the last line of equations, wondering what kind of transformation could be applied --

He started writing again-and stopped.

Rena had left her pen on his desk.

He forgot about the equations. He hadn't wanted to work on them very badly anyway. He touched the tip of the pen with his finger and moved it around. The thing really did wiggle as if it were mounted on a ball-and-socket joint. But how could anybody ever write with a dingus like that? If he hadn't experienced the incredible speed possible with it he would have sworn it wouldn't write at all.

He put the point to paper again and wrote.

-inconsiderate brutality. A savage age does not produce wholly savages. Because he is of such key importance I think the experiment should involve the utmost consideration for his perhaps primitive desires and reactions. Even a closed cycle individual cannot be ignored after results are achieved.

* * * *

There were seven of them in the room besides Professor Harkase, four men and three women, including Rena Corsen. Rena was seated nearest the screen besides which Dr. Harkase was standing.

"In Experimental History," said Dr. Harkase, "we never ignore the personality of the individual subject. How could we when the success of the entire experiment depends upon it?"

"The reaction of George Brooks is not going to be a happy one when he learns that he is nothing but a guinea pig-to see if we can penetrate Cell Four with a closed-cycle individual. I don't see why I couldn't have gone alone. I don't see the necessity of two, especially when we had to go back so far to find another closed-cycle individual besides myself."

"It is simply because you will be the Historian in the case and will have to withdraw as a subject. But it will undoubtedly be desirable to leave a subject in the closed cell permanently. Considering that the history of the Brooks subject has a strong potential affiliation on the other side of Cell Four it seems to me that we are giving him quite an opportunity."

Leave you there alone, George! He doesn't know what he's talking about.

How can I ever tell them I love you-you savage?

"The important thing to discuss in this class session," continued Dr. Harkase, "is what the next move should be. You have gone far beyond the original lines of the experiment in allowing George Brooks to believe that he is to marry you. No doubt you had your reasons for so altering the plan but what do you propose next?"

"It seemed to be the only possible way to gain sufficient confidence to persuade him to accompany me voluntarily to Cell Four. I'm sure that it will be a small matter now to explain what we want of him."

"A peculiar procedure," said Dr. Harkase, unconvinced. "Perhaps you can convince us of the plausibility of your reasons for leaving your personal pen behind on his desk."

"My pen?" Rena's voice was a shrill hysterical cry.

"You mean you didn't intentionally leave it?"

"No, a savage -- "

"Yes, a savage would have no understanding of the privacy of a thalamoactivated instrument and would proceed to use it-even as you see George Brooks doing now."

He gestured toward the screen, where the image of George Brooks was going through a minor fury of examination of the pen that would not write what he intended it to write-but was writing something entirely foreign and incomprehensible, something that was almost like Rena's thoughts.

"My pen!" Rena breathed again. She saw George put it to paper and write again.

I love you, George, Whatever happens, don't ever believe another thing about me. I love you.

Dr. Harkase touched a knob. "Shall we move the image up a bit and see what he is writing?"

"No!" Rena cried out. "Privacy! It's bad enough for him to-You have no right to invade privacy."

By now he other six members of the graduate class in Experimental History were laughing heartily at Rena's discomfiture. But it was far from humorous to her-this experiment that had gone so badly awry. She wondered if she'd ever get her degree as a Historian, and half wondered if it mattered at all now.

You matter to me, George.

"This is quite serious, you know," said Dr. Harkase. "The pen must be recovered intact. Fortunately it is in the hands of a closed-cycle individual. Otherwise we could not prevent the application of penalties, Rena."

"I forgot to remove it when I left this morning," said Rena. "It's all I had to work with when I got there. I didn't think any harm would come of it-but I didn't intend to leave it there."

"I'm sure you didn't but that doesn't lessen the serious legal responsibility Involved. The mark of the expert Historian is his skill in handling the accidental and the unpredicted to prevent them from controlling and altering the intended probability. I perceive that your skill will be tested to the utmost."

"Suppose that I can't return from Cell Four..." said Rena morosely. "Suppose that I have to stay."

Dr. Harkase shifted his position and turned off the time screen. His face was only gently furrowed with lines that betrayed scarcely half his age.

"An appointment as Historian it hardly a trivial matter," he said. "I think I need not remind you young people of that. The concept of history as an experimental subject is in itself a daring one, one wholly outlawed until only a decade before my own lifetime.

"There has always been an element of personal danger to the Historian, both in the actual experiment and the public response. The position of these closed cells of time, however, is perhaps the most dangerous experiment attempted for many years.

"It is entirely possible that you may not be able to return, though all

indications are that you will-but you and George Brooks are the only individuals so far discovered with characteristics that will enable penetration.

"Could you make a satisfactory adjustment with this Brooks in case of emergency?"

"Yes, I'm sure of that. I'm perfectly willing to continue the experiment."

Satisfactory adjustment, That's their delicate clinical term for falling in love. Maybe Cell Four will be a wild and savage place. We'll knock it over, won't we, darling?

She didn't know if he were still writing but she let her mind dwell on these thoughts to keep it clear of the things she couldn't tell him yet.

"I take it that you do not intend to carry out the original plan then," said Dr. Harkase. "The plan to become involved in a car accident, at which time you would be transferred to Cell Four, allowing Brooks to associate it with the trauma of the accident?"

Rena shook her head. "That is a poor plan. Anyone who has constantly thought of negative twenty-six hundred as an age productive only of savages cannot realize the intelligence of individual specimens. George Brooks is not so stupid as to fall into any such explanation.

"Give him the data that he would have after the transfer and he would deduce the entire experiment, at least my relationship to it, in a very short time. I soon decided that the only possible satisfactory way would be to obtain his voluntary aid. That is why I allowed the establishment of a strong personal relationship with the subject.

"I will tell him exactly what we want, who I am and where I come from. I will bring him here tonight to meet my family and you, Dr. Harkase. He will be glad to come with me voluntarily."

"You realize the value of the specimen, of course. If he refuses voluntary assistance it will be difficult to make use of him later. And we have searched a long time for another closed-cycle person besides yourself."

"I have no doubt of his willingness."

"You believe he will consent to remain there-provided you explain his affiliation beyond Four?"

Rena smiled softly. "I could persuade him to do, voluntarily, anything within his power. That is why my plan is so much better than the original one."

CHAPTER II: The Door

They had a date for that night. He was late but George still drove slowly toward the apartment where Rena lived.

He was still bemused by that pen of Rena's, writing snatches of thought that certainly were not his own. He had been unable to make it write anything that he wanted it to-not even his own name. It simply wobbled about, producing a meaningless scrawl-and then scraps of information about some mysterious "Cell Four" and admission from Rena, "I love you, George."

He had deliberately left it at the plant because that would give him better excuse to examine it further. He determined to say nothing to Rena about it until she brought up the subject. But where had she obtained it?

Hank's Drug had never heard of such a thing-quite understandably.

A half hour late, he finally knocked on the door of Rena's apartment.

Rena opened the door as if she had been standing there waiting for him. There was the faint scent of some perfume, nameless to him and faintly narcotic in its penetrating illusion of exotic flowers.

She smiled at him. "Come in, darling. Did you bring my pen-the one I left on your desk this afternoon?"

He was taken aback by the abruptness of her question. He had supposed she would hedge about the matter of the strange instrument.

"No-I didn't think of it. I was going to but -- "

She took his arm and led him to the sofa before the fireplace. "George,

darling, you can't lie worth a darn, can you ?"

"That calls for a smile, lady, or better still -- " He put his arm around her.

"Wait a minute. Let me tell you, exactly what you did. You wondered why the pen wouldn't write for you as it did when I was sitting there. The more you tried the less it would do anything for you. Finally the clock moved around and you had to go and so you shoved it in your desk and locked it up with the idea that tomorrow you'd really tinker and find out what made it go."

"Well -- "

Her expression suddenly changed. She leaned back against him, the white softness of her shoulders outlined against the dark cloth of his shirt sleeve. She looked steadily into the low fire in the hearth.

"I'll tell you about that pen. I don't know quite how to start because, you see, it was made twenty-six hundred years ago-or rather from now."

"What are you talking about?"

"My pen. It was made in a day when privacy and truth are honored to the extent that your use of it this afternoon would have horrified a member of the culture that produced it."

"You're talking plain nonsense Rena. Where did you get that pen? Who made it?"

"Didn't it seem as if I were writing with it instead of you?"

"Yes, it did. I began to think I was going off my rocker. It was almost as if you were talking to me once or twice."

"It's nothing particularly marvelous-just a gadget. IVs attuned by a very delicate mechanism to the waves of my thalamus-so that when I want to use it I simply move it along the paper. The mechanism inside, activated by my thought patterns, does the actual writing.

"It can write almost as fast as I can think. But for me only-no one else. If anyone else attempts to use it he may pick up my thoughts if they happen to lie above what we call class-B intensity, which is the level required to operate the pen.

"But among its manufacturers it is unthinkable that privacy should be invaded through a misplaced pen. Therefore we have no fear of using it-or even of losing it. Another one can always be obtained."

"Where? Where can you obtain such pens?" He was conscious of his own voice in his ears but it seemed to come from a distance over a poor audio reproducer. "Who knows how to make them?"

"There are shops where you can step in and have a brain-wave check and get a stock pen adjusted to your own characteristics-shops in my own town, among my own people."

"But where?"

"Twenty-six hundred years-straight through that door!"

She pointed suddenly to a closed door across the room. He half rose, moving impulsively towards it.

She drew him down beside her again. "Wait, George. You can't get in there yet. You'll have to listen to what I have to say."

He sat back slowly, searching her face with his eyes to find some clue to her meaning. He had a fleeting sense that a thin transparent barrier had suddenly risen between them. It brought a shock of fear that was like a blow beneath his heart.

"You have an unfortunate phrase in your language," said Rena slowly. "Time travel. It's unfortunate because your mind is conditioned by it to contemplate impossible paradoxes. We use a better term-historical extension. What you might call a time machine-we call an historical alternator.

"Your civilization has been built around the automobile and the electric generator for the past thirty years. Can you imagine a civilization built similarly around another machine-an historical alternator? That is the civilization I grew up in."

She paused and he watched her face in silence. He watched for some sudden wrinkling at the corners of her mouth or her eyes that would tell him

this was something she had dreamed up to tell him. But there was none of that. There was a dreadful terrifying honesty of expression that told him that every word she had spoken was true.

It appalled him, the sickening gap of time that he glimpsed between them. He didn't stop now to question how it could be, how such a thing could be brought about or through what manner of technology it was born. He only knew that it was so.

He reached out a hand as if to draw her safely closer across that gap, "I have to believe you," he said. "But I don't understand it. Tell me about it. What is it going to mean to us?"

"I'm a student in the University there, she said. "I'm studying to be an Experimental Historian. My coming here is a part of an experiment I'm doing for graduate study."

"And I'm-just a part of your experiment! Is that what you're trying to say?"

Sudden mist clouded her eyes as she scanned his face. "Do you think I would have lied to you?" Then a faint smile softened the hurt upon her face. "I keep forgetting you're such a savage. I forget that you've never known what it is like in a culture where people do not lie to each other."

"I'm sorry, darling. I'm afraid I don't know what that's like. I know I don't understand a thing you're telling me and minute by minute I'm getting more scared that it means you re lost to me."

"No-it will never mean that. The original intent of the experiment was that I should get you to accompany me to an era that is as yet unpenetrated but it was not meant that I should fall in love with you."

"Is that bad-for your experiment, I mean?" he asked whimsically.

"Not particularly. Provided I can still persuade you to go with me."

"You'd have a hard time talking me out of it but where are we going?"

"It's difficult to explain without your having a broad background in historical physics. Time is stratified in an extremely complex manner. We call these strata cells. There are certain ones which are completely impenetrable to our viewing instruments and from which we can draw no samples whatever with the alternators.

"Historians have been able to project inert samples into these cells but no personal exploration has been possible. For a long time the existence of these impenetrable cells was not even known because our instruments show other cells beyond them. Only careful mathematical analyses of the discontinuities involved finally proved their existence."

"Well, how can we go if they are impenetrable? And even if we can I'm not sure I want my wife romping around through ages that no one can get into."

"You don't understand. Every individual born has a certain inherent historical characteristic that does not follow any known laws of heredity.

"There are certain ones who have what is called an open cycle characteristic, who are permanently barred from use of the alternators. Their history is so intimately bound up with that of their environment that they could not be wrenched out of it without catastrophic consequences to the whole historical fabric. They are in the minority and are rather unhappy individuals. On a par, say, with a trailer tourist of your culture, suddenly deprived of his driver's license for life.

"Most of us have a spiral-like cycle, at least that is the nearest word description that can be applied to the mathematical formulation that describes them. Their history can be extended by the alternators. They move from one level to another of their spiral and alter permissible probabilities without harmful results.

"The third type is an extreme rarity, the closed-cycle type. It was first predicted by mathematical formulations alone by my professor, Dr. Harkam was the first of the type ever discovered. We have searched through centuries of history for another. You're it."

"And what are the characteristics of our type?" asked George.

"We can move anywhere, in any time, and do just about as we please in

any age of the world's history without having the slightest effect upon the general historical environment."

George laughed. "That doesn't sound very complimentary. You mean we can do any darn thing we please and we'll still never amount to anything because we can't affect history?"

Rena nodded. "I'm afraid that's about it. When I first learned of it I felt about the, same as you. It's rather a disheartening situation in a way. We could be utterly destroyed and our passing would be as tangible as the well-known hole in a pool of water.

"But actually it's not anything to be greatly mourned. The, effects of the other types are characterized mostly by duration rather than benevolence or usefulness. The waves of our particular splash simply die out sooner, that's all."

"No children, even?"

"That's an entirely different matter. Dr. Harkase says that you have a strong potential affiliation on the other side of Cell Four to which we are going. Probably it means children."

"That's something anyway. I always pictured myself in the role of paterfamilias. But the pen-tell me what happened this afternoon."

"As soon as I left you I went back to the University to the class session in Experimental History. We were discussing this experiment and you picked up some of the things I was thinking while in class. My mind was wandering, you see." She smiled in recollection of what she had let him write.

"But how?" he exploded. 'You say the University is twenty-six hundred years in the future. How could the pen respond to your thoughts across such a span of time?"

"'That is an accidental but unavoidable nuisance feature of the instruments. Human thought is a process operating entirely outside the time-space continuum as understood in your physics. Time is meaningless at the level where thought mechanisms operate.

"The pen responds to its tuned stimulus as if time did not exist. There have been many efforts to block out this effect but so far they have been unsuccessful. Because of this there are serious penalties involved should one of us take a pen into another age.

"So far only Harkase and the other students know what; I did but I must have it back. If it were permanently lost I might be forbidden to operate an alternator again and in addition be subject to an operation that would change my wave characteristic so that the pen would not respond.

"It's a long study to comprehend a small part of the ramifications involved in displacing basic knowledge temporally, You can understand, however, that it could have serious consequences. That is what is involved in the matter of the pen. So you must be careful. I'll come down for it early in the morning."

"How was I able to write with it the first time when it responds only to your thoughts ?"

She smiled and he understood then what she had done.

"Sometimes I think you take too much for granted," he teased.

Rena stirred and sat on the edge of the sofa. "There's much more that I could tell you but that is enough for now. I'm going to take you to my home. You will meet my parents and Dr. Harkase. There will be a number of other students there also.

"You will glimpse incomprehensible facets of our culture but you will not be a total stranger to the people there. Nearly all of them have visited in this time. Be sure to say nothing of our marriage. I have not told any of them yet. And remember that, while no one there will ever lie to you, to them you will always be a savage."

George stood up and took her hand. "The thing I like about you, darling, is that you are so complimentary."

Together, they walked towards that door across the room.

This wasn't real, he thought. He was just George Brooks, engineer, on a

date with his girl friend. She couldn't be talking seriously about a land of supercivilization centuries ahead of them in time. His emotional response was lagging far behind his intellectual comprehension of the situation.

It caught up when Rena opened the door.

Emotionally he had fully expected to see another room beyond. But there was nothing tangible to be seen. His eyes recorded only a smothering grayness that joined faintly like fog confined behind glass.

"That's the way it always looks," said Rena. "The transition area distorts all sensory phenomena. It may make you a little sick or dizzy the first time but just keep hold of my hand."

He realized that she was pulling at him and that he was standing as if cemented to the floor. He relaxed and allowed her to lead him towards the opening.

CHAPTER III: The Music

It was not like fog. She disappeared into it as if being swallowed by gray mud. And then he saw his own hand begin to vanish into the stuff as she drew him on. An involuntary response caused him to jerk back from it. He felt Rena's hand tug at him sharply as if in irritation.

There was no feeling. Light and sound vanished. It was utter absence of sensation. All that was tangible was the touch of Rena's hand-and a sudden intolerable sickness in his stomach.

They came out of it before he had taken a third step. A deep breath of air and a moment of focusing his eyes on an object that held still was enough to wipe out the vertigo.

He glanced about.

"This is my room," said Rena.

It was something of a shock, he thought afterward, when he first looked at the walls of the room that looked simply like walls. And the bed that looked like a bed. He didn't know what kind of surroundings to expect but he was prepared for any fantasy. The normal appearance of the room was in itself a shock.

The architecture and furnishings were severely simple. The only betrayal of advanced civilization lay in the exact proportions and subtle colorings.

"Since I do most of my studying here, I keep the alternator here so I won't bother anyone else with my comings and goings. Spatially we're about four miles from our location in your time."

"But we only took a couple of steps!"

"That's all that's necessary. The alternator takes care of that. Let's go out and join the others now. Perhaps I should warn you about Mother. She will probably give you the most trouble but don't be dismayed by her.

"She's rather like your amateur tourists in some ways. She absorbs only a superficial knowledge of the cultures she visits. Her hobby is music and she will probably ask you to join in something she has picked up from her visits to your time."

He grinned. 'Don't worry. I can take care of Mother."

His earlier reassurance was suddenly shaken when Rena started walking towards a perfectly blank wall. As she approached, it seemed to fade in one area and an oval section grew crystal clear. She passed through and turned. "Come on."

He followed, mouth slightly agape. He looked back as the wall resumed its opaque hue. "What a gadget! I'd like to take that back with me."

"Don't let Dr. Harkase hear any remarks like that or he will give you his special two-hour lecture on the legal aspects of temporal displacement of scientific knowledge."

"They can't put me in jail for looking-and maybe accidentally figuring out how something works."

She stopped, her face serious. "Once having passed through the alternator field you are forever within the jurisdiction of our laws. Don't

ever forget that fact, George, It's extremely important."

They moved along a short hallway, and came out into a large room which was half-celled and half-open to the Sky. Only later did George realize that the "open" section was actually covered with a transparent dome. Household living space seemed to merge indistinctly into outdoor garden.

There were a dozen or so people standing in conversational groups of twos or threes about the room. Their eyes turned uniformly in his direction as George entered beside Rena.

For the first time the full impact of the situation struck George. These citizens of a super-world twenty-six hundred years beyond his own, viewing him, a strange anachronism. He wondered how a group of his own people would have reacted to the appearance of one of Pythagoras' pupils in a social gathering.

He tried to shake off the shrinking feeling of inferiority, knowing the analogy was imperfect. These were all seasoned travelers, tourists in time. They understood him for what he was. They did not expect him to act according to their standards.

They expected only the standards of a savage, he thought, with a slightly bitter smile as he faced them. Even if this were a civilization where people did not lie to each other did it mean they would be kind to a savage?

Coming toward them was a woman who looked as if she could be Rena's twin. He could scarcely have told that one was any older. It was not in the clear tone of her skin that matched Rena's nor in the black fall of hair about her shoulders.

Rena said, "Here comes Mother. It's first names only among us. I forgot to tell you, George." And to her mother, who came up, "Doran, this is George. You have heard me speak of him."

The woman extended a hand and smiled at George. "I haven't heard of much else lately except you and this experiment with Cell Four. We're glad to have you here, George.

"Most of us have visited in your time. We'll do our best to make you feel at home. Old travelers like us know the discomfort of being thrown out of one's familiar culture. See to refreshments, Rena, and I'll introduce George."

There was an indefinable tension, George thought. It was impossible to tell whether it was in the others or in himself. More likely the latter-but Rena's mother was overdoing it, trying too hard to make it seem like home. Like handshaking-Rena hadn't told him it was no longer a custom but he knew from the way her mother did it that it was not their way.

He met Rena's father next. Cramer was a portly man who would have been a Solid Citizen twenty-six centuries earlier. Then there was Dr. Harkase.

It was more difficult to catalogue the Historian. He seemed to possess an undercurrent of knowledge that gave his face a near cynical expression. George wondered if he knew already the details of all the rest of George's life.

The others were all students at the University, classmates of Rena. They were gracious, civil and friendly but in the back of his mind George could not erase the image of a Neanderthal-like character, dressed in a leopard skin and clutching a knotted war club himself in the presence of this company.

The circle completed, Doran said, "I thought perhaps you'd like an evening of music. I obtained some of your own especially for your visit. Rena mentioned once that you were a singer. I'll get some of the others."

"Well-I might have mentioned to Rena that I did some barbershop singing in college but that's about the limit. Don't get anything beyond Clementine or you'll be over my depth."

Doran frowned. "Clementine? I don't believe I know that one, but I do have one of your loveliest quartets."

She beckoned to some of the others and handed out some music. George gulped and choked when he saw what it was-the Quartet from Rigoletto.

He saw Rena coming and grimaced frantically at her. She came up and

took his arm. "Don't make George perform tonight, Mother. He'd much rather listen to us."

"I really would," said George hastily.

"Well-of course, if you'd rather." Doran beckoned to her husband.

"You take the baritone then, Cramer. Let's see what George thinks of our rendition of his music."

She sat down at a keyboard instrument that was too small to contain strings. The moment her fingers touched the keys George knew it would make a grand piano sound like a spinet. And then the group broke into song.

He sat back in unbelief. His own abilities were strictly of the barbershop variety but he could understand operatic quality when he heard it. The casual art of the four singers was something that would have made Metropolitan directors weep-and run for a contract form.

He should have been enjoying it, George thought, but he was miserable. He looked at Rena. She smiled and pressed his hand. How could he possibly attract her, a product of this culture whose casual evidences made him feel as if he'd swung down from the trees only yesterday? What did she see in him that she found in a member of her own people? Was it possible that he was only an essential element in her experiment after all?

In vicious anger at himself he forced the thought from his mind-but it wouldn't leave. It only shrank back and hid in the dark recess of his subconscious. He looked at her and she seemed to read the doubt in his mind. She leaned over and whispered in his ear.

There was other music, then Rena's mother sang and her voice held George against his will. Compared with it, he thought, Rena Sachs would have resembled a factory whistle.

Dr. Harkase at last suggested, "Rena, let's have a scene from the University play you are doing next month. The one you and Bradwell have together!"

"Oh, no. Let's have more music. You sing one of our own compositions, Dr. Harkase. Let George hear what our music is like."

"You can't refuse your Professor," be insisted. "I think we'd enjoy some drama."

They made it impossible for her. She left George's side and he felt more alone and inadequate than ever, though Rena's father moved over to join him.

Rena took her place in the center of the room with Bradwell. The fellow was a graduate in math at the University. George shuddered to think what Bradwell might be able to show him in that field.

They were beginning. Everyone seemed to understand what it was about though it was a single scene lifted from a long classic drama. To George the allusions to this strange culture were unintelligible. But the emotion of the scene would have been common language in any age.

It was Rena's scene. Bradwell was only a foil against the torrent of emotion with which she dealt.

While George watched, Rena seemed to become a stranger whom he had never met. As the character in the play she became a tormented being, caught in a snarl of tangled loves and hates. The fury of anger and the tenderness of love mingled with clashing discord in her voice, her expression, her entire being.

It was something beyond mere acting. George felt a thin shadow of horror overlay his mind. Rena was inseparably of her own age and time. What he knew of her was like the knowledge gained by looking at sunlight while all the vast spectrum lies on either side, unknown and undetected.

He sensed now some of the unknown that was Rena.

She finished. He felt physically weakened by the barrage of emotion that she had produced.

She returned and sat on the other side of him from her father. She was partly breathless when she spoke. "It's our annual play. Did you like it?"

"You've seen plays in my time. What do you think? I didn't know you

were such an actress. I'll bet you sing as well as your mother, too. Is there anything that the average citizen here can't do?"

"Of course, darling. These things are simply the skills and hobbies of your own day brought to greater perfection. The skills of genius in one age become the hobbies of the citizens in the next. Just as Pythagoras would not have passed through one of your high schools on the knowledge out of his own culture -- "

"That's hardly the answer," interrupted Cramer quietly. 'Perhaps you haven't explained to George about genetic control."

"No," laughed Rena. I left that for you. I knew that you would expound at great length on the benefits of g.c. He's a Division Geneticist." she explained to George. He thinks the world spins on its genes."

"The term implies any of a number of possible techniques to my mind," said George. "What does it mean?"

"No such barbarous procedures as I'm sure you're thinking of," said Cramer gently. "You must understand, to begin with, that all of the population of the Earth does not participate in the program. There is nothing compulsory about it. The only force is that of social pressure.

"With five hundred years of genetic selection in one's ancestry, such as Rena has, he simply does not marry out of that group that shares that history of selection. With seven or eight million who have such a history, it is not difficult to mate within one's own category.

"Occasionally one steps over the line and mixes with the unselected segments of the population. That automatically grades his own posterity downward. We have pedigrees, which are simply gene charts. The pedigree divisions among us are seldom crossed."

George looked across at Rena. Her face was expressionless as if awaiting for his own reaction.

Savage-irrevocably savage. No training, polish or veneer could be applied to him which would render him anything more than savage in their midst. They would be kind, they would not lie-but they wanted none of his genes mixed with theirs.

Rena-he understood now why she had warned him that he would always be a savage. It drowned the faint hope that had been rising within him that he might find a place among her people.

His face felt hot and his throat dry. He said, "How is control accomplished -- or is that something too far beyond my comprehension?"

CHAPTER IV: The Gulf

If Cramer detected the trace of bitterness he ignored it. He laughed. "The theory is simple if not the technique. From the beginning cells to be mated were controlled gene by gene. Random hereditary manipulation no longer existed and deliberate selection of desired genes was made.

"If a desired characteristic lay in a single recessive gene the dominant undesirable was blocked out so that the child possessed the characteristic of the desired gene.

"Generation by generation this process has continued so that all of us have hundreds of characteristics we want instead of the few picked at random for us by heredity. But scores of these might disappear in our offspring with a single random mating.

"As a result those of us whom you see here have characteristics in abundance which were once reserved only for the so-called 'gifted.' The least of us can make such music as only the greatest artists of your day.

"Emotional sensibilities are heightened, intellectual abilities and physical and mental health are abundant. And we have only begun to realize the possibilities of the human body and mind. Do you wonder that few of us care to abandon such a pedigreed heritage?"

George shook his head. He felt an almost unbearable impulse to escape. He knew without a doubt that Cramer understood the effect of this revelation upon him. The geneticist was aware of his squirming desire to hide his

inferiority like some uncleanliness suddenly revealed in this immaculate company. And Doran had known it too, he thought, when she had tried to get him to join their singing. She had done it deliberately.

George said, "What of the others-the lower castes who have not participated in the genetic program? Can nothing be done for them?"

"Originally the plan was made available to all who would participate. I'm sure from your knowledge of your age that you can appreciate the slowness with which it caught on. But eventually the facilities were overburdened and those who had participated for three or four generations were so far ahead of those who hadn't that a natural division sprang up.

"For a time no new families were admitted to the program. That caused serious conflict. Now we have in operation numerous plans on different levels and are building them up as fast as they want it. You would be surprised to know, however, how many hundreds of millions of people still refuse to have anything to do with it."

He glanced up. "I think my wife has been trying to get my attention. You'll excuse me, please?"

Rena moved closer to George.

"So now I know," he said with undisguised bitterness.

"Now you know-why we have to go away from here," said Rena softly.

"What else can you do that I can't? Besides singing and acting like the best professionals of my time. ESP? Telepathy? Middle age at ninety?"

"Darling, please!" Rena's face was distorted with pain.

"Are there any of those things?"

"A little-just a little. I'll tell you about it but we can't talk now. Oh, darling, don't look at me that way. Don't you see? I chose you."

"I'm sorry, Rena." George hit his lip in tension. "It gets me a little to realize that I really am a savage in comparison with you. I thought it meant just a difference in culture and learning, not a difference in kind."

"That's not it. Please don't say that. But here comes Dr. Harkase. He'll want to talk to you about the experiment. I'll be back in a minute."

The room and the people seemed to recede with Rena as she walked away. George felt alone, locked behind glass barriers he could not cross.

The room came back into focus with the approaching figure of Dr. Harkase. He sat down and looked across the room thoughtfully.

"A wonderful girl, Rena, and a wonderful student," he said. "She'll be one of the finest Historians we've ever had. There is some risk in her approach to Cell Four but her return is quite reasonably certain."

He turned to face George directly. "I want you to know that we appreciate very much your willingness to cooperate. I suppose Rena has spoken briefly of the nature of our work?"

"A little. I can't say that I understand any of it, however. She spoke of me as a closed-cycle temporal type and implied that it means a total historical impotence, which doesn't seem to be a very flattering situation."

"I'm not so sure that is the entire truth," said Dr. Harkase. "Our own theories are in a state of flux at the present time. You see the Cell Four represents a very critical historical situation for us.

"Many years ago we made certain alterations that set us off on a new probability branch. At that time we were unable to detect these closed cells. Now that their existence is determined, we find we are approaching one, Four is just six hundred years ago.

"Beyond it-there is just no beyond as far as our instruments can detect. It's as if it were some kind of bud at the end of a tree branch. Only a very few of us know the seriousness of the situation. We would go back and change the original probability alteration but it is irreversible.

"So we've got to find the meaning of these closed cells and what lies beyond them. If there is nothing we've got to find some means of grafting back into the main stream we left. That involves paradoxical impossibilities which we cannot resolve at present.

"I am doing some new work involving closed cycle histories, however,

which indicates that they may be a factor in such resolution. The closed cycle was rather a theoretical freak, much neglected until the discovery of Rena and you. Only since then has there been renewed interest."

"But she spoke of an affiliation between me and the other side of Cell Four. If there is no other side -- "

"What I was speaking of to her was that there is just one slim finger of probability between the Cell and the main stream we left. You are involved deeply in that probability-which is not a definite link, you understand. I am inclined to believe you will be instrumental in resolving our difficulty."

George glanced at the little knots of polished people across the room. His lips compressed involuntarily. "And I'll soon be a savage -- "

"Eh-what's that?"

"I'm sorry. A savage has difficulty in staying out of character for very long at a time."

"I see. You've been talking to Cramer, Perhaps a moment's reflection might help you to understand that while we all benefit from the science we are not all such avid geneticists."

"I think the segregation of your society answers that."

Harkase sighed. "Young man, if you could solve that problem for us you would have bested the scientists of the last half millennium. Segregation has led to prejudice, hate and war. But what are we to do? We tried compulsory genetic control for a brief time. That brought revolt and civil war.

"Should we abandon what we have gained? Worst of all the portion of humanity outside the program seems to be receding farther and farther. Their genes are almost barren of art or science. Many groups of them are nearly subhuman. So far there is no answer."

Dr. Harkase rose to leave. "I'll notify you as soon as we are ready to extend you."

George left his chair and strolled across the room towards the garden. Through the invisible dome he could see the stars. A sense of relief came over him as he watched them. There at least was something familiar. Twenty-six centuries of history made little difference to the stars.

But what vast changes it had made in humanity. Genetic control had produced a new race, he thought. He had only glimpsed the skills they possessed. But Rena had admitted the others. And she was one of them.

He was startled by a step behind him. "Good evening, sir. I was hoping I'd get a chance to speak with you."

It was Bradwell, the young mathematician.

"Hello," said George. "I enjoyed your performance very much."

"Thank you. It was Rena's, of course. I'd like you to see the whole thing if you expect to be here when we put it on."

"I don't know. I think perhaps I'll be leaving soon. Dr. Harkase seemed to indicate that he'll need me within a short time."

Bradwell stared at the horizon of the sky beyond the garden. "I've never had much to do with the alternator," he said thoughtfully. "I took a short extension or two several years ago but I didn't like it. My earliest studies were in the physics of historical extension but I soon abandoned them."

"Why did you dislike the subject?"

"I think it's detrimental to our civilization. It has deadened our own initiative. You wouldn't know from your short visit here but we're not a productive people. We're parasites. We rely on what we can pilfer from other ages. We rely on historical extensions to produce improvements.

"We change the lives of others to improve our own but we produce nothing, build nothing, discover nothing. We live in a sterile age. Personally I think that's why we're approaching Cell Four. We sidetracked ourselves long ago and extinction is the only answer now."

"You could go to some other age."

"Not on the main branch. And it doesn't work, anyway. Something goes wrong with a man. I don't know what it is but there's a difference. A man

withers and dries up. I've seen them come here. You're not the first, you know.

"You think you could live here. You think you could marry Rena and live among us -- "

"I didn't -- " George interrupted in confusion.

"Don't you think we could tell?" Bradwell said. "We sense emotions as easily as spoken words. The wonders of genetics!"

George could not tell whether it was in bitterness or mere cynicism. George felt naked.

He glanced about him, felt the eyes of the others upon him. There was nothing he could hide. Why had Rena even warned him not to betray their marriage plans? Surely she had known they would sense his feelings towards her.

"It wouldn't work at all," said Bradwell. "You could never keep up with Rena. She's ten thousand years ahead of you right now. You think you could learn but you couldn't.

"And it's the same with us when we go to another time and another people. We can visit but we can't live there. It's every man to his own time and people. That's why I don't use the alternator any more. I don't want the contamination of other cultures. I want to produce what I might produce of my own will and ability."

George looked into his eyes and almost shrank before the passionate bitter fires in the man's eyes.

"It's the same for you," Bradwell said fiercely. "In your own time you can build and create. You can be an entity in your own right. That you can never be here. You'd better go back.

"As for Rena-you will not lose her. You never had her."

George backed away, his glance slowly covering the room. They were standing still and silent in groups as if talking to each other but they were not talking. They were waiting, waiting for his answer. It hadn't been just Bradwell who had spoken to him. It had been all of them. Like a wolfpack they waited for his capitulation.

And they were right, he thought. So damned right. He had known it since that moment when Rena grudgingly admitted her superior faculties. Marriage between them would be only miscegenation.

"Yes-I'd better go back," he said to Bradwell. "Can you help me? I wouldn't want Rena to know. Tell her-just tell her I'm too much of a savage for her."

"I'm sorry," said Bradwell. "They should never have come to you. I'll help you get away if you like."

It didn't occur to George that he should say anything to the rest of them. They watched him follow Bradwell out and they knew what was happening. Blindly he urged the scientist on. They came to Rena's room. Bradwell seemed to have no expectation of meeting her.

He led George to the machine. "I'm going to block this after you're gone. That will mean there will be no further possibility of your coming here. This is your own decision-be sure it's the one you want to make."

George nodded dumbly. "Go ahead. I don't want to come back. Rena will not remember for long, I'm sure."

There was the rising sound of commotion in the hallway beyond the room, the sound of running feet and a cry, "George!"

"We'd better hurry," suggested Bradwell. He opened the door of the machine. The grayness swirled before George.

"Yeah-we'd better hurry." He walked into the fog, the sound of Rena's voice still in his ears.

CHAPTER V: The Block

She burst into the room as Bradwell made a swift movement. His hands jabbed at the panel of controls on the wall. A darting red glow splashed through the gray fog and then it was gone. The door opened only to a shallow

chamber lined with polished metal.

"Brad!" she screamed. "Brad!"

She rushed to the panel and looked at what he had done. Her body seemed suddenly without life. She moved, unmoving, scarcely breathing.

Footsteps sounded behind her on the soft carpeting of the floor. Her father's hands touched her shoulders. "Rena."

She turned slowly, the life gone out of her eyes. "You were all in on it, weren't you?"

"We couldn't permit you to do what you planned," said Cramer.

"My life is my own. What gives you the right to destroy my plans and hopes?"

"You are all that I have to give to the future," said Cramer pleadingly. "Five centuries of gene selection-you are the best that a thousand ancestors have to offer the future."

"Am I their prisoner?"

"You are obligated."

"You blocked him," she murmured. "Blocked a hundred years before and after. I can never see him again-never as long as I live."

"You wouldn't have come back from Cell Four and left him there," said Dr. Harkase. "We couldn't take the risk of your not coming back merely because you want to stay with him. We would have gained nothing by the experiment and would have lost you. As it is, we are quite sure of your return."

"You have lost me anyway!" She faced them with a sudden fury that made them recoil. "I hate you all. And I will never forgive you."

Bradwell moved impulsively toward her. "Rena -- "

"Get out now. Get out and leave me alone."

They turned and moved toward the door without speaking. Her father's shoulders sagged but Rena felt no pity for him.

The door opaqued behind them and she pressed a stud on the wall that locked her in. Only then did she fling herself on the bed and let the sobbing cry escape from her throat.

* * * *

George Brooks shook his head and raised slowly on his elbows. There was grass under his face and a shrill singing in his ears. Hard gray morning light showed the landscape about him. He was lying in a park.

Blearily he looked around and struggled to his feet. He'd better move on if he didn't want to be run in.

The granddaddy of all hangovers, he thought dully. It hurt just to move his head. Every bolt that held his gray matter in place seemed to have been sheared off at once.

He sat down heavily on a green bench and tried to think. Why in thunder had he gone out and got so drunk? Seemed as if he and Rena had had a date but he couldn't remember where they'd gone. He couldn't remember taking her to any bar or club. She wouldn't drink anyway. She never touched the stuff. But what had happened to her? How had he got such a hangover?

He remembered then-the vague dream of Rena, an anachronistic Rena who had come from some distant age to take him to a far-off time.

A crazy kind of drunken dream.

Crazy. Like a surging blast of electrons realization flooded through his nerve channels, straining synapses, choking the involuntary functions of his body.

He crumpled on the bench and cried in rage. He remembered then the bland face of Bradwell, the mathematician, the predatory circle of civilized supermen attacking with their inhuman powers of mind.

How super-civilized they had been! Nothing so crude as "Throw the bum out!"

No-one by one, they had invaded his mind, planted a seed of suggestion. A suggestion of fear and retreat because he was a savage and they were supermen. He remembered Cramer sitting beside him. Now that it was over he could recall the sensation of their impressed thoughts even though he'd been

unaware of them at the time-unaware that they weren't his own thoughts.

And Bradwell. He knew the answer to that, too. The fellow hoped to marry Rena himself.

George's fists clenched white with the yearning to smash into that smooth face. He groaned with the sickness of realization of what they had done to him.

Rena had seen him go, he thought. Those had been her footsteps and her voice he had heard in the hall. What would she think? That he had deserted her? But she would come back. She knew him better than that. She would come for an explanation.

Bradwell's block. No further possibility of returning, he had said. Never see Rena again --

And then the one unsurpassable lie. "This is your own decision -- " They would not lie to him, Rena had said. They had merely forced their wills upon him and called the result his own. How little Rena knew of her own people.

"Have a little too much last night, Buddy? Maybe we'd better go down to the station and sleep it off."

George took his hands away from his face to stare at the uniform trouser legs in front of him,v. He got up wearily,

"I'm not drunk, officer. Just taking a walk before breakfast and got kind of sick. I'll be all right."

The policeman searched his face sharply. "Okay, Buddy. But take care of yourself. Better get a meal into you. You don't look so good."

He went on down the street, vaguely aware of his location. He walked for a long time and went in to a dirty lunch counter for something to eat. It made him feel little better.

There would be police investigations, he thought. They'd ask him questions-questions he couldn't answer. They might accuse him of murdering her. He wondered if he ought to report her disappearance to the police.

His thoughts were snarled in foggy indecision but he decided against the falsity of reporting her missing. Let them come after him if they wanted to. It made little difference.

He walked in the clearing air again. He understood more thoroughly what had happened to him. The powerful interference that Rena's people had poured into his brain had acted exactly like alcohol, taking over control of his senses momentarily and leaving his own blunted and helpless afterwards. That's why he had all the symptoms of a hangover.

He tried to think of the future-a future without Rena. He could picture only gray blankness. There was no future for him without her. But somehow a man has to go on living. His bodily processes continue to function and he has to support them.

After an hour's walking he remembered his car still parked by Rena's apartment. He returned to get it and drove to his own rooms. He changed clothes then and called Sykes.

"Boss? This is George. I'm a little late this morning."

"Is that news?"

"Rena and I agreed to disagree last night. I've got a head like a washtub this morning but I'll be down by noon."

"Lay off the bottle, you dope. Don't you think anybody ever went through this before? It happens all the time. By the time the wedding's over you'll both be laughing at it. Why, I remember -- "

"You don't understand. She's gone. Pulled out of town. Given up her job and everything. I don't know where she's gone."

"You must have some idea where she could go."

"I don't. She said I'd never see her again. Forget about it, John, but I just wanted you to know. You might pass the word along the grapevine, so the guys will lay off a little bit. I don't think I could take much ribbing today."

"Okay. I'll put the police on her trail for you. Don't be such a dope.

I won't tell the boys anything. Come on down and get to work. When the cops locate her, take her over your knee and let her know who's going to wear the pants. You might as well get it settled before hand."

"No, I don't want you to call -- "

But Sykes had left. George looked at the phone in his hand, then slowly placed it in the cradle. If he did not protest with excessive urgency it would look funny and Sykes would have to testify to that effect later.

He sank down on the bed, wishing he never had to move again.

Death, he could have understood. Men's minds are made to find reconciliation with the death of loved ones. But in this unfathomable gulf of time-he could not do battle with despair on such ground. His mind retreated wildly before the thought that he would be dead and turned to dust for twenty-six long centuries before Rena ever came into existence.

* * * *

When he reached the plant during the noon hour it seemed like some strange and alien place. It didn't seem possible that it had only been last night he had left it, looking forward to a date with Rena.

Most of the engineers were out. Only a couple were bent over their decks as he strolled in. He waved absently to them.

He sat down at his desk. Just twenty-four hours ago she was sitting across from him, he thought. He visualized her there, posing as a technical journal writer. She must have been amused by his designs that would seem so clumsy and elementary by the standards of her world. But she would not have laughed at him. She had respected what he had done with the knowledge he possessed, he thought. That would be her way.

He thought of her grimacing over his mathematical theories. It must have seemed so elementary, yet she had pretended it was difficult. He saw her writing, copying his work with that fantastic pen of hers --

That pen.

He jerked open the middle desk drawer. Almost reverently he picked up the pen-the one undeniable assurance that he had really known her, that she was not some fantasy of his mind.

He held it gently in his hand. It was worth a fortune if he could find out its secret but he knew he'd never try. He could not risk the one precious testament that he had really known and loved that girl out of time.

Idly he held it in position and touched the point to a scratch pad. It seemed corpselike in motionless stance.

Suddenly his hand trembled almost uncontrollably. That point-it wasn't motionless. Feebly it seemed to be wriggling with volition of its own, making a small circle of curlicues on the paper.

For a moment, George could not control the trembling of his hand sufficiently to move the pen. He laid it down and clenched his fist viciously, shaking it to restore some sense of voluntary control.

He grasped the pen again and moved it swiftly across the pad as he had seen Rena do. His breathing all but ceased.

-so tired, George. I've been sitting here, thinking constantly since the moment you left. I'll have to rest. In an hour I'll try again. Repeat through the rest of the day at hourly intervals.

I can't know that you're reading this but I pray that you have my pen and are watching it write. I can't even be too sure that it's crossing the block. We have no way of knowing whether it will do that or not. In another hour I'll repeat everything. So tired, darling --

The pen continued with only a wobbly line. He laid it down and slowly wiped the sweat from his face.

The implications of the intangible line of communication filled him with a bursting sensation. It was like a one-way line from a living tomb. All his life-as long as she tried to reach him-he could receive her thoughts.

But she would never know it. He could never reach her with his. Never could he let her know that he understood. He thought of the years to come in which each message from her would be like some opiate that would give him

strength to go on until she called again. Even as he thought of it he knew that it would not go on forever. Like him she was sick now with the tragedy of their betrayal. But she had a life to live too, and one day she would forget to call to him.

He shook his head savagely and got up. He couldn't just sit there, his emotions churning his insides to fury. He strode out of the lab, out of the building, into the sunlight, carrying the pen and pad with him.

He walked the whole hour, trying to keep from thinking. When the time was up he went out in front of the building and sat down against the sunlit brick wall beneath a dogwood tree. He touched the pen to paper.

Almost to the second, it resumed.

George, darling, for what must be the hundredth time, I am trying to get across to you. I can't know if I'm crossing the block or not but it's the only chance I have ever to see you again.

I know what they did to you. You must know too that they forced you to go back. It was a bitter, evil thing to do. I think Bradwell even tried to destroy you by shifting the spatial coordinates. But the alteration was so slight that I suppose you returned quite close to my apartment.

That is just as well, perhaps. No one but you knew I occupied the rooms so just stay away from there and no one will think anything is wrong by my absence. None of my belongings are left there.

I could bring them before our courts for what they did but it would not bring you back to me. Only one thing can do that.

His hand began shaking again almost beyond his control as he read that last sentence. He was almost afraid to go on if she were to raise false hopes of their seeing each other again through some wild scheme she must have devised.

You can never be reached by an alternator again, George. I can never reach you again. This is what the block does. But you could come to me.

They know you have the pen but they have no way of knowing that I am communicating with you by it. They cannot see you through the block-just as I can't even be sure I'm reaching you.

If I am getting through to you, we are safe. And you can come to me but not here-or anywhere else they could reach us. We would never be free of their interference with our lives.

They are still going to let me go to Cell Four, however, according to the plans of the experiments for my graduate study. You can meet me there, darling, where they can never follow. Whatever it is, whatever kind of world it may hold, we can be together there for the rest of our lives.

He couldn't understand. Couldn't she realize that he had no way of getting to Cell Four or any other era besides his own? Had she so forgotten?

You are wondering how this can be done? I will teach you to build an historical alternator. It is a dangerous thing to do. I an breaking one of the strictest laws of my culture. They would penalize me for life if it were known. But it is a risk worth taking.

One advantage on our side is that you, as a closed cycle individual, cannot disclose the information or dispense the machine in any way that will upset the present probabilities.

Your danger lies in the fact that the machine cannot be properly checked and tested by an experienced alternator technician but I will try to give you instructions as completely as possible.

Whatever the risk it is worth it to take a chance on being together and free from interference. This is all for now. I'm repeating myself at hourly intervals through today and tomorrow. After that I shall begin sending the instructions you will need to build the alternator.

The pen stopped abruptly.

CHAPTER VI: The Error

A bright shaft of sunlight had moved across him, half blinding him to his surroundings, but he remained sitting there. The image of Rena was set in

the sky and his senses devoured it, the faint flush of her cheeks, the black shining hair about her face.

He waited the next hour and wrote the things she sent. It was almost word for word as before but for him there was newness, the sense of her presence. He had lost all regard for the gap of centuries that separated their parallel time sets. For him she was writing "now."

It was late in the afternoon when he went into the plant. Sykes was the first to see him.

"You had me worried, George. I called your place a half dozen times and nobody answered. You haven't had your foot on a rail all afternoon, I hope?"

George shook his head. "No-but the effect is about the same."

"Well, I put the cops on her trail. They'll let her know who's boss. I tell you you can't let these things get out of hand. If she gets away with it this early you're sunk."

George managed to grin. "I appreciate your understanding and advice but I wish you hadn't notified the police. Rena is all right. She just walked out on me."

He returned to his desk. The pen in his pocket seemed like a hot steel bar against him. What if something happened to it? Where could he keep it safely? He dared not carry it around. It wouldn't be practical to put it in a bank vault but he felt that if he left it in the plant lightning or fire would be sure to strike.

In the end that was the only practical place. He'd keep it locked in his desk. It would be as safe there for the period that he would need it as any place on earth.

He stabbed with a finger at the row of books on one corner of his desk. He picked up his lab notebook and turned to the integrator specifications. He resumed work at the point he'd been that day-was it only one day ago?-when Rena had asked for new material.

He began transforming the equations.

"Boy, do you look like you've been out all night! I've looked all over for you. Sykes told me you'd been on a bender."

George looked up into the eyes of Carl Bacon, the integrator engineer. "Just got here," said George. "Had something of a bad time."

"Rena?"

"Yeah-she walked out on me."

Carl nodded with supreme confidence. "She'll be back, old man. Don't give it a thought. Give a look to what I've been doing to the gadget and let your worry department have a rest."

He would have been more interested if Carl had jumped off a high bridge, George thought miserably, but he leaned over to give attention to Carl's sketches and equations.

"I took one of those tempora tubes and redesigned the suppressor with a magnetic instead of an electrostatic field and reshaped the thing to hyperbolic conformation. Then I tried souping up the current until the space in that orifice is absolutely and completely saturated with electrons like a rummage sale swarming with housewives."

"And what happens?"

"What happens? Man, the things have to speed up to get through. They're pushed from behind and squeezed from the side. They take off along that hyperbola."

"How much?"

"I don't know but here's the gimmick-there's a forty-millisecond delay between control excitation and results at the end of the hyperbola. By extending it the time can be made even greater. That's a heck of a lot more than the simple phase differences we were getting before.

"And here's the best-or worst of it. By reversing the field, the lag can be made a gain. The stream actually knows what's going to happen to it-before it happens."

George squinted up at him. "And you talk about me being on a bender.

Let's both go down to Joe's and spend the rest of the afternoon on a high stool."

"That's what I thought. I haven't told anybody but you. Come on into the lab and I'll show you."

They worked half the night. George felt some of the grief-inspired tension dropping away from him as he became absorbed in the unbelievable phenomenon that Carl had described. He insisted on rerigging the experiment from scratch. It was still there. And there was utterly no explanation.

As midnight approached, he straightened up and stared at the equipment. "Hook two of those things in a kind of push-pull arrangement, with pulse data modulation and they could memorize all the numbers written since your great grandpa swung out of the trees and started counting on his fingers."

"We have an integrator, huh, pal?"

"Let's keep it under wraps a bit until we find out just what we can do with it. But for now let's get some shuteye. I'm dead."

He made certain the pen was in the desk and locked the drawers before leaving. At his rooms he took a quick bath and fell into bed. He lay there for a time, half tormented by the fact that he had not observed all of Rena's schedules. She had told him she would simply repeat herself-but there was still a chance, he thought, of something going wrong, of some new information he might have missed.

And if the whole scheme should fall and contact be lost with her he'd regret every minute he'd passed up.

* * * *

With relief he made contact on the first schedule the next morning and there was nothing new. The aching urge to answer back, to speak to her, was almost unbearable. He felt as if the force of his longing could almost project his thoughts across the ages to her.

He spent the day with Carl, experimenting with the tempora tube, trying to find out what it would do, trying to explain it. He stopped long enough in the afternoon to keep one schedule with Rena. Reassured, he continued the lab work.

The following morning he arrived at seven and locked himself in a small screen room. He hung a do-not-disturb sign on the outside and put a pair of cans on his ears, just for appearance. He sat there with a pad on his knees and Rena's pen in his hand.

It came at eight.

George, darling, this is it. They want me to go in just one more week. I can't ask for more time without arousing suspicion. There's no excuse I can give to hold back longer. If only I could know that you are there!

I'll have to give you a lot of the math involved in order for you to understand how to construct and calibrate the machine. I'm trying to remember accurately how far you can go. I'll simplify all I can, To begin with --

As the stream of abstruse equations began to pour forth faster than his mind could follow he felt sick inside. New concepts, new manipulations that he had never dreamed of appeared on the paper. A week, she said. Did she have the faintest comprehension of the magnitude of the task she was setting up for him?

He wrote steadily through the working hours. Once Carl banged on the door and George waved him away, pointing to the cans on his ears. Carl yanked at the door but finally gave up.

Fearful of missing an important formulation George kept the pen moving steadily. His arm and fingers began to ache. He wondered how long Rena could go on steadily without interruption. It required an effort and clarity of thought far greater than that of ordinary speech, she had told him.

At noon, she paused.

That's about half of what you'll need of the math. You must be tired writing for so long. It tires me greatly because I have to maintain the highest possible level of visualization in order to penetrate the block adequately if at all.

Before we rest let me give you a partial material list to mull over and begin accumulating if possible, Most of the electronic equipment you can get in your labs, I'm sure. Full details of procurement will have to be up to you, of course, but I've simplified everything as much as possible.

Swiftly an itemized list began appearing beneath the other writing. As it lengthened, George uttered an audible groan.

There were enough components there to build a GCA. And he was supposed to do it alone-in a week.

-a half hour, George. There is so much to do.

He laid down the cans and leafed through the sheets he had covered since morning. He had two junior engineers working on his current project, which was about wiped up. He could put them on it, he thought, without their knowing anything of what it was for. They weren't very bright boys anyway. He ought to have help on the more technical end-but that was out.

He could charge some components to his project and get the rest from the junk room. With only a week to go it would take that long for the paper to go through the mill, for somebody to discover there was monkey business going on. He made a couple of separate lists and stepped out to call one of his juniors.

"Jack! I want you to start expediting this stuff. Here's a list for Marvin, too. Clean up our large screen room this afternoon and start gathering this stuff together in there. We've got a hot project."

Jack grinned. He had never known George when he didn't have a "hot" project.

The model-shop work would be the toughest. There was a large order of metal stock, sheets and bars on the list. That meant machine work. Sykes would start asking embarrassing questions before much of that came through.

But his risks were puny beside Rena's, he thought. He wondered what they would do to her if they ever found out.

He glanced hastily at the clock. The time was nearly up and he'd had nothing to eat. He called to a lab boy. "Get the cafeteria to put me up a gallon of coffee, will you? I've got some concentrated thinking to do this afternoon."

Rena kept at it steadily. She made no pause for side remarks-only the steady unending flow of technical information came from the pen. Quitting time at the plant came but she gave no indication of letting up. George's whole body ached from the strain of sitting there steadily, his only movement the guiding of the pen which he didn't dare stop for an instant.

She gave him fifteen minutes rest at six, then resumed and went steadily until midnight. She had completed the math, sketched the main layouts and begun assembly instructions of some of the simpler sub-units.

She stopped abruptly with only a word that she would resume in the morning. George guessed at the deep fatigue that must have overtaken her in that long day of concentration.

It seemed hopeless to try to absorb that mass of material and build the intricate machine in so short a time. The one ray of hope lay in the assembly instructions which she had begun. They were in a form simple enough for Jack and Marvin to handle.

He bought a gross of caffeine pills at an all-night drug store on his way to work the next morning. It was five o'clock and he felt he'd need them to get through the day and the next and the one after that --

By the time the juniors had arrived he had a day's work laid out for them. He also managed to swipe a couple of girls from someone else who had run into a snag on his project. They could help with the wiring and soldering. He sent the shopwork down to Tom Johnson, model-shop foreman-along with a box of fifty-cent cigars.

At eight he was locked up and ready to go. He had rigged up a crude system of levers to hold the pen so that he could guide it with only a small motion of his arm.

The hands of the clock passed eight. The pen made nothing but a wobbly

line. He grasped it and knocked the levers aside. Swiftly the point began to trace out words. And then he knew why he had been so utterly exhausted. It was more than the mere holding of the pen. Somehow, his own nervous system was serving to power it. Rena was providing the trigger impulse.

-think somehow Harkase has found out, He asked me about the pen today and what I thought you might be doing with it. What it means I don't know. I'm just tired and scared, darling. If I could only know that you are there for certain.

But I mustn't waste time. I should be able to finish the instructions today. Then I will repeat everything once more. But even if you've got it all the first time there will be only five days --

She plunged again into the description of the alternator, George's sense of time seemed to go blind. He was a mere robot through which the message passed.

She finished-at two o'clock the next morning. Her last words were barely legible, as if she were working in the last stages of exhaustion.

George had fortified himself intermittently with caffeine pills but even so he felt as if he could not have continued another ten minutes. He glanced at his watch. An hour to get to his apartment. An hour back in the morning.

He went into the screen room and cleared off a section of table. He could put that two hours to better use.

He awoke again at five and made breakfast out of a couple of pills. His stomach felt as if it were slowly turning into one massive ulcer. His head seemed the volume of a number-three washtub. He could get breakfast in two or three hours when the cafeteria opened. In the meantime a lot of wiring could get soldered into place.

It was a ghastly-looking rig growing up there, he thought, as he plugged in the iron. None of the beautifully-laced jobs that the lab girls usually turned out. This was the granddaddy of all bull models.

But the rapidity with which it was going together was heartening. There was such utter clarity in Rena's instructions that the lowliest ham could have put the components together..

He tested the iron and leaned against the bencch, checking over the last batch of instructions. Because of his fatigue when he wrote it most of it was wholly strange, as if written by another author and presented to him f or the first time. He thumbed through the pages, mentally weighing his own thin sliver of genius against the massive intellect that seemed necessary to absorb that mass of material.

His eyes caught at a phrase.

-the mounting of the velac in the fixed field is extremely critical. The field must be measured accurately with a flux meter and the exact plane of symmetry determined. The perpendicular axis of the velac channel --

It was like a sudden small explosion in his brain, he thought afterward. That name-velac.

Velac-it meant absolutely nothing. It resembled nothing that he had ever heard of before. In all her description Rena had used common terms for components-resistor, condenser, coil-values had been defined in familiar units. But velac-it was a word out of another language. A vague knot of fear congealed within his heart.

She had made an error.

In her vast experience in the ages of time she had forgotten what was available to him. Velac-a name out of the future, a device yet to be invented.

It occupied a place of central importance in the machine. Without it there would be no functioning of the alternator, he was certain. And no way to tell her he didn't know. No way to ask her how to build a velac.

The enormity of that error seemed to complete the numbing effect of lack of sleep. He sagged against the bench, watching the slow curl of vapor from the heated soldering iron.

CHAPTER VII: The Tryst

Mechanically he took up the iron. There had to be some answer. Somewhere in that maze of instructional material there had to be a description of the velac. The name was just some contraction she used in reference to a common item or assembly of components. In the meantime he'd best get on with the rest of it.

But as he worked he knew it was no good. He knew that even though he had slipped past the word while writing it there was still no explanation. A single word-a single word to keep him from Rena forever.

Sykes surprised him at seven-thirty. The section chief walked up behind him as George bent over, half inside the temporary frame he had set up to hold the units.

"Since when did we go into the spaghetti business?" said Sykes. He viewed the mess with distaste.

George looked up, his face bleak and without humor. "Pretty, huh?"

"Is there anything in particular that it does?"

"Time machine," said George. "You know. Send guys into the future and that sort of stuff."

He swayed on his feet.

"George! What's wrong? You look sick, man."

George laid down the iron and wiped his forehead. "Got up too early, I guess. I'll be all right after I eat. Cafeteria isn't open yet, is it?"

"No, I don't think so. Look, I don't know why you've been knocking yourself out for the last couple or three days but you've got to cut it out. We want you to handle a new Army contract that's coming up. Some of the technical brass will be in next week to talk over the preliminaries.

"You've got to be in shape, man. There's competition in this business now. I don't mind your puttering around with this junk in off-periods but we've got to show a profit or get cut off at the pockets. We're only a lowly development lab, not one of those prima-donna research outfits."

"Yeah, I know all that," said George wearily. "I just haven't been feeling so hot since Rena pulled out. Too much of the bottle and not enough sleep, I guess. This mess here is just a notion I got. It'll only take a few more days to see if it's going to pan out into something or not. Most of the stuff is from the junk room. I'm not spending the dear old stockholders' hard earned cash on it."

"I think you ought to take the rest of the week off."

"You'd have to send the little men in white coats for me if I did. I'm off right here."

"Have it your way but get some breakfast into you. You look like a zombie this morning."

After breakfast he set Jack and Marvin to the assembly job. He went down to the model shop to try to hurry up the stuff there. Then he came back and checked to see if Rena were contacting him again.

She was repeating the same material that he had already received. Though he had it he wanted to stay there, watching the pen record her thoughts. It was the closest contact with her that he would ever know-and there were so few hours of it left.

But the blind hope that somehow there would be an answer to the problem of the missing element kept him going. He laid down the pen, and turned to the pages he had already written. He passed up the math and started through the text, trying to absorb its content and find an explanation of velac.

There was none. She simply referred to the procurement of the velac as if it were a stock item he could pick off the shelves.

What if she had missed by a mere ten years, he thought. Could he hope to wait out the development of the velac, whatever it might be, and go to her when it turned up?

But it might as easily be fifty years. That would not be a large error in the great span of time that separated them. It would be easy for her to make an error of half a century.

When it came time for her to repeat the reference to the velac he wrote down her words again but there was no clarification.

The remaining four days passed as if in a single blur. For George there was scarcely any dividing line between them. On two more nights he slept in the lab without anyone knowing it. On two others, however, he had to go to his apartment for a few hours of rest.

* * * *

It was Saturday night-the end of the week Rena had given. George sat alone beside the mass of haywired equipment that he had tested and checked as best he could. In some near-miraculous manner it had been thrown together. The circuits checked-all but those involving the velac.

He sat staring bitterly at the unfinished machine. The pen was in his hand-but it hadn't begun to write. Rena had promised to contact him at seven-thirty, just a half hour before her time of departure in her age.

He watched the sweep second hand of the clock swing slowly around. Precisely on time the pen point began dancing in swift whorls.

Hello, darling. Are you all ready to go? Check the calibrations very carefully once again, both temporal and spatial. I want to arrive in Cell Four and find you right there beside me. Oh, it's going to be so wonderful to see you again! It seems as if ten thousand years have passed in the last week.

I'm so tired and I know you must be too. Do you know what I think we're going to find? I think it will be a lovely world where men have conquered everything, including themselves. Where there won't be anything to make us unhappy again.

I think we'll arrive on a little hill overlooking a lovely town. It will be night there and there will be a slow warm rain. I love to walk in the rain but it will be dismal without you --

George, I'm afraid. What if you aren't there. You don't know what's it's been like, trying to reach you all this week, hoping you'd be reading my words, never knowing for sure.

I keep thinking, what if you can't build the alternator for some reason? I tried to make the instructions as simple as I could and specify materials you could obtain in your time. But I keep wondering, what if there's just one question you need to ask?

I'll have to stop this. In just a few minutes now I won't have to worry and wonder any more, will I? I'm at the University now. I'm going through the alternator in the Historical Lab here. My parents are here to say goodbye and Harkase seems as pleased as a fat hog. Sometimes I hate him. I think he's been able to see something that none of the rest of us have.

There's time for no more now. The field is coming up. I'm walking towards it. So this is goodbye and-hello, darling!

He waited. There was no more.

The pen was still. She was gone utterly beyond his reach. He dropped his head to the table and he could not hold back the tears.

After a time he tried the pen again to see if perhaps Rena were trying to reach him from Cell Four. If she were it was in vain. The pen remained a dead thing in his hand, silent and decaying. Somehow he knew it would never write again.

He fled from the laboratory and out of the building. He felt that he had to keep his body in physical motion to retain sanity.

The now widened gap of thirty-two hundred years seemed more terrible than ever. He thought of Rena, stepping into the field, hopeful of meeting him on the other side. What was she doing now?

She knew that he had failed. Her agony would be as great as his and she would be in a strange world that might be far different from the dream world she had hoped for. It might be a fierce and savage place where men and beasts would give her little chance for survival.

In vain he tried to comprehend the philosophy of her time which would allow her to take such risks with little concern for her life but which would deny her any right to be with George, regardless of her happiness. There was

savagery in her age too.

He walked for endless miles, it seemed. At last it began to rain, slowly and gently. "I love to walk in the rain but it would be dismal without you -- "

He headed for the nearest package store and reached it just at closing time.

For three days he was on a solid drunk. Sykes finally came for him on the next Wednesday.

"I suppose you had to do it sooner or later," said the section chief. "But I hope it's not going to be a permanent state. Let's get you into the shower and after you absorb a gallon of coffee we'll take a walk around the block."

"It's no good," said George. "You'd better get one of the other guys to engineer that new contract. I'll be lucky if I can hold a job in a repair shop."

"Yeah? Listen, you dope, they've tracked Rena as far as Detroit. I got a report this morning. She was positively identified there on Monday. I'll admit you don't find a girl like her more than once in a lifetime but you've had your binge now and it's time to pick up the pieces and get ready to see Rena when they catch up with her."

"Yeah-yeah, sure. I wouldn't want her to see me like this, would I?"

"Of course you wouldn't. Now you're talking sense."

It was almost a relief to get back to work the next day. Work and time would dim grief and make it bearable.

* * * *

As usual dealings with the military started out with a snarled-up mess in which the technical brass considered it possible to order engineering impossibilities with the same ease they could command a private to polish a general's buttons.

Their stupidity was refreshing as he let them back themselves into one corner after another. It would be quite a number of days before there would be agreement on preliminary specs, he saw,

After the conference he wiped up a few change orders on his last project and two others in current production, He almost had a phobia about going into the screen room where the unfinished alternator was. But he couldn't quite bring himself to order Jack and Marvin to dismantle it.

It was Saturday and he went in just before one o'clock quitting time. His feelings seemed dulled now by the events of the past week. He could almost view the machine dispassionately as a mere technical achievement, not as a broken key to reunion with Rena.

He sat down over the papers that he had written with her pen. He thumbed through them. Much of the math still eluded him but he began a leisurely examination that replaced the panicky haste which had possessed him before.

Here were the basic principles of the machine. Why couldn't he work it out from there? Why wasn't it possible for him to design his own alternator and velac if necessary?

If he could do it, would it still be possible to arrive in Four simultaneously with Rena, eliminating the probability of her arriving without him?

He glanced speculatively at the machine and turned back to the pages of math. Was it worth a try? He smiled to himself. He would be trying all the remaining days of his life. For him there would be nothing else worth doing.

He began working his way slowly through the equations again, following the theory and transformation step by step. And then, after five and a half hours, forty pages deep in the pile, he found it.

Rena used the term, velocity acceleration of hyperbolic stream flow.

Velocity acceleration-velac.

The kind of term that would come into common use after technicians had been working with a device for a while. But how far in the future would it be?

Swiftly, he went on through the equations describing the phenomenon. It seemed suddenly as if a cold blast descended upon him. He read through the math again.

He knew those equations. They were descriptive of the electron flow within the tempora tube that he and Carl had made.

The tempora tube was the velac-with modifications.

Rena had erred by mere months perhaps, even weeks. She had known that he had helped develop it. No wonder there had been no explanation. But she had forgotten that the contraction, velac, had not yet been coined.

In his previous haste and intense fatigue he had defeated himself by passing over those equations without recognizing them. He swore futilely. If Rena had been harmed or lost to him because of his own thick headedness --

He went to the screen room where Carl worked and broke open the cabinet that held the existing models of the tempora-velac. He took them back to his own room and returned to the math.

There would have to be minor alterations. They were not developed closely enough to the form in which Rena knew them. He contemplated the two-foot globe with its complex innards. It would mean opening the bottle and resealing it.

The company boasted a television tube lab but it was ill-suited to anything else and George was even less suited as a glass technician.

He computed the alterations required in the elements and built a tiny grid assembly that would have to be added. He took the tubes to the other lab.

Carefully he heated one and broke the seal. Then he removed the largest terminal seal that contained a single highvoltage lead. It left a hole three inches in diameter. Deftly, he worked through it to alter the elements and insert the additional grid. His fingers felt clumsy and thick. He wondered if he could ever depend on the operation of the tube when he was through.

Finally the terminal seal was replaced and the vacuum line joined. It seemed an endless wait while the mercury pump scavenged the thinning molecules of air.

Then he flashed it-and a clear thin line appeared almost all the way around the tube.

He glanced wearily out the window. It was almost daylight-Sunday. No one would be down. He could try again with the other tube but he felt the exhaustion creeping up on him again and he remembered the other blunder that fatigue had cost.

Still, he couldn't give up a whole day with possible success this close. If the next tube were a failure he could get the lab to make another on Monday.

He returned to the work. He let the glass anneal for hours after he finished the alterations. This time there was no cracking.

The sun was setting when he took the finished tube back to his own lab, He clamped the tempora-velac in place and adjusted the orifice as Rena had directed. Twenty-four hours after he had first recognized the velac equations the alternator was ready for the application of power.

* * * *

He was ready to go-eight days late. Would it make a difference? Could he still join Rena at that moment when she passed into Cell Four? She had given him exact coordinate settings for the machine with warning not to alter them in any way. It was possible that other factors of which he was ignorant were involved. He didn't know but he carefully adjusted the time setting to eight days less.

It was anti-climatic now. A week ago he had been keyed to intolerable pitch when failure had come. Now Rena's written thoughts seemed like ghostly memories out of an irretrievable past. He looked about the lab where he had worked for eight years. He wondered what they'd think when he disappeared.

The alternator was set for self destruction. They could never follow. The pen was in his pocket and Rena's papers had been carefully burned in a wastebasket. There would be no evidence he had left as far as he knew-unless

it were his own body found dead in an alternator that was a failure.

The gray field was rising now. It pressed like gelatin fingers against the space beyond its confining plates. He glanced at the clock. It was ten minutes after eight.

He walked into the grayness.

* * * *

He was standing on a low hill and there was a city not far away just as she had said. It was even raining and the lights glistened in the slowly falling shower. And then he heard her step, saw her moving in the shadows.

"Rena!"

"George-oh, George, darling!"

He pressed her close in his arms and when he kissed her face he tasted her tears mingled with the rain.

"I've been waiting," she said. "I was sure I'd failed and you weren't coming,"

He tried to see his watch."Ten minutes. Ten minutes isn't bad-out of thirty-two hundred years."

"I know. But it seemed so long when I thought I would never see you again. I've found out about these cells. There's no going back through them-only forward-even for us. I could never have gone back to try to reach you again."

She shivered, half with cold and half with the thought of the awful impenetrable gulf that might have separated them at this moment if they had failed.

"It's just as you dreamed it would be," she said. "But you're cold. Let's go down to the city and find out what kind of a world we've come into. Maybe even the people are as you dreamed of them,"

They moved down the muddy slope towards the town.

* * * *

Not far away in space but six centuries back in time, Dr. Papes Harkase sat in weary relief before his instruments in the Historical Laboratory. The others had gone. It had been an hour since Rena had left. He had spent that time in desperate urgent probing with his instruments.

They told a story of success and the relief that followed laid bare the incredible exhaustion that had crept upon him the past months. He had brought to fruitful conclusion the project that had occupied nearly all his professional life.

In it all there was only one deep regret. He remembered the face of Rena that day when George had been sent back to his own time and blocked. He remembered how she had looked when she said, "You were all in on it, weren't you?"

He wished he could have explained just why he had been in on it. He wished he could have spared her some of the agony of that terrible week when she never knew that her thoughts were being received.

Well, it had been pretty terrible for him too, he thought. He had had to take dangerous steps-impressing Rena to take her pen and leave it with George.

He had not known for certain that her thoughts could reach the pen through the block. It had been a well-indicated theory-but only a theory.

He picked up the sheaf of papers on the desk. He wished that he might have shown them to her, for they explained why he had taken advantage of Cramer's fanatical attitude and helped send George back, to be blocked forever unless he could come through to Cell Four by his own devices.

For that had been the requirement laid down by the immutable mathematical laws that defined the only circumstances under which their blind branch could ever be regrafted to the main stem of history, which they had left so long ago.

He laid the sheets down and patted them with finality. Rena could not have been told what was in them. Her knowing would in itself have broken the laws by which the regrafting could be performed. And so he had manipulated the

situation according to the requirements of those merciless equations and with all his skill as Master Historian.

But the price of his success was Rena's eternal hatred and, though he would never see her again, he wished that it didn't have to be so.

He rose and shut down the massive panel of instruments. It was done. No longer was Cell Four like a blind bud on the end of a probability branch six hundred years ahead. Rena and George had reached the Cell together and now the tenuous fiber of possibility that had reached tentatively back to the main stream was a strong bridge, an indestructible link.

A chain of men whose names were Brooks.

THE CAT AND THE KING

"The cat is symbolic," said Jason Cartwright. "I shall keep him." His eyes went from the motionless silhouette of the giant Maltese sitting in the window overlooking the gray city. They settled on the mud-spattered, ill-clothed form of his brother.

"I find I can't trust men these days," Jason continued. "Seems to me like there used to be an old saying 'even a cat may look at a king'-and it's almost arrived at the state where only a cat may look at this king.

"And don't say I'm not a king, Robert. I'm king of the greatest industrial and commercial empire the universe has seen, and it's growing every hour. Yes, I'll most certainly keep Old Tom. He doesn't talk back, and he keeps quiet about what he sees. All I have to do is rub his ears to get more affection than all the human beings alive would give me."

"If that's all you came for, get out. I'm keeping Old Tom."

But Robert Cartwright didn't rise. He only shifted his muddy feet upon the luxurious carpet that covered the office floor. "As you say, the cat is symbolic. You began your career of commercial imperialism as a boy with a stolen cat-mine. And so you crush me financially and take the one insignificant thing that I desire to keep, Old Tom. But have you ever thought of the complete symbolism of the cat? You end your career just as you started it-and perhaps you are nearer the end than you think."

"What do you mean by that?" Jason's face went dark as he thrust his blunt head towards his brother, "I don't like threats."

"I don't have to make threats. Your own weight will crush you. You've built an industrial empire upon blood and theft, and you're out of date if you think you can-maintain it. Imperialism in commerce was at its height when you and I were boys and saw our father destroyed by it. But now it's dying so fast that you are going to be caught right in its death throes. You began with a stolen cat, and you shall end with only a stolen cat."

"So cries the poor peasant as the king passes by," sneered Jason."

You'd be quite willing to trade places, I'm sure, but you've never even gotten the mud off your feet since you came to Venus, have you?"

Robert glanced about the room and at the fine desk of polished Venusian mahogany. "You don't get muddy feet sitting in a polished office built upon the sweat and blood of other men," he said thinly. "You get it working, tramping through the swamps of Venus, building and discovering."

"Then go back to your building and discovering and tramping through the swamps. I'm leaving you your own laboratory and instruments. Make new discoveries and get your name in a dozen scientific journals. That's what you want, isn't it? As for Old Tom, I had my men bring him along when they found him in your plant. His great-grandfather was the first thing I ever took away from you. Old Tom will be the last, for I'll never again allow you to accumulate a nickel. That's what happens to men who fight me."

"A specific antitoxin for jungle Dread doesn't mean a thing as long as it deprives you of a few of those precious nickels, does it?"

Jason Cartwright shook his head. "Not a thing. Jungle Dread happens to be responsible for a considerable part of my income. The drugs my company sells do not bring a permanent cure for the disease and so a continuous repeat business is possible. It's far more profitable to sell a repeat item than a

single shot. But more important by far is the fact that the antidote we sell becomes a direct control over the Venusians. If they get out of hand, we just dilute the antidote or withhold it and they come around in short order.

"You're just no businessman, and that's why I own fine, beautiful things, which you only track up with your muddy feet. You can get out, now, Robert, You're through, washed up. After you attempted to buck me by manufacturing serum on your own, you signed your own sentence."

"Will you give me passage to Earth?"

"And have you spread the news of your discovery there? I'm not crazy. I don't care what happens to you. You can spend the rest of your life in the jungles hunting new bugs if you want to. The freedom of Venus is yours. Nothing you can do will harm me, but you can never obtain more than enough to barely live. The moment you try, I'll snatch it away from you and throw you back into the jungles. You can attempt to send your story of the serum to Earth, but you'll be a dead man if it reaches there. There's no place on Venus that you can hide from me. Do anything else you like, but don't cross me again. It will be the last time, if you try."

The face of Robert Cartwright was impassive as his brother pronounced sentence upon him. He knew that Jason's word was final. There'd be no mercy.

Robert Cartwright rose. "I'll remember, Jason. You know, of course, that I won't send the story of my discovery to Earth because I'm enough of an idealist to value myself as of greater worth to mankind alive than dead. But I want you to remember this, Jason: Never before have you interfered with my scientific work and I have let you alone. Now, it is different. I'll not allow you to interfere with my work."

"Get out! I haven't time for your empty threats."

"I'm going. Just one more thing for you to remember: You said the cat was symbolic, and you're right. Old Tom may be in your possession, but I am still his master. Never forget it, Jason."

With that parting word, Robert Cartwright turned, grinding the mud of his heel into the thick pile of the rug, and strode towards the door. He never looked back.

* * * *

The door closed behind his brother, and Jason rose and went to the window. He scratched the cat's ear. The big cat struck back playfully, raising blood on the back of Jason's hand. The magnate laughed. "You play rough, eh? You and I should get along."

Then from the window that formed an entire missile-proof wall of his office, he watched the proud, shabby figure of his brother. Robert Cartwright stood hesitantly in the mud of the Venusian street, then turned his back on the magnificent edifice that housed the central offices of Cartwright Enterprises. He moved away and was lost in the crowd of Venusians and Earthmen.

Jason Cartwright returned to the desk and leaned back in his swivel chair. The cat moved over and jumped up to sit on the desk, his proud head erect with tremendous feline superiority that matched Jason's own concept of himself.

The incident of blocking Robert in his manufacture of jungle Dread serum was merely a minor event in the operation of the great company of which Jason was the founder and dictator. As far as the sale of the serum went it wouldn't have mattered a great deal if Robert had gone on with his production. The income from antidote was a small fraction of a percent of the total, but the threat of withholding the antidote was the force that held the hundreds of thousands of Venusian workers in line.

Robert had openly accused Jason of this, and such charges could not go unanswered. Such brashness could not go unpunished. Besides, there was a particularly satisfying feeling in having smashed Robert completely once again.

When they were boys, Robert had been the favorite of their father, a man who dreamed great dreams and dreamed them too well for his own good and

that of his family. His dreams had touched the domains of the great transportation and power companies and they had crushed him mercilessly. He had died in near poverty.

-- From this, Jason had taken his lesson for life. He would never be crushed as be had seen his father crushed. He would be the merciless conqueror, not the broken dreamer his father had been.

With small beginnings in the early days of space flight, he had expanded one small enterprise after another, building each to a ruthless success, then combined and built anew until his empire at last stretched across the Solar System and his enemies were legion.

In contrast, Robert had remained the dreamer like their father. He, too, had gone forward on the breast of the great tide of exploration that followed in the wake of the first space flights, but he went in the interest of science, of discovery. Each new world upon which he set foot was a thrill that touched his soul with the magnificent humbleness of the discoverer. He came to seek knowledge and to find better ways of life for man and the inhabitants of alien worlds.

It was upon Venus that the bulk of human colonization had taken place, and the greatest of the extraterrestrial tragedies. Here, the natives were placid, aboriginal creatures whose life and evolution had almost been brought to a halt by the disease known as jungle Dread. Ninety-nine percent of the native Venusians suffered from it and nearly as many Earthmen contracted it after arriving there.

Some of Jason's chemists had devised an antidote that staved the mind-numbing attacks of the disease and it had been hailed by the worlds as a means of bringing Civilization to Venus. The Venusians were grateful and their advance had been remarkable, but constant consumption of the antidote was necessary.

Leaping ahead as if released from age-old chains, the Venusian civilization developed with incredible rapidity. The shiftless, lethargic attitude of the people changed to an energetic, merciless driving of themselves as if they would make up for the lost centuries. Always skilled craftsmen in producing small artifacts, their innate talents now blossomed forth-to the great financial advantage of Jason Cartwright who hired them by the thousands in his fabricating plants.

But with all this Robert knew that the planet would never achieve as it should as long as jungle Dread had to be held back like an ever present foe at the gates of a city. A specific serum was needed. He succeeded in isolating the virus of jungle Dread and producing a serum that gave lifetime immunity.

Unaware of Jason's use of the drug as a whip over the Venusians, he had asked Jason to manufacture it because he had no talent or bent for industrial or commercial enterprise. Jason had laughed at him and immediately confiscated his plans. Robert discovered the reason and went ahead then with a small plant of his own for the manufacture of the serum. This, too, was wiped out by Jason in a single blow.

It was inevitable, Jason thought. The dreamer always gets cut down in the battle of life. Just as their father had been cut down. There were only the two possibilities for men in the world. He and Robert represented those two, the conqueror, ruthless and unyielding, or the dreamer, imaginative and beaten.

The giant cat twitched its whiskers and looked at Jason as if aware of his thoughts, and in thorough agreement.

Jason could not have explained his pride in possession of the cat. It was not that he loved the pet-he was scarcely capable of such an emotion towards any object. But the cat represented conquest. It was his symbol of triumph, and dated from the boyhood of himself and Robert.

Their father had given Robert the magnificent ancestor of Old loan, and Jason had wanted him. There came a time when Robert needed money for materials for the boyhood laboratory.

It was more than useless to ask their father, but Jason had saved from

his meager allowance and offered to loan it to Robert with the cat as security. Knowing Robert's inability to comprehend anything but his scientific work, Jason was certain the cat would be his. And when the time limit was up on the loan he promptly foreclosed and took possession of the cat.

That had been long decades ago, but to Jason it still carried the thrill of conquest. Old Tom, descendant of that first pet was a satisfying symbol of that conquest.

Jason had not known at the time that Robert had some kittens fathered by their pet, so that when his men raided Robert's plant and found the giant Maltese, he was exuberant. It was like reliving that first experience all over again. It was symbolic of what Robert had become and what Jason had saved himself from becoming.

Old Tom yawned luxuriously and looked questioningly at Jason as if desirous for activity, as if waiting to witness some of the manipulations of the fabulous empire of Cartwright Enterprises.

* * * *

Jason turned to a locked cabinet beside the desk and opened a drawer. He pulled out a file of papers and began scanning them. After a moment, he spoke into the interphone system and demanded, "Marks, get Reamond."

Shortly, a small, ministerial looking man with a bald pate glided into the room soundlessly, "Yes, Cartwright?" he said.

Jason motioned him to a chair.

The man seated himself and found the Maltese, cat staring him in the face. "Where in the world did you get this thing?" asked Reamond.

"Took him away from Robert. The cat's ancestor was with me for years in every move I made before he died. I'm glad to have this cat. Not that I'm superstitious, but a good luck piece around the place won't hurt anybody."

"It gives me the creeps. He just _stares_ at you."

"You'll get used to him. He stays here from now on. But that isn't what I want to talk about.

"You recall the incident of my brother and the absorption of his manufacturing facilities. I want a sufficient number of men put on Robert's trail for a time until it can be determined what his plans are. He made a threat as he left, and I want to be certain that he makes no drastic attacks upon us."

"Yes, I'll see that it's taken care of."

"Remember Bridgeman?"

Reamond scowled, "Yes, he's the bacteriologist who got pretty riled over your brother's case. He insisted we should make the serum and threatened to resign if we didn't."

"Right. He hasn't left yet, has he?"

"Of course not. You know his kind. All high ideals and bluff, but no guts when it comes to a showdown."

"I'm not so sure. At least I'm doubtful enough to believe he should be dealt with. You'll take care of it as in the past?"

"It will be difficult. I think an accident outside the plant would perhaps be best. You feel sure there's no better way? These things are becoming more difficult all the time. Venus isn't quite the frontier country it once was, you know."

"Please take care of it as I asked," Jason demanded. "That's what you're paid for. I think Bridgeman is too dangerous to keep around with the knowledge he has. He is the only one who is thoroughly familiar with Robert's process."

"As you say, Cartwright. What about your brother?"

"He's harmless. I'd rather let him go and enjoy watching him squirm. He'll be at some new program within a year, beating a drum to save the Venusians from some other thing on this foul planet, or else lost in glory over a new bug he's found in the jungle. It amuses me to watch him, especially now that I have the cat. Because it's symbolical to us he'll be sure to make some move to try to get it back."

"There's another matter," said Reamond. "The Workers' Council in the Drian plant is protesting conditions there. They've found some descriptions of Terrestrial plants somewhere and they want equal conditions."

"Drian! We can't have trouble there! The Jovians are coming to pick up their first delivery of distorters soon. Their attack upon the Martians is less than a month away. Dilute the Venusians' antidote for a day. That ought to bring them to their senses."

"It won't be that easy this time, that's why I mention it. They have a new angle. They have an _immune_ as a control. If he sees the effects of diluted antidote in any of them, he yells for help."

"From whom? They aren't organized so much that one group will strike or show force to help another, are they?"

"Not yet, but they're working in that direction. Anyway, the _immune_ could stir up a fuss, yelling to the police, the Terrestrial news sources and so on. You can see what it would do."

"If something happened quite regularly to these _immunes_, such as accidents in hazardous work, they might become discouraged."

"That is my solution, but it doesn't seem to me that it will continue to work forever. We're in a sort of transition period now and it's going to be dangerous unless we retrench and spend more money for plant improvement. The Venusians are brilliant mentally. They've just been held down for thousands of years by this jungle Dread, and now they're beginning to catch up. It might be that in the not too far distant future they'll even pass us."

"I depend on you to prevent such contingencies. If new and more drastic methods are required, go ahead."

Reamond rose. "I'll do as you say, but private police killings won't stop a revolution and that's where we're headed."

"You're talking like an 'old woman, Reamond. If I hear much more of that, I'll have to find someone else to fill your shoes."

The secret police head grinned mirthlessly. "You'll never find another to fill my shoes like I fill 'em."

* * * *

As the door closed behind the man, Jason thought grimly that he was right about that. There was probably not another killer in the entire universe quite so efficient and ruthless as Reamond.

Yet for Reamond to suggest a backing down from their policy of ruthlessness with the Venusians didn't make sense. Surely the man couldn't be getting old and squeamish, Jason thought. Perhaps in this one instance he was right, however, for, if there was one plant in his whole empire that had to be kept running, it was the Drian plant. For there the Venusians were producing deadly distorters, weapons which would go in great quantities to both sides of the imminent Jovian-Martian conflict. That war would make Cartwright Enterprises the greatest commercial empire in the universe, for the distorters rendered all other weapons obsolete. And no one could supply distorters except Cartwright. His scientists had designed it and only the Venusians could build it. Only they possessed the infinite skill that could perform the handwork necessary to the creation of the weapons.

All distorter production was centralized in the Drian plant. If it were thrown out of production by trouble with the Venusians, Cartwright's dreams of multiplication of his empire would disappear. Yes, the Drian plant had to be kept in operation at all costs. Perhaps Reamond was showing good sense after all in his suggestion that they backtrack and give in to the Venusians. But he'd let Reamond go ahead with diluted antidote. If that didn't get results, it would be time to give in.

The cat jumped down into the chair Reamond had just vacated and settled himself in a squatting position, watching with interest as Jason opened another drawer of the cabinet which proved to be a miniature bar complete with ice-cube machine. He mixed a stiff drink of the Venusian fermented drink, Teoqua, and downed it. It was a midmorning ritual with Jason, which he was finding more essential and more satisfying as a mental pickup all the time.

True, his doctor had strictly advised against liquor of any kind, but Jason wasn't inclined to believe that doctors know everything about the human body. No one knew about this private stock except Jason. He winked at the cat and shut the drawer.

At that moment the private outside phone, known only to a very few intimates, rang softly. Jason answered and the exotic face of Robin Murello appeared on the screen. "Hello, darling -- " she said.

"Robin, I wish you wouldn't call me here. I've asked you before."

"But darling-I had to tell you that I won't be dancing this weekend. I'll be free. We can be together if you like. Or perhaps you don't like," she pouted suddenly.

"Of course, Robin. There's nothing else in the world I'd rather do. Same place-The Lanceford in Sunward City."

"I'll be waiting for you." She cut off with a tantalizing smile.

Jason sighed. Robin was expensive, but he could afford her, and she was the one thing that seemed to make things worth while at times. He hated to admit the strain of ruling his ruthless empire was telling on him. But with the help of Teoqua and Robin Murello, he'd see it through.

Jason knew he ought to stay in town over the weekend and work on the problems of this new development at Drian. But he felt tired and wearied of mind and body. Another couple of days wouldn't hurt anything. He reached for the phone and called home. He told his wife, Lotta, he had to go to Caramond for business reasons for several days. He had connections there that would alibi him in case Lotta should try to check up on him. She had done it before.

He notified her of the cat, and sent Old Tom home in the care of his private chauffeur with instructions to provide its care.

* * * *

Sunward City was the Riviera of Venus. Situated in an equatorial, volcanic region, it was the one locality where the eternal fogs of Venus did not persist. The sun shone bright and warm on the sands of the Eastern Sea and the great resort that was Sunward City reeked with exclusiveness. The tremendously wealthy of both Earth and Venus wintered there, for it combined the best of a score of vacation climates.

Robin was there, lying on the white sands, watching the lazy surge of the sea when Jason found her. She was the most beautiful thing he had ever seen on Venus or Earth, he thought. But she was like himself in every respect. There was nothing of loyalty or trustworthiness in her, and she was constantly on the lookout for a higher bidder-for her affections. So far, Jason had managed to outbid the field, but Robin was becoming a very expensive diversion.

"Darling!" she greeted him in surprise, "I didn't know you had come. Shall we swim?"

"Do, if you like, I think I'd like to just lie here and bake in the sun. It seems so long since I saw any real sunshine."

He lay on the sands, feeling the sensual warmth and the nostalgic sensation of the rough sand particles against his skin. It brought back memories of his boyhood days and the infrequent visits to the poor resorts of Mars, of hours wallowing in the cold dunes.

He felt intense pride of possession in Robin. Her fiery beauty was something to possess with pride. But there was no contentment in it, he thought wearily.

Her eyes were unceasingly scanning the beach for new and more intriguing companions. Anger surging silently through him, he wished he had gone to Drian. He was gambling his dreams for a weekend with Robin.

And then on the second night as he and Robin were together after a late supper, a squad of photographers and private detectives forced the apartment door and burst in. Lights flashed in their faces. In the background, Lotta's prim, indignant figure stood erect in majestic triumph.

"It's taken me a long time, Jason, but I've found you at last. The divorce will be handled by my lawyer. I'll expect transportation to Earth and

possession of our estates there. Goodnight, Jason."

It was all over so quickly that it might have been only a flashing dream. But he knew it was real.

Jason felt unaccountably lonely as the door slammed and he and Robin were alone again. He shrugged her away as she attempted to put her arms around him. "Don't worry." she said. "We can be together all we like now, can't we?"

He rose. "I'm afraid not. I'm afraid we won't ever be alone together again. In fact, I think I'll say good-bye to you now before you have a chance to give me the last word."

He picked up his coat. Robin screamed at him shrilly as he opened the door. "Jason! Come back here! I'll blackmail you for everything you've got, I know -- "

He didn't hear the rest of her screamed threats. Perhaps it would be necessary to have Reamond take care of her, he thought,

* * * *

Back in Viamonde, Jason forced himself to concentrate on the affairs of business. Today was the day an important delegation of the Jovian Satellite Federation was coming to demand delivery on their contract.

The original contract had been for a hundred thousand distorters, but Jason had no intention of delivering that many yet. The Martians had been able to accept only sixty thousand on a cash and carry basis, so it wouldn't do to let the Jovians have more. That might end the war too quickly. Though he didn't actually need an excuse to bluff his way along with the Jovians, the labor troubles with the Venusians gave him one.

He tried to concentrate on what was to be done, and constantly his mind slipped back to Lotta. Her departure upset the background of his life. It was very true that for many years Lotta had been nothing but background, nevertheless she was familiar and comfortable background. He missed her, and he knew it would be ridiculous to ever consider Robin in Lotta's place.

What disturbed him most of all, however, was how Lotta had finally discovered his whereabouts. He felt sure that up to this time his deception had been perfect. No one knew of his presence in Sunward City except him and Robin. Someone must have recognized him somewhere along the line and notified Lotta.

He would give her a divorce without question. But it was defeat for him, and defeat struck him like a disease to which he had no immunity. It fevered his mind and constricted his vitals.

He glanced at the cat, Old Tom, who sat in the window washing his paws with meticulous care. That symbol of initial conquest brought his mind back to the present fruits of conquest and the precarious situation with respect to the Venusian workers.

Jason called Reamond first for a report on the Bridgeman business and the results obtained in the case of the diluted antidote.

Reamond's ministerial calm was unusually disturbed as he came in answer to Jason's call. His face was flushed and he was walking very fast.

"What's wrong?" Jason asked before Reamond spoke.

"Plenty. My men bungled somewhere. They had arranged a flier crash for Bridgeman by disturbing the autocontrol with a false heterodyne of the guide beam."

"I don't am what could have gone wrong with an arrangement of that kind."

"Plenty. There was a patrol car following Bridgeman. It put out a beam to avert the crash, and then caught my men by direction finders."

Jason felt his scalp tingle. "The fools! How did they give themselves away like that?"

"Someone tipped Bridgeman off to the whole plot."

"Tipped him off ? That's impossible. No one knew of it but you and me and the bungling fools you assigned to the job. None of us would have tipped him off."

"Obviously. Yet he was tipped off."

Jason sat back in the swivel chair. His mind, already in turmoil because of the defeat administered by Lotta, was stunned by the implications of this. How could information possibly have leaked on such a secret operation as Bridgeman's removal?

"It's obviously a trick," he said at last as if repeating something only to reinforce his own belief in it. "You and I know that Bridgeman could not have obtained information concerning our plans. There is no audio-detection operation in the plant, and certainly not in this room. Triple alarm screens would go off if there were any low or high-frequency radiation present to spy upon us. The telephone circuits are scrambled before they leave this office. There is no leak."

"Then how did he know?"

"Deduction. He assumed that we would be after him because of his upholding my brother's production of serum. Therefore, he obtained a constant guard until we tipped our hand. Then your men were caught. He's smarter than we gave him credit for. All of which means that he must definitely be eliminated. But you'll have to think of something a lot better than that last trick. What of the men the Patrol captured?"

"They swallowed cyanide before they could be made to talk, of course. They knew it was death to be caught in such a crime."

"At least that avenue of information was stopped. Of course, they didn't know they were working for Cartwright Enterprises."

"Of course not. They thought I was a small-time gangster. I keep a front down in the dock area."

"Good. It means then, that there was really no leak, simply an underestimation of Bridgeman. What charges has he made against us ?"

"None, so far. That's what I don't understand."

"It's easy. He expects us to make another attempt, and the patrol won't believe that we're connected with it. But they'll give him a plenty big guard after this attempt. Your next idea will have to be a good one. What about the Venusians and their labor organization ?"

* * * *

Reamond shook his head slowly and stared out of the window over the silhouette of the cat, who was now immobile, as if on guard against some unexpected happening.

"Nothing," he said,

"Nothing! What do you mean?"

"Just that. Nothing. Do you know what they've done, Jason?"

"What?"

"They're _making immunes_."

Jason's glance swept to Old Tom, who returned his stare. Jason's face slowly flushed and his jaws clenched. "This is some of Robert's work. I warned him. He's given the secret of his serum to the Venusians. Get him!"

Reamond shook his head. "Lock the barn after the horse is gone? What good would it do? Besides, Robert had nothing to do with this. The Venusians discovered it themselves."

"His serum?"

"No. All they do is inject some of the blood of an immune into an infant. Apparently, the presence of antibodies in the natural immunes is a mutation that has finally shown up and will eventually destroy jungle Dread, but the Venusians have been speeding it up. They've been doing it since the first Earthmen arrived and brought the rudiments of bacteriology and immunology with them. It's so simple that it's a wonder it wasn't thought of long ago. But the Vemisians are rapidly becoming a race of _immunes_. There are hundreds of thousands now reaching maturity. So from the long view of things the Drian circumstance means nothing. It will do no good to go in there and fight them.

"We've got to offer them something, much more than they've asked for or we're gone. They can live without us, but we can't do business without them-yet. Our days of unlimited exploitation are over. We must have sense

enough to realize it."

Jason pinched his thick jowls. "I still think Robert had something to do with this."

But that was not important, now, he thought. What was vastly more important was the contracts and materials being worked in the vast Drian plants, materials whose destinations were known only to a handful of top executives of the company.

"Perhaps you're right," said Jason at last. "We'll offer them improved working conditions and increased pay that will make their eyes pop. But we'll stick in one provision-that no _immune_ will be hired. That will discourage the production of _immunes_, and prolong our period of control."

Reamond smiled slowly and watched the powerful visage of Jason Cartwright. Reamond's trade had made him a student of men by necessity, and he could see in Jason already an obsolete type. The type had flourished during the cutthroat commerce of frontier days in every part of Earth and the Solar System, but now it was going. The frontiers were breaking down and civilization was coming. More so on Venus than on any other frontier because the retarded evolution of the Venusians was catching up. It seemed very probable that the Venusians would surpass Earthmen in numerous skills and branches of knowledge before many decades passed. Their evolution was rendering Jason and all like him rapidly obsolete. But Jason would be the last to know it.

As for Reamond, he prided himself on his ability to change his characteristics to fit conditions, like a chameleon. Jason would go. Reamond saw his downfall as inevitable. But Reamond himself would go on forever, he knew.

He said. "Whatever you like, Jason. I'll see that it's put through."

"All right. Go ahead. No, wait. Let me announce it to the workers myself. We'll make a big occasion out of it. I'll work out a program of changes and present it to them-but the provision for nonemployment of _immunes_ must be included."

Reamond rose and started for the door. "I'll be ready to do my part in the program whenever you say."

* * * *

After he was gone, Jason's mind went back to the failure in the case of Dr. Bridgeman. It was intolerable. Certainly, Reamond had hired a pair of fools to carry out the task-but the plan couldn't have leaked. There was no possible way for it to have leaked out. Yet it was hard to credit the soft-spoken, dreamy-eyed Bridgeman with enough suspicion of anyone to anticipate the attempt on his life, merely because he had stood up for what he considered to be right. True, he had made the threat to resign, but it had never been carried out.

And from this, Jason's mind leaped to the mysterious manner in which Lotta had caught him at Sunward City. The two instances of others knowing intimate and well-concealed facts swirled in his mind in a confusing pattern of defeat.

The outside line buzzed and Jason switched on the phone. The face of his personal physician, Dr. Wallace, appeared on the screen.

"Hello, Jason, how's the health these days?"

"Fine, fine, Doc. Haven't the slightest need of you. Going to live to be a hundred and fifty."

"Well, I think you ought to come in for your six-monthly check."

"Make it next month sometime. I'm just too busy right now. I couldn't possibly make it."

"You pay me plenty, Jason. I like to earn my keep. But the thing I really wanted to say, is: Lay off the Teoqua. I hear you're hitting the bottle again."

Jason felt his face suffusing. "Where did you hear that?"

"Oh, that sort of thing gets around. People notice it when someone like you goes off the wagon. I forget exactly where I did hear it now, but you

ought to lay off the stuff, Jason. It's worth ten years of your life."

"Where did you hear it?" Jason thrust his face towards the pickup until his face filled the screen on Wallace's phone.

Wallace recoiled from that sudden burst. "I said I didn't know, Jason. Surely it isn't such a breach of confidence if your personal physician warns you -- "

"Sure not. Sure it isn't, doctor." Jason forced his voice to calmness. "It's just that I naturally get irked about people sticking their noses into my business. Sorry. I'll take your advice."

He cut off abruptly and sat back in the chair trembling. He was absolutely certain that since Dr. Wallace had last warned him against Teoqua no human being had seen him touch a drop of it. The only time he imbibed was in his private office, alone, and from the hidden miniature bar in the filing cabinet.

But, of course. He had to have the stuff purchased. That's how Wallace had got wind of it. He tried to recall the chain of handling. Lotta ordered the stuff, ostensibly for the household and guest supply. She had ordered a particularly big amount the last time because they'd given two large parties within a week. That was it. Someone in the liquor dispensary had observed the order going to the Cartwrights', and that's where the news had started.

He cursed violently all the loosetongued gossipers that had disturbed the Solar System since the beginning of time. Why couldn't people learn to shut up? He glanced at Old Tom lying down now in the window, his eyes blinking sleepily as he tried to stay awake in spite of the warm sun shining upon him through a sudden rift in the eternal clouds of Venus.

"At least you don't babble what you hear." Jason crossed and stroked the cat's ears while he stared out at the muddy street below.

After a time he glanced impatiently at the clock. The delegation of the Jovian Satellite Federation were already an hour late. They had not even announced their landing to the field control tower. At last he gave up and went out for lunch.

He took Old Tom along and let him consume a mountainous helping of raw hamburger at the private table of the company officers in the cafeteria.

When he returned, the Jovian delegation was waiting for him.

* * * *

The roughly anthropomorphic Satellite dwellers bowed low when Jason entered.

"Our deepest apologies for not keeping our appointment on time," said Suu Brok, the spokesman. And as be bowed low, Old Tom strode under his nose and took up a position on Jason's desk.

The delegates had difficulty in maintaining composure.

"My closest confidante," said Jason, with a wave towards the cat. "He never repeats what he hears, you know."

"An excellent choice," said Suu Brok. "Especially in view of the many important matters that invite confidence in your magnificent office."

"Right. Sit down over here and let's get down to business. You want to know, I presume, the state of production on the distorter contract."

"Correct," said Suu Brok, "We also want to take the delivery of the first hundred thousand units, if that will be satisfactory."

"We've had some labor difficulties that have slowed production somewhat. You are aware, of course, that the Venusians are the only ones capable of the delicate handwork involved in construction of the distorters. It is difficult always to get the anticipated amount of production out of the Venusians."

"But you promised I" Suu Brok expostulated. "And we've set the hour of striking. Less than eight Solar Days from now we attack the Martian base at Juufrong."

"Aren't you a little premature? Even a hundred thousand distorters would not warrant your striking that soon."

"We must! We've broken the Martian interstellar code and learned that

they intend to strike at our Anterian outpost only two days later."

"Well, of course that's no affair of ours. We have the weapons to sell if you have the money. I'll guarantee completion of the order within three days."

"We can't wait that long!"

"You'll have to. I'm going personally to the Drian plant today to assist in settling the difficulties among the workers. That will have to suffice."

The Jovians looked upon Jason Cartwright darkly. "It will suffice," said Suu Brok stiffly.

When the delegation had gone, Jason grinned broadly at the cat sitting on the desk. "Have to be careful when we're playing both ends against the middle, eh, Tom?"

He drew out a sheaf of papers from the filing cabinet. The Maltese cat looked down interestedly as Jason thumbed over the delivery records showing shipments of distorters to the Martians.

The Martians possessed just a few more than sixty thousand of the deadly weapons according to Jason's confidential papers. Therefore, that would be the limit on the Jovians' present allotment. The war would have to be kept as evenly balanced as possible for the maximum sale of materials to both sides. Jason had long watched the growing conflict between the two races and anticipated it as the means of obtaining System-wide commercial superiority. If he handled things right, he could make Cartwright Enterprises the richest company in the System.

He decided to take Old Tom with him on his trip to the Drian plant. As he left the landing area on the roof of the building in his private flier, the cat sat beside him placidly surveying the dank jungles that surrounded the city of Viamonde. The smoke of fires burning to smelt ore and to power cheap, old-fashioned steam machinery mingled with the natural fog to make the sky an almost impenetrable curtain through which they flew.

The Drian plant was located in one of the most inaccessible jungle areas of the whole planet, but it was in the heart of Venusian habitation. It covered a square mile of cleared jungle land, in which was manufactured the deadliest weapon of the Universe,

The distorter created a field at a predetermined distance which disturbed the natural molecular equilibrium of substances to such an extent that the entire structure shifted its internal relationship, destroying machine functions and instantly killing all forms of life.

The Venusians, of course, had no knowledge of the function of the instrument. They knew only that they were being paid handsomely for something they did almost for pleasure. For it was a pleasure for them to use their agile fingers in the fabrication of delicate artifacts.

The native Venusians were delicate, almost pigmy creatures, seldom over three feet in height, and covered with a silky, water repellent fur.

For ages they had been subject to the disease they called jungle Dread until they did not know it was a disease and thought it a natural condition. The evolutionary processes that built them failed even after long ages to provide an immunity to the disease. Only when a natural _immune_, a mutation, somehow appeared in their midst did they know that something better was attainable. The _immunes_ became leaders of their people, but their own immunity was not transmitted to their progeny.

So it was that when the first Earthmen came and discovered the nature of jungle Dread, and provided a temporary relief from the enervating illness, that the Venusians experienced a vast renaissance. For many years they had been content with the things Earthmen offered. Now they were beginning to understand the ways of Earthmen upon Earth. They began to see glimpses of the light of civilization in their jungle darkness and they were reaching out for those things that they could see.

Many Earthmen knew it and saw it as inevitable that the Venusians could not much longer be exploited without raising their standards of living and

granting them the fruits of civilization, but Jason Cartwright refused to believe it. His empire had been built upon imperialism and exploitation. To admit these were becoming old-fashioned would admit the waning of his star.

* * * *

On the invisible guide beam that led the ship through the fog and dullness, Jason sped towards his goal. Near the end of the journey he glimpsed the broad square that marked the great Drian plant in the jungle depths. The ship nosed down and settled gently upon the landing area at one edge.

Westerman, the plant manager, was waiting as the ship settled.

Jason had called him in mid-flight to advise of his arrival.

Westerman was a good man. He believed in the inevitable righteousness of wealth and in the unquestionable right of Cartwright Enterprises to exploit as they were exploiting the Venusians.

He welcomed Jason with a handshake and a proffered cigar. The heavy diamonds on his ring finger were dulled with condensed moisture of the humid atmosphere.

"Come in, Jason," he said. "This is a surprise. I had no idea you were coming down today."

Jason answered only when they were in the triple-shielded office where no radiation could penetrate to reveal spoken words. The cat, Old Tom, followed the men and took up his place in the window where he could watch the fog shapes move soundlessly.

Jason said, "I didn't plan to come, but Reamond says things are getting out of hand with the Venusians down here. We've got to do something to get those distorters out. I promised the Jovians a hundred thousand units in three days."

Westerman's cigar dropped as his jaws slackened. "A hundred thousand! Man, you're crazy! We've only got fifty thousand ready for shipment now."

"I know. I don't intend to give them more than sixty, but we've got to let them have at least that many."

"We might be able to do that, but a hundred is ridiculous."

"Reamond thinks we've got to give in to the Venusians."

"No! That's stupid!" Westerman's face grew florid as his most fundamental principle of operation was suddenly thrown into question. "It would be commercial suicide to give in to them. They'll ask for more and more until they own the company. It's ridiculous."

"I think maybe Reamond's right, to some degree. We're wasting our energies and money and reducing our production by constantly fighting the Venusians. Even if we do give in to them an inch at a time we can keep them at a sufficiently low level of consumption that we'll still be ahead of the game in increased production. After all," Jason said expansively, "we're not a bunch of robbers and cutthroats. We're out to give a fair deal wherever it will be to our best interests."

"Save it for the publicity office," said Westerman sarcastically. "I'm against any retreat from our present position. We've established a reasonable rate of pay and living conditions for these ... these savages-that's all they were before we came. We have no obligation to raise them to any cultural level above their own."

"I'm going to try it as an experiment anyway," said Jason. "Besides it will be one wary of controlling the _immunes_. We'll grant increases only on condition that no _immunes_ be employed."

"I'm against it," said Westerman.

That afternoon an attention alarm sounded throughout the vast shops where thousands of intent Venusians bent over their work benches on the long assembly lines where the deadly weapons were being constructed.

Then there came the voice of Jason Cartwright, automatically being translated into the Venusian tongue as he spoke. He promised the Venusians that provision would be made for their own village near the plant, with civilized homes, warmed and lighted and provided with water and sewage, for these were the things that the Venusians had learned that Earthmen had. He

promised them good food and clothing, for in dress they desired to imitate the Earthman. And he promised adequate antidote for Jungle Dread. The only provision was that no _immunes_ were to be employed.

He allowed them an hour to come to a decision and at the end of that time offered to meet their delegates. He was much surprised when they came to the office twenty minutes later and accepted the full provisions of his plan with complete agreement on the prohibition against _immunes_.

Jason smiled confidently at Westerman as he prepared to leave. "You see? It takes only a little diplomacy and you can get anything out of these Venusians. I'll bet they'd turn out a hundred thousand units if you asked them to."

"And I'll guarantee your troubles aren't over yet," said Westerman. "Within a week there'll be new ones. They've got something up their sleeves. You'll see."

Jason laughed heartily and called to Old Tom who leaped agilely into place within the ship. Within moments the ship disappeared into the fog.

* * * *

At home that night, Jason considered that he'd done a good day's work. His success with the Venusians overcame somewhat the previous defeats that still rankled in his mind.

The big house was empty in spite of the score of servants in various parts ready to attend his slightest wish. It was Lotta who made that big house into something that approached a home. It was the quiet background of her presence that had provided Jason the small amount of mental peace that was present in his life.

He had sold out on that pretty cheaply, he thought. He still would like to know exactly how Lotta had found him out.

After the solitary dinner he wandered out into the spacious yards and called in the foggy darkness for Old Tom, but the cat failed to respond. He had the freedom of the yards at night and Jason gave up after a while. He went to bed early, anticipating a good day to follow.

He rose early the next morning and found Old Tom already having a breakfast of thick cream. Jason turned on the newscast coming direct from Earth as he began his own meal.

The newscast was interrupted almost before it started by a sudden call. Jason answered, and Westerman's frantic voice surged into the room.

"Jason! Something's leaked somewhere. The Venusians have got hold of the information that these instruments are distorters and weapons of war. They refuse to have anything to do with them because they are to be used in killing. This morning the whole plant is shut down!"

"How did they find that out? They aren't smart enough to figure it out for themselves. Take them off antidote!"

"I don't know bow they found out. They simply say it came out of the jungle. Someone in the jungle told someone else, but they believe it. As for the antidote, that's a joke, Jason, and it's on you."

"What are you talking about? Explain yourself!"

"You made them agree that no _immunes_ would work here. They're all _immunes_, every one of them. Punish them by sending them away and the whole plant closes. We're helpless to do anything about it and they knew it when you bargained with them." Jason stared at him, trying to comprehend the incomprehensible. "That's impossible. There aren't that many _immunes_."

"Have it your way. But I'm telling you what happened. We diluted the day's antidote. Nothing happened. They show no response. And they won't work. If you think you can get those sixty thousand units out of here in three days, you'd better come on down."

"No ... no, we'll have to think of something. I'll call you later."

He sat down at the breakfast table again, his mind unable to concentrate on a single point. It skipped frantically about the growing pyramid of defeats he had experienced the past few days. First Lotta, then Bridgeman had escaped him. But those events were minor compared to this. How

had the Venusians learned of the functions of the distorter!

He forced the breakfast food into his stomach and turned up the newscast once more.

Halfway through his dish of Venusian colqua fruit he halted with spoon in midair. The newscast announcer was saying:

"The biggest news this morning is the revelation of the near outbreak of war between two major powers of the System, Mars and the Jovian Satellite Federation. The revelation came as evidence was presented to both sides showing incontrovertible proof that each was preparing attacks that would precipitate suicidal war, for each was about evenly matched with equipment in the form of the newly developed distorters, the frightful weapons whose almost untold range and power of destruction would surely have decimated both groups. The war, however, has been averted at least temporarily, with the decision to submit it to arbitration.

"The Council of Associated System Governments is making rapid moves to outlaw the distorter and destroy all facilities for its production, for it is the one weapon of war which has no legitimate use, therefore, there is no excuse for its continued production.

"It is rumored, incidentally, that there is only one people capable of such work as is required in distorter production. They are the Venusians, and swift control of the Venusian producers is expected.

"Actual copies of secret files are in existence as evidence that the great Cartwright Enterprises are responsible for the production of these deadly weapons. Their reports, as shown here, indicate the amount of production allotted to each side."

* * * *

Jason Cartwright suddenly thought that he was going to faint. Dizziness and nausea assailed him as the speaker's face was replaced by a view of the papers indicated-papers from Jason's own secret files in his office!

Time seemed to have halted while slowly the realization filtered through his brain that his dream was utterly smashed. His dream of a vast commercial empire to be washed up on his shores by the turbulence of war on other worlds was shattered. And even more than that, the position of the entire Cartwright Enterprises would be destroyed in the flood of public opinion that would be turned against it as the result of this revelation.

He sat down in his chair again without having realized he had risen to press his face against the visor screen when it showed his own secret documents.

Defeat-defeat so monumental it was destroying all he had fought and lived for-shook him as if with ague.

Slowly his mind resumed functioning. How had those pictures of his records been obtained? The office was guarded like a mint. There was not a comprehensible chance of any unwanted visitor breaking in. It was scientifically impossible for spy equipment to have been installed. Yet there it was, proof that someone had obtained those records.

His mind fought with the turbulent question. It went back to the other recent instances when it seemed that secret information known only to him had leaked. The revelation of his deception to his wife, the tipping off of Bridgeman, even Dr. Wallace's knowledge of Jason's secret drinking, the revelation of the purpose of their product to the Venusians at Drian, the whole exposure of the war plans between Jupiter and Mars,

Every one of those instances involved secrets known to him and they had leaked. Fantastically and impossibly leaked.

Had he somehow been subjected to drugs or hypnotism and made to reveal them? That would mean that there was a traitor in his own organization. Reamond, perhaps?

Yet there was another, more remote possibility that gnawed at the base of his mind. His brother, Robert, was his bitterest sworn enemy. Was it somehow possible that Robert was responsible for this? His men had reported that Robert had set up a jungle laboratory not far from the city, in fact it

was less than five miles from Jason's mansion, but there was nothing suspicious going on there. Robert seemed to be engaged in some kind of research having to do with jungle flora and fauna. He never ventured out of the jungle any more. He seemed perfectly harmless there with his three Venusian servants who apparently worked for nothing, since he had nothing with which to pay them.

But Jason still could not rid his mind of the image of Robert as he stood in the office that last day. Robert had been so sure of himself as he had uttered his crazy threats: "I'll never allow you to interfere with my work. You said the cat was symbolic and your Old Tom may be in your possession, but I am still his master."

The words rang in Jason's ears. Robert seemed to have taken a new symbolism in possession of Old Tom that didn't make sense to Jason.

The pictures of his secret files as shown on the news screen came back to his mind. Then suddenly Jason's face went livid and twisted crazily. He reached for the cat as it finished the last of its cream and hurled it madly across the room. It screamed wildly and crashed into thick draperies hanging from the opposite wall, which is all that saved its life.

It clung frantically for a moment, then leaped to the floor with a fighting snarl and arched back.

"So you're symbolic!" snarled Jason. "What a mortal fool I was to miss your symbolism! If you can hear me now, Robert, know that I'm coming after you. This robot of yours has given itself away. Those pictures of my secret records were on my desk and it was my hand holding them, and the viewpoint was that of the cat as he sat on my desk that day. I'm coming for you, Robert, but I'm going to bring the remains of your robot with me."

And then Jason knew that he was acting stupidly. Robert couldn't have been listening. The robot couldn't contain a radio transmitter. That would be futile in view of the screens and shields that protected Jason's home and office. The information was divulged in some other manner. Yet how? He calmed. His suspicions were fantastic. Yet there was no other possible means by which he had been betrayed. Somehow the cat had done it.

Jason turned to the cat again as it cowered lifelike in the corner. He had to admire the workmanship that had produced such a thing. Robert was clever, more clever than he had thought. Clever enough to finally wreck the great Cartwright empire. But he would pay for it.

Jason slowly drew a cover from a nearby table. As he approached, the cat leaped at him like a wild thing and he caught it in the cover, swiftly wrapping it to prevent its escape. And for a moment he suddenly despaired of his answer to the problem. Surely the cat couldn't be a robot. It was too lifelike in its snarling, clawing struggles. But there was one way to find out.

With the thing in a sack, Jason took it to the laboratories in his office building. He handed it to the X-ray machine operator, "I want pictures of this cat. Put it in a pressure vault, however, because it may explode. Leave it in the sack! It's wild...

The bewildered operator did as be was told. But Jason's fears were not realized. The cat didn't explode. And the pictures told a story. Not all of it, but enough.

He called Reamond. The private patrol leader's face was incredulous as Jason unfolded the story. He was torn between a rat's desire to leave the sinking ship, and the knowledge that Jason still had too great a hold on him for that. He said, "What do you want?"

Jason said, "Get a pair of your best men and some weapons. We're going in after that rat if it's the last thing we do."

"Don't you think he'll be expecting us?"

"No. He can't know that I've discovered the nature of his cat. We'll even let the thing lead us to him, because he must have some way of knowing when it's coming.

* * * *

They waited until dark, and it was the longest day of Jason's life. He avoided the newscasts, and stayed away from the offices. The Council would come for him soon enough. He rehearsed the things he would say to Robert, the tortures he would put him to before he killed him.

Then, at last, things were ready. Reamond came to the mansion shortly after dusk with his three picked gunmen, Riley, Wilson and Stacy. Jason didn't like the appearance of any of them from a subjective point of view, but they looked competent in their trade.

"We're ready," said Reamond,

Jason took the sack in which the cat had been imprisoned all day and then went out into the thick darkness beyond the boundaries of the mansion. Jason fastened a collar and long wire to the cat, then let him go. The cat leaped away until be was brought up by the restraining wire. He fought it madly and Jason sloshed rapidly through the wet jungle to follow.

"We ought to be more careful," said Riley. "This don't look like a good setup to me."

"He won't be expecting us," said Jason. "He'll only be looking for the cat. It goes to him every night that it can get free and comes back in the morning."

The trio of gunmen were silent, but their dislike of following a wild cat through the wet jungle night was obvious. The night sounds and the constant drip of water from foliage above them set their nerves on edge. And Jason's careless crashing through the jungle produced a constant fear in them that hordes of unseen enemies would be firing at them momentarily.

When they had covered four of the estimated five miles, Wilson's nerves were near hysteria. He suddenly stopped and exclaimed, "You guys are crazy if you go any farther. We don't know where we're going-and we'll all end up by getting killed. I'm going back whether you guys are or not."

The only answer was a sudden shot from Jason's gun and the flash of a burning ray that lit the night long enough to see the crumpled body of Wilson lying in the jungle muck,

"This is important," said Jason evenly. "We're going to get Robert."

Silence marked assent as he deliberately turned his back on the others and continued on the way. He knew the breed from which the gunmen sprang. They wouldn't have the nerve to shoot him in the back and retreat.

He would not have been so sure if he could have read the mind of Reamond. The private policeman's finger tensed on the release of his gun, but something within him kept him from killing Jason. Through the dark hours he had fought it, but in vain. He knew that he was about to see the close of an age in man's history, and surely it deserved some better ending than a traitorous shot in the back.

Jason was through. He was a dead man and didn't know it, but Reamond wanted to see the fight he would make for survival. He wanted to see Jason's face when be realized the fact that imperialism was dead, and that Jason, the last of the great imperialists, was dead with it.

Undoubtedly he was risking his own neck, but he had to see the end of the Age of Imperialism in this phase of history. Reamond lowered his gun.

They had gone nearly another mile without seeing anything when Stacy uttered a warning. "Hold it. I think there's something ahead of us there."

The party halted. "I don't see anything," said Reamond.

"Come on. We're almost there," said Jason, The cat was pulling frantically now as it lunged to escape.

* * * *

At that moment a torrent of Venusians burst from the trees on their left. The party froze in immobility.

"Can you get any of that stuff?" Jason demanded of Reamond.

"Yes, I understand it well. They want us to lay down our arms and come with them."

"Tell them to go back and tell Robert we're coming for him. They must be some of his look-outs."

Reamond spoke. Then from the jungle depths came the answering flame of a modern tube gun. The men flattened themselves on the padding of grasses and leaves overlaying the muck.

"What did you tell them?" demanded Jason.

"I asked what would happen if we refused."

Jason swore and cursed. "I'll show the dirty -- " Before the others could stop him he sent a stream of fire into the darkness.

Instantly, it was answered. And a piercing scream burst from Jason's lips. In the white light of the flames, they saw him crumple and crash to the path at their feet.

Reamond stared numbly into the darkness. He might have known that Jason would lose all sense of craftiness. That was the way of a man like Jason when he was trapped. He tried to win with the blind arrogance that had brought him to his knees. But you couldn't load a tube gun with arrogance. Reamond had risked his neck to see a turn in the history of the universe. And this was it. A man lying mortally wounded in the jungle muck of Venus.

Reamond called out. There was silence for a moment, then diminutive forms came forward cautiously and pushed aside the thick growth.

"Take us to your master," Reamond said in a voice thin with resignation.

Silently, the Venusians picked up the groaning, struggling form of Jason and carried him skillfully through the jungle. It was only a matter of minutes until they broke out into a small clearing and came in sight of a lighted hut. The Venusians continued forward and entered after a warning knock.

The Earthmen found themselves entering directly into a small but efficient-looking laboratory. A slim, middle-aged man with glasses and laboratory smock was present, but be paid no attention to them. He was bending over an object strapped to a table.

Then be moved and straightened and a shining instrument was in his hand.

Jason saw him through pain-glazed eyes. "So I was right, Robert. It was you who betrayed me-you and your robot cat."

"Betrayed, Jason? I would hardly call it that. Salvation-for a whole world-would be better. But robot, did you say?" The scientist laughed suddenly. "I'm afraid Old Tom resents that."

The cat had risen now as Robert Cartwright released the straps. Its back arched at the sight of Jason's face. He snarled and clawed the air. "You must have mistreated Old Tom. He doesn't like you."

Jason's eyes grew wilder. "You mean he isn't a robot? Then, how-No! Robert, I'll never believe you tricked me into coming here with merely a live cat. My office was spied upon, my secret papers ... and the Xrays -- "

"Yes, Old Tom did it all right," said Robert. "But he's still no robot. He's alive. I knew a long time ago that I would have to be the one to destroy you, Jason. I knew that all it would require would be an exposure of your own life. That would speak for itself and spell ruin for you. But the question was how to spy upon you.

"I found the answer in our boyhood pet. As you say, the cat is symbolic. Symbolic of the life you chose-symbolic, too, of the life I chose-The cat symbolizes all that you ever took from your fellow men by trickery and lies. And it symbolizes that the science that I chose shall in the end triumph over all your lies and schemes, for it has brought your downfall."

"How did you do it?"

"It wasn't simple, but the Venusians figured it out after I showed them what I wanted. The useless parts of the cat's brain were removed as were other nonessential organs or portions of organs. In their place were built tiny masterpieces of electronic equipment. To the cat's optic nerves were connected visual recorders, to his ears, audio instruments. And all that he saw and heard was impressed upon infinitesimal records. See, I have just removed one.

It is taken out just below his ribs on the right side with a large size hypodermic needle, and a new record inserted in its place. The operation is practically painless to Old Tom. The only other thing needed was a means of guiding him here by radio control when he was safely out of the field of your screens. It was easy to direct him here by inciting a small amount of pain or discomfort in certain nerves when he moved in any direction but the one required to bring him here. The records I obtained were distributed where they would do the most good. They saved Bridgeman and Lotta. Wallace's warning helped add to your unnerving.

"You were done for long ago, Jason," Robert continued. "You're an anachronism that somehow managed to live on beyond your time. You are like the last dinosaur must have been, bellowing and thrashing its way about a world that had no need of it. You are the last of the great imperialists. It would not have been worth while to combat you except that you were impeding progress and causing death and misery to millions of Venusians, not to mention what you were doing to the Jovians and Martians by inciting them to war.

"You thought that you blocked the Venusians when you prevented my serum from reaching them. You see how they have solved the problem for themselves. I didn't even know they had done it. They are outstripping Earthmen fast. Eventually, when they catch up on their lost evolution, they may surpass us by far.

"But, as for you, the police will want to know all about your manufacture of distorters. And so the great Cartwright Enterprises are finished. You're finished, Jason, and another age of imperialism has come to an end."

Suddenly, the cat broke away from Robert's hold, and leaped to where Jason lay. But Jason made no move. He was dead.

ALARM REACTION

CHAPTER I

He had to be at the party. Everyone in the Base above the rank of lieutenant j.g. had to attend Commander Kendricks' parties unless sick or on duty, But no one could force him to have a good time and Glenn Baird was damned if he'd make the attempt on his own.

He saw Nancy coming toward him and sauntered out through the wide glass doors into the garden. He still had a cocktail glass in his hand where it had been for the last ha-If hour. He had never yet been able to get rid of one decently at Kendricks'.

Now he gave this one a hasty toss into the thick foliage beside the door and moved on to a garden seat in a secluded nook. He could imagine how Caroline Kendricks had coyly designed this for a lovers' rendezvous. Maybe he was getting old, he reflected, or perhaps his trousers were just worn thin in back but that cement slab was damned cold for romance.

Of one thing he was certain-it was not that being married to the same woman for almost six years had taken it out of him. Nancy, coming toward him with the moonlight behind her, was easily good for a tenpoint, jump in his blood pressure,

She sat down close to him "What's the matter, Glenn? Aren't you having a good time?"

"Oh, cut it out, Nan. Has Kendrick got to the jump he made at ninety thousand feet on his first round-the-world nonstop attempt?"

"No, darling." Nancy laughed. "He's only to the one about swimming fourteen miles through the crocodile-infested waters of -- "

"That means he's on his sixth cocktail. Two more and he'll be so fuzzy we can go home. Be a good girl and go in and keep score for me."

* * * *

She moved suddenly and sat on his lap. "Seat's cold," she said. Her white arms lay on his shoulders and he could smell the clean fragrance of her flesh, unobscured by the heavy fashionable perfumes that made the room inside

as oppressive as a tropical greenhouse.

"Are you sure you shouldn't stay?" she said. "These parties are just as important as good work at the Base in getting ahead. I'm learning Navy awfully fast, darling. You've got to be Kendricks' kind of man to get ahead here."

"Then I'll stay right where I am," Glenn said bitterly. "I'll see the whole Navy go to hell before I'll be John Kendricks' kind of man."

"It's only a step on your way up-but Kendricks can keep you in it for the rest of your life if you don't play things just a little his way. Being nice at his parties doesn't take much out of you."

Nancy slid to her feet as Glenn stood up. "You'll never know," he said. "You'll never really know how much it takes out of me-hanging around for two or three hours while Kendricks spouts off and all the kid lieutenants and their giggly wives cluster around. It takes one hell of a lot out of a man."

"Then let's leave it, Glenn! We don't have to stay. If it isn't turning out to be what you hoped for let's put in for a transfer from Pacific Base! I don't care where they send us as long as we can stay together and be happy. Let's go to Ceres again if that will make you happy."

She clung tightly to his arm as they moved toward the noise and smoke and sticky lighting of the house. He smiled down at her small, earnest face, the moonlight full upon it. He bent down and kissed her quickly before they came into view of the doorway.

"No, I won't take you back to Ceres." They had spent the first two years of their marriage there-then almost four years on the Moon. He had promised himself he would never take her away from civilization again.

"It was kind of fun out there," said Nancy. "Only of course there's Jimmy now and school -- "

"Sure, we've got a family to look after. We won't go to Ceres-or any other place like it. I'm not running away from Kendricks. That would be just what he'd like. Then he could put his son-in-law in my place and maybe make it stick this time. Anyway I'm old fashioned enough to believe that you can get somewhere by honest effort-even in a military organization."

"Oh, darling, then you are old fashioned! I've learned more about the Navy in three months at Pacific Base than you have in your whole ten-year career."

He wished she wouldn't talk like that.

She said it only because she actually didn't understand the petty deadly intrigue of Navy officialdom. It bothered him more than if she had been one of the clever old-in-service Navy wives who used rank like a rapier.

Nancy had never known what home base life was until now. Glenn had seen plenty of it before they were married. He'd tried to explain the difference between Pacific Base and the other places they'd been. But she didn't know what, he was talking about.

She didn't know about rank. She didn't know that home base wives flaunted rank like any land-locked Admiral. She couldn't understand that it wasn't like Ceres, where the Commander's wife had midwifed the birth of Jimmy when the base surgeon and every assistant were called away because a lock port blew during a cruiser take-off.

Nancy didn't understand how absurd it was for her to offer to care for the Kendricks' youngest during the Commander's three-week vacation-an exclusive camp had been planned for him.

That was when they first came to the Base and some of the women finally explained with kindness some of these details when they saw that Nancy was merely innocent of intrigue, that her naive behavior was not some clever campaign to beat their game.

So Nancy thought she understood now. But she didn't. She still didn't understand that it was more than some stupid kind of play acting, a feminine counterpart of military foppery. She could not comprehend how utterly serious, how completely deadly, was the little tight society of Pacific Base.

And so she came up with bizarre remarks such as saying that Glenn was old fashioned for believing that hard work alone would win advancement.

Bizarre-like a child having come upon a glittering dagger, fascinated by its brilliance, not knowing its proper use.

* * * *

Caroline Kendricks fluttered up as they came to the doorway. "I should have known where you two would be," she said with sly insinuation that made Glenn shudder. "Anyone would think you were just engaged. But, Captain-Commander Kendricks has been looking for you. Something very urgent at the Base, it seems. He'll see you in the library."

Glenn frowned. He gave Nancy's hand a squeeze and moved away. "Excuse me, darling. I'll see what it is."

The "library" was a small office in the front of the house, where Commander Kendricks kept a desk and a telephone. On the walls were paintings of the space-ships he had commanded. On the desk were six or eight volumes of Navy Regulations. These constituted the library.

Glenn knocked and was ordered in.

"Mrs. Kendricks said you were looking for me."

The Commander nodded, managing to convey an implication of displeasure that Glenn had not been at his, side the moment he was needed.

There was no sign of liquor in Kendricks' face now. He wore his normal space tan and his hands and eyes were steady. Glenn had the impression that he always ordered uniforms a trifle small to emphasize his own great bulk. Now he sat stiffly behind the desk as if momentous happenings were beneath his jurisdiction.

"Central Headquarters just notified Base that a stranger in distress is on the way in," said Kendricks. "She's not a member of the Galactic Council but has references from Paramides. She asks use of our repair facilities. Central gave permission. I've notified Base. You will report there at once and see that proper facilities are provided"

"Yes, sir. When is she due in?' Kendricks made no answer. His round hard face remained set. In such a pose the lines began to show in definite depth.

"Is that all you have to say, Captain? 'When is she due in?' Is that the only chord of response this information strikes in you?"

Glenn flushed. He had grown used to baltings these past three months-sometimes he felt capable of anticipating them. But the suppressed rebellion against the unwritten law that required his presence at the party,, the inescapable inanity of small talk he had heard ten thousand times before-these had shut off all rational processes in his mind tonight.

"I beg your pardon, sir," he said evenly. "I understood your information to be that a stranger in distress has been granted haven, that -- "

And then he had it. Knew what cue he had missed.

"We will, of course, alert every member of the Analysis Crew to the possibility of a Fourth Order drive," he finished lamely.

"I trust so-I trust so. You have not been with us very long, Captain. Perhaps you cannot be expected to understand the importance of this prime objective. It may underline it for you ff I point out that the only reason for allowing a completely unidentified stranger into this base is the possibility of subsequently finding ourselves in possession of a Fourth Order drive. Do you understand that clearly?"

"Yes, sir."

"It remains to be seen." Kendricks glanced at the six dialed chronometer on his wrist. "Half an hour at the most. He was in the thirty-thousand-mile orbit when Central called. You'll have to hurry."

Glenn saluted and turned to the door,

"I notified Dr. Gibbs, also," said Kendricks. "You'll likely need him. The stranger indicated illness aboard but not the extent. He could communicate only by Galactic Code obtained at Paramides."

"Yes, sir."

CHAPTER II

The way to the car with Nancy Glenn felt the cool wash of ocean breezes upon his face. He inhaled deeply to get the scent of stale heavy perfume and liquor vapor out of his lungs.

"I wish I could get away with the things Doc Gibbs does," he said. "Doc is worth his weight in champagne at a party but he thumbs his nose at Kendrick's by staying away."

"You can-when you get to a position like Gibbs. That's the privilege of rank, thumbing your nose at men like Kendricks. Until then you have to be nice at stupid parties. _That's_ Navy."

"It's not Nancy Baird," said Glenn seriously. "You didn't talk like that before you came to Pacific Base."

"I told you I had learned more Navy in three months than you had, in ten years."

Glenn got in the car beside her. His resentment against her unnatural cynicism mingled with the little raging fires that Kendrick's could so carefully ignite within him. But, as he drove away, these both succumbed to the immense and secret pleasure that came with anticipation of the job ahead.

It was for this and almost for this alone that he had come to Pacific Base. When word of transfer had come his exultation had not been for getting Nancy home, not for getting Jimmy to a civilized school-at least not in the first few hundredths of a second.

Even on Moon Base they had talked of the frantic work going on at Pacific to acquire a Fourth Order drive. The theoretical physicists had proven beyond doubt that Fourth Order was feasible but they couldn't tell the engineers how to build one.

But somewhere in the immensity of the Universe there would inevitably be a race who knew Fourth Order drives. It fired an imagination and a yearning Glenn could not ignore. The one place at which it might be contacted would be Pacific Base. For that hope he had come. For that single hope he would stay-and take anything that Kendricks could dish out. Kendricks and his son-in-law, Lieutenant Prentiss, whom Central had by-passed in picking Glenn.

He took the beach road. Although it was heavy with traffic even at this time of night it was the shortest route to the great naval base five miles away. There, as Chief of Technical Operations, Glenn would direct the berthing and accommodations of this stranger from far worlds-and direct negotiations for technical exchanges.

To walk through a hull fabricated a hundred-million light years away, to touch its machinery, to put tools to it, to set it functioning again-that was worth all the indignities Kendricks and military fops like him could throw in his way.

"I'll probably be the rest of the night," he said to Nancy. "You take the car on home. I'll give you a call in the morning and let you know what's next."

"Oh, no! The last time something like this happened you didn't show up for three days. I'm staying right with you until you get things organized. Then we're going home and get some sleep."

He looked out over the sea where breakers rolled slowly under the white moon, their white caps frantically unravelling. Then he sucked in his breath sharply and pulled the car over to the shoulder of the highway.

"What's the matter?" said Nancy.

He bent close to the windshield to look upward. "Up there," he whispered.

Nancy saw it then. In the sky ahead of them a cluttered shadow moved slowly against the stars. Tiny, but they could make out two spheres and a snub cylinder whose great bulk could be estimated even at this distance. Navy tractors were towing the stranger, whose power was cut because its pilot could not know the field.

"How far has it come?" Nancy whispered. She understood the awe in Glenn and felt it too as if by reflection from him.

"Don't know but we've got almost everything tagged within a hundred million light years. It's probably from farther away than that."

Beside them cars roared on the highway. Laughter from moonlight beach parties was carried up on the winds. The sea rolled in as it had done for a billion years on this and other shores. And there was an ache in Glenn Baird's throat as he contemplated awesome times and distances while he watched the shadows in the sky disappear behind a glowing cloud.

"You'd better hurry," suggested Nancy.

"We've got time. It'll still take a half hour to get the ship down at the field." But Glenn started off, edging into the line of traffic.

* * * *

The approaches to the Base were choked with cars. Every late driving citizen within fifty miles must have glimpsed the ship and guessed what it was, Glenn thought. He signaled a police officer at the approach to the Base and flashed his Navy insignia. The officer held back the lines of snarling cars while he sped through.

On the field daylight flamed from a thousand glaring beams). A circle of intense brilliance marked a spot before one of the great shops where the ship would be landed. Glenn jerked the car to a stop behind the Analysis Building and ran toward his own offices, dragging Nancy by the hand.

Assistant Chief of Technical Operations Walter Prentiss was on evening duty. He sat before a battery of phones, replacing one as Glenn entered. His face was as expressionless as a computing machine panel.

I "Anything of emergency class?" demanded Glenn.

Prentiss shook his head. "Operation is proceeding. Analyzer crew alerted and standing by. Environmental data complete." He tossed a slip of paper across the desk, bearing the latter information. "In fact," he added carelessly, "you might just as well have stayed at the party. Everything is perfectly routine."

Glenn kept his eyes on the paper he'd picked up from the desk. He read as if wholly absorbed in the data concerning the kind of atmospheric conditions carried by the stranger ship. But he didn't miss Prentiss' casual words.

Walter Prentiss had expected the promotion to CSTO, the job Glenn now held. And his expectation was warranted. He was competent. He had a mind like a machine. And he was old in the ways of nepotism. He had a good mentor in his father-in-law, Commander Kendricks.

* * * *

It had hit him and Kendricks hard when Central had by-passed him in replacing the Technical Chief for Pacific Base. But Glenn's own record had some very bright spots on it, and these had won him the post.

Prentiss had not given up yet, however-Glenn knew this for certain. And Kendricks never would. The rejection of his recommendation was a blow for which he would always hold Glenn personally responsible.

Glenn forced these snarling thoughts out of his mind. There was a job to do tonight, a big job-maybe a Fourth Order job. "Ambulance standing by?" he said.

Prentiss nodded, "Gibbs is out front preparing it to these atmosphere specifications."

"Get four suits ready then. You and I will make the entry. Gibbs will go along. Who's heading the Analyzer Crew?"

"Martin."

"Him too then. Let's go."

The tractors were bringing the huge vessel in over the sea approach. It hung a thousand feet in the air, vertical now, landing vanes extending downward. A great spotlight picked it up, glinting on the vast faintly-scarred hull. From the thousands of cars parked about the horizons of the field came a raucous bellow of welcome and exuberance.

Glenn swore in annoyance at the distant racket. He was thankful for the ban on private flying within a ten-mi radius of Base or there would have been

as many ships in the air as there were cars on the ground.

He moved across the hall to the communications room, Nancy following closely. The communicators were in contact with the towing ships and with the stranger itself. The latter was severely restricted to the basic Galactic Code, which had been picked up at Paramides.

Glenn stepped to the Code operator. "Tell them we'll be ready to open the lock upon landing. We'll make immediate entry with cyberlogue equipment."

"I'm afraid they won't understand the cyberlogue reference, sir."

"Of course they-won't! But give them the general idea that we will talk to them. Have they reported an understanding of lock sterilization?"

"Yes, they have already performed that operation, they said. They understand the necessity of not introducing alien germ life to our planet."

"Good. Get them to open that lock then. That's the most important thing."

Nancy trailed with him to the shop building. There he stopped her. "This is as far as you go. I wish you'd take the car on home."

"I'll wait. It won't be three days this time." She smiled confidently.

"It might be."

* * * *

Near the spot of light that was the target for the landing tugs he found Dr, Gibbs. The director of Base hospital was placidly sucking a long cigar that flared in regular intervals in a glare of light. He stood beside the huge doubletrucked van that was his ambulance. In it could be duplicated the atmospheres of any of ten thousand worlds. Now his technicians were busily setting it for the conditions required by the stranger.

"Gibbs I" exclaimed Glenn. "Come on. You're coming aboard with us."

The doctor moved slowly, taking time to drop his cigar carefully and put out the ashes. "Such excitement," he murmured. "Everybody so anxious to give our friend up there a hand-and jam it in his pocket when his back is turned. I'm a medical man. I don't want any part of highway robbery."

"What's eating you, Doc?" Glenn said irritably.

Gibbs never leaned on rank. He could be addressed like a human being. He came towards Glenn in leisurely resignation. "Everybody so anxious to rob the poor suckers of their Fourth Order drive-if they've got one."

"Nobody's going to rob anybody. We'll negotiate for anything we can use of theirs."

"Negotiate!" Gibbs chuckled. "That means wrapping the club in a piece of silk before you hit a guy with it."

Glenn put an arm around Gibbs' shoulders and hurried the older man toward the dressing room. Prentiss and Martin were already there. Shortly all four were dressed in lightweight space garb which would make possible entry into the alien ship.

The strangers were oxygen breathers, they had indicated in Code. They used it, however, at three Earth atmospheres pressure and included trace compounds such as hydrogen cyanide. In addition their air temperature was around a hundred and fifty-eight degrees with ninety percent humidity. A human being could not survive long in such environment without a suit.

Mechanically, they checked intercom equipment with each other and read off meter indications of air temperatures and pressures. Then they marched out to the apron in front of the shop.

Nancy was back against the wall of the building with the group of mechanics, technicians and engineers. Glenn wished he had insisted on her leaving. But it was too late now and he couldn't have made her go anyway.

Sometimes there were accidents, Glenn reflected. His head bent back, looking up at that great glistening piston sliding carefully out of the sky. Sometimes a tractor slipped and a hull toppled. Sometimes a power plant...

There was the force of hydrogen bombs locked within that alien hull. But it didn't do any good to think of these things. Ordinarily he didn't. It was just that he wished Nancy was home.

He could see the great landing vanes oscillating slowly. Their lower

edges were less than twenty meters above the field now and the tractor operators were jockeying carefully over that target of light. The gunmetal sheen of the vessel seemed to swell in frightening proportions as it inched downward. Glenn considered the landing apron. There was six feet of reinforced concrete overlaying a massive rock foundation but the entire mass of the ship would be focused upon the three points where the landing vanes touched.

The thing was at least five hundred meters high, he thought, and a fifth that in diameter. So slowly was it descending that there was a moment's illusion of its hanging suspended and drawing the Earth up to it by the great gravity of its mass.

Then abruptly there came a subdued sound in the Earth like the far-off whoom of an immense bomb. The stranger had touched.

CHAPTER III

Said Glenn, "Let's go." His voice sounded harsh to his own ears as if he had broken a spell.

He shouldered the pack straps of the cyberlogue equipment and led the way toward the ship. There was no sign yet of an entrance but he knew where it would be found. He had glimpsed a ladder against the expanse of one of the vanes. Its rungs looked as small as matchwood from a distance but as the men approached, it was seen that the span of the rungs was almost right for a man.

That was good. It meant beings that climbed and walked like humans. It could have been much different. Some strangers were so grotesquely proportioned that it was virtually impossible for a man to work within their ships.

Glenn put a gloved hand to the first rung which was at head height. The cyberlogue heavy on his back, he swung himself up, hand over hand, then started climbing. One by one Prentiss, Gibbs, and Martin followed. The searchlight caught their transparent helmets and set them glowing. To the hundreds of watchers it looked as if a crazily disjointed glowworm were inching its way up that massive vane.

Glenn paused for breath when he reached the level of the shop roof twenty meters above the floor. The vane had scarcely begun to taper and the reaction ports between the junction of the three vanes was that much farther above him.

He climbed again at a breath-conserving pace. His eyes scanned the surface of the meteor-pocked metal. None of the pocks was more than a millimeter deep. The stuff was good, he thought in admiration. As good as any in the Galaxies of the Council.

The end of the ladder appeared and there a deeper shadow yawned in the dark metal. The door of the airlock had been swung inward.

His heart beat faster. He couldn't help it. It was like when he was a kid and his father took him down to the Navy yard for the first time to see a ship from outside the home Galaxy. The scope of vast distance separating the creatures of the universe, the power of their minds to bridge such space...

Every time it was the same. It made his throat ache with awe.

How far had this ship come? The light of its star, now reaching Earth, had started across space before sentient man appeared on this planet. But the stranger had outstripped the light of its own sun several millionfold.

Now they were here and dependent upon man for succor. Sick, they had said, and their ship in disrepair..

Glenn hoisted himself into the lock with the assistance of handrails. He turned and helped his companions as they appeared above the level of the lock floor. Lights glowed in the ceiling of the chamber.

They turned and surveyed the surrounding walls in silence. Glenn wondered how they felt at such a moment as this. Prentiss, he knew, regarded the ship as an entity by itself. He admired or criticized a mechanism without regard to the minds of the creators. For him there existed only science-without the scientist.

Martin was a gadgeteer-a very good one or he would not be heading up

the Analysis crew. He was fascinated by mechanisms, absorbed in their cleverness. It mattered not at all whether they were the optimum or what kind of mind devised them.

Gibbs was of wholly different cast. He came closest to understanding the things Glenn felt as he walked the deck of this stranger. But Gibbs had no delight in mechanisms of metal and glass. He was awed only by the variant means through which Nature had adapted sentient life to the universe-and the sometimes unbelievable similarity of such life in far removed corners of creation.

Glenn wheeled the lock door shut after examining its mechanism for a moment to be sure he could open it again.

They waited expectantly. The chamber of the ship should begin to fill automatically with the atmosphere in the mail hull sections, provided the mechanism of the stranger permitted any extrapolation at all. They were not wrong. In a moment there came the hiss of inrushing air.

The opposite door opened, giving view of a second lock, a duplicate of the one they were in. But they were still alone.

"Where's the welcoming committee?" said Martin. "This is no way to treat, a friend."

* * * *

The air began to fill suddenly with an opaque fog that swiftly cut their vision. Automatically they locked arms with one another as long training demanded. "What do you think?" said Dr. Gibbs.

"Your department," said Glenn. "Sterilizing us and the chamber before letting us in, just as we would do in similar circumstances."

"I was hoping that was it. A very intelligent class of life."

The vapor faded slowly. With its passing they saw that a door leading to the interior of the ship had been opened. Within that opening stood one of the strangers.

For a long moment the two species of life regarded one another. The stranger was roughly anthropomorphic. He was grotesquely pot-bellied and very thin in all of his four limbs. His bones seemed sharply outlined as if there were great skeletal strength without corresponding muscular development. The totally hairless body was covered with a skin that resembled fine ivory-tinted leather. He wore no clothing or ornament.

Glenn advanced slowly and cautiously, taking care not to make any overt move that could be misinterpreted as hostile. He slung the cyberlogue equipment from his shoulders and set it-down, He took a cord from it and plugged into an outlet on the chest panel of his suit. Then he took from the case a small adjustable communication set and handed it to the stranger.

The latter grasped it and turned it over in his hands for a moment. Then he seemed to nod in a gesture of excitement and clamped it carefully to his head so that the tiny speaker was over his diminutive ear canal. The nut-sized mouthpiece was close to the leathery lips.

Glenn spoke. "I am Glenn Baird, We welcome you to this galaxy and this sun and its planets. We offer you sanctuary."

The stranger's face lighted as the instrument at Glenn's feet translated the words into basic semantics, from which the stranger's own mind could devise meaning.

"I am Eindor," he said at once. "On Paramides they talked to us with such equipment as this and said that men of Earth had made it. They said that here we could find all we need to set our ship in order again."

The voice came mechanically, transcribed by the instrument. All of them could hear through the relay function of Glenn's intercom set.

"I accept your good will with thanks on behalf of my people," Eindor continued. "We are the Centrasi from far beyond your galaxy cluster. But I fear that we have come too late. There is no salvation for us and my companions are already far beyond any assistance."

"You are ill?"

"Yes. Already two have died."

"Are you-?"

"Let me," Gibbs interrupted. "Time is important now."

To Eindor he said, "Is it an illness with which you are familiar or something strange you may have contracted in your travels?"

"It is a new and, strange thing. Nothing such as we have known before."

The men could sense now, even through the mechanical voice of the cyberlogue, the weakness and difficulty with which Eindor was speaking.

"How many are there aboard?" said Gibbs quickly.

"Six remaining -- "

"'Six! We expected hundreds in such a ship!"

"No. It requires only a small crew. There were only eight of us to begin the Journey."

"Where do you come from?" Prentiss demanded abruptly.

"From-I can't express it clearly to you-it would be from behind space, I might say."

"Please!" Gibbs snapped. "This is a case for medical precedence." To Eindor he went on, "This illness-have you narrowed it down to any reasonable limits through past experience? Have you any treatment that alleviates?"

"None whatever. It is, wholly beyond our previous experience and knowledge.

"You have been gracious and kind to permit us to come here. Now I would ask one final favor. It is too late to accomplish what we had hoped. Even as our ship came into your field I hoped there would yet be time for you to at tempt repairs f or us but now V e is none.

"This final favor-accept our thanks and take your departure. We will take our ship away again. We can lift on primary power, pointing towards our home world. It will be many thousands of lifetimes before our corpses are found but in time they will come to rest upon our own soil. This is all we ask of you."

* * * *

Abruptly Emdor's eyes closed and he collapsed in the doorway.

"Find their suits!" ordered Gibbs. "Locate the other five Centrasi. Dress them all up and find some way down without carrying them down that ladder. There's got to be an elevator or freight hoist of some kind."

Glenn accepted the natural orders of Dr. Gibbs in the emergency. They made Eindor as comfortable as possible, then moved on down the corridor, searching carefully. They quickly found the locker of space-suits. Martin and Prentiss were left to dress the Centrasi and find an elevator or hoist to the ground level.

Glenn and Gibbs moved on toward the interior of the ship. Side doors along the corridor showed a score of tempting byways but they seemed to be in a hallway of central importance and continued. At the end they found an elevator which apparently traversed the length of the ship.

They entered. Glenn studied the controls for a moment. They were simple enough to him, who had made a career of working with alien mechanisms, but to Gibbs they looked like a miniature powerhouse switchboard.

The small transparent capsule of the car rose slowly as Glenn touched the controls. They rose past deck after deck crammed with mechanisms. Even those brief glimpses told Glenn he had never seen anything in all his life so vast and complex. If the Centrasi were too ill to assist with the analysis or give information about the ship it would take hundreds of thousands of man-hours to analyze this structure and repair it.

It would be done, of course. The Navy would not rest until the last bit of connecting wire had been tagged and the working of the whole great engine determined to the final detail. But it would not be out of love for the Centrasi. The creatures would be long dead by then unless Gibbs found a cure for them.

The analysis would be made on the million-to-one chance that this might be the long-sought Fourth Order drive.

The car rose faster as Glenn accelerated past endless decks without

observing signs of life or evidence of the control room. He supposed finally that it would be found in the nose of the ship at the highest level.

It was.

The elevator halted automatically. The men stepped out to the deck of the control room. A lighted screen before the pilot's position showed the entire field as viewed from the five-hundred-meter height of the ship's-nose. The shapes, the lights, the distant swarms of curious onlookers-all were there on the screen. Even the tiny knot of people with whom Nancy stood. Glenn tried to pick out her face on the screen but he couldn't be sure at that distance.

He turned quickly away to the more important business. There were no signs of Emdor's companions. "Look for the crew's quarters," he said. "You could expect them on the level below or even on this one, since there were so few of them."

"Over here," said Gibbs quickly from the other side of the room. He beckoned and pointed through a doorway.

The five Centrasi were sprawled on low cushioned beds in attitudes of collapse. Gibbs stepped forward impulsively.

Glenn caught his arm. "Take it easy. Watch for weapons. If one of them should come to he might come out fighting, not recognizing who we are."

Gibbs nodded and they approached the first bunk cautiously. There was no sign of life. Carefully they picked up the Centrasi and carried him to the elevator. It was scarcely large enough to permit laying the creature on the floor. No more than three of them could be taken at once.

"You go on," suggested Gibbs. "Prentiss can be getting them into suits while we're bringing out the next two."

At full speed, the elevator was sickeningly swift in its fall. Belatedly Glenn considered the effect upon his charges but it seemed to him that nothing they did now would make any difference to the dying Centrasi.

Prentiss and Martin had Emdor dressed in the suit when Glenn reached their level. "We located another hatch," he said. There is an elevator all the way to the bottom of the vane but no airlock down there. The interior of the vane can be sealed off so we can let our atmosphere into it and consider letting out the ship's atmosphere at a later time."

"Good," said Glenn. "I'll be right back with Doe Gibbs and the other two. Then we'll call it a night."

The five Centrasi remained unconscious during the removal to the ambulance. Gibbs supervised his medical technicians as they transferred the strangers. The ambulance had been prepared with Centrasi atmosphere in case the creatures needed it but their suits were left on for the short run to the hospital, where a ward was also ready.

Gibbs climbed to a step of the van and glanced upward at the towering hull of the ship. He grinned cynically at Glenn. "There's your plum. All you have to do is pick it for Pop Kendricks. If it turns out to be Fourth Order he'll pat you on the head and maybe give you a one-grade promotion.

"And don't worry about the owners of the thing. The poor devils are in no condition to object to anything!"

CHAPTER IV

Ships were admitted to foreign repair bases of members of the Galactic Council on what was virtually a salvage basis. In the beginning there had been some logical necessity behind it. But now all that Gibbs said of it was true-legalized highway robbery when it was enforced. Glenn knew it was an archaic reminder of barbaric days. But the custom was still on the books to be used when occasion demanded-occasions like this one.

In the early days of space travel there were worlds whose technique and science were hopelessly mismatched against others. Engineering on these separate worlds had sprouted off in ten thousand variant directions, some good, some bad.

There were sporadic outbreaks of warring among these early mismatched cultures-but not nearly so many as might have been expected. There was a

degree of unexpected maturity in men and their fellow creatures by the time they had succeeded in spanning the gulf between their worlds.

They formed a Council and agreed to cooperate and exchange. A ship demanding haven of an alien world was required to allow examination of its mechanisms and devices for copying-if that was desired to bring technology to a more even level throughout the Council worlds.

It was a good enough system in its day, Glenn knew. A day when the Council was young and the idea of cooperation had to be forced on some members and when intergalactic technical societies were only a dream.

But that dab was long gone now. Engineering exchange had passed far beyond such sporadic contact. An unbelievably complex patent system covered the galaxies and protected all cultures and dispensed invention to all who wished it.

The old haven-salvage custom was useful, only for pirating-as in the case of Fourth Order.

It didn't matter that its creators might not be members of the Council. But there were other ways, Glenn knew, besides the plunder and legal blackmail of haven-salvage laws. There was still negotiation-and that didn't mean what Gibbs had implied it was.

Glenn stood at the base of the ship with Prentiss and Martin after Gibbs left. Prentiss looked up. His eyes were already greedy and Glenn wished he could somehow keep Prentiss from defiling the ship with his presence from here on out.

Prentiss spoke suddenly to Martin. "You can get your crew aboard for preliminary inspection. I'll go along."

He was right in assuming the initiative in Glenn's presence-technically right. It was his shift but only the hate that swirled between them driven him to ignorance of due his superior.

"You seem to forget who is in command here." When Glenn recognized his own tired brittle tones he regretted the words. But there was no recalling them. The eyes of Prentiss were bright with the triumph of having forced Glenn to throw his rank.

"I'm sorry," said Prentiss. "I assumed we could go ahead with routine procedure now that the Centrasi are out of the way."

"The Centrasi are not out of the way. Their vessel is still their property. Post a guard and let no one aboard tonight. We will decide the disposition of the vessel after Dr. Gibbs determines the condition of its owners. Good night!"

He hung his spacesuit in the dressing room. He was well aware of leaving behind him the technical organization of the department facing a blank wall. It was like an admiral leading his fleet to the site of expected combat and surprising them with April Fool.

It was what Gibbs had said. He could not get the image of the bland cynical doctor out of his mind. Gibbs saying, "Everybody so anxious to rob the poor suckers..."

He had to keep the men from scratching through the fine Centrasi ship like horde of pack rats. He had to give himself a chance to bargain with Emdor. And muddling his decision was his own burning desire to know for himself whether the Centrasi had unlocked the Fourth Order mystery.

* * * *

Nancy greeted him with high excitement in her eyes as he approached her. She clutched his arm tightly and fell into step with him, walking towards the car. Her face was turned up to his and aglow as if she felt everything that he had sensed as he walked through the great ship.

"How was it, darling?" she whispered. "It must be a wonderful ship inside. What are the people like?"

He told her briefly the things he had seen, describing the Centrasi and his contact with them.

Nancy shuddered faintly. "It's horrible for them to be in such a state so far from home. Maybe you'll never find out where they come from at all if

they die now."

"Very likely we won't," said Glenn. "Their star charts will probably be so unfamiliar that we can't possibly backtrack them. Emdor made a crazy statement about their origin. He said they came from the back-side of space."

"What does that mean?"

"I haven't the faintest idea. Sounds almost like crow-continuum flight but that's impossible."

"You told me once that impossible is a nasty word."

He laughed softly and put his arm around her waist for a quick instant as he opened, the car door for her. But when he appeared on the other side and climbed behind the wheel his face was serious.

Nancy saw it at once. "Now what is it, darling? Why the sudden heavy visage?"

"That guy, Prentiss. He's right behind me with a knife on this job. It's the first big one I've had and he's going to queer it and put himself in my shoes if he can. Besides on the technical end I'm going to have to fight him all the way. I don't see why somebody didn't drown him when he was a pup-and his papa-in-law to boot."

Nancy was silent as he drove through the broad gates of the Base. They came to the short stretch of beach road that led to their own turn-off. In the moonlight and the sea and the sand there seemed to be little of the troubles that Glenn spoke of.

"It's my fault," she said at last. "It's all my fault."

The car swerved as he jerked his head about suddenly. "Huh? What the devil are you talking about?"

"Oh, darling, don't you remember what you used to say when we first went out to Ceres-'It's a black-and-white situation. Treat it that way and don't get mixed up with the sterile puny grays."

Glenn smiled. "Yeah, I remember. But what has that got to do with this?"

"Prentiss. He's making a black-and-white situation, and you're trying to be gray about it. You know what you have to do to perform your job. You know what the proper treatment of the Centrasi is. But you're trying to adapt to the presence of Prentiss' and to the fact that his father-in-law is your Commander and will get you thrown out on your ear if he can find an excuse. So you're trying to play it in the middle, a nice pale gray. You're forgetting that in a situation of this kind Prentiss and Commander Kendricks are both as black as hell."

"Whoa! Now wait a minute, lady. I picked up the wrong gal at the Base. You're not the one I had at Kendricks' party tonight."

"No, I'm not. That's what I mean. I've been a gray too ever since I came here. I hadn't realized what I was doing to you. I've been gray about this whole business of rank, trying to match daggers with these harpies who've played the game of Navy rank all their lives. I've made you be gray about such things as Kendricks and his parties, about Prentiss.

"I'm sorry, darling. It's no good at all. Neither of us can be that way. We're trying to adapt to an impossible situation and feel proud about it. When we were on Ceres you used to say that most of the adaptability people brag about is nothing but plain damned cowardice. Do you still feel the same about it?"

"Yeah-of course I do." Glenn nodded slowly. "That's why I felt so bad seeing you trying to be II e these dames scrabbling for rank instead of being just plain Nancy Baird.

"And you're right-I've been doing the same kind of thing, worrying about Prentiss and Kendricks. From the first minute I walked into the Base they acted as if I were some poor relation being forced to live with a rich uncle. It isn't that way at all, is it? I've got as much right on the Base as either of them as long as I do a real Navy job here, haven't I?"

"Sure. It's as simple as black-and-white and to hell with the in-between grays who haven't got the guts to be either."

"To hell with Prentiss and Kendricks," murmured Glenn fervently.

* * * *

It was two o'clock in the morning when they reached home. From the bedroom window they could see the spotlighted hull of the Centrasi ship like a glorious tower of light. But Glenn did not linger to watch.

They prepared quickly for bed. The moonlight was streaming in a glorious band across the floor but Glenn merely shuffled his arm gently until Nancy's head settled just right in the hollow of his shoulder. Then he closed his eyes and was half asleep almost at once.

"What's Fourth Order?" Nancy said abruptly.

"What's-huh? Darling, let's go to sleep. I've got to be at the Base by seven."

"I know but you can tell me in just a word or two. I heard about it on Ceres and I heard it on the Moon and while you were inside the ship I heard all the mechanics and engineers talking about Fourth Order this and Fourth Order that and would you find it in this new ship. You've never really explained it to me. What is it anyway?"

"A word or two, darling! Look, It's Einstein and Martell and Laughten and Cramer. It's space-time and multidimensions and higher continua-and it's two o'clock in the morning. Honey, will you please shut up and go-to sleep!"

"Oh, I don't mean all that! You don't have to give me an engineering lecture. Just what Fourth Order does-that's all I want to know."

He chuckled softly and kissed the top of her head. "What would I ever do without you, darling? Who else would understand a thumbnail sketch of the world's most complex physical theory at o'clock in the morning?" He paused, hugging her close.

"Well?"

"Fourth Order-it's a kind of a dream," he said slowly. "And it's poetry too. Poetry in mathematics, if you can imagine that."

"Glenn!"

"You remember Columbus in the history books. It's the same kind of a dream of going all' the way around, of seeing all there is to see. A theory that you can find your way back home if you just keep on going in the same direction away from home-keep on going long enough.

"A long time ago they had a theory that nobody could go any faster than light. That was before space flight was ever a reality. Some gentlemen named Lorentz and Fitzgerald along with Albert Einstein cooked up the theory behind that. But when Laughten built the first super-cee ship and buzzed right on through the wall of light, as they called it then, he caused a lot of hasty revising of theories.

"So they built a new one that said we couldn't go faster than the speed of light to the c power-you understand what that means, honey-and we pedaled along with Second Order flight for a long time. Eventually it was knocked over by Cramer, who came up with our present day drives, the Third Order kind, which added still another c exponent to the theoretical limit. This is the drive that is almost universal among members of the Galactic Council and so far as is known nobody has anything better.

"But the physicists were pretty wary about setting any more limits to the 'speed obtainable in open space. So they got together and tinkered with the old theories and poked among the ruins for a long time. In the end they shoveled it all overboard and came up with some brand new stuff.

"This time they said there _was_ a still higher velocity obtainable, something that would make Third Order look like a three-legged cat. Furthermore they said that a ship traveling at Fourth Order velocity could actually circumnavigate space. Remember your elementary physics and the curvature of space? The curvature is real. Go far enough and fast enough and you'll end up in your own back yard-after traveling around all the space there is.

"That's what Fourth Order can do-at least that's the dream we have of it. And if it's possible, then maybe somebody knows how to do it. That's why

we want to examine so carefully the ships that come from so terribly far. Now, do you understand, darling?"

He shook her gently and she gave no answer. Then he caught the deep and even rhythm of her sleeping breath. He grinned tenderly and closed his own eyes. He would have to do it all over again at breakfast.

CHAPTER V

Glenn reached the hospital at seven. Like everything else connected with Pacific Base the hospital was immense. But its size did not come from mere numbers of beds. It contained more machinery than a medium-sized powerhouse and more apparatus than a chemical plant.

Every other-world patient required a new set of conditions-incredible temperatures and deadly atmospheres. Deadly from human viewpoint but vital to intergalactic visitors. Many of the alien crews were injured by shipboard accidents that put their vessels out of commission. Many were sick of strange illnesses that were never identified. Nearly a thousand dead were buried in the cemetery in the hills beyond the field.

As Glenn went up the steps he wondered if the six Centrasi would soon occupy anonymous graves on that dismal hill. To him, as to Nancy, it seemed uncommonly tragic for creatures like these to sicken and die so far from their native world after so magnificent a journey had carried them to Earth.

He passed through the pleasant corridors, whose walls held back a hundred lethal atmospheres. Gibbs was already in the office. "Didn't you go home at all?" said Glenn.

"For a couple of hours. An old man doesn't need much sleep."

"How are they?"

"One died but Emdor revived. I put a crew of technicians on the job as soon as we got over here. We have a fairly complete picture of the Centrasi biochemical makeup now. That's what enabled me to revive Emdor.

"The outlook is not good, however, and I don't think they'll survive. Something is seriously disturbing their endocrine system and there just isn't time enough to find the cause-and then the cure."

The day seemed to darken visibly for Glenn. He shook off the depression that the lonely fate of the Centrasi induced. "Can I talk to Emdor?" he said. "That's the important thing at the moment."

"Can't your bright young technicians figure out how his ship works? Do you have to get him to show you how to run it even while you're in the process of swiping it?"

"We aren't going to steal," said Glenn evenly. "Nobody's been in the ship since last night."

"If you don't steal it Kendricks will fire you. That's your job, didn't you know-to steal anything anybody brings here that's of value to us?"

"I think I know my job and I'll do it my own way. Can I see Emdor?"

"Come along."

They took the elevator to the third floor, where the Centrasi ward was located. An orderly was, in constant attendance to keep the Centrasi under observation and call the nurses or doctors when necessary. He saluted as the two men entered the anteroom before the ward.

Through a large, double-thick glass panel the Centrasi could be seen. The four who remained unconscious were inert upon the low couches provided for them. Emdor was sitting up in a slumped position of despair.

"I'm going to make a physical examination of Emdor while I'm here," said Gibbs. "Do you want to come in-or talk with him from here?"

"I'll go in with you."

Gibbs opened the sliding doors of a small chamber. They entered and closed the doors. A light came on automatically as the pressure was sealed. From a cabinet they took rubberized pressure suits and donned them. Small refrigeration and air supply units were shouldered. Gibbs checked the talk circuits. "Ready?"

Glenn nodded inside the semi-flexible helmet. Gibbs turned up the

pressure valves. While they waited for conditions to be equalized with those inside the ward the room and their suits were bathed in sterilizing vapor. A green light flashed at last and Gibbs opened a door leading to the ward.

* * * *

Glenn learned long ago that it was unwise to assign human values to facial expressions of extra-galactic visitors but it was difficult to refrain in the case of the Centrasi.

Large-melancholy eyes were devoid of lids, which gave them an expression of dejected staring. Every line of their bodies seemed to communicate an impression of overpowering burden which they could scarcely bear.

Dr. Gibbs stepped to the cyberlogue in the ward. "We wish to make an examination. Will you permit, Emdor?"

The Centrasi arose from the low couch. He approached the examination desk in the corner of the ward. Dr. Gibbs motioned him towards the screen of the color fluoroscope.

It fascinated Glenn and touched him with a faint sense of inferiority to both the doctors examining and treating one of the alien visitors. Their problem was an infinitely more complex one than that of the physicists and engineers "who merely tried to analyze mechanical and electronic engines.

The color fluoroscope showed a clear, detailed image of the interior of the Centrasi body. "Emdor's heart," said Gibbs. He pointed towards the pulsing organ located in the right lower abdominal cavity. "It has increased in size detectably in the short time they have been here. Though I have no normal by which to compare there appear to be pathological nodules. And there is definite thickening of the arteries."

"That sounds like degenerative disease, doesn't it?"

Gibbs nodded. "It has that aspect but the question remains as to why it is developing-and with such terrible rapidity. They tell me that the symptoms of lassitude, exhaustion, increased pulse and respiration rates were unknown until a few weeks ago. Their observation of these symptoms began shortly after their first contact with one of our galaxies."

"They must have picked up a bug-but what bugs cause such symptoms?"

Dr. Gibbs shook his head. "They're more careful explorers than that. I'm willing to believe that they did their work under perfectly sterile conditions with respect to themselves. You saw how it was when they approached us."

"What else can produce such degeneration?"

"There are factors which are known to cause it-but it's very difficult to see how they exist in the present case. We'll have to wait for more work on it before we reach any conclusions."

Glenn watched in silence while Gibbs finished his examination and made careful notes. It seemed to Glenn that the eyes of the. Centrasi held a pleading expression, a desire to speak some thought that he dared, not or could not utter.

When Gibbs had finished Emdor said, "My request-the request I made to be set under way in the direction of our home world-will you not grant that?"

Glenn regarded the pleading Centrasi compassionately. He could not hold these creatures against their will, important as was the possibility of their possession of Fourth Order. Actually the decision was no longer his once t e visitors had landed. Kendricks would hold them and Prentiss would-and all the forces of Galaxy law passed in a barbarian age would see that the visitors remained until their ship was ransacked for Fourth Order.

Glenn shook his head. What was the matter with him? He wanted to see Fourth Order as much as any of the rest of them. But he felt the eyes of Gibbs on the back of his neck and he remembered what Nancy had said-"Black-and-white-you can't make a compromise with things that are right and become a dirty gray. Not if you want to keep on feeling like a human being."

* * * *

The Centrasi were sentient creatures on a plane with man. And the law of affinity between sentient beings of the universe was higher than the barbarous rules of an obsolete day in the history of space-flight.

"Your request will be granted," said Glenn slowly, "in case of your death. But we cannot justify ourselves in allowing you to depart with an almost certainly fatal illness. You must allow us an attempt to help you even with our limited knowledge of your requirements. We offer you all the services that we can command.

"In addition we shall attempt the repair of your ship, so that if you do survive you shall be able to return to your home world. In return, we ask a favor of you-that we be allowed to copy such of your mechanisms as are new and useful to us. Will you grant us such an agreement?"

Emdor was silent for a long time. He looked carefully at Glenn and Dr. Gibbs through the transparent helmets that protected their faces. His expression was as if Glenn had just delivered a threat-an ultimatum he could not ignore. Glenn felt sick that he should take it in such a light.

But Emdor finally spoke. "I will agree to that. You are welcome to anything you find of use to you-in the ship. I trust your honor to send us on our way home when we are dead."

"Thanks-thank you, Emdor. I will see that the bargain is kept."

It would cost him his Navy career if he did have to keep it, he thought. If the Centrasi died their ship would be lawful salvage and the Navy's right to keep it would be backed up by all the archaic galactic law within a hundred million light years. But it would be kept-the promise would be kept if the Centrasi died.

Gibbs was watching, assaying his sincerity in the tight bargain he had made for himself. Now, he had to find Fourth Order if it existed in the ship. And Gibbs had to see that at least one of them survived to take the ship home.

"We know you are too sick to assist in determining the trouble in your ship," said Glenn, "but if you will allow us to take a Basal Cyberlogue recording of your mind we will have at our command all the information your brain contains regarding the ship. With the aid of that we should be able to make the repairs."

"No-I am sorry," said Emdor sadly. "But that would be of no assistance. We are not technically trained, my companions and I-not in the structure of the ship and its engines. We are astrographers, not engineers. Likewise we are not physicians or perhaps we could assist with the recovery of our own physical bodies.

"No, in these fields of knowledge, you would find our minds blank. We can contribute nothing that would be of advantage. The mechanisms of the ship are so wholly automatic and ordinarily self-repairing that it is not considered necessary that its users understand its engineering. Because of this we are certain that the damage is tremendous and any chance of repairing it hopelessly small!"

"You don't understand how much we can glean from a Basal Cyberlogue," said "Glenn. "The mere fact that you have piloted the ship indicates knowledge in your minds that will shorten our work considerably. There are thousands of facts you are aware of which would help us."

"No."

For the first time there came to Emdor's face an expression of resistance. It was a sudden flame of rage, so out of keeping with his other expressions that Glenn and Dr. Gibbs were taken aback.

Then the Centrasi crumpled. He had been standing before them and now his body twisted and collapsed upon the low couch.

Gibbs turned swiftly to a shelf beside the cyberlogue. He grasped a hypodermic and measured a precise quantity of fluid from a bottle. He turned the Centrasi over.

"You'd better beat it," he said to Glenn. "This is going to be a long tough haul. I'll be with them most of the day. I'll give you a report this afternoon."

"Okay, I'll be waiting for it. You can't let the poor devils die. And you know what happens to me if they do."

"Beat it."

CHAPTER VI

Outside the hospital Glenn mounted one of the small tricycle scooters used for transportation about the field. He headed for the shops and the Centrasi vessel a mile away.

As he approached the ship he saw an antlike stream of figures moving between it and the shop. Entry was being made into the ship. His order to post guard had been violated.

Rage obscured his thinking for a moment but reason took over during the delay required to reach the spot. There was only one explanation-Prentiss. The voracious engineer had overstepped himself this time.

Glenn parked the scooter and strode into the engineering office. Prentiss was not at his desk but Glenn knew that an open phone line would have been run into the ship. He placed the call.

His assistant answered within a few seconds, his countenance faintly insolent behind the protecting helmet of his suit.

"I ordered a guard posted, and the ship to remain unviolated," said Glenn. "Why was it not done?"

"It was-for a time," said Prentiss blandly. "The order was then countermanded."

"By whom?"

"Commander Kendricks."

"On whose recommendation?"

Prentiss did not even blink. "Mine," he said.

"Keep your line open," said Glenn. "I'm calling the Commander."

It took longer to get Kendricks but his face appeared at last as if he had just been interrupted in the midst of negotiations affecting the destiny of worlds and of nations. He glanced at the two faces appearing on his screen. "Who? Oh, Prentiss!"

"I'm calling, Commander," said Glenn evenly. "I ordered a guard posted on the Centrasi ship. The order was broken without my consent."

"Captain Baird, five precious hours were wasted as a result of your purposeless order. Five hours in which -- "

"Commander, may I ask-does this mean that I am removed from supervision of this project?"

For an instant that seemed to stretch into ages Glenn saw the affirmative answer hesitate on Kendricks' lips. Then the Commander shook his head. He could not risk Glenn's dismissal on so trivial a matter. After all he had come to Pacific Base on Central's recommendation. That made a difference.

"No, you are in command of the Centrasi project, Captain. But there are some matters in which -- "

"Then I must ask that my command be recognized. Otherwise I shall be forced to submit my resignation as of this moment. Confirmation in writing will go forward to Central and -- "

Kendricks' eyes darkened. "In view of your inexperience at so large a base as Pacific and in view of your lack of understanding of urgency and procedure in such instances as the present -- your lack of adequate reason for not going ahead with analysis at once -- perhaps it would be possible to find a more suitable place at Pacific, one in which you could become more thoroughly acquainted with the atmosphere and tenor of the place as a whole."

"I was not consulted about my reasons for issuing the order," Glenn said.

"Please explain them. I was not aware that you had a definite purpose in mind."

"The ship is the personal property of the Centrasi. Furthermore it belongs to a race of which we have absolutely no knowledge. From all appearances they have a technology equal to or perhaps superior to anything

found in the galaxies of the Council.

"Prudence would dictate the most diplomatic approach. With this in mind I ordered their vessel protected from intrusion pending an agreement by which we could gain access to their technological processes-including Fourth Order if it exists there."

Kendricks glared inquiringly at his son-in-law. "I was informed," he said, "that the Centrasi were virtually helpless and in no condition to discuss the matter."

"They were -- last-night. But since we boast so loudly of our medical facilities it seems justified to place some degree of faith in them. In this case, at least. Dr. Gibbs was successful in reviving the Centrasi leader."

"And you were able to negotiate an agreement?-Let me see it?"

Glenn shook his head. "They have granted permission to copy any useful mechanism we encounter in their ship. But it is verbal, although completely recorded through the cyberlogue and witnessed by Dr. Gibbs."

* * * *

The acknowledgment of defeat in the matter brought a red suffusion to Kendricks' face and neck. Suppressed rage showed in the eyes that he turned again upon the image of Prentiss.

"Very good, Captain Baird," he said. "I apologize for the intrusion into your command. You may proceed. Report directly to me the moment there occurs a variation in circumstances."

"Yes, sir. Thank you, Kendricks."

He cut both lines quickly.

Black-and-white. He was sweating now and his hand was trembling as he took it from the phone switch. He had won that round, he thought, but if he had taken time to think about it carefully he would never have gone so far out on a limb as to give Kendricks the chance to saw it off.

But Nancy was right. It was black-and-white and you could win by playing it that way instead of being a dirty gray. He could not restrain a minor glee in knowing that Prentiss was at this moment getting a dressing down from his father-in-law. Sometimes nepotism could pay off too well.

But there was nothing permanent about the triumph-yet. They were out for his scalp and there seemed nothing in the long run that would keep them from getting it. At the moment that didn't matter, however-he had made a promise to Emdor.

That did matter.

He dressed and went out to the ship. A freight hoist had been adapted to the hauling of men and materials into the vessel. So far the ship had not been exhausted of the Centrasi atmosphere due to the possible effect upon the machinery. Prentiss would not slip on a technical detail of that kind, Glenn reflected.

He found Prentiss alone in a long gallery packed with devices of incredible complexity. The gallery stretched away from them a hundred feet on either side. It was crammed with cables whose individual wires almost certainly numbered into the millions. Close spaced, islands of components interrupted the streaming flow of wire. A thousand connectors dipped into an opaque housing and reappeared on the other side, regrouped, rearranged, carrying on their joint flow to yet another island where they parted, never to find each other again in all that vast stream.

As the two men looked upon this "magnificent machine the complexity of their rivalry seemed to diminish for the moment. It was the single common hold their minds could grasp simultaneously. It was the one spot of common ground in all their lives.

"There's Fourth Order here," said Prentiss almost worshipfully. 'There's got to be. There's never been a ship like this before in all the galaxies. There's never a ship that could go beyond the galaxies with such freedom as to permit a crew of only eight. It couldn't be anything but Fourth Order."

"I hope so," said Glenn. "But whatever it is we're going to take a

devil of a long time to plow through all this and find out what makes it go. We've always designed and engineered with the basic belief that the greatest machine is the simplest. Unless all this equipment is absolutely necessary you'd think the Centrasi designed with, just the opposite view"

"We'll find it," said Prentiss confidently. "We'll find Fourth Order if it's here. If it isn't this is no more than a mess of junk that doesn't matter."

With this reminder of Glenn's obligation to the Centrasi the moment of unity passed.

"I suppose Gibbs has no objection to my interviewing the Centrasi now that they are revived," said Prentiss. "I'd like to see what information can be obtained from them."

"I have already taken care of that," said Glenn with sudden defensive coldness. "The crew are astrographers. They know nothing of the ship."

"That just doesn't hold water! If they told you that, then they're lying!"

Glenn regarded his assistant for a moment. Prentiss' eyes were challenging, hostile, but Glenn chose to ignore it. "You'd better take off," he said. "You'll be handling the night shift tonight and I don't want anything done on the shift without your immediate supervision."

"Is that an order to leave?" said Prentiss.

"What would you do if it isn't?"

"I'd like to stick around for another couple of hours at least to get some degree of orientation."

"Suit yourself in that. What I said was only a suggestion."

"Thanks," said Prentiss stiffly. "I'll leave by noon."

CHAPTER VII

It worried Glenn too-the thought that Emdor had lied. He left the ship and went to the communication office after removing his suit. A discrepancy had bothered him ever since he had spoken with Emdor in the hospital. It had to be checked.

He found the original transcripts of the communications with the stranger on the previous night. His memory had been correct. Kendricks had advised him that the Centrasi wanted to use the Base facilities for repairing their ship. That was the way the original was worded. The Centrasi had wanted to do the work. That didn't jibe with Emdor's denial of technical abilities.

Somehow it jolted the problem out of straight black-and-white, shoving it in amongst the indefinable grays, making characters like Prentiss and Kendricks out of the Centrasi.

There was, or course, the possibility-the immense possibility of error through the transcribing of the Galactic Code. That was a clumsy tool at best. Nevertheless the message stood. Gibbs called while Glenn worried over and around the discrepancy.

"Emdor is hanging on," he said. "But two more are dead. I thought you'd like to know. None of them can last much longer."

"How long have the two been dead?"

"About ten minutes."

"Are you doing an autopsy?"

"It hasn't been started but we'll get right at it."

"Then there's still time-there's enough life in the brain cells. Use the Intensifier on the cyberlogue and make a recording of everything you can pick out of the dead brains. Go deep."

"But Emdor said -- "

"He can't kick about reading the dead ones. They've got information that can help us, I'm sure. Get the tapes over here to me as soon as you finish running them."

"Kendricks must have got to you. Glenn, stay on the level with these Centrasi. They're decent guys."

"I will, Doc. Don't worry. But I'm beginning to wonder if they've been

on the level with us. I think they know more than they admit. I think-I'm pretty damned sure now-that they are deliberately trying to keep something from us."

"Even if it involves their own sacrifice? That would be a pretty big and important something."

"That's what I'm worried about. Get me those tapes as quickly as possible. I'm not violating any promise to the Centrasi and I won't-as long as they stay on the level with us."

"They'll be ready after lunch."

The tapes were on Glenn's desk when he returned from the cafeteria at noon. He went at once with them into the analysis section, picking up a tape there covering Fourth Order theory.

The great machines of the analysis section were somewhat analogous to the ancient punched-card machines. They could check the immense store of information gathered from the brains of the dead Centrasi-check this information against the master Fourth Order tape to determine if there was any information of any kind concerning Fourth Order in the Centrasi brains.

Glenn donned a helmet by which he could observe the record of the Centrasi's life as the plastic roll slowly unwound between the million-fingered electronic scanning beam. It was a tremendous thing-reliving the alien life of the dead Centrasi. It renewed Glenn's conviction that Gibbs was right-the Centrasi were decent guys,

There were scenes of a pleasant world and impressions of quiet life devoid of the tensions and conflicts that seared the galaxy of the council worlds. There were the words of great books, and the sound of exquisite music.

Glenn saw other Centrasi who loved the dead creature-and who were loved by him. These would never see him again, for there would be another strange grave on the hill beyond the Base. But there was nothing in all that to give an Earthman fear because of what the Centrasi might be hiding. There was no clue at all as to why anything should be hidden-of great weapons or the whisper of conquest, which could so incite the dread of war within Council worlds, there was not an inkling.

There was not time enough to relive a whole life moment by moment. Reluctantly Glenn sped the tape ahead at a pace that he could not follow. There was only one thing he had to find at this moment.

* * * *

One the screen before him he watched anxiously for a sign. The signal of congruence would appear there if one of the millions of neural patterns of the Centrasi conformed with the Fourth Order array on the master tape.

He had been there an hour and a half when the green fantasies on the screen began to slow their irrelevant contortions. He straightened in his chair. His hand touched a knob for sharper outline.

A structure of infinite complexity was slowly building on the face of the screen in three-dimensional perspective. He watched it, scarcely breathing, awed by the complexity of that figure and what it signified.

They had Fourth Order. There was no question about it. But the figure continued building and it told an even broader tale.

These eight who had come to Earth were engineers-Fourth Order engineers. So vastly competent with it were they that they could have designed and built the entire ship from base elements. They could have designed its great Fourth Order engines from scratch.

And this they had lied about.

He wondered now what his promise to Emdor meant. The Centrasi had said they could duplicate anything found _in the ship._ He remembered how the Centrasi had emphasized that, how terrified he had been at the thought of a brain recording.

Glenn understood now. Earthmen could never-for decades, at least, perhaps centuries-they could never achieve Fourth Order. It would be like an aborigine trying to copy a common automobile engine by merely examination and duplication. The parts would be there. He could observe and measure. But the

machine could not be duplicated from that alone. It could not be understood without all the vast science of metallurgy and chemistry and engineering behind it.

So with the Centrasi ship. Men could take it apart, measure it, analyze it-but they could never make it go. There were unknown and unsuggested sciences which would stand indefinitely between them and Fourth Order machines that would work. The essential things were locked in the brains of the Centrasi. And the Centrasi were willing to die to keep them there.

It made no sense. He glanced down at tapes in his hand. He ought to march triumphantly into Kendricks' office and lay them before the Commander. It would assure his career and put him forever beyond Kendricks' petty nepotism. He would never have to be afraid of Prentiss again.

But he couldn't do it-not now anyway. He had to know why the Centrasi considered it worth their lives to keep the secret of Fourth Order from men. If it was worth their lives, would it be worth his career? He wondered.

* * * *

When he reached his own office again there was a second message from Gibbs. "Come over as soon as you can. I'll show you what's killing the Centrasi. Emdor is alone. The rest are gone."

Glenn locked the tapes in the desk and took the scooter across the field. The sun was low in the sky, and he rode almost all the way in the shadow of the towering Centrasi ship. Gibbs was at his desk, seemingly idle when Glenn walked in.

"What have you found?" said Glenn. "Can we cure Emdor?"

"What have you found? Fourth Order?"

Glenn nodded. "They've got it. They lied to us. They know the stuff from the ground up."

"I know. They don't want us to have it."

"Why?"

Gibbs hesitated. "It's the damnedest most complex series of factors that you could ever hope to run into. Look at this."

He held up a brown object the size of a walnut. "Know what that thing is?"

Glenn shook his head.

"It's one of their adrenal glands."

"I wouldn't be likely to know it from a football. Is there anything wrong with it?"

"They have an endocrine system almost identical with ours-which is not as surprising as it might be. We know that evolution can be parallel in widely scattered galaxies."

"And so?"

"A normal adrenal is yellow. The outer structure, the cortex, is normally filled with fat droplets containing a score or so of hormones. The brownish color of this one indicates that it has been drained of its hormones."

Gibbs picked up another specimen. "Here is a thymus gland-almost atrophied. And here is a color picture of the stomach lining. Bleeding ulcers. Finally here is a section of kidney tissue. It has turned into a hormone-producing gland. We call it endocrine kidney. It raises the blood pressure."

"But what caused such terrific damage?" exclaimed Glenn. "And what can be done about it before it becomes fatal?"

"We call it AR," said Gibbs. "Alarm reaction. Back in the twentieth century when it was first identified it was responsible for about eighty percent of the deaths among Caucasian peoples outside of the major bacteriological pathologies and cancer. Men are still dying of it, though not to the extent they were in that day."

"I never heard of it."

"No, it's not often spoken of by name. It's called by some name to describe the affliction of the organ it destroys-heart, kidney, pancreas or

whatnot. Strictly speaking it's a jungle disease, an illness that can afflict only the inhabitants of a jungle where life is precarious from moment to moment and there is no assurance of survival from one day to the next."

Glenn laughed sharply. "That's not our civilization you're speaking of-or is it?"

"A civilization can be pretty well defined by what its members die of. And any community in which AR exists is a jungle society regardless of technological accomplishments."

"But the Centrasi?"

"All organisms of the basic type of endocrine structure which they share with us are subject to the alarm reaction. It works this way-any kind if stress situation causes the pituitary gland to release a protein substance called adrenocorticotrophic hormone, ACTH for short. In turn this discharges the hormones from the adrenals into the blood stream.

"This is a normal process, designed to enable the body to meet stress. If the condition of stress is such that it cannot be overcome, however, as in a perpetual jungle environment, this endocrine process defeats its own purpose. The protective mechanism turns upon the body itself and destroys it.

"The hormones destroy the thymus, produce enlarged heart and sclerotic blood vessels, destroy the kidneys. The organism finally dies of exhausted resources if no relief is obtained from the stress situation-literally killed by its own defenses. That is the alarm reaction.

"It was first demonstrated in rats by forcing them to endure extremes of temperature, activity and wakefulness. But, more significantly, AR can be aet off in higher creatures by any kind of stress-psychic stress in particular. The initial trigger action is a neural stimulus of the pituitary."

"What is the cause of this neural stimulus in the Centrasi?"

"We are."

* * * *

For a moment Glenn sat motionless as if still awaiting Gibbs' answer. The words were like a delayed explosion. Then he half rose from his chair and leaned across the desk. "What the devil are you talking about? We haven't done anything to them!"

"I think we have-we do. Scanning through the tapes we ran off from the dead brains I found proof of it. You see, the structure of the universe seems to be formed of widely scattered galaxy clusters. Our own Council is composed of the civilizations of one such cluster.

"But we know that the distance from any Council world to the next cluster is so fantastic as to make hopeless any contact with even Third Order ships. The Centrasi come from a similar cluster all the way across the curvature of space."

"That could be what Emdor meant by saying he came from the back-side of space," Glenn mused thoughtfully.

"Perhaps. I don't understand the technical aspects of it. At any rate the Centrasi come from a cluster such as ours at an immense distance. They have just found Fourth Order. This ship was an exploratory one attempting to go all around the curve of space just as you say you would like to do. And then they broke down with some kind of mechanical trouble they couldn't repair in space.

"Their race is so old, and they have had a stabilized evolution for so long that they have never encountered any form of life but their own in all the recorded history of their race. This single Centrasi race has colonized hundreds of thousands of planets.

"Behavior has become so stabilized and eccentricities so thoroughly removed from their makeup that wherever they go in their own galaxy cluster they know what to expect from a fellow creature. They know how he will react, what their mutual obligations are. Does that give you an idea of what we have done to them?"

Glenn stared at the Doctor. "Stress-they can't predict our behavior. Our very presence is a continuing stress..."

Gibbs nodded. "We cannot know all the details of the psychobiological chain involved but it is safe to conclude that contact with sentient life other than their own is sufficient to set off the alarm reaction in them. They are in the peculiar position of having to live out their existence in utter isolation or die.

"It would be a major evolutionary change for them to adapt to other species. They might do it on a long-term biological basis but it would involve the destruction of their present culture in the process.

"It appears that their first contacts set it off, perhaps on Paramides. Then they went through the resistance stage of AR in which they built up adrenal reserves again and partially regained a biochemical balance. There was recovery of the thymus and sugar and chloride levels in the blood.

"Now these things are deteriorating again. They are in the final stage of exhaustion-preparatory to actual death.

We're like a disease to them. Can you understand that fully, Glenn? Each one of us is a single germ. We infect them as surely as if they had breathed a deadly virus."

Glenn's eyes were focused far across the field where a giant gray structure nosed towards the sky. "They've got Fourth Order," he said almost in a whisper. "They've got Fourth Order for sure. They could take us all the way around the curve of space. We could see all there is to see, know all there is to know in the whole universe."

Gibbs sighed and shifted lower in his chair. "Another year or two now and our expeditions will be overrunning their galaxies. In time it is just barely possible that some individuals of their race might develop a resistance to the situation but it's not likely.

"We won't give them time for that anyway. We'll rush in, trying to bargain and trade, selling them soap and deodorants. We'll sap their scientific resources. And they'll be utterly helpless. It will be another case of 'Lo, the poor Indian.' On a galactic scale this time."

Glenn reached across the desk and took the small brown object in his hand. The adrenal felt cold now and faintly resilient like old rubber-the coldness and fleshy resilience of something too long dead. He glanced from it to the great ship again.

"It's so intangible," he murmured. "You can't get hold of it with your brain. That ship out there-it's more alive than this hunk of meat. Yet this little thing stands in the way of obtaining that ship. Your mind can't get hold of something as intangible as that."

Gibbs nodded slowly. "Intangible-too intangible for characters like Kendricks. He'd snort in derision. And Prentiss would laugh in your face if you told him that a piece of flesh no bigger than a pigeon egg barred him from Fourth Order. Yes, it's intangible like all the other things men's minds have fought to grasp for the last ten thousand years-intangible like love and loyalty and freedom.

"The Centrasi won't fight us, either. That's the part we'll like best. We'll just come on the scene and they'll wither away as if a plague had cut them down-all because of a great intangible."

Glenn didn't move his eyes from the ship but he spoke slowly at last. "No-it won't be that way, Doc. It won't be that way. We don't need Fourth Order that badly. In fact, I don't think we need it at all."

CHAPTER VIII

Dr. Gibbs sat motionless in the chair as if a hair trigger had been suddenly set within him. Then his bony frame leaned carefully across the desk. "Do you mean that, Glenn? Do you really mean it?"

"Sure I mean it. There's no other thing I could mean. It's straight black-and-white."

"Huh?"

Glenn grinned faintly. "That's what Nancy would call it-black-and-white. You know something's right, you go ahead and do it. You

don't get all fouled up with considerations and alternatives and 'adaptations to the situation.' It's plain black-and-white and there's no in between."

"That Nancy of yours is a smart little girl, but some things are inherently in between, I'm afraid-like this situation. Kendricks knows too much. You can't keep it secret."

"We can keep it secret. No one actually knows the ship is Fourth Order except you and me. We'll get rid of the ship."

"How?"

"Look-Emdor knows what's happening. He knows all about AR or has deduced enough to know that his people have got to abandon contact with other races. So he and his companions are sacrificing themselves to keep us from finding his home world.

"We'll tell Emdor we understand. We'll put him aboard the ship and send it off. Let him explode it in space if he wants to. But we'll be rid of the ship. Men like Prentiss and Kendricks and all their blundering ravaging kind will never set foot on the Centrasi worlds. We'll tell them that Emdor escaped with one of our medical pressure suits and took off. It could happen at change of shifts tonight."

Gibbs seemed to be holding his breath as if witnessing a vision. "It might work-it just might work! Emdor would surely cooperate on a plan like that! But you-you're taking a tremendous risk. You'd be stripped of rank, court-martialed and disgraced if it ever became known."

"I'll take that chance. It's black-and-white."

They were silent a moment, enjoying a new understanding of each other-their eyes fixed on the mute emblem of defeat, the sick exhausted adrenal gland of the Centrasi. The phone buzzed abruptly. Gibbs reached for it with impatience and listened a moment. Then he rose in a half crouch of sudden defense.

"What is it?" Glenn demanded.

Slowly Gibbs put the phone down, his face burdened with defeat. "Emdor-they got to him. Prentiss came in. I guess Kendricks was in on it too. Prentiss had a pass to contact the Centrasi and the orderly let him through. Now Emdor's out cold, maybe dead. That's military organization for you! Everything according to altitude. If the man above you says hell is frosted over, it's so. Come on, let's get up there."

Glenn joined him and they raced along the hallway. They took the steps two at a time rather than wait for the elevator. "I should have foreseen this," grunted Glenn. "Prentiss told me he thought the Centrasi were lying about not understanding the ship. I should have known he'd try to get to them."

"And so Earth gets Fourth Order and the Centrasi get extinction. A fine piece of work!"

"We'll see. It may not be as bad as that."

The ward looked empty as they approached. Then they saw Emdor slumped on the floor, his limbs sprawled helplessly. Gibbs cursed the orderly who had admitted Prentiss and then apparently vanished in terror.

"Look! He's got the cyberlogue turned on and he's got the intensifier fastened to his head. Look at that wire trailing under him."

They hurried into the dressing chamber and slipped into the pressure suits. It seemed an eternity of waiting for equalization and sterilization. At last the door opened. Gibbs rushed in and turned the Centrasi over. A moment's examination showed that Emdor was dead.

Gibbs examined the cyberlogue intensifier fastened to the skull. It was an instrument which could probe the lowest depths of a sentient brain.

"Leave it there," said Glenn. "I want to have a look."

He moved to the machine and adjusted the controls. He plugged an intensifier into his own suit and cautiously advanced the probe depth. Bleak frustration clouded his face as he searched through the still lucid thought patterns in the dying cells of the Centrasi brain. At last he jerked the plug out.

"What is it?" said Gibbs.

"Prentiss, all right. He induced a heavy neural shock with the intensifier, momentarily breaking down Emdor's careful defenses. If he used a recorder he got everything he needed to know about Fourth Order. Emdor was a principal engineer in the work. Prentiss can build one from scratch with the data from Emdor's mind."

"Then there's not a chance in the world of suppressing this."

* * * *

They stared in silence at the dead Centrasi, whose sacrifice had been so vain. Glenn thought of that incredibly distant world of beauty and charm and ancient civilization that was old when Neanderthal walked the Earth. He thought of men of Earth traveling to those fair worlds with commerce and huckstering and greedy exploitation.

"How long do you suppose we can get good reception from Emdor's neural patterns?" he said abruptly.

"About twenty minutes."

"Keep the body right here as it is. There may be just one slim chance if I can get back in that time. Wait for me."

He rushed to the lock chamber and stripped off the suit while Gibbs demanded to know what he was going to do. But Glenn went on without offering an answer. He skipped down the stairway again and sped away on the scooter, cutting into the shadow of a hundred-thousand-ton ship that was being towed out to the take-off area.

And then he was beneath the oval of the Centrasi ship. He donned a suit and lifted himself into the vessel with the freight hoist.

His guess had been right. He found Prentiss and Kendricks in the main drive chamber. Through the helmet plastic their faces wore defensive surprise as he entered the chamber. It changed swiftly to hostility as he strode toward them.

Kendricks seized the initiative at once. "It is just as well that you followed Lieutenant Prentiss over here," he said. "You will be interested to learn that he has been successful in wresting the secret of Fourth Order from the Centrasi."

"I know. I saw Emdor-dead. I would be more interested in knowing when it became a policy of the Council to approve deliberate murder in exchange for technical data."

Prentiss' face went white. "I'll jam that down your throat! Emdor was nearly dead. He would have gone off in the next ten minutes and carried his secret with him, It was wholly accidental that -- "

"Medically, it was murder. Gibbs can testify that the shock of the intensifier killed him. And you have forgotten the well-known fact that if he really had any secret to which we were entitled it could be obtained from his dead brain as well as his live one."

Prentiss smiled. "And you forget that there is no proof that I didn't get it from a dead brain. No one can determine whether he died five minutes before or after I entered.

"There's no proof except the indelible record you left in his mind!"

It was incredible, Glenn thought. Prentiss was terrified and his thinking processes were utterly devastated. He was not thinking in any respect like the cold technical precise Prentiss who could direct the analysis of a ship like this.

Kendricks stepped forward. "I think nothing irregular will be found in the conduct of Lieutenant Prentiss," he said evenly. "It would be comforting for you to be able to say as much for yours. It appears that you were instrumental in keeping all others from interviewing the Centrasi with the object of deliberately suppressing the knowledge they might have given out.

"What motives you had remain to be determined but these facts, if proven by court-martial, would make it difficult to avoid termination of your Navy career in complete disgrace. Perhaps it would be just as well if you eliminated any suspicion from your mind regarding the irregularity of

Lieutenant Prentiss' actions."

So that was it, Glenn thought. Kendricks was worried too-and scared. And he was willing to bargain. But he held all the bargaining power. He held the secret of Fourth Order and that revelation would smother any accusations Glenn might utter against the two.

There was nothing that he could barter against their knowledge of Fourth Order. But he had to make a try. "Yes-I knew they had Fourth Order," he said slowly. "And I intended to suppress it."

Like an old skin the gloom vanished from the faces of Kendricks and Prentiss. They smiled with braggart confidence.

"Let me show you why," said Glenn softly.

He took the damaged adrenal gland from a pocket of the suit and held it up before them. "There is our barrier to Fourth Order." Then he told the story Gibbs had given him, the story of a great race whose psychic reaction made of man a lethal disease in their midst.

The two of them looked as if convinced of Glenn's insanity before his plea was half finished.

* * * *

Prentiss exclaimed, "Do you think we're going to be stopped from utilizing the greatest mechanical development in the history of the galaxies-stopped by that chunk of meat that's smaller than my fist? You must be crazy! We're going to have Fourth Order in this end of the universe and it's very sad if the race that invented it can't stand visitors!"

"You and Dr. Gibbs have stepped far beyond the bounds of your authority," said Kendricks icily. "It is fantastic for you to pass judgment on this situation. And it is equally absurd to think that we would deliberately harm another race by improper use of Fourth Order-even if it were possible in the unbelievable manner you suggest.

"We will take all necessary precautions. There is no barrier, however, that cannot be overcome in time. We will visit the Centrasi and confer with them. Between our two races the problem can most certainly be solved."

"The moment one of our ships lands on a Centrasi world their race is doomed. We're a disease! Each of us is a single germ which can infect them with a virulent charge of AR. There can be no conferring with them without destroying them. Why can't we just let them alone? Surely the rest of the universe is big enough for us. Our existence doesn't depend on going there and selling them shiploads of soap and confetti."

"Your attitude clearly indicates your incapacity to handle matters of this scope, Captain. As of this moment you are relieved of your charge. Lieutenant Prentiss will supervise the analysis of this ship from here on. Please report to my office in the morning, Captain Baird."

"All right. I know when I'm licked," said Glenn wearily. He pocketed the specimen adrenal gland and turned away. Then he paused. "There's just one thing I'd like to show you-something that you overlooked in the Centrasi brain. Will you come with me while there is still time to pick it up?"

"What do you mean?"

"Emdor's mind is still alive enough for probing. Come and listen to just this one thing. It's evidence-you can't withhold from me the privilege of presenting evidence of value in the proceedings against me."

"Very well," said Kendricks. "We will examine anything you have."

He moved readily as if anxious to prove his magnanimity and fairness of mind now that he had triumphed in the matter. Prentiss came reluctantly, for to him it was only an added irritation.

Gibbs was waiting in the ward when they came. "You stayed pretty long," he said to Glenn. "I don't know about this now."

"Let's hurry," said Glenn. "Please put on the intensifier pads," he directed Kendricks and Prentiss. He looked through the glass to check if the other line were securely on the dead skull of Emdor.

Prentiss watched in hostile silence and sat down before the panel. Kendricks sat opposite with an air of tolerant amusement. Glenn faced the

control panel. The impressions available from Emdor's mind were truly feeble now. He prayed that he hadn't taken too long, that they wouldn't be too weak.

It was eerie, journeying back through the dead creature's brain-like walking through the long abandoned corridors of a ghost city, seeing it alive with scenes long vanished. He adjusted the machine carefully, searching through the millions of neural patterns for the one he needed.

Then he found it-that area of incredible fear, that violent pattern of stress that had killed the mighty intelligences.

Prentiss caught it suddenly. He looked up in a moment of understanding fright, half rising from his chair. "You can't!" he screamed.

Swiftly, Glenn spun the dial of the intensity control to its utter maximum.

With a low moan Prentiss slumped back into the chair, his face blanched. Kendricks, not anticipating the sudden blast, stiffened and was still, his breath heavy and gasping.

Glenn cut the switch. Beyond the glass wall that separated the anteroom from the ward, Gibbs stared. "What did you do to them? What happened?"

Glenn's lips made a thin tired line before he spoke. "I let them feel what it's like to be a Centrasi-on Earth. You'd better come out and have a look at them now."

* * * *

Gibbs joined him in a few moments. He looked at the stiff unconscious bodies of the two men. "You knew what you were doing. It could be murder."

"I don't know. I had to take the chance. See how they are, Doc."

Gibbs bent over them with a stethoscope. "It's difficult to know what the total reaction will be. If you blasted them with the full power of the cyberlogue while it was probing the stress pattern in Emdor's mind it may set up an AR in them that can't be stopped."

"They don't have the Centrasi psychic makeup. It couldn't feed on itself like a chain reaction. They will recover if they're still alive."

"Then what the devil did you hope to accomplish?" Gibbs exploded.

"We'll see. Maybe I was wrong-maybe not."

They were placed in a hospital room on beds. Glenn watched over them in the dimmed light of a lamp. He prayed mentally for their recovery before the midnight change of shift.

An hour before midnight he left for a moment to call Nancy for the third time. "I'm sorry darling if I've messed things up for us," he said wearily. "It looks bad. This may have been a black-and-white deal, but right now it looks wholly black. But I had to do it."

"Let me come down there with you."

"No. Go to bed and get some sleep. I'll call you in the morning. If they haven't revived by then..."

They were awake when he returned to the room. Prentiss was sitting up and his eyes were those of a man who has seen the gates of hell. "You were right," he said hoarsely. "We have no right to destroy them like that. They'd never have a chance against us. We can do without Fourth Order."

Kendricks was lying still but his eyes were open. He nodded. "Walt's right-and you were right, Captain. What can we do?"

Glenn had to fight to overcome the moment's weakness that threatened to overpower him at this reprieve for both himself and the Centrasi. "Come on," he said. "It won't take long."

They returned to the ship and Glenn looked up to the great bulk of it looming in the darkness. There was longing in his heart and an ache in his throat. It was like Columbus, he thought, gazing upon a fully-fitted ship that would take him to all the far dreams he had ever dreamed-gazing upon it and deliberately turning his back forever to those dreams.

He would never ride this ship now along the far curve of space.

They went inside and Prentiss showed him the records from Emdor's mind, the details that would make Fourth Order available to man. It was a vast and complex thing and Glenn felt sure that Prentiss would remember no significant

part of it. They left it where it was.

* * * *

Then Glenn stepped to the intercom system they had spread throughout the ship and gave warning to the analyzer crew. "Evacuate ship! The Centrasi have escaped and are in control. They are lifting ship in ten minutes. Evacuate ship at once!"

When the warning had been obeyed the three of them went to the main power room. They fitted up a time control to the great piles that drove the ship. They fitted them so that every moderator would be jerked at once. And then they put the plant in operation on primary power.

Leaving the ship they fled as if pursued and joined the host of analysts who stood waiting for the unknown. And then Glenn saw Nancy. She was coming toward him from the parking area by the building. She ran toward him and he put his arm around her. She searched his face with anxious eyes.

"It's all right, darling," he whispered. "It worked out just the way we hoped."

They turned then to face the great ship. Inside it a timer switched the controls. The giant unmanned vessel lifted majestically into the air and soared far beyond Pacific Base into the moonlit sky.

Glenn's eyes were on Prentiss and Kendricks. Their throats worked, and he sensed that their eyes were not dry. His own were certainly not. He looked upward again, following their gaze, but the ship was already beyond vision in the night sky. Then, moments later, he saw it-a soundless flash of light that for an instant was the brightest pinpoint in the heavens.

They would hate him forever, he thought. It would be deep and murderous when that vision out of the tortured mind of Emdor wore away and they began to wonder why they had done this.

But they could never escape the knowledge that it _was_ their own hands that had set the timers to jerk the moderators, sending that atomic engine into space to consume in its own fires. They would never betray him.

That knowledge would silence them forever.

And then he looked again at their faces and astonishment crept over him. There were deep understanding and comprehension there. He had been wrong, he thought. Prentiss and Kendricks would always understand why none of the races of the galaxies needed Fourth Order now. This night they had matured.

THE FARTHEST HORIZON

It was meant to be a vacation. The three of them had looked forward to a week of joyous insanity. By letters-dozens of them-and by one long and recklessly expensive spacephone call they had planned this trip. Rick was coming home after a year-long exile on Mars.

Never again would they be separated so long, he had promised Sarah. But he had not told how he intended to keep that promise-not until he stepped off the spaceship dock and hugged her close while he punched the biceps of their sixteen-year-old Ken.

He told then about the great plans he had for all of them to live on Mars indefinitely. He told about the new space-probing crews of which he had been given command. And he told about the junior Officers Corps, which came like a golden dream to Ken.

And so this that was meant for vacation time had turned to a harsh and bitter journey.

Sarah glanced aside at the face of Rick. Spaceburned, and grim now after their quarrels, he looked straight ahead, his jaw tight. His hands gripped the steering wheel too hard, making the car sway like an overcontrolled ship.

In the edge of the rear-view mirror she could see Ken. It was like jumping backward two decades in time. But already there was the same intensity of eyes and hard-set jaw that made them alike in unapproachable severity.

A sudden scream cut through the air, far above. It seemed to hang like a vapor trail long after its source was gone.

Rick's face brightened. "What was that?" His eyes sought the sky for a brief instant, but saw nothing.

"Run 32 that Continental has been bragging about," said Ken. "They put it on two weeks ago and it's been making the Moon on a scheduled fourteen hours. It's really a ship. Shorty McComas, who handles mail, took me through her one night after hours.

Their faces were glowing in the intimacy of their private talk, which shut Sarah wholly out of their dread world. The scream of the ship was to her a cry of pain and helplessness. To them it was a song of exultation.

"Let's hurry," she murmured to Rick. "We want to make it before dark."

Like a signal, her words shut the light of fascination out of their faces. She wanted to scream when they closed down like that. They challenged her right to interfere in their lives, but not once did they credit her with a life of her own.

It was almost dusk when they topped the long rise that looked over the valley where her parents lived. The sun was a golden light fanning out across the valley, and the scene brought a choked longing to her throat.

This is what I've wanted, she thought. This says everything I've tried to tell you about the way I feel.

Ken's voice was a sudden, small roar behind her. "Look at that sunset! It's like the flames of ten thousand jets rolled into one!"

Sarah looked away, helpless before the intuitive skill of Ken and Rick to turn everything into reminders of terror.

* * * *

The farm of Sarah's father consisted of a thousand rolling acres devoted to orchards, grain, and cattle feeding. She had never lived on it, because her parents acquired it after their own retirement and long after her own marriage.

But the farm represented everything that she had come to think of as missing from her own life.

As long as she could remember, there had never been a time when she could put her personal possessions in a place she could call home-her own home. Her father was Commander Ronald Walker, United States Space Navy, Retired, and her early years had seen nothing but a succession of cell-like apartments near space bases, where she and her mother spent the long, lonely hours when the ships were out.

She felt almost cheated when her father retired and bought the farm. There was the peace and security and stability for which she had longed. And now it was still beyond her, for she, like her mother, had married a spaceman.

It was inevitable that she should. The only men she knew were spacemen. If it hadn't been for the Space Navy she and Rick would never have met. She had not yet come to the point of thinking it would have been best if they had not met. It wouldn't! But her heart ached with the weary questioning: Why couldn't their lives have been patterned in the same world?

She hated the very mention of the stars, and they were all that Rick and Ken lived for. It was all that her father had lived for. His frenzied rejection of Earth had left Sarah and her mother to years of loneliness while be chased a faraway dream that could not be caught and held.

In retirement, he had given her mother finally the things she had longed for all her life. A home of her own-but Sarah pitied her mother for the long, wasted years, and the now fruitless achievement of her desire.

The car followed the swelling curve of the road over the hill and crossed a wooden bridge. The hollow rumbling of it was a solemn welcome to this rustic world. Ahead, the farm itself was deceptively casual in appearance. But Rick knew every building and every tree was laid out with the same precision Commander Walker would have used in planning a flight across the Solar System.

This, Sarah did not see or know. For her, this was simply peace in contrast to the hectic naval base where houses were boxes, and "entertainment" was planned in some department by a brisk young woman with owlish glasses.

Sarah's face softened now, and Rick, watching her, grew less grim. He stopped the car for a moment at the entrance to the farm. On either side, the glistening white fence curved away into the distance, along the green slopes, and was lost among the gentle hills. Overhead, the leaves held back the light of the sky and whispered temptingly to those who passed beneath.

Rick deflated his lungs with a long breath. "We ought to be able to find the answer to almost any problem in a place like this," he said. "Let's make a try, Sarah. Will you forgive me the things I said this morning?"

"Of course -- " Her voice held little conviction and drove him away with its utter resignation.

When he started the car again she wished she had taken advantage of the moment. If Rick could look at the farm through her eyes for just an instant-then perhaps they _could_ find an answer to the questions that plagued them.

She looked askance at Ken in the back seat. He was puzzled and grim by the things he heard between them.

He wanted nothing from life except to be a spaceman. He lived only for the whine of the jets overhead, and the hours when he could get some porter or mechanic to take him through the vast ships.

At sixteen he had soloed at three times the speed of sound. He was cast in the mold of his father and his grandfather. And his handsome young face promised unhappiness for some other woman in the long, lonely waiting, Sarah thought.

Or perhaps there would be someone whose vision could soar along with his. There were enough such girls at the Base. Sarah envied their ability' to watch the stars with burning light in their own eyes, waiting jubilantly for their men who spanned the chasms of space.

She would be forever apart from these, she knew. She did not know why. She did not understand either herself or the men who were tied to her but sometimes she wished for the courage to free them, wholly and completely.

* * * *

The house was long and low, like a great crystal set among the trees. Sarah's mother came out the side door almost the moment the car drove up and erupted with Ken's sudden leap to the ground.

Mrs. Walker was still slim and looked fifteen years younger than her actual sixty-five. And all the harried tension that Sarah remembered so well was gone from her face.

She hugged Ken's man-wide shoulders and kissed his forehead as he struggled away.

"I think Dad's got something for you inside. He said something about your birthday, I believe."

"Wait a minute," called Sarah. We get to see, too." She even felt that the smile on her face was real, now. She grasped Rick's hand and pulled him along as they left the car.

Then, as they stepped inside the house, the light in her face died away. Her father was standing there with his polished black pipe in one hand, and smiling across the room at Ken.

Reverently, the boy held a glistening three-foot model of an old-fashioned jet ship. It was a sleek, swept-back thing with a needle nose. Its bright red and gold coloring was like the flame of sunset.

Sarah felt sick inside. She recognized that shape and the golden name, _Mollie,_ on the nose.

Mollie was her mother's name, and she knew that ship. She had seen its prototype when she was a lot younger than Ken was now. She had waited with her mother in a Navy radio room during a cold and rainy night, waited for news of that ship.

Her father was the pilot of it, flying the first round-the-world, non-refuel flight-the first of the atomic jets.

Ken was almost weak with the exquisite pleasure of this gift his grandfather had made for, him.

"It ... it's beautiful," he finally said. "Gosh, it's a beautiful thing. Boy, how I'd like to have been with you when you flew this -- "

"You'll fly better ships than that one, son, and fly them farther and faster."

"But there'll never be a 'first' like this one."

"I think there will. I've been hearing about the junior Patrol Corps that's being set up to train on Mars. I trust that your father has been able to swing enough influence to get you in. If he hasn't, I'm sure I have!"

Ken's angular face sobered. He set the model carefully on the floor and looked at it with his hands in his pockets.

"I won't be going, I believe," he said. "Mother doesn't think I'm old enough for that sort of thing. She doesn't want me to be a spaceman, anyway.

Commander Walker glanced sharply and with new light in his eyes towards his daughter. He knew the expression he saw now on her face. So many times he had seen it-when she was a little girl and he said good-by to her at the beginning of some long flight.

"We'll have a talk about it," he said quietly, "but let's get ready for dinner now. Mother's had it waiting for half an hour. She'll really let us know about it if we keep her waiting much longer."

* * * *

Ken slept that night with the model on end by his bed. The moonlight sprayed through the open window and softened the bright colors of the ship until it looked like a half-real dream standing there in take-off position.

But it would never be more than a dream for him, he thought. He couldn't hurt his mother as he knew he would do if he went to Mars. And there was more yet to think of. It would put a breach between his mother and father that could never be heated. He could not take the responsibility of that.

His perspective would not yet permit him to understand that the breach was already there and not of his creation. For the moment, he was imprisoned by his parents' conflict.

He watched the shadows slowly engulfing the ship as the moon rose higher. He could almost see and hear it crashing through the night sky as his grandfather left the sun behind on that great flight around the world.

He had to go to Mars. He sat up in bed, his fist beating the pillow, his eyes suddenly wet. Somehow, he had to convince his mother that he and his father were not wrong.

* * * *

Sarah awoke early, aware of the thin weight of another day. She wished now that they hadn't come. She had actually forgotten that the overwhelming influence of her father would be added to the other side of the argument and she knew she could no longer uphold her own.

She looked across at Rick's sleeping form, and suddenly their arguments seemed so futile. This was all there need be to life: a man, and a woman, and their child. What else mattered? Why couldn't Rick and Ken see that the stars did not matter as long as they had each other?

But, they would say, why couldn't she go along with them, if they wanted the stars bad enough? One side of the argument seemed as reasonable as the other, and she did not know the answer-only that she feared and hated the stars.

She took a quick, cold shower, and joined her mother in the kitchen of the farmhouse. Its broad windows opened onto the orchard, snowy with blossoms. In the meadow beyond, the grass was close-cropped by the indolent dairy cows.

Sarah stepped outside a moment and filled her lungs with the sharp, glistening air. It carried the scent of the orchard and the dewy grass and the pungent smells of the distant barn where her father was supervising the milking.

"I don't see how anyone would want to live in any other way," she said. "It's horrible to bring up a child knowing nothing but grease and steel and the sickening smell of jets. Ken doesn't know what the world is like, yet!"

"If this is the world, then neither did any of us know it when we lived

at the bases when Dad was in the Navy!

"We certainly didn't. Day and night-nothing but jets and rockets screaming. I thought I'd go crazy listening to them. I dreamed of finding a place where it was quiet and people moved at a walk instead of screaming through space like witches on atomic broomsticks.

"And then I saw to it that I would spend the rest of my life there by marrying a spaceman!"

"You don't have to stay with him."

"I do. It just so happens that I'm still in love with him. It's more likely that he'll tell me to go my own way, but I just can't stand the thought of Ken going to Mars to join this crazy Patrol they've organized for children. It's insane! Sixteen-year-olds being taught to handle spaceships. Don't they deserve any childhood?"

"What does Ken say about it?"

"He's all for it, of course. He doesn't know any better. He doesn't know there's anything else in the world."

Mrs. Walter checked the automatic ovens and glanced at the clock. "We'd better round up the men for breakfast. Almost done." Then she put her hands on her hips and looked at Sarah.

"I haven't had much to do with men-only had the one around during my life. With Ken and Rick you've had more experience in learning how they act, young and old, than I ever had. But one thing I did learn was that it just doesn't matter very much what they do as long as it's what they want. A man shouldn't have to slave at some uninspired career and try to enjoy life on the side. If his career isn't what he wants to do, then he's wasting his life, and no woman has a right to ask him to do that."

"Doesn't anything I want matter?"

"Of course. If you want to leave Rick and be a lady farmer nobody in the whole world would stop you or criticize you. That's one thing you can count on today-and that no one before us could-you are absolutely free to do just about as you please."

"You don't have to make it sound so ridiculous!"

"Well, what do you want, then? You don't want to go to Mars with Rick, and you don't want to stay behind."

"Why does a woman always have to be the one to give in?"

"They don't. I just told you what you could do. You can break up your marriage and you and Rick and Ken can still be good friends-plenty of people have done that rather than 'give in' to each other."

"But that's the ancient dogma that I can't have a marriage and my own life at the same time!"

"You've been married long enough to know that. You've hated the Navy life all these years, but you've lived it. Only this business of Ken's going to Mars has brought it to a climax.

"I had to make the choice, too. It wasn't much fun for me, sitting in the radio shack waiting for news of our great hero. I always thought it was nothing but showing-off, but it was the only thing he lived for, and of all the choices I had to make, he was the one thing I would not give up.

"Yours is twice as hard, because you have Ken as well as Rick-or is it twice as easy?"

* * * *

In the afternoon she lay on the lawn chair in front of the house watching the twinkling pattern of sunlight that came through the leaves of the old oak tree. The world had stopped its rush of jet wings. She seemed to have slipped into utter timelessness.

Her father's approach startled her out of her reverie.

"May I join you?" he said.

"If you promise to talk about nothing but cows and pigs and crops," she said.

He dropped to the grass and looked up at her. A patch of sunlight caught the silver border of his hair and turned the spaceburned skin of his

face to bold bronze.

"I tried to interest Ken in the farm this morning," he said, "but I didn't have much luck. I'd be glad to leave him this place, you know, if he wanted it. I'll be through with it by the time he's old enough. But he won't want it, and neither will Rick-not then, anyway. Farming these days is just an old man's hobby, important enough, but my kind can take care of it."

Sarah sighed. "All right, so you want to talk about Ken and Mars and space jets. You won't let me hear of anything else. You're all determined that I am wrong, that I haven't the right to control my own child's life until he knows what he wants to do."

"Take it easy, Sarah. I'm not used to being jumped like that. It's bad for an old man's heart, you know.

"But as to Ken, are you sure that it's his going to Mars that you are so angry about, or is it something that someone else has done to you-or something, even, that's merely inside yourself?"

"It's everything-everything connected with space and jets and the things that take men away from their families."

"Rick tells me he's arranged for you to go with him."

"He's arranged it! And without consulting me or even assuming I could have another idea about it. He's been gone a whole year, and now he expects to jerk me up and transplant me to some frigid desert where life isn't fit for savages. And I'm supposed to, be happy about that!"

"Would you really be happy with anything less than his giving up space altogether?"

Her breathing halted momentarily with a quick, deep intake as if she had not dared to frame in words the magnitude of this demand before. But she nodded slowly. "I guess that's it, Dad. I'd really settle for nothing less."

"You'll have to settle for a lot less!" Commander Walker retorted. "It's always been like this, Sarah," he continued more gently.

"There has always been a peculiar breed of man who had to see just what was beyond the horizon, a kind of man never settled or satisfied with what he had in the here and now. That's the kind of man I am, and that's the kind Rick is-and Ken is one with us.

"There's nothing you can do about it, Sarah-nothing at all."

Sarah's face grew pale beneath the unwanted tan painted by sunlight on barren Naval Bases. "I can try," she said slowly.

"You'll lose them both."

"Would Mother have lost-?

He nodded slowly. "There is no way on Earth to hold a man from crossing the private horizon he has to cross. And sometimes I think we all have such a horizon, whether we know it or not.

"At any rate, there were certain things I had to do. To have abandoned them would have hurt us both more than to follow through. Your mother understood that. She understood it very well."

"What about me? I didn't understand it. I don't understand it yet. What about the long nights I sat with mother listening for radio reports of first the solo flight around the world, then the Moon, and then the Mars trip, not once but three times, we waited while you tried and failed and tried again.

"I was glad when you had to turn back and missed being the first to reach Mars. I felt it made up a little for all the nights I waited for you. But nothing, really, could make up for that. You didn't even care -- "

"There's more to caring than just clinging to someone you love-sucking the life out of him with demands he cannot fulfill. You can't imprison the thing you love.

"Because I left you did not mean that I had forgotten you. Remembering you was the one thing that kept me going. Perhaps I've done nothing, really, to let you know that, but if I'd known you would ever say the thing you have just said I would have kept on going without caring if I ever succeeded in getting back."

Sarah looked at her hands, lying still and icy in her lap. "I'm sorry,

Dad-but that's the way I did feel. It's almost the way I feel now about Rick and Ken. I can't help it. I can't forget those nights, of waiting and being afraid -- "

"Then you'd better tell Rick and get it over with. You can't change him, and you can't change Ken. Think about it a little while and then tell them if you still feel the same."

He rose to his feet and glanced off towards the distant fields. "I've got to go up to the house and check with the Weather Bureau again. I ordered two inches of rain for tonight and tomorrow. I'd like to postpone it while you're here, but the crops won't stand it. It doesn't show much signs of developing yet. The forecasters are getting pretty careless about filling orders lately."

* * * *

When he was gone, Sarah lay back in the chair, her arm over her eyes to shield them from the sun edging now through the maze of leaves. She would be glad to see it rain, she thought. It should be raining everywhere. The whole world should be crying.

She would have to tell Rick and Ken that they could go-forever. There had not been any other answer since she first watched in fear while Rick took a new experimental ship to test on a long, lonely Moon flight. She had crouched then in a chair in the radio room just as she and her mother had done for so many long years waiting for news of her father.

There had been a thousand other flights since then, and they had quarreled and made up and quarreled bitterly again. And he had wholly overruled her objections to Ken's taking the jet courses at the Base.

Now he wanted to take them to Mars forever. That she could not do. They had to cross their far horizons wherever they might lead them, but they had to go without her.

The sky began clouding that afternoon and by three o'clock the rain came as scheduled. Sarah watched through the windows, watching it drip softly among the trees and wetting the whole Earth as far as she could see.

Her mother was busy with needlework and the men were hotly debating the merits of some fantastic and insignificant jet-drive mechanism.

Of them all, Sarah was alone in her discontent, alone and afraid. And they seemed, as if by conspiracy, to ignore her in her solitude.

Her mother spoke once, and then she turned to Commander Walker. "What are you going to do if the fish pond goes out? You said the dam would never stand another rain like this one, and you haven't done anything about it!"

He waved the question away with superior knowledge of such details.

* * * *

By morning the storm began to abate, the clouds were pierced with sunlight as the air mass was lowered by the controlling beams to conserve its remaining moisture for another location.

But Commander Walker, reading the automatic rain gauge records, fumed. The total catch was only sixty per cent of his order.

Sarah slipped into her coat and boots and left the house as he called the Bureau to report his opinion of forecasters and demand the remainder of his order.

With surprise, she found Ken standing just outside the doorway, his face revealing an unbelievable awareness of the spring glory about him.

He smiled almost shyly. "Feel like going for a walk, Mom? It's a swell morning for that."

"I'd love to, Ken. Let's go on up the hill and see what things look like from there."

They started out together as the door opened and Commander Walker roared at them. "We're going to have some more rain this morning if that Weather Bureau can find enough brains to get those clouds back here. Better not go far. Stay in range of the old house on the island. The forecasters are probably mad enough to give it all in one bucketful. And I'll sue if they cost me any topsoil!"

Ken laughed and waved a hand as they retreated from the house. "We'll be all right. Don't worry about us. We like the rain."

The light in his face was a joyous thing to see, and Sarah thought suddenly how little there had been of it, during the past years. She thought back over the times that Rick had left them alone, and it seemed there had been nothing of closeness or love between her and Ken. He had always pulled away in the direction of his father's horizon-and she had pulled against almost everything he had wanted.

They walked past the steaming barns and the low grumbling noises of the cattle within. The meadowland underneath their feet was squashy from the rain and she had to grasp Ken's arm to keep her feet beneath her.

He was big, like Rick, and the hardness of muscle in his arm startled her. He seemed to have grown almost without her awareness, she thought in panic.

"I've decided I won't go with Dad," Ken said abruptly. "I know you feel about it. I'm not going to ask anymore. We talked about it last night. I told him, and he said it was up to me."

She couldn't see his face, but she knew how it must look. Yet her heart gave an involuntary leap within her. He was offering the thing she most desired at this moment-or so it appeared.

But it was only appearance. She understood-as he didn't at this moment-that some day he would hate her for the unspoken pressure by which she had forced him to this decision.

"We'll talk about it more, later," she said. Her voice was hoarse and barely audible. "We may find another answer."

They came to the low rise behind the barns and followed the base of it towards the old creek bed, long dried up and overrun with grass. There had once been a sizeable stream here, but a dam in the low hills beyond held back all the water that used to flow in spring freshets. This was the fishpond where the runoff from the hills was trapped.

Across the dry streambed was a rise on which stood the first farmhouse of the place, now long abandoned. The stream had once run behind the house, but one sudden spring flood had washed a new course and left the house stranded on a tiny island between the two branches. It did not matter, for the house had been long abandoned even then.

Now Sarah and Ken turned their steps towards it. Ken glanced at the sky. "It looks like Grandpa is about to get all the rain he can use. I'll bet the forecasters are so tired of his grumbling that they're really going to let him have it."

Sarah stopped and glanced anxiously for the first time at the low gray ceiling that was settling with furious intensity.

"We'd better get back," she said. "We'll be drenched if we get caught out here." But already the first drops had started to fall."

"I think it's been raining quite a while over the hill there," said Ken, nodding towards the rise that hid the fishpond. "We'd better go up to the old house and wait it out."

It seemed the sensible thing to do. Sarah hurried on, clutching Ken's hand for support. The bottom of the dry creek bed held three or four inches of water already from the previous rain. They sank to ankle depth in it, and tried to hop across on projecting rocks. Finally, they scrambled up the opposite slope to the house. Their footsteps rattled like dry bones on the old, weather-beaten porch.

From the moment they set foot on it, the rain spurted in torrents. It hammered the aged roof and began to pour through holes. Ken and Sarah dodged, clinging to each other and glancing apprehensively upward.

And Sarah found that she was laughing.

It was a strange and startling discovery. Ken was laughing with her, and she sensed that he, too, felt that they had not laughed together for a very long time.

They clung momentarily in this miracle of laughter, and then it slowly

died away in Ken's face. He relaxed his hold on his mother, and then it was there between them again-the wonder and the agony of their divergent lives.

They sat down close to each other on the porch floor, their backs against the wall. Water fell and splashed on either side of them. They watched the sheeting rain, and listened to its roar on the roof.

Their own silence was long. Ken shifted uneasily. Sarah sensed his embarrassment in not knowing what to say to her in this moment.

She broke the silence. "Why do you want to go to Mars?" she asked suddenly. "Can you tell me in just a single phrase that will make me understand this thing?"

"It's what I've got to do," he answered, forgetting his former promise to abandon the plan. "There's one thing that each man in the world is born to do, Grandpa says, and I believe him. Mine is out there in space.

"Think of all there is yet to do! We haven't even reached the last planet of our own System. Somebody living now is going to be the first to make it. That could be me. And there are the other Systems like ours.

"They're talking about an SOL-speed of light drive-out there on Mars now. Dad thinks he may get in on some of the development work on that. We could reach the nearest stars with it."

"I've been born in the best age the world has ever known! I can't turn my back on it. You have no right to ask it of me."

"I won't ask it," said Sarah quietly. I'm going to let you go-you and Dad-you can go together."

"That isn't what we want. We don't just want to go by ourselves. We need you, too."

"No!" Her voice was so shrill it startled her. "You'll never get me to agree to anything like that. I'll give you all the freedom you want for yourselves, but you can't ask any more of me than that."

From a distance there came a sudden sound of thunder. It rose from somewhere in the hills above them, and a gathering roar shook the old house on its rotten underpinnings. Sarah and Ken glanced up the little valley with wonder and apprehension, and the roaring grew.

"The dam!" Ken cried. "Grandpa's pond-the dam's broken!"

Sarah recalled her mother's complaint about ordering so much rainfall to drain behind the weakened dam. It was incredible that her father should have underestimated such a risk. But now she could see the gray tongue of water curling down the dry creek bed, widening swiftly, some of it overflowing the banks and racing towards the barns and corrals across the meadow.

Then she saw it flowing through the other branch around the house.

"We can't get out of here!" she exclaimed. "There's water all around the house."

Ken eyed the widening reaches of the water. "The bed's pretty well filled up down below so that it won't drain, but it won't be more than six or seven feet deep at the most."

"But how'll we ever get across?"

He grinned as if he were now in the midst of something he could enjoy. "We'll swim, of course."

"No. Your grandfather has the boat he takes to the lake for fishing. They can pull it up here on the trailer and take us off."

"All that trouble? Come on, let's swim across. There's no need to wait for the rain to quit. We couldn't get any wetter than we'll be crossing."

Sarah looked down at the roiling water with distaste. "They'll come looking for us soon. There's no sense in trying to make it across now."

Ken was halfway across the porch. He turned and looked back with boyish pleading in his eyes. "Oh, come on, Mom. Let's not do it for sense. Let's do it for fun!"

For a moment she had a chilling impression that somewhere a key had turned within a lock. She halted in her movement towards him.

To her eyes, resting on his, it seemed as if understanding flared between them-as if some window had opened, letting her see for the first time

through the murky turmoil between them.

Let's do it for fun --

It was so simple she wanted to cry. She had sought for a thousand complex answers to explain the lives of the men who baffled her so.

Let's do it for fun --

They had crossed oceans and prairies in ages past. And now they circled the Earth and reached out to the planets, and Ken already had thoughts of other stars beyond the sun. Their far horizons-they crossed them for fun.

Let's do it for fun-It was so simple, but was it true? How long had it been since she had done anything for fun, for the sheer pleasure of it? Her memory ranged back over the years and they seemed barren of anything but a dread intensity that hovered in the sky on the wings of rockets.

Ken was alarmed by the sudden, half-hysterical giggle that escaped her as she put her hands up to her face and hid her eyes from his sight for a moment.

"What is it, Mom? What's the matter-?"

She looked at him again, and her eyes were shining in a way that he had never seen before. "Come on." she said.

It was a crazy thing-they could just as well wait-and she knew if she stopped to think about it she would never go through with it.

There was only one way to find out if it were true-if it were possible to do anything for fun any more.

She stripped off her coat and outer clothing and raced Ken down the slope clad only in her underthings. She stopped at the edge of the water and waved to Ken who struggled with his shirt on the porch. He was grinning in pleased astonishment.

"Wait a minute," he called. "We can put a rock in these and throw them across."

He made a couple of bundles of their clothes and hurled them across the stream. They landed with a squashy sound on the other side.

"Now we've got to go!"

It wasn't cold. The rain was still falling, and it seemed warm on her bare skin. She looked down at herself. She wasn't old, but she couldn't remember another time when she had stood almost naked in the rain. She opened her mouth to taste it. She wondered how many other things that were fun she had missed.

Ken took her hand and they walked into the water. It was colder than the raindrops and closed like circling ice about her legs and waist and chest. But it felt good. She felt as if thirty years' terror had been stripped away with her clothes.

Her father had been so busy crossing his own horizons that he had never thought to explain why they had to be crossed. He had forgotten to tell her that it was fun and she had never sensed it through her dread.

It had taken Ken's impulsive, naive wisdom to explain it to her-and this simple adventure to prove it. And now, she knew it was true.

Ken was grinning but puzzled. The puzzlement didn't matter, for she was seeing him really alive for the first time in years. All his joy and life had been suppressed in her presence before now, and she had not known it.

Abruptly, her feet slipped on the grassy slope and she went down. Ken grabbed her and buoyed her up, and then they were both laughing and swimming and sputtering their way towards the opposite slope.

* * * *

The sky was breaking as they started wading again, and Sarah saw the figures coming towards them, her mother and father and Rick. Rick broke into a run.

Ken squeezed her hand hard, and looked at her as if he understood the feeling that was in her. "Aren't you glad we didn't wait for them, Mom?"

Then Rick was grasping her hand and pulling her towards him, wrapping his own dry coat about her wet shoulders. She looked up into his worried face.

"I've got a surprise for you, darling," she said. "We're going to Mars,

all of us. It will be fun!"

He scowled in wonder. "I don't know what that's got to do with this, but if it's true it's wonderful."

She didn't get to say more. Her mother was bustling up insisting that Ken take her coat against his wishes.

"Dad knew that dam couldn't take a rain like this. He knew it was weak and ordered rain anyway. Now look at the expense of building the pond again," she complained.

At first the words didn't register through the cold and unpleasantness that was beginning to settle upon Sarah. Then their significance cut sharply. She looked at her father and her son. She caught the momentary glance that passed between them.

And then she understood. A fantastic scheme, a play of their production in which she had been assigned a role without her knowledge. It had worked. They had shown her that the narrow restrictions she called her world could hold the same uncertainties as the vaster universe in which they lived.

But it was Ken's impulsive, unrehearsed invitation that gave her the insight she needed.

Let's do it for fun.

She smiled at her father as he caught her watching them so intently. He flushed as if he guessed she understood what they had done.

She nodded. "It's a lovely vacation, Dad. I'm going to remember it when we're on Mars. And today, I think I've crossed my own horizon."

THE UNLEARNED

The Chief Officer of Scientific Services, Information and Coordination was a somewhat misleading and obscure title, and Dr. Herman Hockley who held it was not the least of those whom the title misled and sometimes obscured.

He told himself he was not a mere library administrator, although he was proud of the information files built up under his diction. They contained the essential accumulated knowledge found to date on Earth and the extraterrestrial planets so far contacted. He didn't feel justified in claiming to be strictly a research supervisor, either, in spite of duties as top level administrator for all divisions of National Standardization and search Laboratories and their subsidiaries in government, industry, and education. During his term of supervision the National Laboratories had made a tremendous growth, in contrast to a previous decline.

Most of all, however, he disclaimed being a figurehead, to which all the loose strings of a vast and rambling organization could be tied. But sometimes it was quite difficult to know whether or not that was his primary assignment after all. His unrelenting efforts to keep out of the category seemed to be encountering more and more determination to push him in that direction.

Of course this was merely the way it looked in his more bitter moments -- such as the present. Normally, he had a full awareness of the paramount importance of his position, and was determined to administer it on a scale in keeping with that importance. His decision could affect the research in the world's major laboratories. Not that he was a dictator by any means, although there were times when dictation was called for. As when a dozen projects needed money and the Congress allotted enough for one or two. Somebody had to make a choice.

His major difficulty was that active researchers knew it was the Congressional Science Committee which was ultimately responsible for their bread and butter. And the Senators regarded the scientists, who did the actual work in the laboratories, as the only ones who mattered. Both groups tended to look upon Hockley's office as a sort of fulcrum in their efforts to maintain balance with each other -- or as referee in their sparring for adequate control over each other.

At that, however, things researchwise were better than ever before. More funds and facilities were available. Positions in pure research were more

secure.

And then, once again, rumors about Rykeman III had begun to circulate wildly a few days ago.

Since Man's achievement of extra-galactic flight, stories of Rykeman III had tantalized the world and made research scientists sick with longing when they considered the possible truth of what they heard. The planet was rumored to be a world of super-science, whose people had an answer for every research problem a man could conceive. The very few Earthmen who had been to Rykeman III confirmed the rumors. It was a paradise, according to their stories. And among other peoples of the galaxies the inhabitants of Rykeman III were acknowledged supreme in scientific achievement. None challenged them. None even approached them in abilities.

What made the situation so frustrating to Earthmen was the additional report that the Rykes were quite altruistically sharing their science with a considerable number of other worlds on a fee basis. Earth scientists became intoxicated at the mere thought of studying at the feet of the exalted Rykes.

Except Dr. Sherman Hockley. From the first he had taken a dim view of the Ryke reports. Considering the accomplishments of the National Laboratories, he could see no reason for his colleagues' half-shameful disowning of all their own work in favor of a completely unknown culture several hundred million light years away. They were bound to contact more advanced cultures in their explorations -- and could be thankful they were as altruistic as the Rykes! -- but it was no reason to view themselves as idiot children hoping to be taught by the Rykes.

He had kept his opinions very much to himself in the past, since they were not popular with his associates, who generally regarded his attitudes as simply old-fashioned. But now, for the first time, a Ryke ship was honoring Earth with a visit. There was almost hysterical speculation over the possibility that Earth would be offered tutelage by the mighty Ryke scientists. Hockley wouldn't have said he was unalterably opposed to the idea. He would have described himself as extremely cautious. What he did oppose wholeheartedly was the enthusiasm that painted the Rykes with pure and shining light, without a shadowy hue in the whole picture.

Since his arrival, the Ryke envoy had been closeted with members of the Congressional Science Committee. Not a word had leaked as to his message. Shortly, however, the scientists were to be let in on the secret which might affect their careers for better or for worse during the rest of their lives, and for many generations to come. The meeting was going to be --

Hockley jumped to his feet as he glanced at the clock. He hurried through the door to the office of his secretary, Miss Cardston, who looked meaningfully at him as he passed.

"I'll bet there isn't a Senator on time," he said.

In the corridor he almost collided with Dr. Lester Showalter, who was his Administrative Assistant for Basic Research. "The Ryke character showed up fifteen minutes ago," said Showalter. "Everyone's waiting."

"We've got six minutes yet," said Hockley. He walked rapidly beside Showalter. "Is there any word on what the envoy's got that's so important?"

"No. I've got the feeling it's something pretty big. Wheeler and Johnson of Budget are there. Somebody said it might have something to do with the National Lab."

"I don't see the connection between that and a meeting with the Ryke," said Hockley.

Showalter stopped at the door of the conference room. "Maybe they want to sell us something. At any rate, we're about to find out."

The conference table was surrounded by Senators of the Committee. Layered behind them were scientists representing the cream of Hockley's organization. Senator Markham, the bulky, red-faced Chairman greeted them. "Your seats are reserved at the head of the table," he said.

"Sorry about the time," Hockley mumbled. "Clock must be slow."

"Quite all right. We assembled just a trifle early. I want you to meet

our visitor, Special Envoy from Rykeman III, Liacan."

Markham introduced them, and the stick-thin envoy arose with an extended hand. His frail, whistling voice that was in keeping with his bird-like character spoke in clear tones. "I am happy to know you, Dr. Hockley, Dr. Showalter."

The two men sat down in good view of the visitor's profile. Hockley had seen the Rykes before, but had always been repelled by their snobbish approach. Characteristically, the envoy bore roughly anthropomorphic features, including a short feather covering on his dorsal side. He was dressed in bright clothing that left visible the streak of feathering that descended from the bright, plumed crown and along the back of his neck. Gravity and air pressure of Earth were about normal for him. For breathing, however, he was required to wear a small device in one narrow nostril. This was connected to a compact tank on his shoulder.

Markham called for order and introduced the visitor. There was a round of applause. Liacan bowed with a short, stiff gesture and let his small black eyes dart over the audience. With an adjustment of his breathing piece he began speaking.

"It is recognized on Earth," he said, "as it is elsewhere, that my people of Rykeman III possess undisputed intellectual leadership in the galaxies of the Council. Your research is concerned with things taught only in the kindergartens of my world. Much that you hold to be true is in error, and your most profound discoveries are self-evident to the children of my people."

Hockley felt a quick, painful contraction in the region of his diaphragm. So this was it!

"We are regarded with much jealousy, envy, and even hatred by some of our unlearned neighbors in space," said the Ryke. "But it has never been our desire to be selfish with our superior achievements which make us the object of these feelings. We have undertaken a program of scientific leadership in our interstellar neighborhood. This began long before you came into space and many worlds have accepted the plan we offer.

"Obviously, it is impractical to pour out all the knowledge and basic science we have accumulated. Another world would find it impossible to sort out that which was applicable to it. What we do is act as a consultation center upon which others can call at will to obtain data pertaining to any problem at hand. Thus, they are not required to sort through wholly inapplicable information to find what they need.

"For example, if you desire to improve your surface conveyances, we will supply you with data for building an optimum vehicle suitable for conditions on Earth and which is virtually indestructible. You will of course do your own manufacturing, but even there we can supply you with technology that will make the process seem miraculous by your present standards.

"Our services are offered for a fee, payable in suitable items of goods or raw materials. When you contemplate the freedom from monotonous and unending research in fields already explored by us, I am certain you will not consider our fees exorbitant. Our desire is to raise the cultural level of all peoples to the maximum of which they are capable. We know it is not possible or even desirable to bring others to our own high levels, but we do offer assistance to all cultures in accord with their ability to receive. The basic principle is that they shall ask -- and whatever is asked for, with intelligence sufficient for its utilization, that shall be granted.

"I am certain I may count on your acceptance of the generous offer of my people."

The envoy sat down with a jiggling of his bright plume, and there was absolute silence in the room. Hockley pictured to himself the dusty, cobweb-filled laboratories of Earth vacated by scientists who ran to the phone to call the Rykes for answers to every problem.

Senator Markham stood up and glanced over the audience. "There is the essence of the program which has been submitted to us," he said. "There is a vast amount of detail which is, of course, obvious to the minds of our friends

on Rykeman III, but which must be the subject of much deliberation on the part of us comparatively simple-minded Earthmen." He gave a self-conscious chuckle, which got no response.

Hockley felt mentally stunned. Here at last was the thing that had been hoped for by most, anxiously awaited by a few, and opposed by almost no one.

"The major difficulty," said Markham with slow dignity, "is the price. It's high, yes. In monetary terms, approximately twelve and a half billions per year. But certainly no man in his right mind would consider any reasonable figure too high for what we can expect to receive from our friends of Rykeman III.

"We of the Science Committee do not believe, however, that we could get a commitment for this sum to be added to our normal budget. Yet there is a rather obvious solution. The sum required is very close to that which is now expended on the National Standardization and Research Laboratories."

Hockley felt a sudden chill at the back of his neck.

"With the assistance of the Rykes," said Markham, "we shall have no further need of the National Laboratories. We shall require but a small staff to analyze our problems and present them to the Rykes and relay the answers for proper assimilation. Acceptance of the Ryke program provides its own automatic financing!"

He glanced about with a triumphant smile. Hockley felt as if he were looking through a mist upon something that happened a long time ago. The National Lab! Abandon the National Lab!

Around him there were small nods of agreement from his colleagues. Some pursed their lips as if doubtful -- but not very much. He waited for someone to rise to his feet in a blast of protest. No one did. For a moment Hockley's own hands tensed on the back of the chair in front of him. Then he slumped back to his seat. Now was not the time.

They had to thrash it out among themselves. He had to show them the magnitude of this bribe. He had to find an argument to beat down the Congressmen's irrational hopes of paradise. He couldn't plead for the Lab on the grounds of sentiment -- or that it was sometimes a good idea to work out your own problems. The Senators didn't care for the problems or concerns of the scientists. It appeared that even the scientists themselves had forgotten to care. He had to slug both groups with something very solid.

Markham was going on. "We are convinced this is a bargain which even the most obstinate of our Congressional colleagues will be quick to recognize. It would be folly to compute with building blocks when we can gain access to giant calculators. There should be no real difficulty in getting funds transferred from the National Laboratory.

"At this time we will adjourn. Liacan leaves this evening. Our acceptance of this generous offer will be conveyed to Rykeman III directly upon official sanction by the Congress. I wish to ask this same group to meet again for discussion of the details incident to this transfer of operations. Let us say at ten o'clock in the morning, gentlemen."

* * * *

Hockley said goodbye to the envoy. Afterwards, he moved through the circle of Senators to his own group. In the corridor they tightened about him and followed along as if he had given an order for them to follow him. He turned and attempted a grin.

"Looks like a bull session is in order, gents. Assembly in five minutes in my office." As he and Showalter opened the door to Miss Cardston's office and strode in, the secretary looked up with a start. "I thought you were going to meet in the conference room."

"We've met," said Hockley. "This is the aftermeeting. Send out for a couple of cases of beer." He glanced at the number surging through the doorway and fished in his billfold. "Better make it three. This ought to cover it."

With disapproval, Miss Cardston picked up the bills and turned to the phone. Almost simultaneously there was a bellow of protest and an enormous, ham-like hand gripped her slender wrist. She glanced up in momentary fright.

Dr. Forman K. Silvers was holding her wrist with one hand and clapping Hockley on the back with the other. "This is not an occasion for beer, my boy!" he said in an enormous voice. "Make that a case of champagne, Miss Cardston." He released her and drew out his own billfold.

"Get somebody to bring in a couple of dozen chairs," Hockley said.

In his own office he walked to the window behind his desk and stood facing it. The afternoon haze was coming up out of the ocean. Faintly visible were the great buildings of the National Laboratories on the other side of the city. Above the mist, the sun caught the tip of the eight-story tower where the massive field tunnels of the newly designed gammatron were to be installed.

Or were to have been installed.

The gammatron was expected to make possible the creation of gravitational fields up to five thousand g's. It would probably be a mere toy to the Rykes, but Hockley felt a fierce pride in its creation. Maybe that was childish. Maybe his whole feeling about the Lab was childish. Perhaps the time had come to give up childish things and take upon themselves adulthood.

But looking across the city at the concrete spire of the gammatron, he didn't believe it.

He heard the clank of metal chairs as a couple of clerks began bringing them in. Then there was the clink of glassware. He turned to see Miss Cardston stiffly indicating a spot on the library table for the glasses and the frosty bottles.

Hockley walked slowly to the table and filled one of the glasses. He raised it slowly. "It's been a short life but a merry one, gentlemen." He swallowed the contents of the glass too quickly and returned to his desk.

"You don't sound very happy about the whole thing," said Mortenson, a chemist who wore a neat, silvery mustache.

"Are you overjoyed," said Hockley, "that we are to swap the National Lab for a bottomless encyclopedia?"

"Yes, I think so," said Mortenson, "There are some minor objections, but in the end I'm certain we'll all be satisfied with what we get!"

"Satisfied! Happy!" exclaimed the mathematician, Dr. Silvers. "How can you use words so prosaic and restrained in references to these great events which we shall be privileged to witness in our lifetimes?"

He had taken his stand by the library table and was now filling the glasses with the clear, bubbling champagne, sloshing it with ecstatic abandon over the table and the rug.

Hockley glanced toward him. "You don't believe, then, Dr. Silvers, that we should maintain any reserve in regard to the Rykes?"

"None whatever! The gods themselves have stepped down and offered an invitation direct to paradise. Should we question or hold back, or say we are merely happy. The proper response of a man about to enter heaven is beyond words!"

The bombast of the mathematician never failed to enliven any backroom session in which he participated. "I have no doubt," he said, "that within a fortnight we shall be in possession of a solution to the Legrandian Equations. I have sought this for forty years."

"I think it would be a mistake to support the closing of the National Laboratories," said Hockley slowly.

As if a switch had been thrown, their expressions changed. There was a sudden carefulness in their stance and movements, as if they were feinting before a deadly opponent.

"I don't feel it's such a bad bargain," said a thin, bespectacled physicist named Judson. He was seated across the room from Hockley. "I'll vote to sacrifice the Lab in exchange for what the Rykes will give us."

"That's the point," said Hockley. "Exactly what are the Rykes going to give us? And we speak very glibly of sharing their science. But shall we actually be in any position to share it? What becomes of the class of scientists on Earth when the Lab is abandoned?"

Wilkins stood abruptly, his hands shoved part way into his pockets and his lower jaw extended tensely. "I don't believe that's part of this question," he said. It is not just we scientists who are to share the benefits of the Rykes. It is Mankind. At this time we have no right to consider mere personal concerns. We would betray our whole calling -- our very humanity -- if we thought for one moment of standing in the way of this development because of our personal concern over economic and professional problems. There has never been a time when a true scientist would not put aside his personal concerns for the good of all."

Hockley waited, half expecting somebody to start clapping. No one did, but there were glances of self-righteous approval in Wilkins' direction. The biologist straightened the sleeves of his coat with a smug gesture and awaited Hockley's rebuttal.

"We are Mankind," Hockley said finally. "You and I are as much a part of humanity as that bus load of punch machine clerks and store managers passing on the street outside. If we betray ourselves we have betrayed humanity.

"This is not a sudden thing. It is the end point of a trend which has gone on for a long time. It began with our first contacts beyond the galaxy, when we realized there were peoples far in advance of us in science and economy. We have been feeding on them ever since. Our own developments have shrunk in direct proportion. For a long time we've been on the verge of becoming intellectual parasites in the Universe. Acceptance of the Ryke offer will be the final step in that direction."

Instantly, almost every other man in the room was talking at once. Hockley smiled faintly until the angry voices subsided. Then Silvers cleared his throat gently. He placed his glass beside the bottles on the table with a precise motion. "I am sure," he said, "that a moment's thought will convince you that you do not mean what you have just said.

"Consider the position of pupil and teacher. One of Man's greatest failings is his predilection for assuming always the position of teacher and eschewing that of pupil. There is also the question of humility, intellectual humility. We scientists have always boasted of our readiness to set aside one so-called truth and accept another with more valid supporting evidence.

"Since our first contact with other galactic civilizations we have had the utmost need to adopt an attitude of humility. We have been fortunate in coming to a community of worlds where war and oppression are not standard rules of procedure. Among our own people we have encountered no such magnanimity as has been extended repeatedly by other worlds, climaxed now by the Ryke's magnificent offer.

"To adopt sincere intellectual humility and the attitude of the pupil is not to function as a parasite, Dr. Hockley'"

"Your analogy of teacher and pupil is very faulty in expressing our relation to the Rykes," said Hockley. "Or perhaps I should say it is too hellishly accurate. Would you have us remain the eternal pupils? The closing of the National Laboratories means an irreversible change in our position. Is it worth gaining a universe of knowledge to give up your own personal free inquiry?"

"I am sure none of us considers he is giving up his personal free inquiry," said Silvers almost angrily. "We see unlimited expansion beyond anything we have imagined in our wildest dreams."

On a few faces there were frowns of uncertainty, but no one spoke up to support him. Hockley knew that until this vision of paradise wore off there were none of them on whom he could count.

He smiled broadly and stood up to ease the tension in the room. "Well, it appears you have made your decision. Of course, Congress can accept the Ryke plan whether we approve or not, but it is good to go on record one way or the other. I suppose that on the way out tonight it would be proper to check in at Personnel and file a services available notification"

And then he wished he hadn't said that. Their faces grew a little more

set at his unappreciated attempt at humor.

* * * *

Showalter remained after the others left. He sat across the desk while Hockley turned back to the window. Only the tip of the gammatron tower now caught the late afternoon sunlight.

"Maybe I'm getting old," Hockley said. "Maybe they're right and the Lab isn't worth preserving if it means the difference between getting or not getting tutelage from the Rykes."

"But you don't feel that's true," said Showalter.

"No.

"You're the one who built the Lab into what it is. It has as much worth as it ever had, and you have an obligation to keep it from being destroyed by a group of politicians who could never understand its necessity."

"I didn't build it," said Hockley. "It grew because I was able to find enough people who wanted the institution to exist. But I've been away from research so long -- I never was much good at it, really. Did you ever know that? I've always thought of myself as a sort of impresario of scientific productions, if I might use such a term. Maybe those closer to the actual work are right. Maybe I'm just trying to hang onto the past. It could be time for a jump to a new kind of progress."

"You don't believe any of that."

Hockley looked steadily in the direction of the Lab buildings. "I don't believe any of it. That isn't just an accumulation of buildings over there, with a name attached to them. It's the advancing terminal of all Man's history of trying to find out about himself and the Universe. It started before Neanderthal climbed into his caves a half million years ago. From then until now there's a steady path of trial and error -- of learning. There's exultation and despair, success and failure. Now they want to say it was all for nothing."

"But to be pupils -- to let the Rykes teach us -- "

"The only trouble with Silvers' argument is that our culture has never understood that teaching, in the accepted sense, is an impossibility. There can be only learning -- never teaching. The teacher has to be eliminated from the actual learning process before genuine learning can ever take place. But the Rykes offer to become the Ultimate Teacher."

"And if this is true," said Showalter slowly, "you couldn't teach it to those who disagree, could you? They'd have to learn it for themselves."

Hockley turned. For a moment he continued to stare at his assistant. Then his face broke into a narrow grin. "Of course you're right! There's only one way they'll ever learn it: go through the actual experience of what Ryke tutelage will mean."

* * * *

Most of the workrooms at Information Central were empty this time of evening. Hockley selected the first one he came to and called for every scrap of data pertaining to Rykeman III. There was a fair amount of information available on the physical characteristics of the world. Hockley scribbled swift, privately intelligible notes as he scanned. The Rykes lived under a gravity one third heavier than Earth's, with a day little more than half as long, and they received only forty percent as much heat from their frail sun as Earthmen were accustomed to.

Cultural characteristics included a trading system that made the entire planet a single economic unit. And the planet had no history whatever of war. The Rykes themselves had contributed almost nothing to the central libraries of the galaxies concerning their own personal makeup and mental functions, however. What little was available came from observers not of their race.

There were indications they were a highly unemotional race, not given to any artistic expression. Hockley found this surprising. The general rule was for highly intellectual attainments to be accompanied by equally high artistic expression.

But all of this provided no data that he could relate to his present

problem, no basis for argument beyond what he already had. He returned the films to their silver cans and sat staring at the neat pile of them on the desk. Then he smiled at his own obtuseness. Data on Rykeman III might be lacking, but the Ryke plan had been tried on plenty of other worlds. Data on them should not be so scarce."

He returned the cans and punched out a new request on the call panel. Twenty seconds later he was pleasantly surprised by a score of new tapes in the hopper. That was enough for a full night's work. He wished he'd brought Showalter along to help.

Then his eye caught sight of the label on the topmost can in the pile: Janisson VIII. The name rang a familiar signal somewhere deep in his mind. Then he knew that was the home world of Waldon Thar, one of his closest friends in the year when he'd gone to school at Galactic Center for advanced study.

Thar had been one of the most brilliant researchers Hockley had ever known. In bull-session debate he was instantly beyond the depth of everyone else.

Janisson VIII. Thar could tell him about the Rykes!

Hockley pushed the tape cans aside and went to the phone in the workroom. He dialed for the interstellar operator. "Government priority call to Janisson VIII," he said. "Waldon Thar. He attended Galactic Center Research Institute twenty-three years ago. He came from the city Plar, which was his home at that time. I have no other information, except that he is probably employed as a research scientist."

There was a moment's silence while the operator noted the information. "There will be some delay," she said finally. "At present the inter-galactic beams are full."

"I can use top emergency priority on this," said Hockley. "Can you clear a trunk for me on that?"

"Yes. One moment, please."

He sat by the window for half an hour, turning down the light in the workroom so that he could see the flow of traffic at the port west of the Lab buildings. Two spaceships took off and three came in while he waited. And then the phone rang.

"I'm sorry," the operator said. "Waldon Thar is reported not on Janisson VIII. He went to Rykeman III about two Earth years ago. Do you wish to attempt to locate him there?"

"By all means," said Hockley. "Same priority."

This was better than he had hoped for. Thar could really get him the information he needed on the Rykes. Twenty minutes later the phone rang again. In the operator's first words Hockley sensed apology and knew the attempt had failed.

"Our office has learned that Walden Thar is at present on tour as aide to the Ryke emissary, Liacan. We can perhaps trace -- "

"No!" Hockley shouted. "That won't be necessary. I know now -- "

He almost laughed aloud to himself. This was an incredible piece of good luck. Walden Thar was probably out at the spaceport right now -- unless one of those ships taking off had been the Ryke --

He wondered why Thar had not tried to contact him. Of course, it had been a long time, but they had been very close at the center. He dialed the field control tower. "I want to know if the ship from Rykeman III has departed yet," he said.

"They were scheduled for six hours ago, but mechanical difficulty has delayed them. Present estimated take-off is 11:00."

Almost two hours to go, Hockley thought. That should be time enough. "Please put me in communication with one of the aides aboard named Waldon Thar. This is Sherman Hockley of Scientific Services. Priority request."

"I'll try, sir." The tower operator manifested a sudden increase of respect. "One moment, please."

Hockley heard the buzz and switch clicks of communication circuits

reaching for the ship. Then, in a moment, he heard the somewhat irritated but familiar voice of his old friend.

"Waldon Thar speaking," the voice said. "Who wishes to talk?"

"Listen, you old son of a cyclotron's maiden aunt!" said Hockley. "Who would want to talk on Sol III? Why didn't you give me a buzz when you landed? I just found out you were here."

"Sherm Hockley, of course," the voice said with distant, unperturbed tones. "This is indeed a surprise and a pleasure. To be honest, I had forgotten Earth was your home planet."

"I'll try to think of something to jog your memory next time. How about getting together?"

"Well -- I don't have very long," said Thar hesitantly. "If you could come over for a few minutes -- "

Hockley had the jolting feeling that Waldon Thar would just as soon pass up the opportunity for their meeting. Some of the enthusiasm went out of his voice. "There's a good all-night interplanetary eatery and bar on the field there. I'll be along in fifteen minutes."

"Fine," said Thar, "but please try not to be late."

* * * *

On the way to the field, Hockley wondered about the change that had apparently taken place in Thar. Of course, he had changed, too -- perhaps for much the worse. But Thar sounded like a stuffed shirt now, and that was the last thing Hockley would have expected. In school, Thar had been the most irreverent of the whole class of irreverents, denouncing in ecstasy the established and unproven lore, riding the professors of unsubstantiated hypotheses. Now -- well, he didn't sound like the Thar Hockley knew.

He took a table and sat down just as Thar entered the dining room. The latter's broad smile momentarily removed Hockley's doubts. The smile hadn't changed. And there was the same expression of devilish disregard for the established order. The same warm friendliness. It baffled Hockley to understand how Thar could have failed to remember Earth was his home.

Thar mentioned it as he came up and took Hockley's hand. "I'm terribly sorry," he said. "It was stupid to forget that Earth meant Sherman Hockley."

"I know how it is. I should have written. I guess I'm the one who owes a letter."

"No, I think not," said Thar.

They sat on opposite sides of a small table near a window and ordered drinks. On the field they could see the vast, shadowy outline of the Ryke vessel.

Thar was of a race genetically close to the Rykes. He lacked the feathery covering, but this was replaced by a layer of thin scales, which had a tendency to stand on edge when he was excited. He also wore a breathing piece, and carried the small shoulder tank with a faint air of superiority.

Hockley watched him with a growing sense of loss. The first impression had been more nearly correct. Thar hadn't wanted to meet him.

"It's been a long time," said Hockley lamely. "I guess there isn't much we did back there that means anything now."

"You shouldn't say that," said Thar as if recognizing he had been too remote. "Every hour of our acquaintance meant a great deal to me. I'll never forgive myself for forgetting -- but tell me how you learned I was aboard the Ryke ship."

"The Rykes have made us an offer. I wanted to find out the effects on worlds that had accepted. I learned Janisson VIII was one, so I started looking."

"I'm so very glad you did, Sherm. You want me to confirm, of course, the advisability of accepting the offer Liacan has made."

"Confirm -- or deny it," said Hockley.

Thar spread his clawlike hands. "Deny it? The most glorious opportunity a planet could possibly have?"

Something in Thar's voice gave Hockley a sudden chill. "How has it

worked on your own world?"

"Janisson VIII has turned from a slum to a world of mansions. Our economic problems have been solved. Health and long life are routine. There is nothing we want that we cannot have for the asking."

"But are you satisfied with it? Is there nothing which you had to give up that you would like returned?"

Waldon Thar threw back his head and laughed in high-pitched tones. "I might have known that would be the question you would ask! Forgive me, friend Sherman, but I had almost forgotten how unventuresome you are.

"Your question is ridiculous. Why should we wish to go back to our economic inequalities, poverty and distress, our ignorant plodding research in science? You can answer your own question."

They were silent for a moment. Hockley thought his friend would have gladly terminated their visit right there and returned to his ship. To forestall this, he leaned across the table and asked, "Your science -- what has become of that?"

"Our science! We never had any. We were ignorant children playing with mud and rocks. We knew nothing. We had nothing. Until the Rykes offered to educate us."

"Surely you don't believe that," said Hockley quietly. "The problem you worked on at the Institute -- gravity at micro-cosmic levels. That was not a childish thing."

Thar laughed shortly and bitterly. "What disillusionment you have coming, friend Sherman! If you only knew how truly childish it was. Wait until you learn from the Rykes the true conception of gravity, its nature and the part it plays in the structure of matter."

Hockley felt a sick tightening within him. This was not the Waldon Thar, the wild demon who thrust aside all authority and rumor in his own headlong search for knowledge. It couldn't be Thar who was sitting passively by, being told what the nature of the Universe is.

"Your scientists-?" Hockley persisted. "What has become of all your researchers?"

"The answer is the same," said Thar. "We had no science. We had no scientists. Those who once went by that name have become for the first time honest students knowing the pleasure of studying at the feet of masters."

"You have set up laboratories in which your researches are supervised by the Rykes?"

"Laboratories? We have no need of laboratories. We have workshops and study rooms where we try to absorb that which the Rykes discovered long ago. Maybe at some future time we will come to a point where we can reach into the frontier of knowledge with our own minds, but this does not seem likely now."

"So you have given up all original research of your own?"

"How could we do otherwise? The Rykes have all the answers to any question we have intelligence enough to ask. Follow them, Sherman. It is no disgrace to be led by such as the Ryke teachers."

"Don't you ever long," said Hockley, "to take just one short step on your own two feet?"

"Why crawl when you can go by trans-light carrier?"

Thar sipped the last of his drink and glanced toward the wall clock.

"I must go. I can understand the direction of your questions and your thinking. You hesitate because you might lose the chance to play in the mud and count the pretty pebbles in the sand. Put away childish things. You will never miss them!"

They shook hands, and a moment later Hockley said goodbye to Thar at the entrance to the field. "I know Earth will accept," said Thar. "And you and I should not have lost contact -- but we'll make up for it."

Watching him move toward the dark hulk of the ship, Hockley wondered if Thar actually believed that. In less than an hour they had exhausted all they had to say after twenty years. Hockley had the information he needed about the Ryke plan, but he wished he could have kept his old memories of his student

friend. Thar was drunk on the heady stuff being peddled by the Rykes, and if what he said were true, it was strong enough to intoxicate a whole planet.

His blood grew cold at the thought. This was more than a fight for the National Laboratories. It was a struggle to keep all Mankind from becoming what Thar had become.

If he could have put Thar on exhibition in the meeting tomorrow, and shown what he was once like, he would have made his point. But Thar, before and after, was not available for exhibit. He had to find another way to show his colleagues and the Senators what the Rykes would make of them.

He glanced at his watch. They wouldn't like being wakened at this hour, but neither would the scientists put up much resistance to his request for support in Markham's meeting. He went back to the bar and called each of his colleagues who had been in the meeting that day.

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Hockley was called first when the assembly convened at ten that morning, He rose slowly from his seat near Markham and glanced over the somewhat puzzled expressions of the scientists.

"I don't know that I can speak for the entire group of scientists present," he said. "We met yesterday and found some differences of opinion concerning this offer. While it is true there is overwhelming sentiment supporting it, certain questions remain, which we feel require additional data in order to be answered properly.

"While we recognize that official acceptance can be given to the Rykes with no approval whatever from the scientists, it seems only fair that we should have every opportunity to make what we consider a proper study and to express our opinions in the matter.

"To the non-scientist -- and perhaps to many of my colleagues -- it may seem inconceivable that there could be any questions whatever. But we wonder about the position of students of future generations, we wonder about the details of administration of the program, we wonder about the total effects of the program upon our society as a whole. We wish to ask permission to make further study of the matter in an effort to answer these questions and many others. We request permission to go as a committee to Rykernan III and make a first-hand study of what the Rykes propose to do, how they will teach us, and how they will dispense the information they so generously offer.

"I ask that you consider this most seriously, and make an official request of the Rykes to grant us such opportunity for study, that you provide the necessary appropriations for the trip. I consider it most urgent that this be done at once."

There was a stir of concern and disapproval from Congressional members as Hockley sat down. Senators leaned to speak in whispers to their neighbors, but Hockley observed the scientists remained quiet and impassive. He believed he had sold them in his telephone calls during the early morning. They liked the idea of obtaining additional data. Besides, most of them wanted to see Rykeman III for themselves.

Senator Markham finally stood up, obviously disturbed by Hockley's abrupt proposal. "It has seemed to us members of the Committee that there could hardly be any need for more data than is already available to us. The remarkable effects of Ryke science on other backward worlds is common knowledge.

"On the other hand we recognize the qualifications of you gentlemen which make your request appear justified. We will have to discuss this at length, but at the moment I believe I can say I am in sympathy with your request and can encourage my Committee to give it serious consideration."

* * * *

A great deal more was said on that and subsequent days. News of the Ryke offer was not given to the public, but landing of the Ryke ship could not be hidden. It became known that Liacan carried his offer to other worlds and speculation was made that he offered it to Earth also. Angry questions were raised as to why the purpose of the visit was not clarified, but government

silence was maintained while Hockley's request was considered.

It encountered bitter debate in the closed sessions, but permission was finally given for a junket of ninety scientists and ten senators to Rykernan III.

This could not be hidden, so the facts were modified and a story given out that the party was going to request participation in the Ryke program being offered other worlds, that Liacan's visit had not been conclusive.

In the days preceding the takeoff Hockley felt a sense of destiny weighing heavily upon him. He read every word of the stream of opinion that flowed through the press. Every commentator and columnist seemed called upon to make his own specific analysis of the possibilities of the visit to Rykernan III. And the opinions were almost uniform that it would be an approach to Utopia to have the Rykes take over. Hockley was sickened by this mass conversion to the siren call of the Rykes.

It was a tremendous relief when the day finally came and the huge transport ship lifted solemnly into space.

Most of the group were in the ship's lounge watching the television port as the Earth drifted away beneath them. Senator Markham seemed nervous and almost frightened, Hockley thought, as if something intangible had escaped him.

"I hope we're not wasting our time," he said. "Not that I don't understand your position," he added hastily to cover the show of antagonism he sensed creeping into his voice.

"We appreciate your support," said Hockley, "and we'll do our best to see the time of the investigation is not wasted."

But afterwards, when the two of them were alone by the screen, Silvers spoke to Hockley soberly. The mathematician had lost some of the wild exuberance he'd had at first. It had been replaced by a deep, intense conviction that nothing must stand in the way of Earth's alliance with the Rykes.

"We all understand why you wanted us to come," he said. "We know you believe this delay will cool our enthusiasm. It's only fair to make clear that it won't. How you intend to change us by taking us to the home of the Rykes has got us all baffled. The reverse will be true, I am very sure. We intend to make it clear to the Rykes that we accept their offer. I hope you have no plan to make a declaration to the contrary."

Hockley kept his eyes on the screen, watching the green sphere of Earth. "I have no intention of making any statement of any kind. I was perfectly honest when I said our understanding of the Rykes would profit by this visit. You all agreed. I meant nothing more nor less than what I said. I hope no one in the group thinks otherwise."

"We don't know," said Silvers.

"It's just that you've got us wondering how you expect to change our views."

"I have not said that is my intention."

"Can you say it is not?"

"No, I cannot say that. But the question is incomplete. My whole intention is to discover as fully as possible what will be the result of alliance with the Rykes. If you should conclude that it will be unfavorable that will be the result of your own direct observations and computations, not of my arguments."

"You may be sure that is one thing that will not occur," said Silvers.

* * * *

It took them a month to reach a transfer point where they could change to a commercial vessel using Ryke principles. In the following week they covered a distance several thousand times that which they had already come. And then they were on Rykeman III.

A few of them had visited the planet previously, on vacation trips or routine study expeditions, but most of them were seeing it for the first time. While well out into space the group began crowding the vision screens which

brought into range the streets and buildings of the cities. They could see the people walking and riding there.

Hockley caught his breath at the sight, and doubts overwhelmed him, telling him he was an utter and complete fool. The city upon which he looked was a jewel of perfection. Buildings were not indiscriminate masses of masonry and metal and plastic heaped up without regard to the total effect. Rather, the city was a unit created with an eye to esthetic perfection.

Silvers stood beside Hockley. "We've got a chance to make Earth look that way," said the mathematician.

"There's only one thing missing," said Hockley. "The price tag. We still need to know what it's going to cost."

Upon landing, the Earthmen were greeted by a covey of their bird-like hosts who scurried about, introducing themselves in their high whistling voices. In busses, they were moved half way across the city to a building which stood beside an enormous park area.

It was obviously a building designed for the reception of just such delegations as this one, giving Hockley evidence that perhaps his idea was not so original after all. It was a relief to get inside after their brief trip across the city. Gravity, temperature, and air pressure and composition duplicated those of Earth inside, and conditions could be varied to accommodate many different species. Hockley felt confident they could become accustomed to outside conditions after a few days, but it was exhausting for now to be out for long.

They were shown to individual quarters and given leisure to unpack and inspect their surroundings. Furniture had been adjusted to their size and needs. The only oversight Hockley could find was a faint odor of chlorine lingering in the closets. He wondered who the last occupant of the room had been.

After a noon meal, served with foods of astonishingly close approximation to their native fare, the group was offered a prelude to the general instruction and indoctrination which would begin the following day. This was in the form of a guided tour through the science museum which, Hockley gathered, was a modernized Ryke parallel to the venerable Smithsonian back home. The tour was entirely optional, as far as the planned program of the Rykes was concerned, but none of the Earthmen turned it down.

Hockley tried to concentrate heavily on the memory of Waldon Thar and keep the image of his friend always before him as he moved through the city and inspected the works of the Rykes. He found it helped suppress the awe and adulation which he had an impulse to share with his companions.

It was possible even, he found, to adopt a kind of truculent cynicism toward the approach the Rykes were making. The visit to the science museum could be an attempt to bowl them over with an eon-long vista of Ryke superiority in the sciences. At least that was most certainly the effect on them. Hockley cursed his own feeling of ignorance and inferiority as the guide led them quietly past the works of the masters, offering but little comment, letting them see for themselves the obvious relationships.

In the massive display showing developments of spaceflight, the atomic vessels, not much different from Earthmen's best efforts, were far down the line, very near to the earliest attempts of the Rykes to rocket their way into space. Beyond that level was an incredible series of developments incomprehensible to most of the Earthmen.

And to all their questions the guide offered the monotonous reply: "That will be explained to you later. We only wish to give you an overall picture of our culture at the present time."

But this was not enough for one of the astronomers, named Moore, who moved ahead of Hockley in the crowd. Hockley saw the back of Moore's neck growing redder by the minute as the guide's evasive answer was repeated. Finally, Moore forced a discussion regarding the merits of some systems of comparing the brightness of stars, which the guide briefly showed them. The guide, in great annoyance, burst out with a stream of explanation that

completely flattened any opinions Moore might have had. But at the same time the astronomer grinned amiably at the Ryke. "That ought to settle that," he said. "I'll bet it won't take a week to get our system changed back home.",

Moore's success loosened the restraint of the others and they besieged the guide mercilessly then with opinions, questions, comparisons -- and even mild disapprovals. The guide's exasperation was obvious and pleasant to Hockley, who remained a bystander. It was frightening to Markham and some of the other senators who were unable to take part in the discussion. But most of the scientists failed to notice it in their eagerness to learn.

After dinner that night they gathered in the lounge and study of their quarters. Markham stood beside Hockley as they partook cautiously of the cocktails which the Rykes had attempted to duplicate for them. The Senator's awe had returned to overshadow any concern he felt during the events of the afternoon. "A wonderful day!" he said. "Even though this visit delays completion of our arrangements with the Rykes those of us here will be grateful forever that you proposed it. Nothing could have so impressed us all with the desirability of accepting the Ryke's tutelage. It was a stroke of genius, Dr. Hockley. And for a time I thought you were actually opposed to the Rykes!"

He sipped his drink while Hockley said nothing. Then his brow furrowed a bit. "But I wonder why our guide cut short our tour this afternoon. If I recall correctly he said at the beginning there was a great deal more to see than he actually showed us."

Hockley smiled and sipped politely at his drink before he set it down and faced the Senator. "I was wondering if anyone else noticed that," he said.

* * * *

Hockley slept well that night except for the fact that occasional whiffs of chlorine seemed to drift from various corners of the room even though he turned the air-conditioning system on full blast.

In the morning there began a series of specialized lectures which had been prepared in accordance with the Earthmen's request to acquaint them with what they would be getting upon acceptance of the Ryke offer.

It was obviously no new experience for the Rykes. The lectures were well prepared and anticipated many questions. The only thing new about it, Hockley thought, was the delivery in the language of the Earthmen. Otherwise, he felt this was something prepared a long time ago and given a thousand times or more.

They were divided into smaller groups according to their specialties, electronic men going one way, astronomers and mathematical physicists another, chemists and general physicists in still another direction. Hockley, Showalter and the senators were considered more or less free-floating members of the delegation with the privilege of visiting with one group or another according to their pleasure.

Hockley chose to spend the first day with the chemists, since that was his own first love. Dr. Showalter and Senator Markham came along with him. As much as he tried he found it virtually impossible not to sit with the same open-mouthed wonder that his colleagues exhibited. The swift, free-flowing exposition of the Ryke lecturer led them immediately beyond their own realms, but so carefully did he lead them that it seemed that they must have come this way before, and forgotten it.

Hockley felt half-angry with himself. He felt he had allowed himself to be hypnotized by the skill of the Ryke, and wondered despairingly if there were any chance at all of combating their approach. He saw nothing to indicate it in the experience of that day or the ones immediately following. But he retained hope that there was much significance in the action of the guide who had cut short their visit to the museum.

In the evenings, in the study lounge of the dormitory, they held interminable bull sessions exchanging and digesting what they had been shown during the day. It was at the end of the third day that Hockley thought he could detect a subtle change in the group. He had some difficulty analyzing it

at first. It seemed to be a growing aliveness, a sort of recovery. And then he recognized that the initial stunned reaction to the magnificence of the Rykes was passing off. They had been shocked by the impact of the Rykes, almost as if they had been struck a blow on the head. Temporarily, they had shelved all their own analytical and critical facilities and yielded to the Rykes without question.

Now they were beginning to recover, springing back to a condition considerably nearer normal. Hockley felt a surge of encouragement as he detected a more sharply critical evaluation in the conversations that buzzed around him. The enthusiasm was more measured.

It was the following evening, however, that witnessed the first event of pronounced shifting of anyone's attitude. They had finished dinner and were gathering in the lounge, sparring around, setting up groups for the bull sessions that would go until long after midnight. Most of them had already settled down and were taking part in conversations or were listening quietly when they were suddenly aware of a change in the atmosphere of the room.

For a moment there was a general turning of heads to locate the source of the disturbance. Hockley knew he could never describe just what made him look around, but he was abruptly conscious that Dr. Silvers was walking into the lounge and looking slowly about at those gathered there. Something in his presence was like the sudden appearance of a thundercloud, his face seemed to reflect the dark turbulence of a summer storm.

He said nothing, however, to anyone but strode over and sat beside Hockley, who was alone at the moment, smoking the next to last of his Earthside cigars. Hockley felt the smouldering turmoil inside the mathematician. He extended his final cigar. Silvers brushed it away.

"The last one," said Hockley mildly. "In spite of all their abilities the Ryke imitations are somewhat less than natural."

Silvers turned slowly to face Hockley. "I presented them with the Legrandian Equations today," he said. "I expected to get a straightforward answer to a perfectly legitimate scientific question. That is what we were led to expect, was it not?"

Hockley nodded. "That's my impression. Did you get something less than a straightforward answer?"

The mathematician exhaled noisily. "The Legrandian Equations will lead to a geometry as revolutionary as Riemann's was in his day. But I was told by the Rykes that I should dismiss it from all further consideration. It does not lead to any profitable mathematical development."

Hockley felt that his heart most certainly skipped a beat, but he managed to keep his voice steady, and sympathetic. "That's too bad. I know what high hopes you had. I suppose you will give up work on the Equations now?"

"I will not!" Silvers exclaimed loudly. Nearby groups who had returned hesitantly to their own conversations now stared at him again. But abruptly he changed his tone and looked almost pleadingly at Hockley. "I don't understand it. Why should they say such a thing? It appears to be one of the most profitable avenues of exploration I have encountered in my whole career. And the Rykes brush it aside!"

"What did you say when they told you to give it up?"

"I said I wanted to know where the development would lead. I said it had been indicated that we could have an answer to any scientific problem within the range of their abilities, and certainly this is, from what I've seen.

"The instructor replied that I'd been given an answer to my question, that the first lesson you must learn if you wish to acquire our pace in science is to recognize that we have been along the path ahead of you. We know which are the possibilities that are worthwhile to develop. We have gained our speed by learning to bypass every avenue but the main one, and, not get lost in tempting side roads."

"He said that we've got to learn to trust them and take their word as

to which is the correct and profitable field of research, that we will show you where to go, as we agreed to do. If you are not willing to accept our leadership in this respect our agreement means nothing. Wouldn't that be a magnificent way to make scientific progress!"

The mathematician shifted in his chair as if trying to control an internal fury that would not be capped. He held out his hand abruptly. "I'll take that cigar after all, if you don't mind, Hockley."

With savage energy he chewed the end and ignited the cigar, then blew a mammoth cloud of smoke ceilingward. "I think the trouble must be in our lecturer," he said. "He's crazy. He couldn't possibly represent the conventional attitude of the Rykes. They promised to give answers to our problems -- and this is the kind of nonsense I get. I'm going to see somebody higher up and find out why we can't have a lecturer who knows what he's talking about. Or maybe you or Markham would rather take it up through official channels, as it were?"

"The Ryke was correct," said Hockley. "He did give you an answer."

"He could answer all our questions that way!"

"You're perfectly right," said Hockley soberly. "He could do exactly that."

"They won't of course," said Silvers, defensively. "Even if this particular character isn't just playing the screwball, my question is just a special case. It's just one particular thing they consider to be valueless. Perhaps in the end I'll find they're right -- but I'm going to develop a solution to these Equations if it takes the rest of my life!

"After all, they admit they have no solution, that they have not bothered to go down this particular side path, as they put it. If we don't go down it how can we ever know whether it's worthwhile or not? How can the Rykes know what they may have missed by not doing so?"

"I can't answer that," said Hockley. "For us or for them, I know of no other way to predict the outcome of a specific line of research except to carry it through and find out what lies at the end of the road."

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Hockley didn't sleep very well after he finally went to bed that night. Silvers had presented him with the break he had been expecting and hoping for. The first chink in the armor of sanctity surrounding the Rykes. Now he wondered what would follow, if this would build up to the impassable barrier he wanted, or if it would merely remain a sore obstacle in their way but eventually be bypassed and forgotten.

He did not believe it would be the only incident of its kind. There would be others as the Earthmen's stunned, blind acceptance gave way completely to sound, critical evaluation. And in any case there was one delegate who would never be the same again. No matter how he eventually rationalized it, Dr. Forman K. Silvers would never feel quite the same about the Rykes as he did before they rejected his favorite piece of research.

Hockley arose early, eager but cautious, his senses open for further evidence of disaffection springing up. He joined the group of chemists once more for the morning lecture. The spirit of the group was markedly higher than when he first met with them. They had been inspired by what the Rykes had shown them, but in addition their own sense of judgment had been brought out of suspension.

The Ryke lecturer began inscribing on the board an enormous organic formula, using conventions of Earth chemistry for the benefit of his audience. He explained at some length a number of transformations which it was possible to make in the compound by means of high intensity fields.

Almost at once, one of the younger chemists named Dr. Carmen was on his feet exclaiming excitedly that one of the transformation compounds was a chemical on which he had conducted an extensive research. He had produced enough to know that it had a multitude of intriguing properties, and now he was exuberant at the revelation of a method of producing it in quantity and also further transforming it.

At his sudden enthusiasm the lecturer's face took on what they had come to recognize as a very dour look. "That series of transformations has no interest for us," he said.

"I merely indicated its existence to show one of the possibilities which should be avoided. Over here you see the direction in which we wish to go."

"But you never saw anything with properties like that!" Carmen protested. "It goes through an incredible series of at least three crystalline-liquid phase changes with an increase in pressure alone. But with proper control of heat it can be kept in the crystalline phase regardless of pressure. It is closely related to a drug series with anesthetic properties, and is almost sure to be valuable in -- "

The Ryke lecturer cut him off sharply. "I have explained," he said, "the direction of transformation in which we are interested. Your concern is not with anything beyond the boundaries which our study has proven to be the direct path of research and study."

"Then I should abandon research on this series of chemicals?" Carmen asked with a show of outward meekness.

The Ryke nodded with pleasure at Carmen's submissiveness. "That is it precisely. We have been over this ground long ago. We know where the areas of profitable study lie. You will be told what to observe and what to ignore. How could you ever hope to make progress if you stopped to examine every alternate probability and possibility that appeared to you?" He shook his head vigorously and his plume vibrated with emotion.

"You must have a plan," he continued. "A goal. Study of the Universe cannot proceed in any random, erratic fashion. You must know what you want and then find out where to look for it."

Carmen sat down slowly. Hockley was sure the Ryke did not notice the tense bulge of the chemist's jaw muscles. Perhaps he would not have understood the significance if he had noticed.

* * * *

Hockley was a trifle late in getting to the dining room at lunch time that day. By the time he did so the place was like a beehive. He was almost repelled by the furor of conversation circulating in the room as he entered.

He passed through slowly, searching for a table of his own. He paused a moment behind Dr. Carmen, who was declaiming in no mild terms his opinions of a system that would pre-select those areas of research which were to be entered and those which were not. He smiled a little as he caught the eye of one of the dozen chemists seated at the table, listening.

Moving on, he observed that Silvers had also cornered a half-dozen or so of his colleagues in his own field and was in earnest conversation with them -- in a considerably more restrained manner, however, than he had used the previous evening with Hockley, or than Carmen was using at the present time.

The entire room was abuzz with similar groups.

The senators had tried to mingle with the others in past days, always with more or less lack of success because they found themselves out of the conversation almost completely. Today they had no luck whatever. They were seated together at a couple of tables in a corner. None of them seemed to be paying attention to the food before them, but were glancing about, half-apprehensively, at their fellow diners -- who were also paying no attention to food.

Hockley caught sight of his political colleagues and sensed their dismay. The field of disquietude seemed almost tangible in the air. The senators seemed half frightened by what they felt but could not understand.

Showalter's wild waving at the far corner of the room finally caught Hockley's eye and he moved toward the small table which the assistant had reserved for them. Showalter was upset, too, by the atmosphere within the room.

"What the devil is up?" he said. "Seems like everybody's on edge this

morning. I never saw a bunch of guys so touchy. You'd think they woke up with snakes in their beds."

"Didn't you know?" said Hockley. "Haven't you been to any of the lectures this morning?"

"No. A couple of the senators were getting bored with all the scientific doings so I thought maybe I should try to entertain them. We took in what passes for such here, but it wasn't much better than the lectures as a show. Tell me what's up.

Briefly, Hockley described Silvers' upset of the day before and Carmen's experience that morning. Showalter let his glance rove over his fellow Earthmen, trying to catch snatches of the buzzing conversation at nearby tables.

"You think that's the kind of thing that's got them all going this morning?" he said.,

Hockley nodded. "I caught enough of it passing through to know that's what it is. I gather that every group has run into the same kind of thing by now, the fencing off of broad areas where we have already tried to do research.

"After the first cloud of awe wore off, the first thing everyone wanted was an answer to his own pet line of research. Nine times out of ten it was something the Rykes told them to chuck down the drain. That advice doesn't sit so well -- as you can plainly see."

Showalter drew back his gaze and stared for a long time at Hockley. "You knew this would happen. That's why you brought us here -- "

"I had hopes of it. I was reasonably sure this was the way the Rykes operated."

Showalter remained thoughtful for a long time before he spoke again. "You've won your point, I suppose, as far as this group goes, but you can't hope to convince all of Earth by this. The Rykes will hold their offer open, and others will accept it on behalf of Earth.

"And what if it's we who are wrong, in the end? How can you be sure that this isn't the way the Rykes have made their tremendous speed -- by not going down all the blind alleys that we rattle around in."

"I'm sure it is the way they have attained such speed of advancement."

"Then maybe we ought to go along, regardless of our own desires. Maybe we never did know how to do research!"

Hockley smiled across the table at his assistant. "You believe that, of course."

"I'm just talking," said Showalter irritably. "The thing gets more loopy every day. If you think you understand the Rykes I wish you would give out with what the score is. By the looks of most of these guys I would say they are getting ready to throttle the next Ryke they see instead of knuckle under to him."

"I hope you're right," said Hockley fervently. "I certainly hope you're right."

* * * *

By evening there was increasing evidence that he was. Hockley passed up the afternoon lecture period and spent the time in the lounge doing some thinking of his own. He knew he couldn't push the group. Above all, he mustn't give way to any temptation to push them or say, "I told you so." Their present frustration was so deep that their antagonism could be turned almost indiscriminately in any direction, and he would be offering himself as a ready target if he were not careful.

On the other hand he had to be ready to take advantage of their disaffection and throw them a decisive challenge when they were ready for it. That might be tonight, or it might be another week. He wished for a sure way of knowing. As things turned out, however, the necessity of choosing the time was taken from him.

After dinner that night, when the group began to drift into the lounge, Silvers and Carmen and three of the other men came over to where Hockley sat.

Silvers fumbled with the buttons of his coat as if preparing to make an address.

"We'd like to request.." he said, "that is -- we think we ought to get together. We'd like you to call a meeting, Hockley. Some of us have a few things we'd like to talk over."

Hockley nodded, his face impassive.

"The matter I mentioned to you the other night," said Silvers. "It's been happening to all the men. We think we ought to talk about it."

"Fine," said Hockley. "I've been thinking it would perhaps be a good idea. Pass the word around and let's get some chairs. We can convene in ten minutes."

The others nodded somberly and moved away with all the enthusiasm of preparing for a funeral. And maybe that's what it would be, Hockley thought -- somebody's funeral. He hoped it would be the Rykes.

The room began filling almost at once, as if they had been expecting the call. In little more than five minutes it seemed that every member of the Earth delegation had assembled, leaving time to spare.

The senators still wore their looks of puzzlement and half-frightened anxiety, which had intensified if anything. There was no puzzlement on the faces of the scientists, however, only a set and determined expression that Hockley hardly dared interpret as meaning they had made up their minds. He had to have their verbal confirmation.

Informally, he thrust his hands in his pockets and sauntered to the front of the group.

"I have been asked to call a meeting," he said, "by certain members of the group who have something on their minds. They seem to feel we'd all be interested in what is troubling them. Since I have nothing in particular to say I'm simply going to turn the floor over to those of you who have. Dr. Silvers first approached me to call this discussion, so I shall ask him to lead off. Will you come to the front, Dr. Silvers?"

The mathematician rose as if wishing someone else would do the talking. He stood at one side of the group, halfway to the rear. "I can do all right from here," he said.

After a pause, as if coming to a momentous decision, he plunged into his complaint. "It appears that nearly all of us have encountered an aspect of the Ryke culture and character which was not anticipated when we first received their offer." Briefly, he related the details of the Ryke rejection of his research on the Legrandian Equations.

"We were told we were going to have all our questions answered, that the Ryke's science included all we could anticipate or hope to accomplish in the next few millennia. I swallowed that. We all did. It appears we were slightly in error. It begins to appear as if we are not going to find the intellectual paradise we anticipated."

He smiled wryly. "I'm sure none of you is more ready than I to admit he has been a fool. It appears that paradise, so-called, consists merely of a few selected gems which the Rykes consider particularly valuable, while the rest of the field goes untouched.

"I want to offer public apologies to Dr. Hockley, who saw and understood the situation as it actually existed, while the rest of us had our heads in the clouds. Exactly how he knew, I'm not sure, but he did, and very brilliantly chose the only way possible to convince us that what he knew was correct.

"I suggest we do our packing tonight, gentlemen. Let us return at once to our laboratories and spend the rest of our lives in some degree of atonement for being such fools as to fall for the line the Rykes tried to sell us."

Hockley's eyes were on the senators. At first there were white faces filled with incredulity as the mathematician proceeded. Then slowly this changed to sheer horror.

When Silvers finished, there was immediate bedlam. There was a clamor

of voices from the scientists, most of whom seemed to be trying to affirm Silvers' position. This was offset by explosions of rage from the senatorial members of the group.

Hockley let it go, not even raising his hands for order until finally the racket died of its own accord as the eyes of the delegates came to rest upon him.

And then before he could speak, Markham was on his feet. "This is absolutely moral treachery," he thundered. "I have never heard a more vicious revocation of a pledged word than I have heard this evening.

"You men are not alone concerned in this matter. For all practical purposes you are not concerned at all! And yet to take it upon yourselves to pass judgment in a matter that is the affair of the entire population of Earth -- out of nothing more than sheer spite because the Rykes refuse recognition of your own childish projects! I have never heard a more incredible and infantile performance than you supposedly mature gentlemen of science are expressing this evening."

He glared defiantly at Hockley, who was again the center of attention moving carelessly to the center of the stage. "Anybody want to try to answer the Senator?" he asked casually.

Instantly, a score of men were on their feet, speaking simultaneously. They stopped abruptly, looking deferentially to their neighbors and at Hockley, inviting him to choose one of them to be spokesman.

"Maybe I ought to answer him myself," said Hockley, "since I predicted that this would occur, and that we ought to make a trial run before turning our collective gray matter over to the Rykes."

A chorus of approval and nodding heads gave him the go ahead.

"The Senator is quite right in saying that we few are not alone in our concern in this matter," he said. "But the Senator intends to imply a major difference between us scientists and the rest of mankind. This is his error.

"Every member of Mankind who is concerned about the Universe in which he lives, is a scientist. You need to understand what a scientist is -- and you can say no more than that he is a human being trying to solve the problem of understanding his Universe, immediate or remote. He is concerned about the inanimate worlds, his own personality, his fellow men -- and the interweaving relationships among all these factors. We professional scientists are no strange species, alien to our race. Our only difference is perhaps that we undertake more problems than does the average of our fellow men, and of a more complex kind. That is all.

"The essence of our science is a relentless personal yearning to know and understand the Universe. And in that, the scientist must not be forbidden to ask whatever question occurs to him. The moment we put any restraint upon our fields of inquiry, or set bounds to the realms of our mental aspirations, our science ceases to exist and becomes a mere opportunist technology."

Markham stood up, his face red with exasperation and rage. "No one is trying to limit you! Why is that so unfathomable to your minds? You are being offered a boundless expanse, and you continue to make inane complaints of limitations. The Rykes have been over all the territory you insist on exploring. They can tell you the number of pretty pebbles and empty shells that lie there. You are like children insistent upon exploring every shadowy corner and peering behind every useless bush on a walk through the forest.

"Such is to be expected of a child, but not of an adult, who is capable of taking the word of one who has been there before!"

"There are two things wrong with your argument," said Hockley. "First of all, there is no essential difference between the learning of a child who must indeed explore the dark corners and strange growths by which he passes -- there is no difference between this and the probing of the scientist, who must explore the Universe with his own senses and with his own instruments, without taking another's word that there is nothing there worth seeing.

"Secondly, the Rykes themselves are badly in error in asserting that they have been along the way ahead of us. They have not. In all their fields

of science they have limited themselves badly to one narrow field of probability. They have taken a narrow path stretching between magnificent vistas on either side of them, and have deliberately ignored all that was beyond the path and on the inviting side trails."

"Is there anything wrong with that?" demanded Markham. "If you undertake a journey you don't weave in and out of every possible path that leads in every direction opposed to your destination. You take the direct route. Or at least ordinary people do."

"Scientists do, too," said Hockley, "when they take a journey. Professional science is not a journey, however. It's an exploration.

"There is a great deal wrong with what the Rykes have done. They have assumed, and would have us likewise assume, that there is a certain very specific future toward which we are all moving. This future is built out of the discoveries they have made about the Universe. It is made of the system of mathematics they have developed, which exclude Dr. Silvers' cherished Legrandian Equations. It excludes the world in which exist Dr. Carmen's series of unique compounds.

"The Rykes have built a wonderful, workable world of serenity, beauty, scientific consistency, and economic adjustment. They have eliminated enormous amounts of chaos which Earthmen continue to suffer.

"But we do not want what the Rykes have obtained -- if we have to pay their price for it."

"Then you are complete fools," said Markham. "Fortunately, you cannot and will not speak for all of Earth."

Hockley paced back and forth a half dozen steps, his eyes on the floor. "I think we do -- and can -- speak for all our people," he said. "Remember, I said that all men are scientists in the final analysis. I am very certain that no Earthman who truly understood the situation would want to face the future which the Rykes hold out to us."

"And why not?" demanded Markham.

"Because there are too many possible futures. We refuse to march down a single narrow trail to the golden future. That's what the Rykes would have us do. But they are wrong. It would be like taking a trip through a galaxy at speeds faster than light -- and claiming to have seen the galaxy. What the Rykes have obtained is genuine and good, but what they have not obtained is perhaps far better and of greater worth."

"How can you know such an absurd thing?"

"We can't -- not for sure," said Hockley. "Not until we go there and see for ourselves, step by step. But we aren't going to be confined to the Rykes' narrow trail. We are going on a broad path to take in as many byways as we can possibly find. We'll explore every probability we come to, and look behind every bush and under every pebble.

"We will move together, the thousands and the millions of us, simultaneously, interacting with one another, exchanging data. Most certainly, many will end up in blind alleys. Some will find data that seems the ultimate truth at one point and pure deception at another. Who can tell ahead of time which of these multiple paths we should take? Certainly not the Rykes, who have bypassed most of them!

"It doesn't matter that many paths lead to failure -- not as long as we remain in communication with each other. In the end we will find the best possible future for us. But there is no one future, only a multitude of possible futures. We must have the right to build the one that best fits our own kind."

"Is that more important than achieving immediately a more peaceful, unified, and secure society?" said Markham.

"Infinitely more important!" said Hockley.

"It is fortunate at least, then, that you are in no position to implement these insane beliefs of yours. The Ryke program was offered to Earth, and it shall be accepted on behalf of Earth. You may be sure of a very poor hearing when you try to present these notions back home."

"You jump to conclusions, Senator," said Hockley with mild confidence. "Why do you suppose I proposed this trip if I did not believe I could do something about the situation? I assure you that we did not come just to see the sights."

Markham's jaw slacked and his face became white. "What do you mean? You haven't dared to try to alienate the Rykes -- "

"I mean that there is a great deal we can do about the situation. Now that the sentiments of my colleagues parallel my own I'm sure they agree that we must effectively and finally spike any possibility of Earth's becoming involved in this Ryke nonsense."

"You wouldn't dare! -- even if you could -- "

"We can, and we dare," said Hockley. "When we return to Earth we shall have to report that the Rykes have refused to admit Earth to their program. We shall report that we made every effort to obtain an agreement with them, but it was in vain. If anyone wishes to verify the report, the Rykes themselves will say that this is quite true: they cannot possibly consider Earth as a participant. If you contend that an offer was once made, you will not find the Rykes offering much support since they will be very busily denying that we are remotely qualified."

"The Rykes are hardly ones to meekly submit to any idiotic plan of that kind."

"They can't help it -- if we demonstrate that we are quite unqualified to participate."

"You -- you -- "

"It will not be difficult," said Hockley. "The Rykes have set up a perfect teacher-pupil situation, with all the false assumptions that go with it. There is at least one absolutely positive way to disintegrate such a situation. The testimony of several thousand years' failure of our various educational systems indicates that there are quite a variety of lesser ways also --

"Perhaps you are aware of the experiences and techniques commonly employed on Earth by white men in their efforts to educate the aborigine. The first procedure is to do away with the tribal medicine men, ignore their lore and learning. Get them to give up the magic words and their pots of foul-smelling liquids, abandon their ritual dances and take up the white man's great wisdom.

"We have done this time after time, only to learn decades later that the natives once knew much of anesthetics and healing drugs, and had genuine powers to communicate in ways the white man can't duplicate.

"But once in a long while a group of aborigines show more spunk than the average. They refuse to give up their medicine men, their magic and their hard-earned lore accumulated over generations and centuries. Instead of giving these things up they insist on the white man's learning these mysteries in preference to his nonsensical and ineffective magic. They completely frustrate the situation, and if they persist they finally destroy the white man as an educator. He is forced to conclude that the ignorant savages are unreachable.

"It is an infallible technique and one that we shall employ. Dr. Silvers will undertake to teach his mathematical lecturer in the approaches to the Legrandian Equations. He will speculate long and noisily on the geometry which potentially lies in this mathematical system. Dr. Carmen will ellucidate at great length on the properties of the chain of chemicals he has been advised to abandon.

"Each of us has at least one line of research the Rykes would have us give up. That is the very thing we shall insist on having investigated. We shall teach them these things and prove Earthmen to be an unlearned, unreachable band of aborigines who refuse to pursue the single path to glory and light, but insist on following every devious byway and searching every darkness that lies beside the path.

"It ought to do the trick. I estimate it should not be more than a week before we are on our way back home, labeled by the Rykes as utterly hopeless

material for their enlightenment."

The senators seemed momentarily appalled and speechless, but they recovered shortly and had a considerable amount of high-flown oratory to distribute on the subject. The scientists, however, were comparatively quiet, but on their faces was a subdued glee that Hockley had to admit was little short of fiendish. It was composed, he thought, of all the gloating anticipations of all the schoolboys who had ever put a thumbtack on the teacher's chair.

* * * *

Hockley was somewhat off in his prediction. It was actually a mere five days after the beginning of the Earthmen's campaign that the Rykes gave them up and put them firmly aboard a vessel bound for home. The Rykes were apologetic but firm in admitting they had made a sorry mistake, that Earthmen would have to go their own hopeless way while the Rykes led the rest of the Universe toward enlightenment and glory.

Hockley, Showalter, and Silvers watched the planet drop away beneath them. Hockley could not help feeling sympathetic toward the Rykes. "I wonder what will happen," he said slowly, "when they crash headlong into an impassable barrier on that beautiful, straight road of theirs. I wonder if they'll ever have enough guts to turn aside?"

"I doubt it," said Showalter. "They'll probably curl up and call it a day."

Silvers shook his head as if to ward off an oppressive vision. "That shouldn't be allowed to happen," he said. "They've got too much. They've achieved too much, in spite of their limitations. I wonder if there isn't some way we could help them?"

THE PERSON FROM PORLOCK

Borge, the chief engineer of Intercontinental, glanced down at the blue-backed folder in his hand. Then he looked at the strained face of Reg Stone, his top engineer.

"It's no use," said Borge. "We're canceling the project. Millen's report is negative. He finds the BW effect impossible of practical application. You can read the details, yourself."

"Canceling-!" Rag Stone half rose from his chair. "But chief, you can't do that. Millen's crazy. What can he prove with only a little math and no experimental data? I'm right on the edge of success. If I could just make you see it!"

"I have seen it. I can't see anything that warrants our pouring out another twenty-five thousand bucks after the hundred and fifty your project has already cost the company."

"Twenty, then. Even fifteen might do it. Borge, if you don't let me go on with this you're passing up the biggest development of the century. Some other outfit with more guts and imagination and less respect for high-priced opinion in pretty folders is going to come through with it. Teleportation is in the bag-all we've got to do is lift it out!"

"Majestic and Carruthers Electric have both canceled their projects on it. Professor Merrill Hanford, who assisted Bots-Wellton in the original research, says that the BW effect will never be anything of more than academic interest."

"Hanford!" Reg exploded. "He's jealous because he doesn't have the brains to produce a discovery of that magnitude. Bots-Wellton himself says that his effect will eventually make it possible to eliminate all other means of freight transport and most passenger stuff except that which is merely for pleasure."

"All of which is very well," said Borge, "except that it doesn't work outside of an insignificant laboratory demonstration."

"Insignificant! The actual transfer of six milligrams of silver over a distance of ten feet is hardly insignificant. As for Millen's math, we haven't got the right tools to handle this."

"I was speaking from an engineering standpoint. Of course, the effect is of interest in a purely scientific way, but it is of no use to us. Millen's math proves it. Take this copy and see for yourself. I'm sorry, Reg, but that's the final word on it."

Reg Stone rose slowly, his big hands resting against the glass-topped desk. "I see. I'll just have to forget it then, I guess."

"I'm afraid so." Borge rose and extended his hand. "You've been working too hard on this thing. Why don't you take a couple of days off? By then we'll have your next assignment lined up. And no hard feelings over this Bots-Wellton effect business?"

"Oh, no-sure not," Reg said absently.

He strode out of the office and back to the lab where the elaborate equipment of his teleport project was strewn in chaotic piles over benches and lined up in racks and panels.

A hundred thousand dollars worth of beautiful junk, he thought. He slumped in a chair before the vast, complex panels. This cancellation was the fitting climax to the delays, misfortunes, and accidents that had dogged the project since it began.

From the first, everyone except a few members of the Engineering Committee and Reg himself had been against it. Borge considered it a waste of time and money. The other engineers referred to it as Stone's Folly.

And within Reg himself there was that smothering, frustrated, indefinable sensation which he couldn't name.

It was a premonition of failure, and there had been a thousand and one incidents to support it. From the first day, when one of his lab assistants fell and broke a precious surge amplifier, the project seemed to have been hexed. No day passed but that materials seemed mysteriously missing or blueprints turned up with the wrong specifications on them. He'd tried six incompetent junior engineers before the last one, a brilliant chap named Spence, who seemed to be the only one of the lot who knew a lighthouse tube from a stub support.

With men and materials continually snafu it was almost as if someone had deliberately sabotaged the whole project.

He caught himself up with a short, bitter laugh. The little men in white coats would be after him if he kept up that line of thought.

He passed a hand over his eyes. How tired he was! He hadn't realized until now what a tremendous peak of tension he had reached. He felt it in the faint trembling of his fingers, the pressure behind his eyeballs.

His disappointment and anger slowly settled like a vortex about Carl Millen, the consulting physicist who'd reported negatively when Borge insisted to the Engineering Committee that they get outside opinion on the practicability of BW utilization.

The cool, implacable Millen, however, could hardly be the object of anything as personal as anger. Yet, strangely enough, he had been the object of Reg Stone's friendship ever since the two of them were in engineering school together.

What each of them found in the other would have been hard to put into words, but there was some complementary view of opposite worlds which each seemed able to see through the other's eyes.

As for Millen's report on the BW project-Reg knew it had been utterly impersonal and rendered as Carl Millen saw it, though the two of them had often discussed it in heated argument in the past. But the very impersonality of Millen's point of view made the maintenance of his anger impossible for Reg.

But never in his life had he wanted anything so much as he wanted to be the one to develop the Bots-Wellton effect from a mere laboratory demonstration to a system able to transport millions of tons of freight over thousands of miles without material agent of transfer.

Now he was cut off right at the pockets. He felt at loose ends. It was a panicky feeling. For months on end he had been working at top capacity. He

seemed to have suddenly dropped into a vacuum.

He debated handing in his resignation and going to some company that would let him develop the project. But who would? Majestic and Carruthers, two of the largest outfits, had pulled out, Borge had said. Who else would pick it up?

There was one other possibility, he thought breathlessly. Reg Stone could take it over!

Why not? He had a beautifully equipped backyard lab and machine shop. Tens of thousands of dollars worth of equipment from the project would have to be junked by Intercontinental. Reg felt sure Borge would let him buy it as junk.

Sure, it would be slow without the facilities of the Intercontinental labs, but it would be better than scuttling the entire project.

He suddenly glanced at the clock on the wall He'd been sitting there without moving for over an hour. It was lunchtime. He decided to go downtown where he wouldn't meet anyone he knew, rather than eat in the company cafeteria.

He chose the Estate, a seafood restaurant three miles from the plant. As soon as he walked in he knew why he had chosen the Estate with subconscious deliberation.

He saw Carl Millen across the room. He had meant to see him. Millen always ate at the same place at the same time.

Millen spotted Reg almost simultaneously and beckoned to him.

"Sit down, Reg. You're the last person I expected to see here. What's new at your shop?"

"Not much-except Borge received a report from Carl Millen & Associates, Consulting Engineers."

Millen grinned wryly. "Did he blow his top?"

"Why did you turn in a negative report?"

"Didn't you read it? I proved the BW effect is absolutely limited by the free atomic concentration in the dispersion field. That limitation utterly forbids any mass application of the principle."

Reg was silent as the waiter brought the menus. They each ordered oysters on the half shell.

"I remember," said Reg, when the waiter had gone, "about 1925 a then very prominent aeronautical engineer wrote a learned piece proving absolutely that planes could never reach five hundred miles an hour."

Millen laughed. "Yes, and there's also the gent that proved a steamship could never carry enough fuel to get it across the Atlantic."

He stopped and looked seriously at Reg. "But for every one of those classic boners there are thousands of legitimate negative demonstrations that have saved engineering and industry untold millions. You know that as well as I do. This is one of them."

"I'll admit the first, but not the second," said Reg. "I've not read your report. I probably won't. It's faulty. It's got to be. The BW principle can be utilized somehow and I'm going to prove it."

"Just how do you propose to do that?" Millen asked, smiling gently. "Something intuitive, no doubt?"

"All right, have your fun, but come around and see me when you want to go on a quick vacation via the Stone Instantaneous Transfer Co."

"Reg, that job I talked about a year ago is still open. I could offer you Assistant Chief of Development. In a year I could let you in on a partnership. It's worth twenty thousand now, thirty later."

"I could work on the BW outside?"

Millen shook his head. "That's the only string attached. Our men haven't time for anything but customers' projects. Besides, you'd have to get used to the idea of believing in math, not intuition."

"I don't think I'd do you much good."

"You could learn, for that kind of money, couldn't you? What does that cheese factory pay you? About eight or ten?"

"Seven and a half."

"The lousy cheapskates! Three times that ought to be worth shelving your intuition in favor of math."

Reg shook his head. "There isn't that much money in the world. Solving other people's riddles for a fee is not my idea of living."

"Sometimes I think you're just a frustrated research physicist. In this business you're in for the money. It's a cinch there's no glory."

The waiter brought their orders, then.

His depression continued with Reg that evening. His three boys sensed it when he turned down a ball game. His wife, Janice, sensed it when he didn't poke his head in the kitchen on the way to his study.

After dinner, and when the boys were in bed, he told her what had happened that day.

"I don't understand why you feel so badly about the cancellation of this particular project," she said when he finished. "Others have been cancelled, too."

"Because it's one of the greatest phenomena ever discovered. It's ripe for engineering application, but no one else will believe it. It's as if they deliberately try to block me in every step. All through the project it's been that way. Now this-chucking the whole business, when we've gone so far! I can't see through the reasons behind it all. Except that they just don't want it to succeed. I've got that feeling about it, and I can't rid myself of it. _They want me to fail!"_

"Who does?"

"Everyone! In the drafting room. The lab technicians. The model shop. It seems as if everybody's concern with the project is simply to throw monkey wrenches in the gears."

"Ob, darling-you're just wrought up over this thing. Let's take a vacation. Let the boys go to camp this summer and go off by ourselves somewhere. You've got to have a rest."

He knew that. He'd known it for a long time, but teleportation was more important than rest. He could take care of the neuroses at his leisure, later. That's the theory he'd worked on. Now, all he had was a beautiful neurosis. It couldn't be anything else, he told himself, this absolute conviction that he was being sabotaged in his work, that others were banded against him to prevent the full development of the BW principle.

"Perhaps in a few weeks," he said. "There are some more angles about this business that I must follow up. Let's read tonight. Something fanciful, something beautiful, something faraway -- "

"Coleridge," Janice laughed.

They sat by the window overlooking the garden. Their one vice of reading poetry together was something of an anachronism in a world threatened with atomic fires, but it was the single escape that Reg would allow himself from his engineering problems.

Janice began reading softly. Her voice was like music out of a past more gentle and nearer the ultimate truths than this age.

"In Xanadu did Kubla Khan
A stately pleasure-dome decree:
Where Alph, the sacred river, ran -- that deep romantic chasm which slanted
Down the green hill athwart a cedarn cover!
A savage place! as holy and enchanted
As e'er beneath a waning moon was haunted -- "

Reg suddenly stiffened and sat erect, his eyes on the distant golden cavern of the sky.

"That's it," he breathed softly. "That's just how it is -- "

Janice looked up from the book, her face puzzled. "What in the world are you talking about?"

"The Person from Porlock. Remember how Coleridge wrote Kubla Khan?"

"No. Who's the Person from Porlock?"

"Coleridge wrote this poem just after coming out of a dope dream. He later said that during his sleep he had produced at least two to three hundred lines. While trying to get it on paper he was interrupted by a person from the village of Porlock. When he finally got rid of the visitor, Coleridge could recall no more of his envisioned poem.

"He was furious because this self-important busybody had interrupted his work and he wrote a poem castigating the Person from Porlock and all other stupid, busy people who hamper the really industrious ones."

"And so-?

"Don't you see? It's these Persons from Porlock who have made it impossible for me to complete my work. Borge; Millen; Dickson, the draftsman who bungled the drawings; Hansen, the model shop mechanic who boggled tolerances so badly that nothing would work. These Persons from Porlock-I wonder how many thousands of years of advancement they have cost the world!"

In the near darkness now, Janice sat staring at Reg's bitter face. Her eyes were wide and filled with genuine fear, fear of this malign obsession that had overtaken him.

"The Persons from Porlock," Reg mused, half aloud. "Wouldn't it be funny if it turned out that they were deliberately and purposely upsetting the works of other men. Suppose it were their whole object in life -- "

"Reg!

He was scarcely able to see Janice in the settling gloom, but he felt her fear. "Don't worry, Janice, I haven't gone off my rocker. I was just thinking-Sure, it's fantastic, but Coleridge was one of the world's geniuses. Perhaps he glimpsed something of a truth that no one else has guessed."

* * * *

Reg went into Borge's office early the next morning. The chief engineer frowned as he saw Reg Stone. "I thought you were going to take a few days."

"I came in to ask what you are going to do with the equipment that's been built for my BW project."

"We'll store it with the miscellaneous plumbing for a while, then junk it. Why?"

"How about doing me a big favor and declaring it junk right away and letting me buy it-as junk?"

"What do you want the stuff for?"

"I want to continue the BW experiments on my own. You know, just putter around with it in my shop at home."

"Still think it will amount to something, eh?"

"Yes. That's why I'd like to buy the stuff, especially the velocitor chamber. It would take me a couple of years to build one of those on my own."

"I'd like to do it as a favor to you," said Borge, "but Bruce, the new manager, has just made a ruling that no parts or equipment may be sold to employees. It was all right during the war when the boys were outfitting their WERS stations on company time and equipment. We were on cost plus then, but too many are trying to refurnish their amateur stations now at our expense. So Bruce cut it all out."

"But that doesn't make sense with such specialized stuff as I've had built for the BW. It's no good for anything else."

"Maybe you could talk Bruce out of it. You know him."

Yes, he knew Bruce, Reg thought. A production man who, like many of his kind, considered engineers mere necessary evils. It was utterly useless to ask Bruce to make an exception to one of his own regulations.

Persons from Porlock --

Persons from Porlock --

The words echoed like a tantalizing refrain in his mind as he went downstairs towards his own lab. He knew he should forget that impossible concept, but the words were like a magic chant explaining all his misfortunes.

This huge plant and all the technological advances that had come out of it could not exist without Borge and Bruce, and the others like them. Yet, at the same time, these Persons from Porlock constituted the greatest stumbling

block to modern scientific development. Every engineer in the world at some time had been stymied by one of them-an unimaginative chief, a stupid factory manager, incompetent draftsmen, mod shop machinists, secretaries, expediters, administrators --

As he passed the open door of the company's technical library he spotted Dickson, his head draftsman on the BW project, sitting inside at a table. He went in.

Dickson looked up. "Hello, Reg. I wondered where you were this morning. I just heard about them junking the project. It's a devil of a tough break."

"Are you really sorry, Dickson?" said Reg.

The draftsman looked sharply. "What do you mean? Of course I hate to work on a project and see it canceled. Who wouldn't?"

"You know, looking back, it appears as if we hadn't made each one of about fifty boners, the project would have succeeded. For example, that dimension on the diameter of the focusing cavity in the assembly unit. It's the only one in the assembly that wouldn't be obvious to the model shop, and it's the only one on which you made a mistake in spite of our checking. A seven that looked like a two in your dimensioning. That made the difference between success and failure and lost us nearly four weeks while we looked for the bug in the unit."

"Reg, I've told you twenty times I'm sorry, but I can't do anything about it now. A hair on my lettering pen made just enough of a boggle of the figure so that those dopes in the model shop misread it. It was a worse two than it was a seven. They should have checked us on it even if we did miss it."

"Yeah, I know. It just seemed funny that it was that particular dimension you were drawing when the hair got on your pen."

The draftsman looked at Reg as if stunned by the unspoken implication. "If you think I did that on purpose-!"

"I didn't say that. Sure it was an accident, but why? Was it because you didn't want the thing to succeed-subconsciously?"

"Of course not! It was of no material interest to me, except, of course, as I said before I have the same enthusiasm to see a project on which I work turn out successfully as you do."

"Yeah, I suppose so. Just forget I said anything."

Reg left Dickson and walked back to the ball. Persons from Porlock-were they consciously malicious or were they mere stupid blunderers? More likely the latter, he thought, yet there must be some subconscious desire to cause failure as was the case with the mysterious accident prones so familiar to insurance companies.

The more he considered it, the less fantastic the Person from Porlock concept seemed. It was entirely possible that the genius of the poet, Coleridge, had hit upon a class of persons as definite and distinct as accident prones-and a thousand times more deadly.

There could hardly be any other explanation for the stupid blunder of Dickson in drawing the focusing cavity. He had done far more complex drawings on this project, yet that single dimension, of an extremely critical nature, had been the one to be botched.

And it meant there were others like him in the model shop because any machinist with half an eye for accuracy would have checked that figure before going ahead and shaping up the part to such critical tolerances.

He turned into the machine shop where Hansen, the machinist who'd done the job on the cavity, was working.

"Pretty nice work." He nodded towards the piece in the lathe.

"I hope the engineer thinks so," Hansen growled. "They give me plus five thousands on this thing and no minus. Next they'll want flea whiskers with zero-zero tolerance."

"You're good. That's why you get the tough ones."

"I wish the guy on the payroll desk would take note."

"But you know, there's something that's bothered me for several weeks.

You remember that cavity you made for me with a one two five interior instead of a one seven five?"

Hansen turned wearily to the engineer. "Reg, I've eaten crow a hundred times over for that. I told you it looked like a two. Maybe I need my eyes examined, but it still looks that way."

"Did you have any reason for not wanting the cavity to work?"

"Now, look!" Hansen's anger suffused red through his face. "I'm paid to turn out screwball gadgets in this shop, not worry about whether they work or not."

"Didn't it occur to you to check that boggled figure?"

"I told you it looked all right!" Hansen turned angrily back to his lathe and resumed work.

Reg watched the mechanic for a moment, then left the shop.

The bunglers seemed to have no personal interest in their botch work, he decided. It must be something entirely subconscious as in the case of accident prones. That didn't make them any less dangerous, however. Without them on his project he would have been able by now to demonstrate the practicability of BW utilization.

But, following this line of reasoning, why couldn't the teleportation equipment be made to work now? According to all this theory the equipment he had built should have been capable of acting as a pilot model for a larger unit and it should have been able to transfer hundred pound masses at least a thousand feet. Yet, it had failed completely.

Granting that he himself was not a Person from Porlock. But could he grant that?

Maybe the greatest blunders were his own. His failure to catch Dickson's mistake early enough, for example!

That was the one premise he could not admit, however. It led to insolvable dilemma, rendered the problem completely indeterminate. He had to assume that he was not one of the bunglers.

In that case, why did the equipment fail to work?

It meant that some of the blunders introduced by the Persons from Porlock still remained in the equipment. Remove them, and it should work!

He'd have to go over every equation, every design, every specification-point by point-compare them with the actual equipment and dig out the bugs.

* * * *

He went into his own lab. He dismissed the assistants and shut the door. He sat down with the voluminous papers which he had produced in the ten months of work on the project. It was hopeless to attempt to go over the entire mass of work in short hours or days. That's what should be done, but he could cover the most vulnerable points. These lay in the routine, conventional circuits which he had left to his assistants and in whose design the draftsman and model shop had been trusted with too many details.

The first of these was the amplifier for the BW generator, whose radiation, capable of mass-modulation, carried the broken down components of the materials to be transported. The amplifier held many conventional features, though the wave form handled was radically unconventional.

It contained two stages of Class A amplification which had to be perfectly symmetrical. Reg had never made certain of the correct operation of these two stages by themselves. Spence, his junior engineer, had reported them operating correctly and Reg had taken his word on so simple a circuit.

He had no reason now to believe that anything was wrong. It was just one of those items left to a potential Person from Porlock.

He disconnected the input and output of the amplifier and hooked up a signal generator and a vacuum tube voltmeter. Point by point he checked the circuit. The positive and negative peaks were equal and a scope showed perfect symmetry, but in the second stage they weren't high enough. He wasn't getting the required soup. The output of the tube in use should have been more than sufficient to produce it.

Then he discovered the fault. The bias was wrong and the drive had been cut to preserve symmetry. Spence had simply assumed the flat tops were due to overloading.

Reg sat in silent contemplation of the alleged engineering and poured on self-recrimination for trusting Spence.

This was the reason for the apparent failure of the whole modulator circuit. Because of it, he had assumed his theory of mass modulation was faulty.

Spence was obviously one of them, he thought. That meant other untold numbers of bugs throughout the mass of equipment. During the remainder of the morning and in the afternoon he adjusted the amplifiers and got the modulator into operation. He uncovered another serious bug in an out-of-tolerance dropping resistor in the modulator. He contemplated the probability of that one defective resistor among the hundreds of thousands of satisfactory ones the plant used-the probability of its being placed in exactly the critical spot. The figure was too infinitesimal to be mere chance.

By quitting time he had the circuit as far as the mass modulator functioning fairly smoothly. He called Janice and told her he wouldn't be home until late. Then he worked until past midnight to try to get the transmission elements to accept the modulated carrier. The only result was failure and at last he went home in utter exhaustion.

The next morning, refreshed, he was filled with an unnatural exuberance, however. He had the key to the cause of his failures and he felt success was only a matter of time. If he could just get that necessary time --

The broad parking lot was dotted with infrequent cars at the early hour of the morning at which he arrived. Gail, the lab secretary, was already at her desk, however, when he walked in. She called to him, "Mr. Borge wants you to come up, Reg."

"O.K. Thanks."

He turned and went back out the door towards the chief engineer's office. This would be the new project, he thought. He strode in and Borge looked up with a brief nod.

"Sit down, Reg." The lines of Borge's face seemed to have eroded into deeper valleys in the short time since Reg had last seen him.

"I hear some things I don't like," said Borge suddenly. "About you."

"What sort of things? I haven't -- "

"Dickson and Hansen have been saying you've accused them of deliberate sabotage on your project. True or not, whatever is implied by these rumors can't go on. It can wreck this shop in a month."

"I didn't accuse them of anything!" Reg flared. "I just asked if they wanted the project to fail. Of course, I didn't expect them to say that they did, but their manner showed me what I wanted to know."

"And what was that?"

Reg hesitated. This development was nothing that he had expected. How would Borge, as one of the Persons from Porlock, react to Reg's knowledge of them? Did Borge even understand his own motives? Whether he did or not, Reg could make no rational answer except the truth.

"I found that they did, subconsciously, want the project to fail. I believe this is the explanation of the numerous blunders without which my project would have been a success."

"You believe, then, that your failure is due to the ... ah, persecutions ... of these persons, rather than to any inherent impossibility in the project itself or your own inability to bring it off?"

"I haven't a persecution complex, if that's what you're trying to say," Reg said hotly. "Look, Borge, did you ever hear of accident prones, who plague insurance companies?"

"Vaguely. I don't know much about the subject."

"I can prove there is another kind of prone, a blunder prone, whose existence is just as definite as that of the accident prone. I call these

blunder prones 'Persons from Porlock' after the one named by the poet, Coleridge, when his great poem, 'Kubla Khan,' was ruined by one of them."

"And just what do these ... er, Persons from Porlock do?"

"They make mistakes in important work entrusted to them. They interfere with others who are doing intense and concentrated work so that trains of thought are broken and perhaps lost forever, as in the case of Coleridge. And as in my own case. I could tell of at least a hundred times when I have been deliberately interrupted at critical points of my calculations so that work had to be repeated and some points, only faintly conceived, were totally lost."

"Which couldn't have been due to your own nervous strain and overworked condition?"

"No."

"I see. These Persons of Porlock generally persecute the intelligent and superior people of the world, is that it?"

Reg's anger flared. "I'm not a psychoneurotic case and I'm not suffering from a persecution complex!"

Suddenly, cold fear washed over Reg. Borge's pattern of reason was clear, now. He would dismiss the whole matter as a neurotic complex and let Reg out of the lab. He would be blackballed with every other company in which he might have another try at BW work.

"I know you're not," Borge was saying, "but you are tired! For six years you've been turning out miracles. I hate like the devil to see you come up with something like this, Reg. Surely you must realize it's all the result of overwork and fatigue. No one is going around interfering with your work. Your mind refuses to admit defeat so it's automatically throwing it off on someone else. I'm no psychologist, but I'll bet that's close to the right answer. I want you to have Walker at the Clinic examine you. I'm willing to bet he recommends a long rest. I'll give you six months with pay if necessary. But I can't let you back in the lab unless you do this. A repetition of yesterday's performance and the whole place would be shot up. You've got to get rid of this Person from Porlock business."

The pieces of the whole puzzle locked into place with startling clarity for Reg. He knew that the last uncertainty had been removed. They were not random, subconsciously motivated performers. These Persons from Porlock were skillfully conscious of what they were doing. Borge could not hide the knowledge that his eyes revealed.

But what were they doing?

Six months-it would be too late, then. His sense of blind urgency told him that. Borge was simply showing him that there was no possible way that he could win.

He tried again. "I can't expect you to believe these things. I know it sounds fantastic. Any psychiatrist would no doubt diagnose it as a persecution complex. But I promise that no more incidents like yesterday's will take place. Give me the new assignment, but let me work on the BW just six weeks in my spare time, on my own. I'll guarantee I'll have it working in that time."

Borge shook his head. "That's the main trouble with you already-overwork. You've been pushing yourself so hard that your nerves are all shot. Anyone walking by while you are computing is such a disturbance that you think he's deliberately interfering with you. Put yourself in the care of a good doctor and let me know his report. That's the only condition upon which I can let you stay with the company. I hate to put it that way. I wish you'd try to understand for yourself-but if you won't, that's the way it's got to be."

Reg stood up, his body trembling faintly with the fury of his anger. He leaned forward across the desk. _"I know who you are!_ But I warn you that I won't stop. Somehow I'm going to carry this work through, and all you and your kind can do won't stop me!"

He whirled and strode from the office, conscious of Borge's pitying glance upon his back. Conscious, too, that he was walking out for the last

time.

The fury and the anger didn't last. When he got outside, he was sick with frustration as he glanced back at the plant. He had acted stupidly through the whole thing, he thought, letting them cut him off from any access to the BW equipment without a struggle.

Yet, how else could he have conducted himself? The whole thing was so fantastic at first that he couldn't have outlined a rational program to combat it.

Maybe Borge was right in one respect. He _was_ devilishly tired and exhausted from the long war years of uninterrupted work. There'd been that micro-search system on which he'd spent two years at Radiation Lab. One such project as that would have sent the average engineer nuts. As soon as it was in production he'd tackled an equally tough baby in the radar fire-control equipment that had gone into fighter planes four months after he took over the project cold.

Yeah, he _was_ tired --

* * * *

Janice was surprised to see him, and was shocked by the pain and bewilderment on his face.

Slowly, and carefully, he explained to her what had happened. He told her how Borge had built up a case against him out of the things he'd said to Dickson and Hansen. He told her how they and Spence and the rest had sabotaged his project.

"They've got me licked," he finished. "They've done what they started out to do, knocked out the BW project."

Janice had sat quietly during his recital, only her eyes reflecting the growing terror within her.

"But, darling, why should they want to hinder the project? What possible reason could there be behind it, even if these mysterious Persons from Porlock actually existed?"

"Who knows? But it doesn't make any difference, I suppose. They're so obvious that I don't see how the world has failed to recognize them. Yet ... you don't believe a thing I've said, do you?"

"They can't exist, Reg! Borge is right. You're tired. This notion is only something that your mind has seized upon out of Coleridge's fantasy. It has no basis in reality. Please, for my sake, take a visit to the Clinic and see if they don't advise rest and psychiatric treatment for you."

Like a cold, invisible shell, loneliness seemed to coalesce about him. There was the illusion of being cut off from all sight and sound, and he had the impression that Janice was sitting there with her lips moving, but no sound coming forth.

Illusion, of course, but the loneliness was real. It cut him off from all the world, for where was there one who would understand and believe about the Persons from Porlock? They surrounded him on every side. Wherever he turned, they stood ready to beat down his struggles for the right to work as he wished. Perhaps even Janice --

But that premise had to be denied.

"I'll let them tap my knees and my skull if it will make you happier," he said. "Maybe I'll even beg Borge to take me back if that's the way you want it. It doesn't matter any more. The BW project is dead. They killed it-but don't ever try to make me believe they don't exist."

"They don't! They don't Reg. You've got to believe that. Quit deluding yourself -- "

Quite suddenly, it was beyond his endurance. He strode from the room and out into the brilliance of the day, brilliance that was like a cold, shimmering wall surrounding him, moving as he moved, surrounding but not protecting.

Not protecting from the glance of those who passed on the street nor from those who came towards him, nor those who followed after in a steady, converging stream.

He felt their presence-the Persons from Porlock-like tangible, stinging auras on every side. They surrounded him. They were out to get him.

His stride broke into a half run. How long his flight continued he never knew. It was dimming twilight when he sank, half sobbing from exhaustion, onto a park bench miles from home.

He looked about him in the gathering darkness, and somehow it seemed less evil than the light and the thousand faces of the Persons from Porlock who drifted by on every side.

If only he could drag one of them out into the open where all the world could see it and believe-that would be one way of escape from the soundless, invisible prison in which they had encased him. He had to show that they existed so that no one in the world would doubt his word again. But how?

What incontrovertible proof of their existence did he possess? What was there besides his own feelings and beliefs? He shuddered with realization that there was nothing. His knowledge, his evidence of them was of the flimsiest kind. There had to be something tangible.

But _could_ there be more? Insidiously, doubts began to creep into his mind. He remembered the look in Borge's eyes, the pity and the fear in Janice's.

He rose stiffly from the park bench, cold fear driving his limbs to carry him out into the lights. If he were to remain sure of his own sanity, he had to first prove to himself beyond any doubt that the Persons from Porlock existed in actuality, not merely in his own suspicions.

There was one way by which he might be able to do this. That way lay through the report of Carl Millen and the mathematics by which he had "proved" the BW effect impossible of mass exploitation.

The math was deliberately false, Reg knew. If he proved it, confronted Millen with the fact --

* * * *

He caught a taxi home. Janice met him, dry-eyed and with no questions or demands for explanations. He offered none, but went to his study and took out Millen's report. He asked Janice to brew up a pot of coffee and he began the slow weaving of a pathway through the tortuous trail of Millen's abstruse mathematical reasoning.

Sleep at last forced abandonment of his work, but he arose after a few hours and turned to the pursuit again, All through the day he kept steadily at it, and in the late afternoon he caught his first threads of what he was searching for. A thread of deliberate falsification, a beckoning towards wide paths of illogic and untruth.

It was so subtle that he passed it twice before recognizing it. Something of the intense deliberation chilled him when he realized the depths of the insinuations. It was like the devil's nine truths and a lie that he'd heard country preachers talk about when he was a boy.

This work of Carl Millen's was certainly the nine truths-and the one, black, insidious lie.

Now that he recognized it, following its development became easier until he trailed it to the final, colossal untruth that the free atomic concentration in the dispersion field made large scale application impossible.

This was it! Proof!

The triumph of his discovery swept away the exhaustion that had filled him. Let them call it a persecution complex now!

He put the report and his pile of computations in his brief case and told Janice he was going to Millen's.

As he drove with furious skill towards town he wondered what Millen's reaction would be. He could call Reg crazy, deny he was a Person from Porlock-but he could never deny the evidence of his deliberate falsifications.

The secretary told Reg that Millen was busy and would he sit down?

"Tell him it's Reg Stone, and I've found out what he tried to do in the BW report," said Reg. "I think he'll see me."

* * * *

The girl glanced disapprovingly at the engineer's disheveled appearance and relayed the information. Then she nodded towards the polished hardwood door.

"He'll see you."

Reg opened the door sharply. Carl Millen looked up from behind the desk in the center of the room. His face was unsmiling.

Then Reg saw the second person in the room. Spence, his junior engineer on the BW project. The man's unexpected presence gave him a moment's uneasiness, but it would make no difference, Reg thought, since Spence was one of them, too.

"So you think you've found something in my report?" said Millen. "Pull up a chair and show me what you mean."

Reg sat down with slow deliberation, but he left his brief case closed.

"I think you know what I mean," he said. "I don't believe it's necessary to go into the details. You deliberately invented a false line of reasoning to prove the BW effect useless."

"So? And what does that prove?"

His failure to deny the accusation took Reg aback. There was no trace of surprise or consternation on Millen's face.

"It proves that you are one of them," said Reg. "One with Dickson, Hansen, Borge, and Spence here-one of those who fought to keep me from developing teleportation. I want to know why!"

Millen's face relaxed slowly. "One of your Persons from Porlock?" Amusement touched his face at the words.

"Yes."

Millen leaned forward, his almost ominous seriousness returning. "You've done a good job, Reg. Better than we hoped for a while. It looked for a time as if you weren't going to get it."

Reg stared at him. The words made no sense, but yet there was as admission here of the unknown that chilled him.

"You admit that you falsified the facts in your report? That you are one of the Persons from Porlock?"

"Yes."

The stark admission echoed in the vast silences of the room. Reg looked slowly from one face to the other.

"Who are you? What is your purpose?" he asked hoarsely.

"I'm just like you," said Millen. "I stumbled into this thing when I first opened my consulting service. Spence is the one that can tell you about it. He's the different one-your real Person from Porlock."

Reg turned to his former junior engineer. Somehow, this was what be had known since he first entered the room. Spence's face held a look of alien detachment, as if the affairs of common engineers were trivial things.

His eyes finally turned towards Reg's face and they seemed to burn with a quality of age despite the youth of his face.

"We came here a long time ago," said Spence slowly. "And now we live here and are citizens of Earth-just as are. That is our only excuse for meddling in your affairs. Our interference, however, gives you the same safety it does us."

Reg felt as if he were not hearing Spence, only seeing his lips move. "You _came_ here? You are not of Earth -- "

"Originally, no."

And suddenly Reg found Spence's words credible. Somehow, they removed the fantasy from the Person from Porlock concept.

"Why haven't you made yourselves known? What does all of this mean?"

"I did not come," said Spence, "but my ancestors did. They had no intention of visiting Earth. An accident destroyed their vessel and made landing here necessary. The members of the expedition were scientists and technicians, but their skill was not the kind to rebuild the ship that had brought them across space, nor were the proper materials then available on Earth.

"They became reconciled to knowing the chance of communication with the home planet, and knowing that the chance of being found, was infinitely remote. They were skilled in the biologic sciences and managed in a generation or two to modify their physical form sufficiently to mingle undetected with Earthmen, though they kept their own group affiliation.

"From the first, they adopted a policy of noninterference, but they found living standards hardly suitable and built secret colonies where their own life and science could develop apart from that of Earthmen.

"It was one of these colonies which the drugged mind of your poet, Coleridge, was able to see in his unconsciousness, and which he began to describe in 'Kubla Khan.' My people had detected the presence of his perceptions and one of them was sent immediately to interrupt the work of recollection because they didn't want their colony revealed with such accurate description as Coleridge could make. The Person from Porlock was this disturbing emissary."

Spence smiled for the first time, briefly. "So you see, your designation of all of us as Persons from Porlock was not far from the truth."

"But why have you interfered with me? Why don't you make yourselves known and offer your advanced science to the world?"

"Surely you are sufficiently familiar with the reaction of your own people to the new and the unknown to make that last question unnecessary. We aren't concerned with advancing your science. It is progressing rapidly enough, too rapidly for your social relationships, which would benefit by some of the energy you expend on mechanical inquiries.

"In our own science we have great fields of knowledge which do not exist in yours. One is a highly specialized field of what we term prognostication logics. Your symbolic logic sciences are a brief step in that direction-very brief. We are enabled to predict the cumulative effect of events and discoveries in your culture. We take a hand in those which indicate a potential destructive to the race. We interfere to the point of preventing their development."

Reg stared at Spence. "How could my teleportation development imperil the race? Surely that was no excuse for your interference!"

"It was. It isn't obvious to you yet because you haven't come to the discovery that teleportation can be quite readily accomplished from the transmitting end without the use of terminal equipment. Further along, you would have found no receivers necessary. Everything could be done from the transmission end."

"That would have made it a thousand times more valuable!"

"Yes? Suppose the cargo to be transported was the most destructive atomic bomb your science is capable of building."

The impact of that concept burst upon Reg. "I see," he said at last, quietly. "Why did you let us produce the bomb at all?"

"We were rather divided on that question. Our computations show a high probability that you will be able to survive it, but only if a number of auxiliary implements are withheld, teleportation among others. There were some of us who were in favor of preventing the bomb's construction even with the assurance our computations give but their influence was less than that of us who know what benefits atomic energy can bring if properly utilized. As a group, we decided to let the bomb be produced."

"But the BW effect can never be utilized?"

"Not for some centuries."

Spence seemed to have said all that he was going to say, but Millen moved uneasily.

"I can never tell you how glad I am that you uncovered my math," he said. "You know the alternative if you hadn't?"

"Alternative-?" Reg looked across the desk. Then he remembered, that night, sitting in the park, seeing the shadows against the distant lights, the ghastly pursuit of imagined terrors.

"The alternative was-insanity?"

Millen nodded.

"Why? Couldn't it have been done some other way?"

Millen avoided the question. "You will never attempt to develop the EW effect now, will you?"

"No. Of course not."

"It wouldn't have been that way if Spence or some other had come to you and warned you that it wasn't to be done. You'd have laughed at him as a crackpot. Now there's no doubt in your mind."

Reg nodded slowly and cold sickness lodged in his vitals at the thought of what he had so narrowly escaped. "Yes, I see. And now I suppose I shall go back and eat crow for Borge. That is, if you will put in a good word for me with your man." He smiled wryly towards Spence.

"We have a bigger job for you," said Millen. "I still want you here."

"Doing nail puzzles and answering riddles for customers too stingy to run their own development labs? Not me!"

"Not that, exactly. We need you to take over my job. I've got something else lined up to take care of."

"What are you talking about? Take over as head of Carl Millen & Associates? That would be worse than the puzzles-desk arthritis."

"No. Who's the best man in the world today on interference with the utilization of the BW effect?"

"I don't understand you."

"You're that man. We need somebody to take charge of the whole project of BW interference. Spence has another assignment for me, but Bots-Wellton himself still needs to be worked on. Carruthers and Majestic haven't stopped their projects yet. That was only a blind to fool your company. They've got to be stopped yet. A couple of universities are working on it. It's a big job, and you're the best-equipped man in the world to handle it-under Spence's direction, of course. You see, his people won't do the detail work after some of us once become trained in it. It's up to us to fry our own fish. Will you take it?"

Reg stood up and went to the window, looking down upon the street crawling with ever hopeful life. He turned back to Spence and Millen.

"How could I do anything else in the face of the drastic indoctrination and persuasion course you've given me. Sure I'll take it!"

Then he laughed softly. "Reg Stone: Person from Porlock!"

DISCONTINUITY

CHAPTER I

The middle-aged blond woman was like a sleek and expensive cat. Now, she was afraid. Her bruised face swathed in healing bandages, she sat in the big chair by the window of her husband's office and watched his desk and the circle of his associates who were ringed about her.

She could feel hate like a hot radiance emitted by each of them. Their eyes stared as if she were some animal not of their species.

She spoke again. "I cannot give my permission. I would rather have David dead than-than like those others. Far rather!"

It was the third time she had said it and it only increased again the hate that surrounded her. Momentarily, she shrank in the chair. Then, as if she had retreated to a point beyond which she could not go, she sprang at them.

She stood erect in their midst, trembling with a fury that for once forced them back. "Stop staring at me that way! I'm his wife. Do you think I _want_ him dead? You claim to be his friends, but if that were true would you offer him a return to life with an idiot's mind?"

She turned to one end of the circle, paused, and turned again, glaring at each of them in the maddened, cavernous silence.

There were the young laboratory girls in white smocks. They were all in love with David, she thought. There were the earnest college boys working out research seminars at the Institute laboratories under David's direction. They

had come to plead for David's life-as an idiot.

At last, from the rear of the circle, the moment of balanced hate was broken. A tall, gray-haired man stepped to her side and took her arm.

"Will the rest of you please leave?" he said. "I would like to speak with Mrs. Mantell alone for a few minutes.

They hesitated, then turned. Silently, she watched them go, but she wanted to cry out for them to remain. Her fear of any one of them alone was greater than that in the presence of all. It doubled as each of the two dozen filed through the doorway. The last one closed it behind him.

Dr. Vixen, who remained, was her husband's first assistant and co-developer of the Mantell Synthesis. Older than David, he had the serene and confident bearing of a man who is aware that most of his life is behind him, and that he has spent it exactly as he would have wished.

He leaned back against the desk and placed his hands upon it. Alice Mantell slumped back into the chair as if he had forced her down.

"Now, I will answer the question you asked, Alice. Yes-I _do_ think you want David dead. Regardless of the condition of his mind or his body you want him out of your life."

"I'll not listen -- "

"Sit down and shut up, please. There are great peculiarities in the accident in which you and David were involved. Not the least of these is your own miraculous escape in comparison with his great brain injury. A suggestion to the police concerning this, along with a report of your own infidelities towards David would certainly result in a lengthy investigation, to say the least.

"This is how they might reconstruct it: Your friend, Jerrold Exter, was hiding in the darkness of the back seat of the car when you and David got in. There was no occasion for David to glance back at him, almost invisible in the darkness.

"It was some sort of compressed air mallet that Jerrold used to crush David's skull. Then you got out and let the car plunge through the retaining wall at the end of Mayview Drive. You managed to beat yourself up a little so it wouldn't be too suspicious looking. And if the wreckage hadn't been spotted within a few minutes you might have succeeded in your plan."

The thing that she had feared was here, and with its coming the fear dwindled. Her heavy breathing slowed, and her face recovered from its whiteness.

"You mean this for blackmail?" she asked.

For a moment she believed that Dr. Vixen was going to hurl himself upon her, and the rage she incited within him was curiously pleasant to her.

"I want David," he said evenly, at last. "I want him alive and well. In return, David will certainly be willing to be relieved of your presence for the rest of his life."

"So he has lied to all of you about me!"

"We'll let that go," said Dr. Vixen. "You agree?"

She nodded quickly, again like a cat, striking for what seemed a precious offer of freedom from punishment, and security from the thing that she had loathed. She was going to be free at last of the incredible, alien world in which David Mantell lived, to which she had been bound by fifteen long years of marriage to him. For a time he had dragged her along like a small child at a fair that displayed things beyond her comprehension, and then he had abandoned her because she had failed to understand.

She relaxed in spite of Dr. Vixen's awareness of her evil, partly, even, because of it. "Do you think I'm _bad?_"she said suddenly.

He shook his head. "There are no bad people. Only sick ones, stupid ones, ignorant ones. David would have told you that. He would have let you go long before now if he had been sure that you wanted to."

"But I did want to! Surely he has told you that if he has told you anything."

"He always seemed to think there was a chance. You see, he loved you."

He was sorry when he had said it, for in the presence of this woman it was as if he had exposed his friend's nakedness to an obscene gaze.

But Alice Mantell startled him. Her eyes softened and the catlike tension of her body relaxed for just an instant. "I loved him, too," she said, "once -- "

"Perhaps you can remember that, then, in giving the assistance that we need."

"You have my permission to perform the Synthesis! What more do I have to pay for freedom?"

"You have misunderstood because neither you nor they"-he nodded towards the closed door-"are aware of all the facts. Your permission to perform the Synthesis on your husband is relatively unimportant. Lack of it would be just one more illegality that would not have stood in our way.

"More important, Dr. Dodge, the Institute president, notified David only this morning that the Synthesis was banned, and the operation is now illegal with or without your permission.

"Those youngsters out there don't know it yet, but our careers and professional freedom are at stake as well as David's life. I'll tell them, of course, before we go ahead."

"What are you talking about? Why is the Synthesis forbidden?"

"The _others_-the first hundred Synthesis patients you mentioned a moment ago. The group who have made the Mantell Synthesis a one hundred percent failure so far. The public and the politicians have decided there are to be no more like them, regardless of possible benefits."

"Will David's be a failure, too?"

"We have no reason to believe otherwise."

"You're insane!" She rose and backed away as if in sudden fear of his madness. "Why will you persist in a deliberate failure that will turn him into an idiot?"

"Because-he is wholly lost to us otherwise. This way, he will at least be alive. As long as he is alive there is hope. And, finally, because he would have wanted it this way."

"You're devils of the same litter."

He took her from the office into the Synthesis laboratory. There, her fear returned. She had been afraid all her married life of the world in which David walked. He could tear apart the brain of a man, cell by cell, and reconstruct it in the image of a living human being.

But she never had believed it could be anything but dead. David had penetrated to the very core of life-and had found nothing there that she could embrace. Sometimes-long ago-he had tried to tell her of the vast and intricate molecules that were the essence of a man. He told her the long and incomprehensible names of those protein structures that held the memory and intelligence of man. He could show her, he said, the exact cluster of molecules that held his love for her-and that, she thought, was the moment in which she stopped loving him.

The room was full of compact masses of equipment and long panels that ranged the entire length of the laboratory. Overhead, great cables and high-frequency pipes wove in intricate streams to knit the masses together. Like the interior of a great, expanded skull, this would be the kind of creation that David would build, she thought bitterly.

"Will I ... see him?" she asked.

"No, that will not be necessary. We require what is termed a neural analogue so that those factors of David's life involving you may be reconstructed. Some patterns are inevitably lost, of course, but for the most part he will remember you and all that has passed between you."

"I should think you-and he'd be satisfied to have that forgotten."

"No. It is important that every possible element of his life be reconstructed and re-evaluated. Loss can be kept at a minimum that way. Your analogue, for example, will restore all that he has ever done or thought in connection with you, every opinion or feeling he has expressed to you or which

has been colored by your presence. Then we will call others who will contribute their share, but yours is among the most important."

She shuddered in revulsion. "No-you can do without me. I don't understand what you are talking about, but you can get along without me."

"We can't! Your mind holds the greatest part of the pattern we need. David's life is within the cells of your brain."

"I can't do it-I won't. I'm afraid of all this." Her eyes scanned the far ceiling where the webbed cables looped in ritualistic patterns. "You can't make me -- "

"The accident-remember?"

"Some day I'll kill you," she sobbed.

A nurse assisted her in the preparations. Sick with fear, she permitted her clothing to be exchanged for a plain smock, and then lay upon the padded couch while the score of electrodes were carefully oriented and pasted to her skull. The paste had a thick, nauseating smell that made her stomach contract violently.

She was given then a gentle anaesthetic to control her voluntary thoughts and movements and was left alone in the faintly lighted room.

While Alice was being made ready, Dr. Vixen told the technicians of the Institute's ban on Synthesis, offering each of them the chance to leave. None did. He wished he hadn't had to tell them, but he had no right to make the decision for them though he felt sure of what each of them would do.

All of them were nervous and tense. As a group they were acting on their own in a move in which David had always been there to lead. The tension was multiplied by the fact that it was he upon whom they were operating. So great was this tension they held almost reckless disregard for the ban of the Institute. Yet each knew that he was gambling his whole future life and career in this illegal step.

Dr. Vixen, watching them, sensed the nervousness that threatened the very success they wanted so badly, but he could do nothing now to help them. David had trained them well. They would have to rely on the excellence of that training.

He gave the signal for the beginning of the exacting, laborious process of transcribing the data from the mind of Alice Mantell to master molecules which would, in turn, be used to recreate large areas of the shattered brain of David Mantell.

From his glass observation window Dr. Vixen watched the inert form of the woman. Even in the drugged sleep her face held the cast of bitter lines. It was hard to remember, he thought, that she was only a sick child, a bewildered woman who had never understood the shadow of greatness in which she stood. It was hard to forget that she had broken the heart of David Mantell, and in the end had tried to kill him.

Somewhere, in her youth, there must have been a tone of gentleness, a graciousness and sweetness that David had loved. He would not have married her if she had been so wholly without charm. What had happened to it in the years between? Dr. Vixen did not know. He had heard David's story in snatches of unbearable bitterness that David had sometimes found impossible to contain. But he wondered if Alice might not have her side to the story, too.

A hurried call from one of the technicians brought an end to these considerations. He hurried to the post from which the man called. On the screen of the electron microscope there he saw the image of the pattern molecule that was building, being shaped by the impulses from the mind of Alice Mantell. It was a hundred thousand times the size of the one that would ultimately take its place in the reconstructed brain of her husband.

"Pathological, type 72-B-4," said the technician. "We can't possibly let that series go through! That woman's sick."

"What area are you working with now?"

"It's in her formulation of her relationship with Dr. Mantell."

Dr. Vixen gazed at the image forming before his eyes. Here was proof of just how sick Alice really was. Ordinarily, he would have nodded without

hesitation. Such a malformation should never be allowed to reproduce. But this was different. This was David, who knew more about the Mantell Synthesis than any other man alive. Dr. Vixen hesitated to deliberately modify a single factor that might alter the life and personality of his friend.

"Let it get as far as the selector banks and see what happens," he said.

The technician opened his mouth to protest, then shut it without a sound. He dared not utter what he thought.

But Dr. Vixen understood perfectly well what the man was thinking. They were in an uncharted field with only a few hard-won rules to guide them. It was foolhardy to abandon a single one that had been found to be empirically correct.

For centuries men had stood in yearning awe before the mystery of the human brain. Decades of skilled medicine passed before the smallest clue to its functioning was uncovered. That came in the discovery that the brain is mechanically analogous to a great punched-card machine-all the endless data that compose memory, emotion, intellect, reason-these are arrayed as on stacks of punched cards.

It was Von Foerster whose work suggested this analogy, who showed the possible nature of the punched cards in use within the brain. He demonstrated them as punched molecules, immense and intricate protein structures in which the atoms were stacked and arranged and tied together in a precise pattern, which pattern represented an item of intelligence.

Later, every control function of the human brain and body was found to originate with these figurate molecules. Some were trigger devices controlling circulating, delay-line types of storage for definite but transitory periods. Others, formed at birth, perpetuated themselves throughout the life of the individual and controlled the involuntary functions. The bulk of them, however, were proven to be occupied with storage of data.

Von Foerster's work produced a tremendous impetus in brain research, but it raised more problems than it solved, and it was centuries again before these were answered.

With a library of molecules numbering 10^21 power it seemed an impossible task for the brain to select and read off the data represented by any single one. Utterly impossible time intervals were implied if the process of selection went on by examining every molecule one by one.

This was obviously not the means.

* * * *

Carstairs broke the impasse by the demonstrated application of the principle of molecular resonance. He showed that not only was each figurate molecule a punched card carrying data, it was also a tuned, resonant, circuit unique among the endless numbers in the human brain.

He uncovered the mechanism which Von Foerster had overlooked, the comparatively insignificant number of molecules which formed a selector bank. These, Carstairs showed, were tuned by stimuli and aroused responses in the distant banks of punched molecules, which were sent along the neuron chains to cancel the punching in the selector banks and present themselves as required data. Multiple resonance provided the cross-indexing necessary.

David Mantell had been a student of Dr. Carstairs. The great scientist had been a very old man then, but he had bestowed upon young Mantell the frustrated yearning to know all the secrets of the human mind.

The student, David Mantell, became Dr. Mantell, and in so doing provided the medical world with its most brilliant technique in thirty centuries of its history. He developed the Mantell Analysis, by which it was possible to probe the human brain and determine the exact molecule bearing any given piece of information.

That alone would have given him an immortal name, but he was not content with only half a step. The full pace consisted of being able to duplicate or repair such a molecule and insert it into the vast mechanism of the mind if need be.

With one sweep he eliminated the centuries-old butchery of lobotomy and topectomy which had maimed hundreds of thousands in its long fad.

Or would have --

To date, his experiments had resulted only in intensifying the very conditions they were designed to heal.

In a hundred cases of extensive brain damage, his process had restored life, but only in varying degrees of hopeless aphasia.

At first the public hailed the magnitude of his stride, then, revolted by the horror of his failures, they had turned against him with a mighty clamor. Fed by the public affairs observers who shaped opinion, the clay of rumor and prejudice, the clamor had forced the politically fed Institute to ban the Synthesis.

And now David Mantell himself lay with a bare speck of life possessing his body. The back of his skull had been crushed and sixty percent of his brain stuff destroyed. He lay with a probe in his spinal column conducting mechanically generated, "wired-in" pulses to the organs of his body that the chemistry and mechanics of his corpse might still go on.

Alice Mantell could not have known by any means, Dr. Vixen thought, that she was providing the very next step that David had planned-though hardly in this degree.

He had planned to submit himself to Synthesis surgery to learn, if he might, the answer to the failures that he had produced. But it would have been gently and slowly, molecule by molecule, with constant checking, describing, and analyzing. Now, more than half his brain would have to be rebuilt, and of all his associates there were none who doubted that he would become a schizophrenic horror.

If one single spark of the old intelligence that was Dick Mantell should succeed in breaking through and giving just one clue to the failures, they knew that he would have been willing that the Synthesis be done. And it was worth the risk of their professional lives.

But Alice wanted him dead because he had chained her in a prison from which she wanted to flee. She wanted to be free of him forever, and to have been chained to an idiot would have tripled the horror of her prison.

She was a poor murderess. Her guilt had screamed from her sick eyes, and they had all interpreted its message. But none of them would talk-not now. The bargain that Dr. Vixen had made would be kept.

CHAPTER II

He awoke, and was aware of consciousness. There was thunder in the Earth, rippling sheets of light blinded him. He endured the pains of primal birth and felt suddenly alive as if sprung from the head of Jove.

The chaos was dying slowly, but it would be a long time before he ordered it, catalogued and tamed it. He waited confidently and with restrained exultation. To be alive was to be a god.

I am David Mantell, he thought, but more-much more than David Mantell ever was.

He thought then of Alice, and in this there was pain. He had never understood her-poor, stupid, bewildered little Alice. He had tried to lead her in his direction, and when she had floundered He had abandoned her. He had been stupid, too.

He remembered the ride in the car. He wondered curiously if he had actually failed to comprehend her intention beforehand. He supposed he had, but such ignorance seemed incomprehensible to him. He thought of Alice lying in the wreckage with torn clothes, and bruises on her body from careful blows by Jerrold.

He wanted to weep for her suffering, not of her body, but of her mind. He wanted to weep because she had believed she must be beaten and abandoned in the wreckage to be free of him. He wept because he had not known how to lift her to dignity and courage and esteem in her own mind.

He would make it up, he thought. He would make it all up to his sick

Alice and heal her. There was half a lifetime left to them. Surely it was enough to erase the errors of the first half.

His body was little damaged, but his brain had been subjected to the Synthesis. Fully aware of this, he arranged the known in precise order and shelved the unknown for later consideration, but of it all he became master.

He was alone, but they were watching him, he knew. The room was dimly but pleasantly lit. Furnishings, books and journals were familiar. That was the way it was always arranged-the way it had been for the hundred failures before him.

But _his_ Synthesis was no failure!

For the first time, the tremendous impact of this realization settled upon him. He was alive, aware of himself and his past. He was alive when he might have been dead. And the work of his own hands and brain had made it possible.

He sat up on the edge of the bed, examining the physical sensations. He felt normal, yet there was a newness that he could not define.

Then the door opened slowly, and Dr. Vixen stood there, letting himself be recognized.

David Mantell smiled. "Come in, Vic. Everything's fine. I feel as if I'd had no more than a slight bump on the head. I imagine you must have had quite a repair job, considering the jolt I got from Exter. Sit down and give me the details of what hap -- "

David stopped smiling. "What's the matter, Vic? Why are you looking at me like that? Why-?"

Dr. Vixen was staring, his face reflecting sickness of heart. Then he finally spoke. At least his mouth and lips moved, but his words were sheer gibberish.

David felt panic, like cold water rising swiftly about his chest. "What's the matter with you? Talk sense! Give it to me in English!"

Vixen spoke again, and still no understanding came. David had risen in greeting, but now he edged away until he collided with a desk. He passed a hand over his face and heard the man's voice again. He barely sensed a connotation of dismay and anxiety.

Then he thought of the others, the hundred others who had preceded him through the doors of Synthesis to a prison of aphasia that could not be opened. These had spoken gibberish and had understood nothing said to them.

In sudden desperate horror, he grabbed a pencil and a pad from the desk and scrawled, "Vic, can you read this?"

Dr. Vixen stared at it with growing pity. He backed towards the door, retreating as if from a phantom. "Sit down, David. I'll get Dr. Martin and be right back." And he knew it was silly because David Mantell could not understand a single word.

David remained motionless for only an instant after he was alone. He knew what his fate would be. Visual, auditory, ataxic aphasia-schizophrenia-they would put a label on him and lock him in a jail. They'd lock him up for the rest of his life because somehow he had become imprisoned behind an incredible wall of communication failure.

The Synthesis was not a failure. There was only this one terrible defect that put its patients in a prison of noncommunication. He thought of the first one-over five years ago. A young man, an artist of superb abilities whose head was injured by a falling rock on a mountain vacation. Fifteen percent replacement, David recalled, and the fellow had been in solitary hell for that whole five years.

David did not know how the error had come about, but he had no time to analyze or consider the technical aspects of the problem. He had to get away.

He opened the door and cautiously scanned the corridor. Sixty feet away was the door to the exterior, but his nakedness prevented escape that way. In the other direction lay the great laboratories. The assistants' locker rooms always contained miscellaneous spare items of garb.

He ran swiftly in that direction. Twenty-five feet of corridor, then

down a spiral stairway. At the foot of it he could look directly into the selector room. Vixen was there with Martin, a serious young medic. Their faces were bleak with the futility of their arguments as they scanned the files of David's Synthesis. The technicians were gathered around, listening to Vixen's story and the discussion they had all heard a hundred times before.

He had to cross in direct view of anyone looking towards this open exit from the laboratory. He waited impatiently, scanning the shifting positions of the people within the room. Then, for a single instant, he detected-almost predicted-that none of them was watching the hallway.

He darted across and into the locker room. He would have slugged anyone who appeared now, but he found himself alone.

Within seconds, he found and donned a pair of baggy brown trousers, a slip-over shirt, and a pair of decrepit shoes that someone kept for rough maintenance work. He collected a bundle of articles and tossed them into the incinerator chute, but he grabbed up someone's dark coat and kept it, for the evening was cool.

It was dusk already when he opened the door towards the outside and stepped into the laboratory grounds.

He walked carefully away from the buildings, slipping from one to another of the shrubbery groups that lined the drive. He abandoned his car. They could easily trail that, but it would take considerable time to make up a description from the things they found missing from the locker room.

He walked along the street and mixed with passers-by. The laboratory seemed after a little while like a world he had known only in a dream.

Suddenly, he stopped and stood still, letting the mob flow about him like turbulent waters. Never had he loved the ugly, grotesque, hurrying crowd as he did now. He felt the jostle of bodies with the same sensual joy that a child might experience driving his arms full length into warm sand on the seashore.

He did not hear the fat man who turned and snarled, "What ya think ye're doin' standin' there in everybody's way." Nor the salesgirls who caught sight of the expression on his face, and laughed.

He heard their muffled words on every side, and there was no meaning whatever. They were like words beyond a thick wall that deadened only the meaning but not the sound. But this was a wall that defied his efforts to tear it down because it could not be seen or felt.

He saw the smiles and lines of tension and hurry upon the faces, and was wholly a stranger in their midst. It was slowly becoming a physical agony, that urge to speak out and identify himself with the company of men. He wanted to take the hand of someone and say hello and be understood.

But there was no one who would think him anything but a fool.

He moved on again in the dusk, remembering locations of streets, but the signposts he could not read. Everywhere, the signs, the advertisements were as mystic symbols of some order into which all this vast throng had been initiated. Of them all, only he stood in naked ostracism. As darkness increased, there was a lull in the crowd between going home from work and the return to the streets for pleasure. In this time he sensed the beginnings of real hunger, but he had no solution. He recalled vaguely the need of money, but the symbols were less than shadows of memory. There was no money in his pockets. He could not beg enough for a meal. He dared not open his mouth.

There was his own home, of course, but the police would be watching for him there. Alice would certainly report him-provided she didn't make another blundering attempt to kill him.

He could not go home.

Through the evening hours he ranged among the pleasure crowds watching the faces of the dull, contented men and the pretty, flirtatious women. With increasing wonder he scanned as if for something lost. He knew not what it was, but these among whom he searched seemed imperceptibly decreased in stature, and his panic grew.

With furious haste he almost ran among them peering at the face of each

to whom he came, as if for a lost and forgotten image of himself. But these were not of himself-they were more than strangers; they were like foreign beings he had never known.

With each minute and each hour all that he looked upon became more alien and he more lost. While the beckoning urge to unite with them had not ceased, the gap across which he watched steadily widened. As if it were a spreading chasm in the Earth with him on one side and all mankind on the other, he saw himself hurled back and away while those for whom he yearned dwindled and diminished and were wholly unaware of any gap.

As darkness settled down for its long haul through the night the streets became increasingly deserted. Lights went out on signs and store fronts and he grew in conspicuousness as he moved in solitude about the city.

Almost alone, he ranged the streets with swifter pace and growing rage like some great animal clawing and thundering at the darkness of his loneliness. He paced before the perforated cliff-sides of man's own making and watched the shadows against the little square flames, each marking the place of a man, side by side, row on row, until they seemed to reach the stars.

He raged through the city and into the hills above town where he sat at last upon a granite rock, suddenly motionless and still as if straining to unite with the Earth itself. Only his eyes were alive watching and dreading the coming of day and the awakening of the city.

He dreaded the blinking traffic beacons and suppressed a cry of fury at the neon lights with their beckoning invitation to a world he could not enter.

He slept at last there on the hillside, lying against the granite boulder that was still warm from the day's heat. He was later aware only of lying huddled on the ground and the Earth was full of chill. The sun was slow in its warming of the face of the hill and he was depressed with hunger.

Below lay the city. He felt like a traveler who had arrived at a destination in the darkness of night. It was not merely the old transformed now. It was wholly new-and incredibly ugly. Yet it gave a sense of perspective that his hasty night flight had denied him.

Surely the situation was not as impossible as it seemed. Somehow he could prevent them from locking him up as aphasic or schizophrenic. It was unthinkable that there should be a complete barrier to communication between him and the world.

If only there were another of his kind with whom he might talk to diminish the unbearable loneliness of being the single member of his species in a strange and savage world.

Another-there _were_ others, he thought. A hundred others! His throat caught in a sudden agony of relief as he wondered how he had forgotten in the night.

But the relief was short lived. How could two aphasics talk with each other? No solace or assistance could be offered by another of his kind if they were both in individual prisons. The barrier was doubled instead of broken.

He sat upon the rock again, knowing that in the hours to come he'd have to go down the hill to-somewhere. But for the duration of this instant he could remain.

His thoughts went back to Alice. He was aware of a sympathetic and lucid understanding of her that made him appalled at the thoughts of the blindness with which he had walked through the years of their marriage. They had started out with something fine and lovely between them, and he knew what had become of it now, he thought with startling clarity.

Alice had been sick even then. Her love for him had been genuine, but she could not come to marriage prepared to give the companionship it demanded-either to him or to anyone else she might have married. Her aspirations were chaotic and turned in upon herself.

And he had never helped her.

He had to get back to the world of men if for no other reason than to make amends to his wife and heal her soul of the bitter distortions that had made her life a hell.

It could be done. And then he thought for the first time of the Institute's ban on Synthesis. Vixen and the staff had defied the ban!

Frustration boiled into fury, and he rose and clenched fists in the face of the burning sun. He cursed his prison and damned the intolerable error that had been the mason of its stout walls. But he continued to stand-helpless.

He watched the sun revealing the city of dreadful ugliness. Structures of four different centuries stood side by side, and scarcely a single one revealed a line of imagination or beauty. The city was barren and full of discord to the senses. He hated it-and longed to re-enter it.

But the longing was becoming dim, even as the prolonged fast had diminished hunger. He felt a curious freedom from all that the city represented, and that itself was warning, he thought, of the deteriorating facilities of his mind.

It had been a futile dream to suppose that the human mind could be rebuilt by a machine. A hundred had been sacrificed to that dream, and he was the last. After him there would be no more.

In their common prison the hundred would be a living monument to the futility of his dream.

But it wasn't a common prison, he kept reminding himself. If it only were-!

He lifted his head sharply at the impact of new thought. For an instant the scene before him seemed suddenly shining and glorious beyond his power to behold. What if it _were_ a common prison!

He dredged into his mind, stood aside, and examined his own thought processes. He recalled his utterance to Vixen, the utterance to which Vixen had responded as if it were sheer gibberish.

He recalled the exact words he had spoken then. And they _were_ words-he let them flow through his mind over and over again. They were discrete symbols for exact thought processes. They constituted a language, a real and infinitely precise language, a language given by the semantic selector as it oriented the prepunched molecules that formed his brain.

It was the same language spoken by the Synthesized patients, which _he_ had once called gibberish.

He was never aware of starting to run, only of being actually in flight down the long hillside as if in some fleeting panic. But he knew where he was going.

He was going to find a human being with whom he could speak.

CHAPTER III

Marianne Carter had been a brilliant young selector technician in David's laboratory. Her brain had been virtually destroyed by electric shock.

Marianne's parents in desperate hope had asked David for help, but he had not helped them. He had given them back their daughter alive, but only as a bewildered, gibbering creature who neither spoke sense nor comprehended anything that was said to her.

She had been his last patient, and she was now the closest. By the roundabout way through the city's outskirts, which was the only route David dared travel, she was fully ten miles away.

She was located at one of the small, public sanatoriums that had long ago replaced the gray prison houses once used for the mentally sick. David knew the place well. Others of his patients had been cared for there at times but Marianne was the only one there now.

It was well beyond noon when he finally arrived at the rear of the grounds surrounding the place. Through the heavy shrubbery that hid it he could see the faint, pink glow of the barrier field that fenced the grounds. Beyond, numerous patients were out on the lawn. If luck were with him, he might be able to see Marianne. Like some fantastic peeping Tom, he thought, a deep and desperate urge within him would be satisfied by a single glimpse of her and a world that he could understand.

He crouched down, watching first one side of the big grounds and then the other. Increasingly aware of the weakness and hunger that was returning, he knew that it was not long that he could wait.

And it was futile, he repeated. In the end he would have to give up and submit to hospitalization-and imprisonment. But first he had to see Marianne. He had to know about the language.

The afternoon dimmed and took on the quality of night. He watched the patients herded to the buildings by the attendants. There was as yet no sign of Marianne.

He shifted his cramped position, knowing he had come as far as he could go yet unwilling to cross that final pass between this meager freedom and the captivity he must face.

As he moved slightly he became aware for the first time of the two men who crouched a little way beyond him on the other side of the shrubs and right next to the barrier fence. He had no idea how long they had been there. They hunched beside a small wire hoop that one of them held against the fence.

With instinctive caution, David retreated to his former immobile crouch. In a moment he saw a figure moving swiftly across the lawn beyond. A woman's skirt fluttered wildly with her running in the half darkness. She ducked down as she neared the barrier. On hands and knees she crawled forward and _through_.

He sucked in his breath with sharp intake as she appeared through the hoop that the men held. There was no power on Earth that was known to be capable of breaking through that barrier field-until now.

Then she stood up and he saw her face in full view. It was Marianne.

He must have made a movement and a sound. The two men turned and saw him. Almost in the same instant they were upon him. For a brief moment he fought back, but their fury was merciless, and his physical weakness gave them quick and easy victory.

They held him upright between them and stared in perplexity as if debating his fate in their own minds. David shook his head, his senses foggy from the beating, and felt the blood flowing from a cut lip. Then he saw Marianne standing before him. As his eyes met hers, her face flooded with startled recognition.

"David Mantell! Dr. Mantell-!"

Now it was his attackers who were startled. They loosed their grasp and backed in awe. He heard them exclaim beneath their breaths-his name.

It took a moment to realize that he had heard Marianne's words for what they were, that he had recognized his own name. In consecutive order he marveled at his understanding of the men's words.

And then he was close to crying with the sheer joy of a human voice that he understood. He managed a smile with his bloody lips.

"Hello, Marianne."

"You are one of us!" she breathed.

"I have a Synthesized brain," he said. "I escaped the laboratory to avoid imprisonment in a place like this." He waved a hand towards the building. "I couldn't talk -- "

"I know. All of us nearly went crazy at first."

"What does this mean? Your coming through the fence, and these ... friends ... of yours? Who are they?"

"Don't you remember? This is John Gray. He was your first patient. And this is Martin Everett."

The first man held out his hand and took David's warmly. He was a thin-faced, sensitive man, the artist of whom David had been thinking that very morning.

"We're terribly sorry," said John Gray. "We couldn't risk detection. We've planned too long to chance a failure now."

"I remember ... five years ago -- " said David.

He remembered faintly the name of Martin Everett, too. A spaceport engineer, he had been browned with the sun of several planets, but now he was

pale from long confinement.

"Tell me what have you done? What do you know of our condition? What do you plan?"

"There's no time for that," said Martin urgently. "We've got to get away from here. We'll explain later, in our quarters."

The other two nodded and David found himself being hurried along between them, his consent being taken for granted. They had parked a large car on the road beyond the shrubbery and no one said anything more as they climbed in. He was too full of wonderment to do anything more than observe.

In the car Marianne attempted to wipe the blood from his face. His gratitude for that simple attention was beyond all consideration of the act itself. It was a symbol that he was back in the fraternity of mankind. Each of them would be kinder to other men all the days of their lives because they had seen the dark, lonely walls of hell.

The four rode with little comment, but from each to all the others there seemed a mingling of spirit, almost as if they were become of common substance.

Marianne was a small, light-haired girl. Sitting beside him she reminded David of Alice when Alice was young and sweet and unembittered. But Marianne had the clarity of mind that Alice had never known.

The two men in front, the engineer and the artist, seemed aged far more than the gap of years since he had last seen them would account for. They were different men, of stature and humanity. In contrast he thought of the hordes among whom he had walked the previous night searching for a nameless something. Here it was, he thought. In the profile of these men-and in Marianne-was the thing he had sought, the lost and forgotten image of himself.

In all of them was strange newness that he could not name or define. It was the same new strength he had felt in the first moments of awakening, but it had been overshadowed and strangled in the darkness of that loneliness during those first hours. Now it was back and he began to examine it for what it was.

They drove to a dilapidated house in the oldest section of town. Cautiously alert for followers, they stopped at the rear, and all of them got out.

The interior of the house was more pleasant than the outside. It had the atmosphere of an apartment where a couple of highly civilized men had lived for a long time.

Before she allowed him to question or be questioned, Marianne took David into the bathroom to finish the repairs to his face, and into the kitchen where she prepared a soup for him.

She sat at the opposite end of the table and watched as he ate. He was aware of her presence like a warming radiance. When he looked up abruptly she smiled at him, her deep brown eyes alive with _human_ qualities, but, as if she read in his eyes that he was reminded of other things, she did not speak.

How many long, cold years had it been since he had sat thus in communion with Alice, he thought. Which of them had been the first to break the spell? Fault was in them both, but he was willing to assume all blame if the healing powers of Synthesis could answer his yearning for her.

Finished with the light meal, he allowed Marianne to lead him to the living room where John and Martin were waiting expectantly.

"For us this is unexpected luck to have you with us," said John. "For you it may not be the tragedy you have believed if some of the things we have figured out are correct. We hope we can look to look to you for the advice we have long needed and an explanation of just what has happened to us."

"I am afraid you know more than I," said David. "What have you done?"

"Little more than getting together and communicating with each other. Martin and I were in the same sanatorium cell, and we discovered we could talk to each other. Through the shop they provided for occupational therapy we succeeded in devising a gadget to pass through the fences. We took it easy at first because we wanted to find out what had happened to cut us off from

everyone else. We still don't know, but we have concluded it's not wholly bad.

"We gradually contacted most of the others, about seventy-five so far, and then planned to escape permanently as a group. This is the beginning, and now you have come along. What would you advise?"

"I don't know. You'll have to wait for an answer to that."

He sat down before the group and faced them. He spoke again slowly. "It has only been hours since I believed that I was utterly alone and incapable of communication with any other person in the world. I don't need to tell you about that hell. Each of you has been in it longer than I.

"I am beginning to have a faint understanding of what may have caused it."

"We thought at first that it might have been deliberate," said Martin. "We thought it might have been given during Synthesis to replace other faculties that couldn't be used. But that didn't make sense in the light of what was done to us afterwards, locking us up."

David shook his head. "It was not deliberate-not on our part at least. I think it was entirely accidental in the sense of being unforeseen, but that does not imply a failure of the process. Rather, I think it has worked entirely too well!

"It would not be the first time that a semantic mechanism has gone on its own and turned up surprising results. You may recall Jamieson's experiences when he first devised a semantic selector and it turned out Scott's 'History of Mankind'. Historians are still trying to show that it is a true forecast of the future, but for some reason he would never reveal during his lifetime Jamieson was positive that it would never happen as the book related. He said the chances of it were mathematically zero and let it go at that."

"After I knew that I possessed a language common to the Synthesized," said Marianne, "it seemed to me that its only possible origin was in the semantic selector."

"You're leaving us behind," said John. "We don't know much about those particular things."

"The Mantell Synthesis," said David, "consists of replacing the library of the brain, but of equal importance are the two halves of the process. Information is restored in punched card form, which in this case consists of punched molecules.

"Duplication of the basic cell structure, the complex cortical processes, and establishing metabolistic reactions-these things have been done by biochemists for half a century in an effort to create an artificial thinking brain. But none of their efforts succeeded because they had no data mechanism and stubbornly refused to recognize it in spite of the antiquity of Von Foerster's work on punched molecules.

"Synthesis builds up these molecular files in previously prepared basic cell structures. Blank molecules are first created chemically. Then they are 'punched' with data from giant pattern molecules which have been prepared from a number of sources. That is old, too. At least as early as the twentieth century the principle of molecular molding was suspected.

"The chief data source is the brains of associates of the patient. Electroencephalographic data was taken first from my wife's brain, then from about thirty others. This covered a vast sector of my life. Then data was poured in from all the trivia and impedimenta that could be discovered to have ever been in my possession. All these carried connotations and implications far beyond the bare artifact.

"Lastly, book data were poured in. Thousands of tomes that I had read and thousands more that I hadn't. All of this added up to a pretty complete mass of information that came very close to duplicating what had been in my brain before the accident.

"That was the first half of the process, but in that state a brain is like a great library that has just been moved to new quarters, in which the truckers have dumped the books and file cards in a hopeless jumble in the

middle of the floor. A brain that regained consciousness in such a condition would be in a state of lethal insanity. The body would die within minutes from the confusion of impulses."

"I begin to see where the semantic selector comes in," said Martin. "That's the librarian."

"Right. The earliest work in direct line with selector development was the mathematical theory of communication developed by Shannon in the twentieth century. It flowered in the discovery of the Law of Random by Jamieson and his subsequent invention of the semantic selector. Marianne can tell you what the selector does. She's spent five years as nursemaid to them."

The girl smiled. "No Jamieson selector ever did what the Mantell Synthesis demands. The old ones were mere toys that could take random combinations of a few items, several hundred thousand up to a couple of million, and arrange them in order, rejecting all semantic noise and nonsense. But Synthesis demands that this be done for a set of items numbering around 10^21."

"Surely a man in a whole lifetime doesn't accumulate that many items of data," exclaimed John.

"No-but he could. The wastage of the human brain has been deplored for centuries, and I wonder if we haven't stumbled onto the answer to it right here.

"The learning process we all go through is a clumsy mess at best. Unable to cope with the world in childhood, we acquire tens of thousands of erroneous learning sets, which are seldom corrected in later life. They remain all our lives cross-indexed with masses of reasonably correct data. When the brain is asked for a certain response it fumbles around through these incorrect sets and brings them up about as often as the correct ones to which they are cross-indexed."

"That explains it!" Marianne cried in sudden excitement. "That's what's happened! The selector has sorted out and done away with every one of those semantically erroneous learning sets. We've got the same data with a modern filing system."

David smiled at her almost childish excitement, but he felt the same superb confidence that bubbled out in her. "I think you're quite right," he said. "I was working up to it by a slower approach. The learning of a child is a hodgepodge of accumulating experiences-like the delivery of books dumped on a library floor. These are carelessly filed and cross-indexed by emotion, a poor, inefficient librarian who hates her job but bitterly resents the rightful attempts of reason to take it over and put emotion in her own place as head, say, of the art department. Emotion is a selfish old spinster who wants the whole job and glory and makes a mess of all of it."

"Are we then cold and rational beings wholly without feeling?" said Martin in dismay. "Surely that is as bad as what we once were!"

"Is that the way you feel?"

"No-I think I feel an emotional sensitivity as great as I ever did."

"Probably greater. With emotion in her own place she is much more effective than when she was in charge of the files, which she messed up so badly.

"The semantic selector, in arranging the pre-punched molecules in precise order with semantically correct cross-indexing, has swept clean the crazy, nonsensical filing system accumulated over the years. Learning has been speeded up because there are prepared vast numbers of blank molecules that can efficiently receive new data now. The ties that required us to evaluate present data on the basis of early experiences are gone.

"The greatest evolutionary deficiency of the human brain is lack of a built-in semantic selector system. Some selection must go on it is true, but from an evolutionary standpoint the selector must be as primitive as the brain of a worm.

"The Law of Random is a perplexing thing that men have never fathomed," he went on quietly. "We know it exists and we have fashioned semantic

selectors to abide by it, but we have never seen the heights or the depths of it.

"Evolution appears to follow the Law, but in a smooth and flowing curve along which mutations themselves are part of a continuous process.

"We have jumped the curve entirely. We are a discontinuity. If we understood more than a fragment of the Law of Random, we could determine if we are an error that is to be erased or if we are the beginnings of a new and higher curve. Perhaps in a sufficiently large scale of time the whole curve is naturally discontinuous. We'll never live long enough-the race may not-to know the answer empirically. Some day we might solve it epistemologically.

"Without any way of knowing we may as well assume that we won't have to wait for the mutations of evolution. We have within our hands the means to make a new kind of man, one which can displace the old and bring reason into the world.

"Neurosis and psychosis have been driven beyond the reach of us forever. I am very certain we are the most completely sane people the world has ever known!"

CHAPTER IV

The two men blinked sharply as if stung by a quick shock. Marianne gasped a little at the appalling nakedness of his claim. But none of them spoke to deny it.

As if it were the suddenly perceived answer to a long and intricate problem upon which he had spent his whole life, David felt the delicate pleasure of discovery. It was the logical goal achieved after a lifetime of wandering amid faint clues and whispered rumors. He felt as if he were standing upon a high peak beholding a vast and beautiful sea which he had always known would be there.

But his companions were not with him in spirit. They were not ready to behold such vastness without terror.

"How can we ever be sure of what we have lost?" said Marianne. She was sitting in a contracted position, hugging her arms close to her as if sudden cold had pervaded the room.

"We are not what we once were. You say we have emotion, but is it anything more than the recorded emotion of a symphony which can be stamped out by the thousands? Are we anything more than the products of a machine and, therefore, machines ourselves? Where is individuality, personality if the soul of man is no more than a collection of figurate molecules?"

"You have answered your own question," he said kindly. "You are afraid and I am not. If a single molecule among all the billions that have been recreated in your brain is different from those in mine then we are not identical.

"There is individuality enough for the most rugged of rebels against the herd. As for personality, that has certainly been changed, but little of value has been lost. Fear-born hate is certainly gone. In its place there is understanding of the motives of men. Greed is no longer in you because you can evaluate your own worth.

"Yet the intensity of your laughter, your capacity for sorrow, and your intellectual interests are specifically your own and different from any other man's. Every brain upon the whole Earth could pass beneath the selector, but no man would emerge the duplicate of any one of us."

"I cannot comprehend it," said John. "I have spent my life building symbols of my own emotional responses in order to convey those responses to others. But I -- "

He stopped short. David smiled. "Keep going. You can't deny the logic of your own train of thought. Perhaps this is the key you need: No one else in the whole world could have painted the same pictures you have made."

A great peace seemed to flow over the artist. He settled back in the chair, his face calm as if a great turbulence within him had suddenly calmed.

"That's what you did," he said, "you took my pictures and out of _them_

you obtained data to punch the molecules that now make up the only brain in the world that could direct the painting of those pictures-mine."

"That is it. And still you might fear that much is lost, but it is not. A single hour's contact with another brain leaves enough imprint of our personality that it would suffice for fifty percent reproduction. No Synthesis has been performed with the assistance of less than twenty such persons who have known the patient for long periods.

"True, Synthesis could not exist without these recordings we have made upon other brains. Though it has not yet been done I believe that a one hundred percent restoration could be made with adequate assistance and no one could tell the difference in the Synthesized individual except for the increased efficiency of mind. Nothing essential would be lost."

"But the language -- " said Martin. "You have not explained yet the advantages or even the full reason for this substitution of a wholly artificial language for the one we knew."

"I can name one advantage very quickly," said David. "How long do you suppose our conversation has taken so far?"

"About fifteen or twenty minutes."

"I've been noting Marianne's watch since I sat down. That was just thirty-eight seconds ago."

Marianne jerked her arm up as if she could confirm the statement with a glance. Then slowly, disbelief faded and they realized how incredibly short a time their discussion had taken.

"Shannon introduced the factor of entropy into his formulations," said David. "His work has scarcely been improved upon since his day.

"As the organization of a communication system increases so that there is minimum freedom of choice, increased certainty, and minimum noise of both semantic and engineering kinds-as these things approach the ideal the entropy of the system approaches zero. I suggest that the communication systems of our brains have been reduced to virtually zero entropy by the selector.

"As a result, there is zero redundancy also-there is absolutely no part of a message between us which could be omitted and leave possible a correct translation. Likewise, any possible sound that we can make has a single, definite, and completely understandable semantic significance. Ideas that once would have required minutes of speaking can be conveyed with a single sound of almost infinitely precise intonation. There is no possible misunderstanding on the part of the hearer whose communication faculties likewise have been ordered by the semantic selector.

"For this reason we have found it impossible to understand those about us in any form of communication-speech, reading, sign language. All are beyond our comprehension because, as Shannon demonstrated so long ago, a channel cannot pass a message of greater entropy than the channel capacity without equivocation. Since we demand zero entropy and ordinary communication employs so much higher values, we understand nothing."

Martin spoke up. "How well we know! In the hospital John and I beat our brains trying to work up a code system with the attendants and doctors. They did nothing but stare and grin as if we were cute monkeys cutting capers."

"Consider what it would mean as a universal language," said David. "Never has it been possible for one man to know another's thoughts with hundred percent certainty. Now it can be done. The new language makes possible unity of thought and action that has scarcely been dreamed of. What it would do to the advertisers, the politicians, and all those who thrive by breeding misunderstanding between men!"

"How can we remain in our present isolation?" exclaimed John. "What can we _do?_ There are only the hundred of us. Is there no possibility of our ever breaking through?"

David looked carefully at each of them. The sharpness of his perceptions made the very presence of the others a thing of exquisite pleasure. But this was only an oasis where the drink of companionship with his own kind could be tasted for a short time. Dawn was coming with its

necessities that would break the perfection of this hour.

They could not exist in this isolated world within a world.

"Suppose it were possible," said David thoughtfully, "to increase the entropy of our brains somewhat, deliberately introducing the necessary disorganization that would permit communication with the world, retaining if possible the present speech channels so that we could translate from one to the other."

"From what you said previously such a thing sounded impossible," said Martin.

"It may be. As long as the present semantic entropy approaches zero without actually achieving it, however, the selector might be able to fix it for us. It's a gamble, but I'm willing to try. Yet I couldn't be the first."

He saw the change come upon their faces now. They, who a moment ago were terrified at the vastness of the world which they had entered with him, now shrank before the implications of his words.

"We can't go _back!_" cried Marianne. "Not after this-I have dim memories of a period of terrible confusion and uncertainty, pain and misunderstanding, a period worse than the first days after the Synthesis."

"Such residual impressions are possible," said David. "I am appalled by the ugliness of what I see in the city about us, and the stupidity it signifies. Those I saw on the streets seemed to have shrunk to moronic stature. Have any of you checked your I.Q.?"

"How could we without standards?" said Martin.

"That's why it did not seem very astounding that you could penetrate the barrier field around the hospital with a baling wire gadget made in the therapy shop-when it has been mathematically proven the field cannot be penetrated."

"Why ... we'd never thought of it. It seemed a simple problem."

"I'd say your I.Q.-and that of all of us-has gone up by one to two hundred points at least."

"Supermen, huh?" John smiled.

"No!" Marianne exclaimed seriously. "That's an ugly word that puts us above and beyond humanity. We are not that. We are part of it. We are the first _normal_ men. We are the first of what all men could and should be. Anything less is illness of the normal man. We have been healed of that universal illness."

"That's a better definition," said David. "Every man who is born with adequate biochemical proportions is potentially a noble creature. We are the first of our kind to be put in the way to achieve our potentialities.

"Yet-we must give it up. To a degree, at least-if we are to re-enter the world we have left. Of that I am certain."

"Suppose we do? What then?"

"There is a far broader field for Synthesis than gross physical injuries. Reorientation by the selector should be made available to every man. It could banish neurosis and psychosis from the Earth-if it were permitted."

"There would hardly be opposition to that," said John.

"Perhaps. But Synthesis is now illegal because of the failures it has produced so far. I have long worked on borrowed time."

"But we've got to restore contact! How can it be done?"

"I'll take one of you with me for increase of entropy. That one can be an interpreter so that Dr. Vixen can take care of me. Then we will see what happens to the opposition."

"Who do you want?"

Each of them was looking at him now with eyes of dread. Though it possessed its own private hell of isolation from humanity, this was a paradise they regretted leaving.

"Let's draw names," said David.

It was Marianne.

CHAPTER V

It was the night following when they drove into the darkened grounds of the Institute. A few random lights showed in laboratories in some of the buildings, but the Synthesis building was dark.

As the car drew to a halt the four of them left it and fanned out like silent, skillful thieves. David applied the combination to gain entrance through the main door, but they had to slug a watchman who surprised them. He greeted David with recognition and a friendly smile. They couldn't take the risk.

Inside, David hurried Marianne through the dark hallways and past the great banks of the selector equipment that was silent now like a herd of sleeping giants. John and Martin followed at a short distance.

David turned on the lights as they entered the operating chamber. Marianne shrank in momentary hesitation as she saw the operating table before her.

David tried to smile reassuringly, but he understood her fear. "You don't have to go through with it," he said.

"Yes ... I do. But you don't know what I'll be like when I get up from there, do you?"

"No. I don't know for sure."

While she changed to the operating robe he set the matrix of the semantic selector to widen the communication channels of her mind. Then he helped her to the table so that she lay with her face in a cradle that permitted access to anaesthetic and oxygen. Seconds later she was unconscious.

He picked up the electrode helmet from its sterilizing case and poised it over her head. At that moment he saw the shadowy figure standing in the dark depths between two panels of selector control equipment.

With a single uttered sound he commanded John and Martin. They circled unseen and collared the watcher with sudden speed that was seemingly more than human.

It was Vixen they brought out half suspended between them, his eyes wide with terror.

"I need his help if he'll give it," said David, "but if he thinks we're insane and is part of a trap to catch us he can't give it."

"Shall we tie him up to be safe?"

"Wait. Let his arms go. But be ready to grab him again."

David held the helmet in his hands, its hundred spiny probes a terrible weapon to hurl into a man's face if he had to do it.

Cautiously, he held it out as if to Vixen, and then lowered it over the head of Marianne. Vixen advanced slowly towards the table, his eyes flashing from one to the other of the men at his side. Then he reached for the helmet and touched the adjustments with gentle skill.

They worked together swiftly then, no sound passing between any of them. By electroencephalograph they positioned the helmet with exacting care. Carefully, the hundred or more probes, scarcely a dozen molecules in thickness, were screwed down, penetrating the skull and into precise loci of the brain structure of Marianne.

It was exhausting labor. Time after time the probes had to be withdrawn when they fell short of correct placement by a few cell diameters. David was grateful for the presence of Vixen and prayed that his friend would have faith enough in him to go through with it with all the skill at his command, but he knew he could not be certain yet of Vixen's motives.

He finished the last probe. Vixen was perspiring, but they did not pause. He cut in the switches that let the impulses begin pouring through the giant, overhead cable that connected with the helmet, upsetting the perfection that had previously been created within the mind of Marianne.

It seemed a grim and ugly thing to do, yet it must be done to all of them if they were to survive, he thought. Such a tiny minority could not exist behind the barrier that rose between them and all the rest of the world. If the process were successful, they could then bridge both worlds and invite the rest of mankind to share their fortune.

For two hours the selector mechanism shifted and surged and poured its disturbing pulses through the brain of Marianne. David did not know how long it would take for completion and he worried for her safety and the possible discovery of all of them.

Halfway from midnight to dawn the great mechanism chucked to a halt and the flow of symbols ceased. Tediously, the probes were withdrawn, and Vixen lent a needed hand again not knowing if he had helped perform a miracle or been accessory to murder.

They revived Marianne as quickly as possible. David remembered his awakening to loneliness and wondered if Marianne would know again a forsaken desolation, having crossed back over the barrier.

But even so, he was not prepared for her reaction. She sat up slowly and looked about with wild expectancy in her eyes. Then her face filled with understanding and a gasp of horror came from her throat-a single long scream of despair.

"Marianne!" David rushed to comfort her in his arms, but he could not still the violent shaking of her body.

They let her cry, and in time she quieted as if some psychic storm had swept her. She looked up at them finally with the quietness of desolation.

"How have we lived like beasts all our lives?"

"Do you recall the language, Marianne? Can you speak with Dr. Vixen?"

She nodded absently and spoke a phrase uncomprehended by David and his two companions. But Dr. Vixen's face lighted with relief and joy. It seemed an endless conversation then upon which they embarked.

When she turned again to David her voice was flat and the joy of life seemed to have gone from her. "We can understand. He says he has waited here for you each night believing you would come back. He did not believe you were insane. The workers here have kept the secret of your escape so that no one knew of it. You were not pursued.

"I have explained a little of what we have done, but I can hardly get through the high semantic noise level. I want to think in Synthesized terms while speaking in English. Let's go back to our isolation. I feel I can't endure this chaos of thought."

"You are more sensitive than before," said David. "You are on a bridge between paradise and hell. In either one, with no knowledge of the other, you could be content. Understanding both is a special hell of its own. Those whose entropy is never reduced to the low levels we know will not experience it.

"But I'm coming to join you. Ask Vixen if he'll stay and follow through with the same treatment for me."

"He has already agreed."

* * * *

David awoke to nightmare. The chaos was like some great machine gone wrong, every part working against all others yet inexplicably still moving. Chaotic sounds, shrill and wild, rang in his ears and ten thousand unbidden visions marched before his eyes.

He remembered Marianne's cry of despair and understood it fully. He was aware of her by his side clutching his hand tightly in both of hers.

"It gets better after a little while," she murmured.

"I hope so." He managed a grin. "It's pretty bad at first, isn't it?"

Vixen was there, anxiously. "Are you all right, David? Can you understand me now? Can you tell me what went wrong?"

David had the continued impression of birdlike fluttering. He wondered if all men would seem to be of such reduced stature as Vixen-and knew it was so.

"I'm all right," he said. "Order breakfast for all of us sent to my office, and we'll determine what needs to be done next."

* * * *

Dr. Dodge, President of the Institute of Bio-Sciences, was a small, pudgy man. His thick hands could scarcely manipulate a scalpel or the focusing dials of a microscope. That was a major reason why he was a research executive

instead of a practicing scientist, David thought.

David had heard all of the doctor's weary arguments. They had been over the same ground again and again in the past months-but he had not had Marianne on previous visits. Dodge had not yet learned that David himself was a Synthesized.

"I want to present Marianne Carter," David said. "She is the first direct proof of the success of the Mantell Synthesis. The most recent case, she required eighty percent replacement and is willing to submit to any test required to demonstrate the success of Synthesis."

Dodge glanced at Marianne somewhat as if she were a specimen under glass. He pursed his lips in displeasure, then turned angry eyes towards David.

"Have you disobeyed the memorandum I issued to your department? This girl was as much a failure as the rest! If you have experimented further, you have disobeyed my order."

"She is proof of the success of Synthesis."

"After my order was given!"

"Is that important in the face of success?"

"Extremely important." He patted a stack of documents on his desk. "Here are the accumulated protests that have come from every humanitarian society in the country. Every public affairs observer has broadcast disapproval of your continued experiments with human beings. Now we have a threat in Congress to stop the flow of funds while a long investigation of the entire Institute is conducted. You have threatened the very existence of our organization!

"I have pacified the opposition by publication of my memorandum which I issued your laboratory. If I should now announce a resumption of Synthesis they'd have my hide. If I uttered the very word in public, our funds would be dried up."

"Are we to be dictated to and be directed in our research by news propagandists and politicians?"

"We are to serve the public interest," said Dodge as if he spoke an infallible maxim. "We exist by public acclaim and to serve those who support us."

"All right. Let's give them proof that Synthesis can rebuild a human mind. Let me show Marianne to the whole world."

Dodge glanced at her distastefully. "Eighty percent replacement. Who could ever be sure if he were speaking with a human being or a mechanical robot? I have never favored your attempts to reclaim the dead, and I will not support your fantasies now in the face of the threat you have brought to the Institute.

"No. Your refusal to obey orders shows you are unfit to direct the tremendous facilities of the laboratory entrusted to you. From this moment they are closed to you. You are dismissed. You may have time to remove your personal effects. Your further appearance will constitute illegal trespass."

"That's not fair!" cried Marianne. "What of the others like me? What is to become of them?"

"There will be no more tampering with those poor specimens of humanity. They will be permitted to live out their lives in adequate custody, but we want no more like them."

David was about to speak in reckless fury now, but Marianne stopped him with a single sharp word in their new tongue, which Dodge scarcely noticed, thinking it only an exclamation.

But it conveyed to David all that he understood he should have perceived by himself. Dodge deluded even himself as to his real reasons for opposing Synthesis. He was a miserable little monarch, greedy and fearful of his empire. There was bitter hate for one such as David who had ranged so far beyond in the vast plains of research that the short-winded capacities of Dr. Dodge could scarcely keep him in sight.

It was the envy and hate of a little man for a big one. He would never

attempt to understand, but he would wield all the power of his governmental authority to destroy that which he could not comprehend.

David rose. "We may return," he said, "with a better argument."

They returned to the laboratory. During their absence, John and Martin had been treated for increased entropy under Vixen's direction. They were in a state of despair.

With Vixen, the four of them met in David's office once again. David felt sorry for Vixen. Not only so seemingly incompetent in their midst, he was now a bewildered little man. It was as if they were simply taller than he and could look over a high wall into a garden that was hidden from his vision even as he talked with them.

"Dodge refused to remove the ban on the operation," said David. For Vixen's benefit he spoke in English.

"I don't understand your urgency," said Vixen slowly. "There is something new in all of you. It makes me afraid. Perhaps it made Dodge afraid, too. Tell me what it is that is different, and what it is that you are so urgent about. There is more involved than mere continuance of the Synthesis operations."

"Much more. It involves the whole race. We have in our hands the capacities for development that might have been learned or evolved in the next million years-if we hadn't killed ourselves off by then."

Swiftly, and in crude terms that Vixen could understand, David explained the thing that had happened to their brains through the manipulation of the semantic selector. "Any mind, then, can pass beneath the selector," he concluded, "and become ordered and rational-just as ours have done, and become aware of the new language as well as the old."

Vixen was staring at him and breathing heavily when David finished. "And you suppose that you can entice the whole world to change themselves over?" he demanded.

"The thousands in the mental hospitals will be our first opportunity," said David. "We'll take the most demented and raise them to heights of genius that cannot be imagined-or ignored. Who will be able to resist our offer then?"

"Ninety-nine percent of the population," said Vixen. "_I_ would resist if I were one of them -- "

"You!" David's voice was filled with sudden contempt, and then he recognized his error. Vixen was not the stupid creature he seemed. It was the Synthesized who had changed and Vixen was still in the intellectual vanguard of his race.

"Why?" David spoke more gently.

"I am fifty years old. I have a wife and children. I like things the way they are. I like myself the way I am, if you please. I am content. And I, who understand very well the inconstancy of our established interpretations of the laws of nature, am far more pliable than the mass of men. You will find few takers if you try to sell your new world literally as such."

"But _you will_ join us?"

"I don't know. I really don't know, David. I'll have to think about it very much for a long time."

The four of them stood looking at him incredulously. It was no longer within their power to comprehend the workings of neurons that could lead to such a response as his. It represented only illness.

Yet Dr. Vixen was an independent being with his own right to choose or reject-and so were the billions who were even less than he.

"You have not shown me this world which you see," Vixen went on as if trying to soften a blow whose impact he fully sensed. "You cannot show it, perhaps, but tell it only in words which you have said are feeble things to convey that which you have experienced.

"Perhaps you will find enough clients among the young and adventurous, but neither quality is strong in me any longer."

"How can a blind man be told the color of the sky?" asked Marianne.

"How can a frightened child be made to understand what it's like to be free? Only by experience can it be known."

"You have a viewpoint we had not dreamed of," said David, "but one that we must consider."

In their new language he said, "Vixen may be right. In the end we may have to ram this down humanity's throat, but we can't even put the rest of the hundred in communicable condition unless we change Dodge's mind. Tomorrow at the latest they'll be here with a dismantling order."

"How can we change Dodge except by force?" said Martin.

"We can't. You get Dodge here tonight," he said to John and Martin. "I'm going to get one other at the same time-my wife, Alice."

Marianne gasped incredulously. "You don't want _her!_"

Watching, David saw her face crumple momentarily as she lost control. Then she murmured, "I'm sorry. I'm terribly sorry. Forgive me."

He understood how it must have seemed to her. They were the first to cross back over the bridge to contact with fellow humans. There had seemed for a time a companionship and a narrow unity between them. Of it she had fashioned a dream.

He touched her arm. "She's my wife, Marianne. I've loved her for a long time-loved and neglected and hurt her. I'm going to make it up. You've dreamed a lovely and a foolish thing. You could almost have been our daughter."

"That would have been something," she said almost bitterly.

He smiled with tenderness and lifted her chin. At least no one need fear that Synthesis would make the race an emotionally sterile group of creatures intent only on intellectual forms of tick-tack-toe.

"Please, Marianne. I'm going to need your help."

"Of course. Forgive me."

* * * *

His own house looked strange to him as if he had been gone a very long time and had forgotten the details of its lines. Yet he remembered well the last night he had been here, the night that Alice plotted murder.

He could see lights and hoped she was alone. He was not prepared for murder, but the urge would be great if Exter were there.

She was alone. He let himself in quietly and was suddenly before her in the same living room they had shared for so many long and empty years.

She uttered a scream that he thought would never die. White-faced, she cowered in the depths of the sofa on which she sat.

"David! Don't come nearer-leave me alone! Vixen promised ... I gave you back your life!"

"I'm not going to hurt you, Alice. Please don't be afraid, and don't try to explain. Listen to what I have to say."

She watched his approach as if hypnotized in terror by a creeping cobra. He sat down and put his arm along the back of the sofa, but she shrank from it.

"Something very wonderful has come out of this thing that has happened to us. We have learned how to control Synthesis, how to reorder the human mind so that life can be lived as it should be. The hates and fears can be cleaned out of our minds to make a fresh start in complete understanding and trust.

"You and I can make a fresh start. I want you to come to the laboratory with me and submit to the selector. Things can be again the way they were fifteen years ago-except better."

Her fear-wide eyes had not blinked once. "No ... I won't let you do anything to me, David. You can't make me. Go away and let me alone!"

He tried to tell her again in other words, and she remained hidden still behind her wall of terror. He felt suddenly very tired.

"Alice, you loved me once. I did nothing to let you know how much it meant to me or make it grow. But, if I thought there was nothing left of it, I'd never have come back tonight. I love you and I want you back the way we were so long ago, and it can be that way. I'm telling you the truth, Alice."

"The day after we were married you disappeared into your laboratory,

and I've scarcely seen you since."

It was then that he was sure, for her eyes became soft with the fleeting memory of a time beyond their troubled years.

"I'll make it up, every day of neglect. I promise you I will, darling."

He hit her then sharply and carefully on the point of the chin. She uttered a brief, low cry and sagged back against the sofa.

* * * *

They had Dr. Dodge already in the operating room when he carried Alice's moaning, half-limp form into the laboratory.

Vixen helped them. His face was white and he moved like a man in a nightmare. He had gone too far now to do anything but go the whole way.

He needed sleep badly, but the rest of them seemed unaware that they were starting their second twenty-four hours without rest. Vixen watched David's sure hands, beside which his own were clumsy paws. David had always possessed great skill in the laboratory, but his fingers seemed inspired now.

He was baffled and half angered by David's tenderness towards his wife. Vixen had known them over the years and had watched Alice grow from a vibrant, beautiful girl into a harsh, treacherous creature who could look upon murder.

Vixen tried to allow for the neglect that David had shown her, but then he thought of his own wife. She had been patient. No, Alice would have been discarded as a worthless human by all but David who still saw in her the dreams he had held long ago.

For good or for evil, the Synthesis had produced a mighty upheaval in those upon whom it was performed.

With difficulty, Vixen performed the work of driving the probes into the brain of Dodge with precision. He would have enjoyed much more smashing that shining pate with a hammer, he thought. And his life would be no more forfeit than for what he was already doing. For assault and kidnapping they were already dead men.

He sat down when his work was through and watched David switch on the simultaneous channels of the selector that fed pulses to the brains of Dodge and of Alice. The room was silent and there was nothing to be done during the long hours ahead.

He must have slept, dozing in the uncomfortable chair by the wall. He was roused at last by the excited babbling of voices and recognized the speech of the Synthesized in their wild new tongue.

They were around the two tables, and the helmets and probes had been removed from the two figures. Dodge had been turned over and was struggling to sit up, his face suffused with the red blush of rage. He looked like a pudgy Buddha squatting on the table in the shapeless gown that covered him. Vixen felt a chill of dread.

But a slow change spread over the face of Dodge. He reminded Vixen suddenly of a man blind for many years who was seeing again the dawn. His face lighted, and he looked around.

After a moment, his head bowed, and he wept quietly.

David was not watching. He was beside Alice. She had not yet seen him, and Vixen could glimpse only the side of her face, but ugly lines of strain and dark intent seemed to have vanished. A quality of rightful youth had taken possession of her.

She turned then, and caught sight of David. Her arms went out to him, and he crushed her close to him. Vixen could see the tears rising in her eyes and spinning down her cheeks and heard her murmuring over and over, "My darling -- "

Marianne sat beside Vixen, her face wistful but not bitter, and Vixen's eyes continued to shift from the face of Dodge to Alice and back.

"If _those_ two could be changed," he whispered half to himself, "the whole world could be made over."

"I'm next. You'll let me be next?" he demanded urgently. "And after me, the whole world!"

THE END

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