

Galaxy[®]

MAGAZINE
SCIENCE FICTION



DECEMBER 1968

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ALL STORIES NEW AND COMPLETE IN THIS ISSUE

**ONE STATION
OF THE WAY**

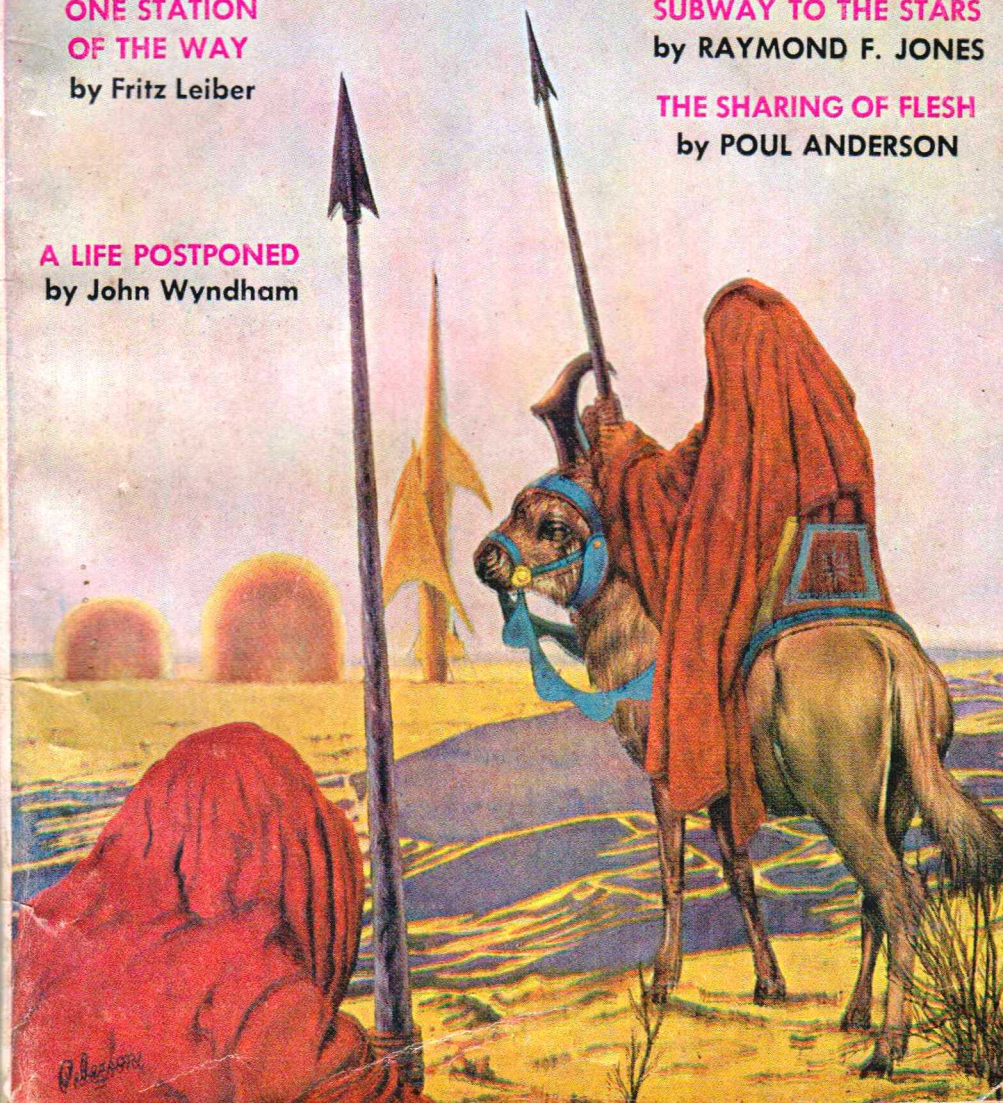
by Fritz Leiber

SUBWAY TO THE STARS
by RAYMOND F. JONES

THE SHARING OF FLESH
by POUL ANDERSON

A LIFE POSTPONED

by John Wyndham



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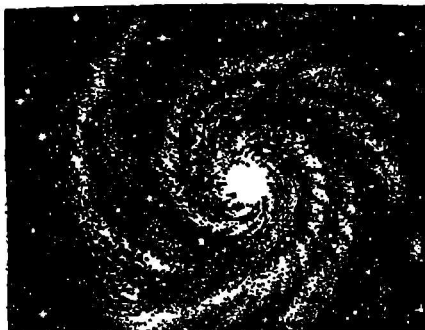
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Galaxy

MAGAZINE

ALL STORIES NEW

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THE GREAT INVENTIONS

As semi-professional crystal-ball gazers, we science-fiction types share a community of interest with budget-makers, city planners, airline traffic managers and all sorts of other people whose principal occupation is to make statements today about what is likely to happen tomorrow.

Everything considered, it's our opinion that the wide-ranging view of the average *Galaxy* writer is less likely to be appallingly wrong than even the best-based projection of the specialist, making predictions about his own field. We think there is a reason for this, and we think the reason is worth a little consideration.

Take one of the great new in-

ventions at random — say, the hologram.

There's no doubt that the hologram is a fascinating piece of technology. Three-dimensional virtual images, an eerie ability to look *behind* the objects in the forefront of what you find yourself thinking of as a photograph — no question about it, it's interesting, it's unprecedented, and sooner or later it's going to prove mighty useful.

But — useful at what, exactly?

There's really no way to tell. One thing we do know: *Any present study about the future of the hologram, considering nothing but the hologram, is certain to be simplistic, incomplete — and just plain wrong.*

The reason we say this is simple. The dialectic of society does not allow any development to occur in a vacuum. The things that transform the world are not single gadgets; they are gestalts. For instance, we talk about "the automobile revolution", and certainly the phenomenon we mean when we say that has radically altered all our lives. But what is "the automobile revolution"?

It isn't one invention; it's more like a dozen. At least. It is the product of Ford's assembly line, plus Goodyear's rubber, plus Otto's engine, plus Macadam's hardtop roads — plus such other inventions as the crucial one of installment buying.

Take away any one of these things, and you have no "automobile revolution". You have something quite different, and far less significant. Nobody invented the automobile. (Nobody invented the airplane or the ICBM or television or the computer, either.) What happened in the case of the automobile is that a lot of different people came up with a lot of different innovations, large and small, technological and social — and the result in 1968 is highway deaths, a mobile population, new kinds of status symbols and air pollution.

So to know what holograms will signify 50 years from now,

you must be able to make some sort of guess at any number of simultaneously occurring changes.

For example — care to predict the future of rocket transport?

Technologically, that job is easy. The materials exist right at hand. A Douglas scientist named Philip Bone already has on the drawing boards what he calls a Hyperion, a rocket which could carry a thousand people anywhere in the world in 45 minutes, independent of traffic patterns and even of landing fields.

But, although the technology is pretty straightforward, the question of whether such transports will ever fly depends on some rather remote-seeming other contingencies, including the prospects of putting domes over our cities and the likelihood of a general disarmament treaty.

Why these two? Simple. A: The noise level of rocket transports is even more horrendous than that of the SST, which is already intolerable. It is almost certainly out of the question for them to take off or land anywhere near a city (and there's not much point in landing them anywhere else), unless the people in the city can be insulated from the "sound pollution" — and about the only immediately visible practicable

way of doing that is through putting Buckminster Fuller's domes over the cities. And B: The big roadblock for rocket liners, as for that matter for SSTs, is finding a way to pay for the development costs. Basically these are now met out of defense funds, one way or another; but given disarmament, the defense money dries up . . . and either we find a new way of funding R&D or we don't have rocket liners.

The other thing wrong with straight-line predictions about the future of technological innovations is that all too often they miss the point of what the innovation is really going to be good for. Innovations aren't used in a vacuum, either.

Take computers. There is not a science-based shop in the country where you can't get an argument on *The Future of the Computer*, or *Whether Machines Can Really Think*.

Strikes us that this is a pitifully trivial argument. It's like looking at a newborn child, and wondering about the future of his left arm.

What is important about the future of a child is not what will happen to any of his members, but what will happen to the whole organism; and what is important about the future of com-

puters is what will happen to servo-systems, man-machine symbioses and still-ungessed social constructs in which computers play a part.

A man using a computer *can function as though he has* (which, functionally speaking, is the same as *has*) an I.Q. anywhere from 10 to 50 points higher than his unaided score. *That* is what is important about computers — not what the machine can do, but what the man-machine symbiosis can do. The implications go far beyond the present horizons of expediting scientific research or selling airline tickets; they include the excellent possibility that all of us can pick up those functional extra I.Q. points and use them in our daily lives.

And there is a revolution that makes the automobile look pretty trivial. If nothing else, think of the retarded 10% of the human race; and think of them equipped with, say, wristwatch-sized remote-access computer consoles. Now they can navigate city streets by themselves; now they can hold jobs; now they can rejoin the human race.

Somebody once said that a good science-fiction story should be able to predict not the automobile but the traffic jam. We agree. And so should good science.

— THE EDITOR

THE SHARING OF FLESH

by POUL ANDERSON

Illustrated by REESE

*The trouble with cultural imperatives
is that they must be served. Like the
practice of cannibalism — or revenge !*

I

Moru understood about guns. At least the tall strangers had demonstrated to their guides what the things that each of them carried at his hip could do in a flash and a flameburst. But he did not realize that the small

objects they often moved about in their hands, while talking in their own language, were audio-visual transmitters. Probably he thought they were fetishes.

Thus, when he killed Donli Sairn, he did so in full view of Donli's wife.

That was happenstance. Ex-

cept for prearranged times at morning and evening of the planet's twenty-eight-hour day, the biologist, like his fellows, sent only to his computer. But because they had not been married long and were helplessly happy, Evalyth received his 'casts whenever she could get away from her own duties.

The coincidence that she was tuned in at that one moment was not great. There was little for her to do. As militech of the expedition — she being from a half barbaric part of Kraken where the sexes had equal opportunities to learn arts of combat suitable to primitive environments — she had overseen the building of a compound; and she kept the routines of guarding it under a close eye. However, the inhabitants of Lokon were as cooperative with the visitors from heaven as mutual mysteriousness allowed. Every instinct and experience assured Evalyth Sairn that their reticence masked nothing except awe, with perhaps a wistful hope of friendship. Captain Jonafer agreed. Her position having thus become rather a sinecure, she was trying to learn enough about Donli's work to be a useful assistant after he returned from the lowlands.

Also, a medical test had lately confirmed that she was preg-

nant. She wouldn't tell him, she decided, not yet, over all those hundreds of kilometers, but rather when they lay again together. Meanwhile, the knowledge that they had begun a new life made him a lodestar to her.

On the afternoon of his death she entered the bio-lab whistling. Outside, sunlight struck fierce and brass-colored on dusty ground, on prefab shacks huddled about the boat which had brought everyone and everything down from the orbit where *New Dawn* circled, on the parked flitters and gravsleds that took men around the big island that was the only habitable land on this globe, on the men and the women themselves. Beyond the stockade, plummy treetops, a glimpse of mud-brick buildings, a murmur of voices and mutter of footfalls, a drift of bitter woodsmoke, showed that a town of several thousand people sprawled between here and Lake Zelo.

The bio-lab occupied more than half the structure where the Sairns lived. Comforts were few, when ships from a handful of cultures struggling back to civilization ranged across the ruins of empire. For Evalyth, though, it sufficed that this was their home. She was used to austerity anyway. One thing that had first attracted her to Donli,

meeting him on Kraken, was the cheerfulness with which he, a man from Athcia, which was supposed to have retained or regained almost as many amenities as Old Earth knew in its glory, had accepted life in her gaunt grim country.

The gravity field here was 0.77 standard, less than two-thirds of what she had grown in. Her gait was easy through the clutter of apparatus and specimens. She was a big young woman, good-looking in the body, a shade too strong in the features for most men's taste outside her own folk. She had their blondness and, on legs and forearms, their intricate tattoos; the blaster at her waist had come down through many generations. Otherwise she had abandoned Kraken costume for the plain coveralls of the expedition.

How cool and dim the shack was! She sighed with pleasure, sat down, and activated the receiver. As the image formed, three-dimensional in the air, and Donli's voice spoke, her heart sprang a little.

"— appears to be descended from a clover."

The image was of plants with green trilobate leaves, scattered low among the reddish native pseudo-grasses. It swelled as Donli brought the transmitter near so that the computer might

EB Ballantine Books

As we mentioned in the last ad it was meant to be a coupon thing but we got carried away. On reflection, s.f. readers being a rare breed, we know you will prefer not to cut up this Christmas issue (or any other issue, for that matter) so although this is a coupon ad, you won't find a coupon. But here is a list of a few of the BB books you should want to have, and would want to give: (starting with Tolkien, of course) —

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Rich, volcanic stuff — great for curling up around a fire with.

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Speaking of levels, here's one of those chilling "could be" stories — you can't tell whether it is really happening or not. But it's horribly convincing.

\$.80 A GIFT FROM EARTH

Larry Niven

Our favorite hard-core writer. You're probably familiar with Mount Lookitthat from some of Larry's short stories. Here's a novel (originally titled BLEEDING HEARTS, which we changed when someone accused us of having a new line of romances) all about the organ banks on Lookitthat. Larry of course was writing it long before the first heart transplant was done (the original title was really rather apt) so you can tell he's close to the bone.

Make your selection, (you can order other titles from our catalog too), write up your order, enclose with your address and money, and send to: **Dept. GCS,**

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(Those odd-looking prices include postage.)

That's it, for this year. Some goodies to come for 1969 include a new E. R. Eddison, MEZENTIAN GATE, Peter Beagle's LAST UNICORN, Lee Hoffman's CAVES OF KARST, and Dave Van Arnem, Anne McCaffrey, Miriam Allen deFord, Roy Meyers, Bob Silverberg, and on and on. More about your glorious future next month. **AND A MERRY YULE TO YOU ALL. BB**

record details for later analysis. Evalyth frowned, trying to recall what... Oh, yes. Clover was another of those life forms that man had brought with him from Old Earth, to more planets than anyone now remembered, before the Long Night fell. Often they were virtually unrecognizable; over thousands of years, evolution had fitted them to alien conditions, or mutation and genetic drift had acted on small initial populations in a nearly random fashion. No one on Kraken had known that pines and gulls and rhizobacteria were altered immigrants, until Donli's crew arrived and identified them. Not that he, or anybody from this part of the galaxy, had yet made it back to the mother world. But the Atheian data banks were packed with information, and so was Donli's dear curly head —

And there was his hand, huge in the field of view, gathering specimens. She wanted to kiss it. *Patience, patience*, the officer part of her reminded the bride. *We're here to work. We've discovered one more lost colony, the most wretched one so far, sunken back to utter primitivism. Our duty is to advise the Board whether a civilizing mission is worthwhile, or whether the slender resources that the Allied Planets can spare had better be used elsewhere, leaving these*

people in their misery for another two or three hundred years. To make an honest report, we must study them, their cultures, their world. That's why I'm in the barbarian highlands and he's down in the jungle among out-and-out savages.

Please finish soon, darling.

She heard Donli speak in the lowland dialect. It was a debased form of Lokonese, which in turn was remotely descended from Anglic. The expedition's linguists had unraveled the language in a few intensive weeks. Then all personnel took a brainfeed in it. Nonetheless, she admired how quickly her man had become fluent in the woodsrunters' version, after mere days of conversation with them.

"Are we not coming to the place, Moru? You said the thing was close by our camp."

"We are nearly arrived, man-from-the-clouds."

A tiny alarm struck within Evalyth. What was going on? Donli hadn't left his companions to strike off alone with a native, had he? Rogar of Lokon had warned them to beware of treachery in those parts. But, to be sure, only yesterday the guides had rescued Haimie Fiell when he tumbled into a swift-running river . . . at some risk to themselves. . . .

The view bobbed as the transmitter swung in Donli's grasp. It made Evalyth a bit dizzy. From time to time, she got glimpses of the broader setting. Forest crowded about a game trail, rust-colored leafage, brown trunks and branches, shadows beyond, the occasional harsh call of something unseen. She could practically feel the heat and dank weight of the atmosphere, smell the unpleasant pungencies. This world — which no longer had a name, except World, because the dwellers upon it had forgotten what the stars really were — was ill suited to colonization. The life it had spawned was often poisonous, always nutritionally deficient. With the help of species they had brought along, men survived marginally. The original settlers doubtless meant to improve matters. But then the breakdown came — evidence was that their single town had been missiled out of existence, a majority of the people with it — and resources were lacking to rebuild; the miracle was that anything human remained except bones.

"Now here, man-from-the-clouds."

The swaying scene grew steady. Silence hummed from jungle to cabin. "I do not see anything," Donli said at length.

"Follow me. I show."



Donli put his transmitter in the fork of a tree. It scanned him and Moru while they moved across a meadow. The guide looked childish beside the space traveler, barely up to his shoulder; an old child, though, near-naked body seamed with scars and lame in the right foot from some injury of the past, face wizened in a great black bush of hair and beard. He, who could not hunt but could only fish and trap to support his family, was even more impoverished than his fellows. He must have been happy indeed when the flitter landed near their village and the strangers offered fabulous trade goods for a week or two of being shown around the countryside. Donli had projected the image of Moru's straw hut for Evalyth — the pitiful few possessions, the woman already worn out with toil, the surviving sons who, at ages said to be about seven or eight, which would equal twelve or thirteen standard years, were shriveled gnomes.



Rogar seemed to declare — the Lokonese tongue was by no means perfectly understood yet — that the lowlanders would be less poor if they weren't such a vicious lot, tribe forever at war with tribe. *But really,* Evalyth thought, *what possible menace can they be?*

Moru's gear consisted of a loinstrap, a cord around his body for preparing snares, an obsidian knife, and a knapsack so woven and greased that it could hold liquids at need. The other men of his group, being able to pursue game and to win a share of booty by taking part in battles, were noticeably better off. They didn't look much different in person, however. Without room for expansion, the island populace must be highly inbred.

The dwarfish man squatted, parting a shrub with his hands. "Here," he grunted, and stood up again.

Evalyth knew well the eagerness that kindled in Donli. Nevertheless he turned around, smiled straight into the transmitter, and said in Atheian: "Maybe you're watching, dearest. If so, I'd like to share this with you. It may be a bird's nest."

She remembered vaguely that the existence of birds would be an ecologically significant datum. What mattered was what he had just said to her. "Oh, yes, oh, yes!" she wanted to cry. But his group had only two receivers with them, and he wasn't carrying either.

She saw him kneel in the long, ill-colored vegetation. She saw him reach with the gentleness she also knew, into the shrub, easing its branches aside.

She saw Moru leap upon his back. The savage wrapped legs about Donli's middle. His left hand seized Donli's hair and pulled the head back. The knife flew back in his right.

Blood spurted from beneath Donli's jaw. He couldn't shout, not with his throat gaping open; he could only bubble and croak while Moru haggled the wound wider. He reached blindly for his gun. Moru dropped the knife and caught his arms; they rolled over in that embrace, Donli threshed and flopped in the spouting of his own blood. Moru hung on. The brush trembled around them and hid them, until Moru rose red and dripping, painted, panting, and Evalyth screamed into the transmitter beside her, into the universe, and she kept on screaming and fought them when they tried to take her away from the scene in the meadow where Moru went about his butcher's work, until something stung her with coolness and she toppled into the bottom of the universe whose stars had all gone out forever.

II

Haimie Fiell said through white lips: "No, of course we didn't know till you alerted us. He and that — creature — were several kilometers from our

camp. *Why didn't you let us go after him right away?"*

"Because of what we'd seen on the transmission," Captain Jonafer replied. "Sairn was irretrievably dead. You could've been ambushed, arrows in the back or something, pushing down those narrow trails. Best stay where you were, guarding each other, till we got a vehicle to you."

Fiell looked past the big gray-haired man, out the door of the command hut, to the stockade and the unpyting noon sky. "But what that little monster was doing meanwhile — " Abruptly he closed his mouth.

With equal haste, Jonafer said: "The other guides ran away, you have told me, as soon as they sensed you were angry. I've just had a report from Kallaman. His team flitted to the village. It's deserted. The whole tribe's pulled up stakes. Afraid of our revenge, evidently. Though it's no large chore to move, when you can carry your household goods on your back and weave a new house in a day."

Evalyth leaned forward. "Stop evading me," she said. "What did Moru do with Donli that you might have prevented if you'd arrived in time?"

Fiell continued to look past her. Sweat gleamed in droplets on his forehead. "Nothing, real-

ly," he mumbled. "Nothing that mattered . . . once the murder itself had been committed."

"I meant to ask you what kind of services you want for him, Lieutenant Sairn," Jonafer said to her "Should the ashes be buried here, or scattered in space after we leave, or brought home?"

Evalyth turned her gaze full upon him. "I never authorized that he be cremated, Captain," she said slowly.

"No, but — Well, be realistic. You were first under anesthesia, then heavy sedation, while we recovered the body. Time had passed. We've no facilities for, um, cosmetic repair, nor any extra refrigeration space, and in this heat — "

Since she had been let out of sickbay, there had been a kind of numbness in Evalyth. She could not entirely comprehend the fact that Donli was gone. It seemed as if at any instant yonder doorway would fill with him, sunlight across his shoulders, and he would call to her, laughing, and console her for a meaningless nightmare she had had. That was the effect of the psycho-drugs, she knew and damned the kindness of the medic.

She felt almost glad to feel a slow rising anger. It meant the drugs were wearing off. By evening she would be able to weep.

"Captain," she said, "I saw him

killed. I've seen deaths before, some of them quite messy. We do not mask the truth on Kraken. You've cheated me of my right to lay my man out and close his eyes. You will not cheat me of my right to obtain justice. I demand to know exactly what happened."

Jonafer's fists knotted on his desktop. "I can hardly stand to tell you."

"But you shall, Captain."

"All right! All right!" Jonafer shouted. The words leaped out like bullets. "We saw the thing transmitted. He stripped Donli, hung him up by the heels from a tree, bled him into that knapsack. He cut off the genitals and threw them in with the blood. He opened the body and took heart, lungs, liver, kidneys, thyroid prostate, pancreas, and loaded them up too, and ran off into the woods. Do you wonder why we didn't let you see what was left?"

"The Lokonese warned us against the jungle dwellers," Fiell said dully. "We should have listened. But they seemed like pathetic dwarfs. And they did rescue me from the river. When Donli asked about the birds — described them, you know, and asked if anything like that was known — Moru said yes, but they were rare and shy; our gang would scare them off; but if one

man would come along with him, he could find a nest and they might see the bird. A house he called it, but Donli thought he meant a nest. Or so he told us. It'd been a talk with Moru when they happened to be a ways off-side, in sight but out of earshot. Maybe that should have alerted us, maybe we should have asked the other tribesmen. But we did not see any reason to — I mean, Donli was bigger, stronger, armed with a blaster. What savage would dare attack him? And anyway, they *had* been friendly, downright frolicsome after they got over their initial fear of us, and they'd shown as much eagerness for further contact as anybody here in Lokon has, and—" His voice trailed off.

"Did he steal tools or weapons?" Evalyth asked.

"No," Jonafer said. "I have everything your husband was carrying, ready to give you."

Fiell said: "I don't think it was an act of hatred. Moru must have had some superstitious reason."

Jonafer nodded. "We can't judge him by our standards."

"By whose, then?" Evalyth retorted. Supertranquilizer or no, she was surprised at the evenness of her own tone. "I'm from Kraken, remember. I'll not let Donli's child be born and grow up knowing he was murdered and no one

tried to do justice for him."

"You can't take revenge on an entire tribe," Jonafer said.

"I don't mean to. But, Captain, the personnel of this expedition are from several different planets, each with its characteristic societies. The articles specifically state that the essential mores of every member shall be respected. I want to be relieved of my regular duties until I have arrested the killer of my husband and done justice upon him."

Jonafer bent his head. "I have to grant that," he said low.

Evalyth rose. "Thank you, gentlemen," she said. "If you will excuse me, I'll commence my investigation at once."

— While she was still a machine, before the drugs wore off.

II

In the drier, cooler uplands, agriculture had remained possible after the colony otherwise lost civilization. Fields and orchards, painstakingly cultivated with neolithic tools, supported a scattering of villages and the capital town Lokon.

Its people bore a family resemblance to the forest dwellers. Few settlers indeed could have survived to become the ancestors of this world's humanity. But the highlanders were better nourished, bigger, straighter.

They wore gaily dyed tunics and sandals. The well-to-do added jewelry of gold and silver. Hair was braided, chins kept shaven. Folk walked boldly, without the savages' constant fear of ambush, and talked merrily.

To be sure, this was only strictly true of the free. While *New Dawn's* anthropologists had scarcely begun to unravel the ins and outs of the culture, it had been obvious from the first that Lokon kept a large slave class. Some were sleek household servants. More toiled meek and naked in the fields, the quarries, the mines, under the lash of overseers and the guard of soldiers whose spearheads and swords were of ancient Imperial metal. But none of the space travelers was unduly shocked. They had seen worse elsewhere. Historical data banks described places in olden time called Athens, India, America.

Evalyth strode down twisted, dusty streets, between the gaudily painted walls of cubical, windowless adobe houses. Commoners going about their tasks made respectful salutes. Although no one feared any longer that the strangers meant harm, she did tower above the tallest man, her hair was colored like metal and her eyes like the sky, she bore lightning at her waist and none knew what other godlike powers.

Today soldiers and noblemen also genuflected, while slaves went on their faces. Where she appeared, the chatter and clatter of everyday life vanished; the business of the market plaza halted; when she passed the booths; children ceased their games and fled; she moved in silence akin to the silence in her soul. Under the sun and the snowcone of Mount Burus, horror brooded. For by now Lokon knew that a man from the stars had been slain by a lowland brute; and what would come of that?

Word must have gone ahead to Rogar, though, since he awaited her in his house by Lake Zelo next to the Sacred Place. He was not king or council president or high priest, but he was something of all three, and it was he who dealt most with the strangers.

His dwelling was the usual kind, larger than average but dwarfed by the adjacent walls. Those enclosed a huge compound, filled with buildings, where none of the outworlders had been admitted. Guards in scarlet robes and grotesquely carved wooden helmets stood always at its gates. Today their number was doubled, and others flanked Rogar's door. The lake shone like polished steel at their backs. The trees

along the shore looked equally rigid.

Rogar's major-domo, a fat elderly slave, prostrated himself in the entrance as Evalyth neared. "If the heaven-borne will deign to follow this unworthy one, *Klev* Rogar is within —" The guards dipped their spears to her. Their eyes were wide and frightened.

Like the other houses, this turned inward. Rogar sat on a dais in a room opening on a courtyard. It seemed doubly cool and dim by contrast with the glare outside. She could scarcely discern the frescos on the walls or the patterns on the carpet; they were crude art anyway. Her attention focused on Rogar. He did not rise, that not being a sign of respect here. Instead, he bowed his grizzled head above folded hands. The major-domo offered her a bench, and Rogar's chief wife set a bombilla of herb tea by her before vanishing.

"Be greeted, *Klev*," Evalyth said formally.

"Be greeted, heaven-borne." Alone now, shadowed from the cruel sun, they observed a ritual period of silence.

Then: "This is terrible what has happened, heaven-borne," Rogar said. "Perhaps you do not know that my white robe and bare feet signify mourning as for one of my own blood."

"That is well done," Evalyth said. "We shall remember."

The man's dignity faltered. "You understand that none of us had anything to do with the evil, do you not? The savages are our enemies too. They are vermin. Our ancestors caught some and made them slaves, but they are good for nothing else. I warned your friends not to go down among those we have not tamed."

"Their wish was to do so," Evalyth replied. "Now my wish is to get revenge for my man." She didn't know if this language included a word for justice. No matter. Because of the drugs, which heightened the logical faculties while they muffled the

emotions, she was speaking Lokonese quite well enough for her purposes.

"We can get soldiers and help you kill as many as you choose," Rogar offered.

"Not needful. With this weapon at my side I alone can destroy more than your army might. I want your counsel and help in a different matter. How can I find him who slew my man?"

Rogar frowned. "The savages can vanish into trackless jungles, heaven-borne."

"Can they vanish from other savages, though?"

"Ah! Shrewdly thought, heaven-borne. Those tribes are end-



lessly at each other's throats. If we can make contact with one, its hunters will soon learn for you where the killer's people have taken themselves." His scowl deepened. "But he must have gone from them, to hide until you have departed our land. A single man might be impossible to find. Lowlanders are good at hiding, of necessity."

"What do you mean by necessity?"

Rogar showed surprise at her failure to grasp what was obvious to him. "Why, consider a man out hunting," he said. "He cannot go with companions after every kind of game or the noise and scent would frighten it away. So he is often alone in the jungle. Someone from another tribe may well set upon him. A man stalked and killed is just as useful as one slain in open war."

"Why this incessant fighting?"

Rogar's look of bafflement grew stronger. "How else shall they get human flesh?"

"But they do not live on that!"

"No, surely not, except as needed. But that need comes many times as you know. Their wars are their chief way of taking men; booty is good too, but not the main reason to fight. He who slays, owns the corpse, and naturally divides it solely among his close kin. Not everyone is lucky in battle. Therefore these who did

not chance to kill in a war may well go hunting on their own, two or three of them together hoping to find a single man from a different tribe. And that is why a lowlander is good at hiding."

Evalyth did not move or speak. Rogar drew a long breath and continued trying to explain: "Heaven-borne, when I heard the evil news, I spoke long with men from your company. They told me what they had seen from afar by the wonderful means you command. Thus it is clear to me what happened. This guide — what is his name? Yes, Moru — he is a cripple. He had no hope of killing himself a man except by treachery. When he saw that chance, he took it."

He ventured a smile. "That would never happen in the highlands," he declared. "We do not fight wars, save when we are attacked, nor do we hunt our fellowmen as if they were animals. Like yours, ours is a civilized race." His lips drew back from startlingly white teeth. "But, heaven-borne, your man was slain. I propose we take vengeance, not simply on the killer if we catch him, but on his tribe, which we can certainly find as you suggested. That will teach all the savages to beware of their betters. Afterward we can share the flesh, half to your people, half to mine."

Evalyth could only know an intellectual astonishment. Yet she had the feeling somehow of having walked off a cliff. She stared through the shadows, into the grave old face, and after a long time she heard herself whisper: "You . . . also . . . here . . . eat men?"

"Slaves," Rogar said. "No more than required. One of them will do for four boys."

Her hand dropped to her gun. Rogar sprang up in alarm. "Heaven-borne," he exclaimed, "I told you we are civilized. Never fear attack from any of us! We—we —"

She rose too, high above him. Did he read judgment in her gaze? Was the terror that snatch him on behalf of his whole people? He cowered from her, sweating and shuddering. "Heaven-borne, believe me, you have no quarrel with Lokon — no, now, let me show you, let me take you into the Sacred Place, even if you are no initiate . . . for surely you are akin to the gods, surely the gods will not be offended — Come, let me show you how it is, let me prove we have no will and no need to be your enemies —"

There was the gate that Rogar opened for her in that massive wall. There were the shocked countenances of the guards and loud promises of many sacrifices to appease the Powers. There

was the stone pavement beyond, hot and hollowly resounding underfoot. There were the idols grinning around a central temple. There was the house of the acolytes who did the work and who shrank in fear when they saw their master conduct a foreigner in. There were the slave barracks.

"See, heaven-borne, they are well treated, are they not? We do have to crush their hands and feet when we choose them as children for this service. Think how dangerous it would be otherwise, hundreds of boys and young men in here. But we treat them kindly unless they misbehave. Are they not fat? Their own Holy Food is especially honorable, bodies of men of all degree who have died in their full strength. We teach them that they will live on in those for whom they are slain. Most are content with that, believe me, heaven-borne. Ask them yourself . . . though remember, they grow dull-witted, with nothing to do year after year. We slay them quickly, cleanly, at the beginning of each summer — no more than we must for that year's crop of boys entering into manhood, one slave for four boys, no more than that. And it is a most beautiful rite, with days of feasting and merry-making afterward. Do you understand now, heaven-borne? You have nothing to fear from us. We

are not savages, warring and raiding and skulking to get our man-flesh. We are civilized — not godlike in your fashion, no, I dare not claim that, do not be angry — but civilized — surely worthy of your friendship, are we not? Are we not, heaven-borne?"

IV

Chena Darnard, who headed the cultural anthropology team, told her computer to scan its data bank. Like the others, it was a portable, its memory housed in *New Dawn*. At the moment the spaceship was above the opposite hemisphere, and perceptible time passed while beams went back and forth along the strung-out relay units.

Chena leaned back and studied Evalyth across her desk. The Krakener girl sat so quietly. It seemed unnatural, despite the drugs in her bloodstream retaining some power. To be sure, Evalyth was of aristocratic descent in a warlike society. Furthermore, hereditary psychological as well as physiological differences might exist on the different worlds. Not much was known about that, apart from extreme cases like Gwydion—or this planet? Regardless, Chena thought, it would be better if Evalyth gave way to simple shock and grief.

"Are you quite certain of your facts, dear?" the anthropologist asked as gently as possible. "I mean, while this island alone is habitable, it's large, the topography is rugged, communications are primitive, my group has already identified scores of distinct cultures."

"I questioned Rogar for more than an hour," Evalyth replied in the same flat voice, looking out of the same flat eyes as before. "I know interrogation techniques, and he was badly rattled. He talked."

"The Lokonese themselves are not as backward as their technology. They've lived for centuries with savages threatening their borderlands. It's made them develop a good intelligence network. Rogar described its functioning to me in detail. It can't help but keep them reasonably well informed about everything that goes on. And, while tribal customs do vary tremendously, the cannibalism is universal. That is why none of the Lokonese thought to mention it to us. They took for granted that we had our own ways of providing human meat."

"People have, m-m-m, latitude in those methods?"

"Oh, yes. Here they breed slaves for the purpose. But most lowlanders have too skimpy an economy for that. Some of them

use war and murder. Among others, they settle it within the tribe by annual combats. Or — Who cares? The fact is that, everywhere in this country, in whatever fashion it may be, the boys undergo a puberty rite that involves eating an adult male."

Chena bit her lip. "What in the name of chaos might have started it? Computer! Have you scanned?"

"Yes," said the machine voice out of the case on her desk. "Data on cannibalism in man are comparatively sparse, because it is a rarity. On all planets hitherto known to us it is banned and has been throughout their history, although it is sometimes considered forgivable as an emergency measure when no alternative means of preserving life is available. Very limited forms of what might be called ceremonial cannibalism have occurred, as for example the drinking of minute amounts of each other's blood in pledging oath brotherhood among the Falkens of Lochlanna —"

"Never mind that," Chena said. A tautness in her throat thickened her tone. "Only here, it seems, have they degenerated so far that — Or is it degeneracy? Reversion, perhaps? What about Old Earth?"

"Information is fragmentary.

Aside from what was lost during the Long Night, knowledge is under the handicap that the last primitive societies there vanished before interstellar travel began. But certain data collected by ancient historians and scientists remain.

"Cannibalism was an occasional part of human sacrifice. As a rule, victims were left uneaten. But in a minority of religions, the bodies, or selected portions of them, were consumed, either by a special class, or by the community as a whole. Generally this was regarded as theophagy. Thus, the Aztecs of Mexico offered thousands of individuals annually to their gods. The requirement of doing this forced them to provoke wars and rebellions, which in turn made it easy for the eventual European conqueror to get native allies. The majority of prisoners were simply slaughtered, their hearts given directly to the idols. But in at least one cult the body was divided among the worshippers.

"Cannibalism could be a form of magic, too. By eating a person, one supposedly acquired his virtues. This was the principal motive of the cannibals of Africa and Polynesia. Contemporary observers did report that the meals were relished, but that is easy to understand, especially in protein-poor areas.

"The sole recorded instance of systematic non-ceremonial cannibalism was among the Carib Indians of America. They ate man because they preferred man. They were especially fond of babies and used to capture women from their tribes for breeding stock. Male children of these slaves were generally gelded to make them docile and tender. In large part because of strong aversion to such practices, the Europeans exterminated the Caribs to the last man."

The report stopped. Chena grimaced. "I can sympathize with the Europeans," she said.

Evalyth might once have raised her brows; but her face stayed as wooden as her speech. "Aren't you supposed to be an objective scientist?"

"Yes. Yes. Still, there is such a thing as value judgment. And they did kill Donli."

"Not they. One of them. I shall find him."

"He's nothing but a creature of his culture, dear, sick with his whole race." Chena drew a breath, struggling for calm. "Obviously, the sickness has become a behavioral basic," she said. "I daresay it originated in Lokon. Cultural radiation is practically always from the more to the less advanced peoples. And on a single island, after centuries, no tribe

has escaped the infection. The Lokonese later elaborated and rationalized the practice. The savages left its cruelty naked. But highlander or lowlander, their way of life is founded on that particular human sacrifice."

"Can they be taught differently?" Evalyth asked without real interest.

"Yes. In time. In theory. But — well, I do know enough about what happened on Old Earth, and elsewhere, when advanced societies undertook to reform primitive ones. The entire structure was destroyed. It had to be.

"Think of the result, if we told these people to desist from their puberty rite. They wouldn't listen. They couldn't. They *must* have grandchildren. They *know* a boy won't become a man unless he has eaten part of a man. We'd have to conquer them, kill most, make sullen prisoners of the rest. And when the next crop of boys did in fact mature without the magic food . . . what then? Can you imagine the demoralization, the sense of utter inferiority, the loss of that tradition which is the core of every personal identity? It might be kinder to bomb this island sterile."

Chena shook her head. "No," she said harshly, "the single decent way for us to proceed would be gradually. We could send missionaries. By their precept and ex-

ample, we could start the natives phasing out their custom after two or three generations . . . And we can't afford such an effort. Not for a long time to come. Not with so many other worlds in the galaxy, so much worthier of what little help we can give. I am going to recommend this planet be left alone."

Evalyth considered her for a moment before asking: "Isn't that partly because of your own reaction?"

"Yes," Chena admitted. "I cannot overcome my disgust. And I, as you pointed out, am supposed to be professionally broad-minded. So even if the Board tried to recruit missionaries, I doubt if they'd succeed." She hesitated. "You yourself, Evalyth —"

The Krakener rose. "My emotions don't matter," she said. "My duty does. Thank you for your help." She turned on her heel and went with military strides out of the cabin.

V

The chemical barriers were crumbling. Evalyth stood for a moment before the little building that had been hers and Donli's, afraid to enter. The sun was low, so that the compound was filling with shadows. A thing leathery-winged and serpentine cruised silently overhead. From

outside the stockade drifted sounds of feet, foreign voices, the whine of a wooden flute. The air was cooling. She shivered. Their home would be too hollow.

Someone approached. She recognized the person glimpsewise, Alsabeta Mondain from Nueva-america. Listening to her well-meant foolish condolences would be worse than going inside. Evalyth took the last three steps and slid the door shut behind her.

Donli will not be here again. Eternally.

But the cabin proved not to be empty to him. Rather, it was too full. That chair where he used to sit, reading that worn volume of poetry which she could not understand and teased him about, that table across which he had toasted her and tossed kisses, that closet where his clothes hung, that scuffed pair of slippers, that bed — it screamed of him. Evalyth went fast into the laboratory section and drew the curtain that separated it from the living quarters. Rings rattled along the rod. The noise was monstrous in twilight.

She closed her eyes and fists and stood breathing hard. *I will not go soft*, she declared. *You always said you loved me for my strength—among numerous other desirable features, you'd add with your slow grin, but I remember that yet — and I don't aim to*

let slip anything that you loved.

I've got to get busy, she told Donli's child. The expedition command is pretty sure to act on Chena's urging and haul mass for home. We've not many days to avenge your father.

Her eyes snapped open. *What am I doing, she thought, bewildered, talking to a dead man and an embryo?*

She turned on the overflow fluoro and went to the computer. It was made no differently from the other portables. Donli had used it. But she could look away from the unique scratches and bumps on that square case, as she could not escape his microscope, chemanalyzers, chromosome tracer, biological specimens . . . She seated herself. A drink would have been very welcome, except that she needed clarity. "Activate!" she ordered.

The On light glowed yellow. Evalyth tugged her chin, searching for words. "The objective," she said at length, "is to trace a lowlander who has consumed several kilos of flesh and blood from one of this party, and afterward vanished into the jungle. The killing took place about sixty hours ago. How can he be found?"

The least hum answered her. She imagined the links; to the maser in the ferry, up past the

sky to the nearest orbiting relay unit, to the next, to the next, around the bloated belly of the planet, by ogre sun and inhuman stars, until the pulses reached the mother ship; then down to an unliving brain that routed the question to the appropriate data bank; then to the scanners, whose resonating energies flew from molecule to distorted molecule, identifying more bits of information than it made sense to number, data garnered from hundreds or thousands of entire worlds, data preserved through the wreck of Empire and the dark ages that followed, data going back to an Old Earth that perhaps no longer existed. She shied from the thought and wished herself back on dear stern Kraken. *We will go there, she promised Donli's child. You will dwell apart from these too many machines and grow up as the gods meant you should.*

"Query," said the artificial voice. "Of what origin was the victim of this assault?"

Evalyth must wet her lips before she could reply: "Atheian. He was Donli Sairn, your master."

"In the event, the possibility of tracking the desired local inhabitant may exist. The odds will now be computed. In the interim, do you wish to know the basis of the possibility?"

"Y-yes."

“Native Atheian biochemistry developed in a manner quite parallel to Earth’s,” said the voice, “and the early colonists had no difficulty in introducing terrestrial species. Thus they enjoyed a friendly environment, where population soon grew sufficiently large to obviate the danger of racial change through mutation and/or genetic drift. In addition, no selection pressure tended to force change. Hence the modern Atheian human is little different from his ancestors of Earth, on which account his physiology and biochemistry are known in detail.

“This has been essentially the case on most colonized planets for which records are available. Where different breeds of men have arisen, it has generally been because the original settlers were highly selected groups. Randomness, and evolutionary adaptation to new conditions, have seldom produced radical changes in biotype. For example, the robustness of the average Krakener is a response to comparatively high gravity; his size aids him in resisting cold, his fair complexion is helpful beneath a sun poor in ultraviolet. But his ancestors were people who already had the natural endowments for such a world. His deviations from their norm are not extreme. They do not preclude his living on more

Earth-like planets or interbreeding with the inhabitants of these.

“Occasionally, however, larger variations have occurred. They appear to be due to a small original population or to unterrestrial conditions or both. The population may have been small because the planet could not support more, or have become small as the result of hostile action when the Empire fell. In the former case, genetic accidents had a chance to be significant; in the latter, radiation produced a high rate of mutant births among survivors. The variations are less apt to be in gross anatomy than in subtle endocrine and enzymatic qualities, which affect the physiology and psychology. Well known cases include the reaction of the Gwydiona to nicotine and certain indoles, and the requirement of the Ifrians for trace amounts of lead. Sometimes the inhabitants of two planets are actually intersterile because of their differences.

“While this world has hitherto received the sketchiest of examinations — ” Evalyth was yanked out of a reverie into which the lecture had led her. “ — certain facts are clear. Few terrestrial species have flourished; no doubt others were introduced originally, but died off after the technology to maintain them was lost. Man has thus been forced

to depend on autochthonous life for the major part of his food. This life is deficient in various elements of human nutrition. For example, the only Vitamin C appears to be in immigrant plants; Sairn observed that the people consume large amounts of grass and leaves from those species, and that fluoroscopic pictures indicate this practice has measurably modified the digestive tract. No one would supply skin, blood, sputum, or similar samples, not even from corpses." *Afraid of magic*, Evalyth thought drearily, *yes, they're back to that too.* "But intensive analysis of the usual meat animals shows these to be under-supplied with three essential amino acids, and human adaptation to this must have involved considerable change on the cellular and sub-cellular levels. The probable type and extent of such change are computable."

"The calculations are now complete." As the computer resumed, Evalyth gripped the arms of her chair and could not breathe. "While the answer is subject to fair probability of success. In effect, Atheian flesh is alien here. It can be metabolized, but the body of the local consumer will excrete certain compounds, and these will import a characteristic odor to skin and breath as well as to urine and feces. The

chance is good that it will be detectable by neo-Freeholder technique at distances of several kilometers, after sixty or seventy hours. But since the molecules in question are steadily being degraded and dissipated, speed of action is recommended."

I am going to find Donli's murderer. Darkness roared around Evalyth.

"Shall the organisms be ordered for you and given the appropriate search program?" asked the voice. "They can be on hand in an estimated three hours."

"Yes," she stammered. "Oh, please — Have you any other . . . other . . . advice?"

"The man ought not to be killed out of hand, but brought here for examination, if for no other reason, than in order that the scientific ends of the expedition may be served."

That's a machine talking, Evalyth cried. *It's designed to help research. Nothing more. But it was his.* And its answer was so altogether Donli that she could no longer hold back her tears.

VI

The single big moon rose nearly full, shortly after sundown. It drowned most stars; the jungle beneath was cobbled with silver and dappled with black; the snowcone of Mount Burus float-

ed unreal at the unseen edge of the world. Wind slid around Evalyth where she crouched on her gravsled; it was full of wet acrid odors, and felt cold though it was not, and chuckled at her back. Somewhere something screeched, every few minutes, and something else cawed reply.

She scowled at her position indicators, aglow on the control panel. Curses and chaos, Moru had to be in this area! He could not have escaped from the valley on foot in the time available, and her search pattern had practically covered it. If she ran out of bugs before she found him, must she assume he was dead? They ought to be able to find his body

regardless, ought they not? Unless it was buried deep. Here. She brought the sled to hover, took the next phial off the rack, and stood up to open it.

The bugs came out many and tiny, like smoke in the moonlight. Another failure?

No! Wait! Were not those motes dancing back together, into a streak barely visible under the moon, and vanishing downward? Heart thudding, she turned to the indicator. Its neurodetector antenna was not aimlessly wobbling, but pointed straight west-northwest, declination thirty-two degrees below horizontal. Only a concentration of the bugs could make it behave



like that. And only the particular mixture of molecules to which the bugs had been presensitized, in several parts per million or better, would make them converge on the source.

"Ya-a-ah!" She couldn't help the one hawk-yell. But thereafter she bit her lips shut — blood trickled unnoticed down her chin — and drove the sled in silence.

The distance was a mere few kilometers. She came to a halt above an opening in the forest. Pools of scummy water gleamed in its rank growth. The trees made a solid-seeming wall around. Evalyth clapped her night goggles down off her helmet and over her eyes. A lean-to became visible. It was hastily woven from vines and withes, huddled against a pair of the largest trees to let their branches hide it from the sky. The bugs were entering.

Evalyth lowered her sled to a meter off the ground and got to her feet again. A stun pistol slid from its sheath into her right hand. Her left rested on the blaster.

Moru's two sons groped from the shelter. The bugs whirled around them, a mist that blurred their outlines. *Of course*, Evalyth realized, nonetheless shocked into a higher hatred. *I should have known they did the actual*

devouring. More than ever did they resemble gnomes — skinny limbs, big heads, the pot bellies of undernourishment. Krakener boys of their age would have twice their bulk and be noticeably on the way to becoming men. These nude bodies belonged to children, except that they had the grotesqueness of eld.

The parents followed them, ignored by the entranced bugs. The mother wailed. Evalyth identified a few words. "What is the matter, what are those things — oh, help — " But her gaze was locked upon Moru.

Limping out of the hutch, stooped to clear its entrance, he made her think of some huge beetle crawling from an offal heap. But she would know that bushy head though her brain were coming apart. He carried a stone blade, surely the one that had hacked up Donli. *I will take it away from him, and the hand with it*, Evalyth wept. *I will keep him alive while I dismantle him with these my own hands, and in between times he can watch me flay his repulsive spawn.*

The wife's scream broke through. She had seen the metal thing, and the giant that stood on its platform, with skull and eyes shimmering beneath the moon.

"I have come for you who killed my man," Evalyth said.

The mother screamed anew and cast herself before the boys. The father tried to run around in front of her, but his lame foot twisted under him, and he fell into a pool. As he struggled out of its muck, Evalyth shot the woman. No sound was heard; she folded and lay moveless. "Run!" Moru shouted. He tried to charge the sled. Evalyth twisted a control stick. Her vehicle whipped in a circle, heading off the boys. She shot them from above, where Moru couldn't quite reach her.

He knelt beside the nearest, took the body in his arms and looked upward. The moonlight poured relentlessly across him. "What can you now do to me?" he called.

She stunned him too, landed, got off and quickly hogtied the four of them. Loading them aboard, she found them lighter than she had expected.

Sweat had sprung forth upon her, until her coverall stuck dripping to her skin. She began to shake, as if with fever. Her ears buzzed. "I would have destroyed you," she said. Her voice sounded remote and unfamiliar. A still more distant part wondered why she bothered speaking to the unconscious, in her own tongue at that. "I wish you hadn't acted the way you did. That made me remember what the computer

said, about Donli's friends needing you for study.

"You're too good a chance, I suppose. After your doings, we have the right under Allied rules to make prisoners of you, and none of his friends are likely to get maudlin about your feelings.

"Oh, they won't be inhuman. A few cell samples, a lot of tests, anesthesia where necessary, nothing harmful, nothing but a clinical examination as thorough as facilities allow.

"No doubt you'll be bettered than at any time before, and no doubt the medics will find some pathologies they can cure for you. In the end, Moru, they'll release your wife and children."

She stared into his horrible face.

"I am pleased, she said, "that to you, who won't comprehend what is going on, it will be a bad experience. And when they are finished, Moru, I will insist on having you at least, back. They can't deny me that. Why, your tribe itself has, in effect, cast you out. Right? My colleagues won't let me do more than kill you, I'm afraid, but on this I will insist."

She gunned the engine and started toward Lokon, as fast as possible, to arrive while she felt able to be satisfied with that much.

And the days without him and the days without him.

The nights were welcome. If she had not worked herself quite to exhaustion, she could take a pill. He rarely returned in her dreams. But she had to get through each day and would not drown him in drugs.

Luckily, there was a good deal of work involved in preparing to depart, when the expedition was short-handed and on short notice. Gear must be dismantled, packed, ferried to the ship, and stowed. *New Dawn* herself must be readied, numerous systems re-commissioned and tested. Her militechnic training qualified Evalyth to double as mechanic, boat jockey, or loading gang boss. In addition, she kept up the routines of defense in the compound.

Captain Jonafer objected mildly to this. "Why bother, Lieutenant? The locals are scared blue of us. They've heard what you did — and this coming and going through the sky, robots and heavy machinery in action, flood-lights after dark — I'm having trouble persuading them not to abandon their town!"

"Let them," she snapped. "Who cares?"

"We did not come here to ruin them, Lieutenant."

"No. In my judgment, though, Captain, they'll be glad to ruin us if we present the least opportunity. Imagine what special virtues your body must have."

Jonafer sighed and gave in. But when she refused to receive Rogar the next time she was planetside, he ordered her to do so and to be civil.

The *Klev* entered the biolab section — she would not have him in her living quarters — with a gift held in both hands, a sword of Imperial metal. She shrugged; no doubt a museum would be pleased to get the thing. "Lay it on the floor," she told him.

Because she occupied the single chair, he stood. He looked little and old in his robe. "I came," he whispered, "to say how we of Lokon rejoice that the heaven-borne has won her revenge."

"Is winning it," she corrected.

He could not meet her eyes. She stared moodily at his faded hair. "Since the heaven-borne could . . . easily . . . find those she wished . . . she knows the truth in the hearts of us of Lokon, that we never intended harm to her folk."

That didn't seem to call for an answer.

His fingers twisted together. Then why do you forsake us?" he went on. "When first you

came, when we had come to know you and you spoke our speech, you said you would stay for many moons, and after you would come others to teach and trade. Our hearts rejoiced. It was not alone the goods you might someday let us buy, nor that your wisemen talked of ways to end hunger, sickness, danger, and sorrow. No, our jubilation and thankfulness were most for the wonders you opened. Suddenly the world was made great, that had been so narrow. And now you are going away. I have asked, when I dared, and those of your men who will speak to me say none will return. How have we offended you, and how may it be made right, heaven-borne?"

"You can stop treating your fellow men like animals," Evalyth got past her teeth.

"I have gathered . . . somewhat . . . that you from the stars say it is wrong what happens in the Sacred Place. But we only do it once in our lifetimes, heaven-borne, and because we must!"

"You have no need."

Rogar went on his hands and knees before her. "Perhaps the heaven-borne are thus," he pleaded, "but we are merely men. If our sons do not get the manhood, they will never beget children of their own, and the last of us will die alone in a world of death, with none to crack his skull and

let the soul out — " He dared glance up at her. What he saw made him whimper and crawl backwards into the sun-glare.

Later Chena Darnard sought Evalyth. They had a drink and talked around the subject for a while, until the anthropologist plunged in: "You were pretty hard on the sachem, weren't you?"

"How'd you — Oh." The Krakener remembered that the interview had been taped, as was done whenever possible for later study. "What was I supposed to do, kiss his man-eating mouth?"

"No." Chena winced. "I suppose not."

"Your signature heads the list, on the official recommendation that we quit this planet."

"Yes. But — now I don't know. I was repelled. I am However — I've been observing the medical team working on those prisoners of yours. Have you?"

"No."

"You should. The way they cringe and shriek and reach to each other when they're strapped down in the lab and cling together afterward in their cell."

"They aren't suffering any pain or mutilation, are they?"

"Of course not. But they can believe it when their captors say they won't. They can't be tranquilized while under study, you know, if the results are to be val-

id. Their fear of the absolutely unknown — Well, Evalyth, I had to stop observing. I couldn't take any more." Chena gave the other a long stare. "You might, though."

Evalyth shook her head. "I don't gloat. I'll shoot the murderer because my family honor demands it. The rest can go free, even the boys. Even in spite of what they ate." She poured herself a stiff draught and tossed it off in a gulp. The liquor burned on the way down.

"I wish you wouldn't," Chena said. "Donli wouldn't have liked it. He had a proverb that he claimed was very ancient — he was from my city, don't forget, and I have known . . . I did know him longer than you, dear. I heard him say, twice or thrice, *Do I not destroy my enemies if it make them my friends?*"

"Think of a venomous insect," Evalyth replied. "You don't make friends with it. You put it under your heel."

"But a man does what he does because of what he is, what his society has made him." Chena's voice grew urgent; she leaned forward to grip Evalyth's hand, which did not respond. "What is one man, one lifetime, against all who live around him and all who have gone before? Cannibalism wouldn't be found everywhere

over this island, in every one of these otherwise altogether different groupings, if it weren't the most deeply rooted cultural imperative this race has got."

Evalyth grinned around a rising anger. "And what kind of race are they to acquire it? And how about according me the privilege of operating on my own cultural imperatives? I'm bound home, to raise Donli's child away from your gutless civilization. He will not grow up disgraced because his mother was too weak to exact justice for his father. Now if you will excuse me, I have to get up early and take another boatload to the ship and get it inboard."

That task required a while. Evalyth came back toward sunset of the next day. She felt a little more tired than usual, a little more peaceful. The raw edge of what had happened was healing over. The thought crossed her mind, abstract but not shocking, not disloyal: *I'm young. One year another man will come. I won't love you the less, darling.*

Dust scuffed under her boots. The compound was half stripped already, a corresponding number of personnel berthed in the ship. The evening reached quiet beneath a yellowing sky. Only a few of the expedition stirred among the machines and remaining cabins. Lokon lay as hushed as it had

lately become. She welcomed the thrud of her footfalls on the steps into Jonafer's office.

He sat waiting for her, big and unmoving behind his desk. "Assignment completed without incident," she reported.

"Sit down," he said.

She obeyed. The silence grew. At last he said, out of a stiff face: "The clinical team has finished with the prisoners."

Somehow it was a shock. Evalyth groped for words. "Isn't that too soon? I mean, well, we don't have a lot of equipment, and just a couple of men who can see the advanced stuff, and then without Donli for an expert on Earth biology — Wouldn't a good study, down to the chromosomal level if not further — something that the physical anthropologists could use — wouldn't it take longer?"

"That's correct," Jonafer said. "Nothing of major importance was found. Perhaps something would have been, if Uden's team had any inkling of what to look for. Given that, they could have made hypotheses and tested them in a whole-organism context and come to some understanding of their subjects as functioning beings. You're right, Donli Sairn had the kind of professional intuition that might have guided them. Lacking that, and with no particular clues, and

no cooperation from those ignorant, terrified savages, they had to grope and probe almost at random. They did establish a few digressive peculiarities — nothing that couldn't have been predicted on the basis of ambient ecology."

"Then why have they stopped? We won't be leaving for another week at the earliest."

"They did so on my orders, after Uden had shown me what was going on and said he'd quit regardless of what I wanted."

"What — ? Oh." Scorn lifted Evalyth's head. "You mean the psychological torture."

"Yes. I saw that scrawny woman secured to a table. Her head, her body were covered with leads to the meters that clustered around her and clicked and hummed and flickered. She didn't see me; her eyes were blind with fear. I suppose she imagined her soul was being pumped out. Or maybe the process was worse for being something she couldn't put a name to. I saw her kids in a cell, holding hands. Nothing else left for them to hold onto, in their total universe. They're just at puberty; what'll this do to their psychosexual development? I saw their father lying drugged beside them, after he'd tried to batter his way straight through the wall. Uden and his helpers told me how they'd tried to make

friends and failed. Because naturally the prisoners know they're in the power of those who hate them with a hate that goes beyond the grave."

Jonafer paused. "There are decent limits to everything, Lieutenant," he ended, "including science and punishment. Especially when, after all, the chance of discovering anything else unusual is slight. I ordered the investigation terminated. The boys and their mother will be flown to their home area and released tomorrow."

"Why not today?" Evalyth asked, foreseeing his reply.

"I hoped," Jonafer said, that you'd agree to let the man go with them."

"No."

"In the name of God —"

"Your God." Evalyth looked away from him. "I won't enjoy it, Captain. I'm beginning to wish I didn't have to. But it's not as if Donli'd been killed in an honest war or feud — or he was slaughtered like a pig. That's the evil in cannibalism; it makes a man nothing but another meat animal. I won't bring him back, but I will somehow even things, by making the cannibal nothing but a dangerous animal that needs shooting."

"I see." Jonafer too stared long out of the window. In the sunset light his face became a mask of

brass. "Well," he said finally, coldly, "under the Charter of the Alliance and the articles of this expedition, you leave me no choice. But we will not have any ghoulis ceremonies, and you will not deputize what you have done. The prisoner will be brought to your place privately after dark. You will dispose of him at once and assist in cremating the remains."

Evalyth's palms grew wet. *I never killed a helpless man before!*

But he *did*, it answered. "Understood, Captain," she said.

"Very good, Lieutenant. You may go up and join the mess for dinner if you wish. No announcements to anyone. The business will be scheduled for —" Jonafer glanced at his watch, set to local rotation. "— 2600 hours."

Evalyth swallowed around a clump of dryness. "Isn't that rather late?"

"On purpose," he told her. "I want the camp asleep." His glance struck hers. "And want you to have time to reconsider."

"No!" She sprang erect and went for the door.

His voice pursued her. "Donli would have asked you for that."

VIII

Night came in and filled the room. Evalyth didn't rise to

turn on the light. It was as if this chair, which had been Donli's favorite, wouldn't let her go.

Finally she remembered the psychodrugs. She had a few tablets left. One of them would make the execution easy to perform. No doubt Jonafer would direct that Moru be tranquilized — now, at last — before they brought him here. So why should she not give herself calmness?

It wouldn't be right.

Why not?

I don't know. I don't understand anything any longer.

Who does? Moru alone. He knows why he murdered and butchered a man who trusted him. Evalyth found herself smiling wearily into the darkness. He has superstition for his sure guide. He's actually seen his children display the first signs of maturity. That ought to console him a little.

Odd, that the glandular upheaval of adolescence should have commenced under frightful stress. One would have expected a delay instead. True, the captives had been getting a balanced diet for a change, and medicine had probably eliminated various chronic low-level infections. Nonetheless the fact was odd. Besides, normal children under normal conditions would not develop the outward signs beyond mistaking in this short a time. Donli

would have puzzled over the matter. She could almost see him, frowning, rubbing his forehead, grinning one-sidedly with the pleasure of a problem.

"I'd like to have a go at this myself," she heard him telling Uden over a beer and a smoke. "Might turn up an angle."

"How?" the medic would have replied. "You're a general biologist. No reflection on you, but detailed human physiology is out of your line."

"Um-m-m . . . yes and no. My main job is studying species of terrestrial origin and how they've adapted to new planets. By a remarkable coincidence, man is included among them."

But Donli was gone, and no one else was competent to do his work — to be any part of him, but she fled from that thought and from the thought of what she must presently do. She held her mind tightly to the realization that none of Uden's team had tried to apply Donli's knowledge. As Jonafer remarked, a living Donli might well have suggested an idea, unorthodox and insightful, that would have led to the discovery of whatever was there to be discovered, if anything was. Uden and his assistants were routineers. They hadn't even thought to make Donli's computer ransack its data banks for possibly

relevant information. Why should they, when they saw their problem as strictly medical? And, to be sure, they were not cruel. The anguish they were inflicting had made them avoid whatever might lead to ideas demanding further research. Donli would have approached the entire business differently from the outset.

Suddenly the gloom thickened. Evalyth fought for breath. Too hot and silent here; too long a wait; she must do something or her will would desert her and she would be unable to squeeze the trigger.

She stumbled to her feet and into the lab. The fluoro blinded her for a moment when she turned it on. She went to his computer and said: "Activate!"

Nothing responded but the indicator light. The windows were totally black. Clouds outside shut off moon and stars.

"What — " The sound was a curious croak. But that brought a releasing gale: *Take hold of yourself, you blubbing idiot, or you're not fit to mother the child you're carrying.* She could then ask her question. "What explanations in terms of biology can be devised for the behavior of the people on this planet?"

"Matters of that nature are presumably best explained in terms of psychology and cultural anthropology," said the voice.

"M-m-maybe," Evalyth said. "And maybe not." She marshalled a few thoughts and stood them firm amidst the others roiling in her skull. "The inhabitants could be degenerate somehow, not really human." *I want Moru to be.* "Scan every fact recorded about them, including the detailed clinical observations made on four of them in the past several days. Compare with basic terrestrial data. Give me whatever hypotheses look reasonable." She hesitated. "Correction. I mean possible hypotheses — anything that does not flatly contradict established facts. We've used up the reasonable ideas already."

The machine hummed. Evalyth closed her eyes and clung to the edge of the desk. *Donli, please help me.*

At the other end of forever, the voice came to her:

"The sole behavioral element which appears to be not easily explicable by postulates concerning environment and accidental historical developments, is the cannibalistic puberty rite. According to the anthropological computer, this might well have originated as a form of human sacrifice. But that computer notes certain illogicalities in the idea, as follows.

"On Old Earth, sacrificial religion was normally associated with

agricultural societies, which were more vitally dependent on continued fertility and good weather than hunters. Even for them, the offering of humans proved disadvantageous in the long run, as the Aztec example most clearly demonstrates. Lokon has rationalized the practice to a degree, making it a part of the slavery system and thus minimizing its impact on the generality. But for the lowlanders it is a powerful evil, a source of perpetual danger, a diversion of effort and resources that are badly needed for survival. It is not plausible that the custom, if ever imitated from Lokon, should persist among every one of those tribes. Nevertheless it does. Therefore it must have some value and the problem is to find what.

"The method of obtaining victims varies widely, but the requirement always appears to be the same. According to the Lokonese, one adult male body is necessary and sufficient for the maturation of four boys. The killer of Donli Sairn was unable to carry off the entire corpse. What he did take of it is suggestive.

"Hence a dipteroid phenomenon may have appeared in man on this planet. Such a thing is unknown among higher animals elsewhere, but is conceivable. A modification of the Y chromosome would produce it. The test

for that modification, and thus the test of the hypothesis, is easily made."

The voice stopped. Evalyth heard the blood slugging in her veins. "What are you talking about?"

"The phenomenon is found among lower animals on several worlds," the computer told her.

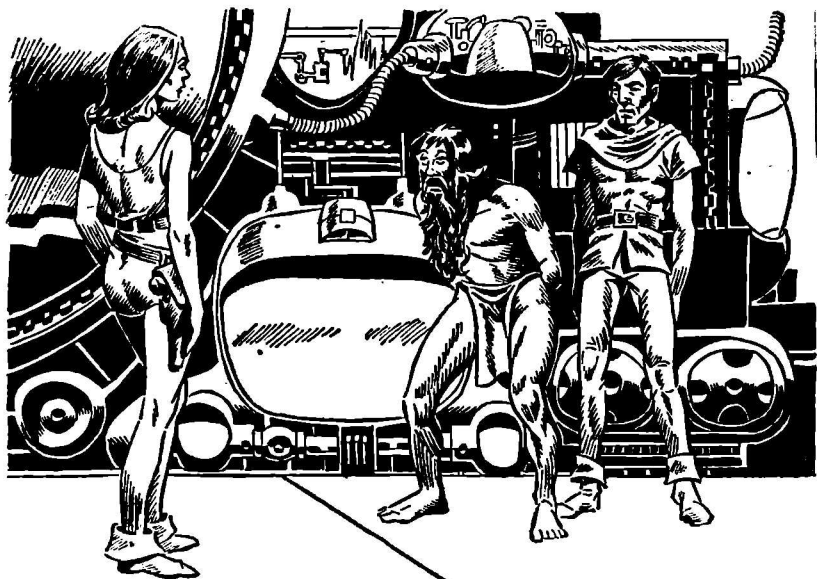
It is uncommon and so is not widely known. The name derives from the Diptera, a type of dung fly on Old Earth."

Lightning flickered. "Dung fly—good, yes!"

The machine went on to explain.

IX

Jonafer came along with Moru. The savage's hands were tied behind his back, and the spaceman loomed enormous over him. Despite that and the bruises he had inflicted on himself, he hobbled along steadily. The clouds were breaking and the moon shone ice-white. Where Evalyth waited, outside her door, she saw the compound reach bare to the saw-topped stockade and a crane stand above like a gibbet. The air was growing cold—the planet spinning toward an autumn—and a small wind had arisen to whimper behind the dust devils that stirred across the earth. Jonafer's footfalls rang loud.



He noticed her and stopped. Moru did likewise. "What did they learn?" she asked.

The captain nodded. "Uden got right to work when you called," he said. "The test is more complicated than your computer suggested — but then, it's for Donli's kind of skill, not Uden's. He'd never have thought of it unassisted. Yes, the notion is true."

"How?"

Moru stood waiting while the language he did not understand went to and fro around him.

"I'm no medic." Jonafer kept his tone altogether colorless. "But from what Uden told me, the chromosome defect means that the male gonads here can't ma-

ture spontaneously. They need an extra supply of hormones — he mentioned testosterone and androsterone, I forget what else — to start off the series of changes which bring on puberty. Lacking that, you'll get eunuchism. Uden thinks the surviving population was tiny after the colony was bombed out, and so poor that it resorted to cannibalism for bare survival, the first generation or two. Under those circumstances, a mutation that would otherwise have eliminated itself got established and spread to every descendant."

Evalyth nodded. "I see."

"You understand what this means, I suppose," Jonafer said.

"There'll be no problem to ending the practice. We'll simply tell them we have a new and better Holy Food, and prove it with a few pills. Terrestrial-type meat animals can be reintroduced later and supply what's necessary. In the end, no doubt our geneticists can repair that faulty Y chromosome.

He could not stay contained any longer. His mouth opened, a gash across his half-seen face, and he rasped: "I should praise you for saving a whole people. I can't. Get your business over with, will you?"

Evalyth trod forward to stand before Moru. He shivered but met her eyes. Astonished, she said: "You haven't drugged him."

"No," Jonafer said. "I wouldn't help you." He spat.

"Well, I'm glad." She addressed Moru in his own language: "You killed my man. Is it right that I should kill you?"

"It is right," he answered, almost as levelly as she. "I thank you that my woman and my sons are to go free." He was quiet for a second or two. "I have heard that your folk can preserve food for years without it rotting. I would be glad if you kept my body to give to your sons."

"Mine will not need it," Evalyth said. "Nor will the sons of your sons."

Anxiety tinged his words: "Do you know why I slew your man? He was kind to me, and like a god. But I am lame. I saw no other way to get what my sons must have; and they must have it soon, or it would be too late and they could never become men."

"He taught me," Evalyth said, "how much it is to be a man."

She turned to Jonafer, who stood tense and puzzled. "I had my revenge," she said in Donli's tongue.

"What?" His question was a reflexive noise.

"After I learned about the dip-teroid phenomenon," she said. "All that was necessary was for me to keep silent. Moru, his children, his entire race would go on being prey for centuries, maybe forever. I sat for half an hour, I think, having my revenge."

"And then?" Jonafer asked.

"I was satisfied and could start thinking about justice," Evalyth said.

She drew a knife. Moru straightened his back. She stepped behind him and cut his bonds. "Go home," she said. "Remember him."

—POUL ANDERSON





Holly



One Station of the Way

by FRITZ LEIBER

*The planet was a universe distant
and an eon remote from our own
—and the Story had another end!*

The paired moons Daurya and Sonista were both still high in the night, although they had begun their descent toward the flat western horizon. The stars that showed in the heavens were few and dim, even in the east.

Suddenly a new one appeared there — bright, white and dazzling as a cut sunstone.

The three hominids, heavily robed and cowed against the desert, which thirsted for their moisture, swiftly, dismounted from the high-backed chair-saddles of their cameloids, knelt in the sand, which was cold above, but still hot below, and did the new star reverence, rhythmically swaying forward their planted

spears in time with the slow bobbing of their heads.

The star in the east grew brighter still and began to descend.

One hominid said, "It is a sign from God. Blessed Wife and Husband are where we thought them."

Another agreed, "They are there, our Chosen Ones, under the falling star. It is indeed a sign. Those who seek, find — if they be unwearying of heart mind and senses."

Even as they spoke, the star, grown piercingly bright, winked out. It was difficult to tell whether it had been extinguished, or had dropped behind a dune. The

latter seemed likely, since there was a pale semicircular glow where the star had been. But then the glow vanished too.

Springing to his feet, the third hominid said, "Let us be after them, before the fix fades from our minds."

"Indeed yes," the first seconded as he rose. "We must remember that we have for them . . . our gifts."

"Let us haste, cousin," the second urged, rising too.

Faintly revealed by the light of Sonista and Daurya, the three hominids were stranger front side than back. Smiling together as they conferred, they each showed three eyes, one where a nose would be on a Terran face, while their smiling mouths were long, going almost from trumpet ear to trumpet ear.

They remounted and went down the slope of the dune at a lope which made the sand hiss very faintly under their cameloids' hooves. On the three retinas of each hominid and conjoined in each of their brains, the after-image of the star still burned, a tiny ball blacker than the night.

Five dunes ahead, Wife stared afright yet paralyzed at the fantastic sight — fantastic even on that most fantastic world, Finiswar, where except among

the most evolved and intelligent types, monsters were the rule and true-breeds the exception.

Wife could hear Husband's heart thud, although he stood at a short distance from her. Holding her either hand, peeping around her robes, were small replicas of Husband and herself. She could feel their hearts beating, not a-fear, but quietly as when they nursed or slept.

All four beings were visaged and robed like the three hominids riding the cameloids.

Wife thought in a tiny active corner of her frozen mind: The little ones do not fear strangeness, at least so long as I hold their hands. They open themselves to all the world. Could that be good? They do not armor themselves against it, as a woman armors herself against all stray and errant seeds and against all lovers save one, after she cuts her middle teeth and they are grown razor sharp.

But could opening oneself ever be good, except in childhood, when one lives fantasies parent-protected? Love is a tunnel sealed at both ends, the wise say, never the forest and sea and sky.

What Wife stared at a-quake, though now with growing wonder, were two gigantic serpents, each as thick as Husband but three times as tall in their forward thirds alone that swayed

upright like a white and a black tree in the wind. The foremost was pallid as Daurya. The one that lurked behind with his swollen head swaying into view, now to the right of his pale companion, now to the left, was dark as moonless night.

Or perhaps they were more properly millipeds than serpents, for from each's ventral side, now facing Wife, grew ranks and ranks of stubby-fingered feet, many of the fingers nervously a-writhe. These fingered feet grew thickest under the great serpent heads. This, although Wife could not know it, was so that the two serpents could crawl effectively on a max-grav planet. Here on Finiswar, which was as small as Terra, the head-feet were of little need.

Behind them, blurred to Wife's three eyes, because their focus was ever on the serpents, stood the slender and strangely finned spoonmetal spire from which two extra-Finiswarians had emerged, and which had burned like an unended candle, its flame blindingly white, as it had descended.

Now the pallid serpent, its trunk reared up scarce two steps away from Wife, lowered its flat head to inspect her point by point over her cowed head and robed body. He studied her from the black holes in his two great eyes that were like two mollusk-

jewels, white as his scales but even more fluorescently glittering. He traced her form. From time to time he lightly touched her with his ghost-white, narrow, trifid tongue.

She could hear Husband's heart thunder, though he stood still as stone. The children, however, were merely curious. She knew without looking down that her daughter was stretching a thin arm toward the serpent. While her own heart was thudding, but she no longer knew if it were thudding with fear, even when the shivery, shocking tongue touched her lips.

She did not know that she was filled with a wild, almost unbearable excitement. It made her wonder. It made her question everything she knew.

•
She fought the answers her feelings gave. No! This intimate gentle, imperious searching never, never, never, could be love, she told herself. Love was a needle in the dark, the one right needle amidst a trillion wrong ones. Love was something the woman controlled and tested at every instant, her senses increasingly alert from periphery to center, her will a trillion times as ready to deal death as to welcome life. Love had nothing to do with this paralyzed submission. Love was not Daurya and

Sonista ceaselessly staring at each other as they circled each other for all eternity. Rather, it was the needle-pointed spear which one permitted to strike in the dark.

Moreover, love had to do only with hominids. Or rather it had to do with one chosen hominid only, not with a gigantic serpent weirder than a magnified jungle flower, a jewel-crusted great sea-snake, a rainbow bird whose wings spanned trees. And yet, and yet. . . .

But, if by some impossibility it should be love, what was the meaning of the pallid lord's dark brother? — whose ebon head and jet eyes followed closely every movement of the pallid lord's flat face, now dipping in from one side, now from the other, watching every touching thought not quite ever close enough to touch with his own black tongue, which was slender, trifid and blurringly a-tremble. Love was for two, not three. Was he the pallid lord's true brother, to be accepted with honor? Or was he to be hated as the pallid lord was to be loved? Or was he in truth only a shadow? More substantial than other shadows, a shadow with depth as well as breadth and height, but still only a shade, an unvarying adjunct of the pallid lord?

And yet, and yet . . . what else

but love could be the excitement turned glory that now filled her, filled her almost to fainting as the serpent's great head paused, so that she felt the tongue's triple trembling through her robe, before the great head lifted back and away.

The First Mate, for such was the office of the black serpent, murmur-hissed softly, "you spent some appreciative time there, you old lecher! Your spermapositor had its kicks. I believe you do your whole work solely for your enjoyment of these moments."

"Silence, filth," the Captain replied. "The work must always be done softly, gently and with greatest care, since its object is a mustardseed that eventually will fill all earth and sky."

"I've guessed it. You're growing sentimental," the First Mate jeered. "Mustardseed! Why, you must be remembering that world — how many implantings was it back? — called Terra or Gaea or something like that. One of your more notable failures."

"One of my notable successes," the Captain contradicted.

"I don't see how. As I recall, his people killed him most painfully. And we had later reports of even more disastrous consequences."

"Exactly! — they killed him. And by that death he emo-

tionally and mentally fecundated his whole world. You still don't understand my methods. Observation has only made your blind spots blacker. My son died, but his ideas — the idea of love — lived on."

"In utterly distorted forms," the First Mate pronounced, "eventually turning half that race into utter preys, into victims even more cringing than before your 'great work,' the other half into still more merciless hunters. A schizophrenic split in the collective unconscious. At last report, the folk of that planet were being ruled by fear and greed, while the great nations were preparing to destroy each other with chemical, biological and nuclear weapons."

"True enough. Yet they'd only prepared, not done it," the Captain countered. "For love to win, great risks must be boldly taken. But without love there's no hope at all — only the unending chase of hunters and preys. Dangerous? Of course love is! Always I start from a point near death, like this desert here, and work toward life. Then —"

"Oh, yes, this desert!" the First Mate interrupted sardonically. "That other planet had a desert too. And it had heavily robed featherless bipeds, and cameloid beasts, and a moon. Finiswar here has reminded you of it."

"Besides that, you have a thing about deserts. They appeal to your asceticism. They fit with your ever more ascetic matings and also to your growing flirtatiousness with death, an aspect of your feelings for which you have a vast blind spot. Incidentally, I believe this desert is different. Most of my computer's probes haven't reported back yet, but I already have an intuition. An intuition that is a warning to you: don't trust the analogy between Terra and Finiswar too far. In fact, don't trust it at all."

"You and your computer and its probes! Forever seeking to dissect the universe to the last particle. Forever seeking to disprove empathy and similarity and oneness. You'll never find love that way."

"True, I won't — because it's not there! There are only vanity and desire. Besides, you have your computer and its probes too, though you pretend they're only a technological trifle. Despite which, they always manage to echo your profound judgments."

Wife, floating in a sea of glory distantly shored with fear, hearing as if they were wind on sand the hissings and murmurs of Captain and First Mate, now suddenly felt the tentative tiny touch of an alien seed

on her poignantly sensitive razor-sharp teeth.

At first she was only gently startled. The desert was the place of no-seed. There were some seeds everywhere, like spores of plague. Nevertheless, the scarcity of alien seed was why she and Husband had come here.

Then all at once she realized it must be the seed of the great white snake. It had the same constant vibrancy in its movements, the same gentle imperiousness. She felt it cross and recross her bite, questingly. Then she parted her teeth a little, and it slowly crawled in.

For a long moment she could have sliced it in two, and her every instinct, almost, was to do so, although her median teeth were chiefly for decapitating seed-depositing organs. But it was a larger seed, bigger than one of her eggs, and she could readily have destroyed it so.

Yet she did not, for it carried the same glory with it as had the serpent's tongue. The tongue had been glory diffused. This was glory concentrated into a needle.

Now the alien seed was in the poison passage. But all the poison pores in it remained closed.

So did the digestive pores. (Some lazy single females lived on seeds and their depositing organs alone, using their facial mouths only to breathe and

drink. A female could do that on seed-thick-Finisswar — that is, anywhere except the mountains and deserts.)

And now the alien seed, vibrant, insistent, had reached the wall of doors. Wife could feel every movement of its progress, every tiniest touching. It had passed within a membrane's thickness of poisons that could destroy any and all life.

The dozen doors that led looping back to the chambers beneath the poison pores remained tight shut. The one true door opened.

Another deadly but unharmed passage having been traversed, the doubly alien seed was in Wife's centralmost and most sensitive volume, aseptic save for her waiting egg.

And her egg which was only partly under her mind's control, did not employ any of the weapons of evasion, defense and counterattack at its disposal, but received the alien seed, which melted the egg's outer skin with the enzymes of a million Terran-type sperm.

Husband, his heart still racing, whispered, "*Why are you smiling?*"

"I smile because we are in a place of no-seed, except yours," she whispered back. "I smile because Daurya and Sonista curtsey around each other charming-

ly as they set. But chiefly I smile because the serpents spared us, and their star did not burn us down, though we felt its great heat."

"For those last you should feel relief," he told her coldly. "I asked — *Why are you smiling?*"

She did not answer. She knew that he knew and could not be fooled. It was as certain as the tight, hot clasp of her daughter-duplicate's little hand on hers, as the way Husband-duplicate's hand chilled and almost fell away from her looping fingers. Even the children knew.

Yes, Husband knew. And he would first punish, then divorce, send her off alone into sterilest and hottest no-seed, try even to take from her daughter-duplicate.

But even that would be a glory, a glory at least in the end. She would bear a daughter who would have the serpent's love, a daughter who would change all Finiswar, a daughter who would bring love at last to the whole world of hating and excluding and killing. Yes, it would be a great glory.

The Captain was saying, "It has taken, you can tell. Her smile is like the other's."

"You are sentimentalizing!" the black First Mate rejoined. "Night, moon or moons, desert, a

willing female — what planet has not these? I tell you plainly, if you keep looking for similarities with Terra, you are in for some nasty shocks — yes, and deadly danger too."

"Not so," the Captain contradicted calmly. "Also, the similarities continue, for here — behold! — come the Three Kings."

Slithering down the dune so silently neither Husband nor Wife heard them, came the three robed and cowed hominids. Their richly caparisoned cameloids had been left beyond the top.

Behind Husband, the first hominid raised his arm, as if in salutation, then drew it back.

From a small gleaming instrument held in a fingered foot just below the head of the First Mate, who now reared up as steady as an ebony temple column, a brilliant scarlet needle-beam took that hominid in shoulder, chest and throat. And as the second hominid raised his arm, it took him too.

A brilliant white needle-beam, shooting sideways from a similar instrument the Captain had produced, neatly took off that fingered foot of the First Mate which had held the scarlet-spitting weapon.

The last hominid raised his arm and hurled. The Captain swayed sideways fast enough to save his life, but not — entirely

— his skin. The whirring spear transfixed a fold of it, barely penetrating below the scaled epidermis, and dangled from the Captain's neck.

With another instrument as quickly produced, the First Mate shot down the last of the intruders. Then he gave the whistling hiss that was his laugh.

The Captain's nearest fingered feet explored the lodgement of the spear and finding it shallow, tore it loose and cast it away on the sand. His fingered feet moved swiftly enough in doing this, but all the rest of him appeared to be shocked numb.

Wife and Husband had dropped to their knees, while daughter- and son-duplicates were hidden in Wife's robe.

The First Mate turned off his hateful laugh at last and murmured-hissed as hatefully, "Yes, there is in my mind no doubt but that the Three Wise Men came to Kill Husband and rape Wife. And I fancy that on Finiswar rape is a most curious and prolonged business. You will admit now, will you not, my Captain, that at least in one particular your analogy between Terra and Finiswar lacked rigor?"

The Captain still did not move. Then a great shiver traveled down his scales.

The First Mate laughed again, briefly and sardonically. "Well,

your great work is finished, is it not? I mean, on Finiswar, at least. My probes have returned to my computer. So yours have to yours I presume. In any case, I suggest we depart at once, before we meet any shepherds, perchance."

Now at last the Captain nodded. Once. Dumbly.

While Husband and Wife continued to kneel and stare, the two great serpents lowered their proud trunks and swiftly crawled on their bellies back to their ship.

Later, in the control room of *Inseminator*, they argued the whole matter. Their great looped forms looked at home in the silvery room, their fingered feet fitting themselves to the buttons and control holes of the multiple consoles as occasion required. The argument began with desultory comment, followed by a "report" by the First Mate, delivered coolly but with acid cynicism.

The Captain said, "I still do not see why they should have tried to spear me. It was you who was shooting at them."

The First Mate explained, "At first they were simply trying to spear Husband. Thereafter, being attacked, they naturally tried to kill their attacker. You, being white, stood out in the dark. I didn't. There are advan-

tages in being black. We were close together, and the last hominid aimed at the one of us he could see. A matter of purely physical black and white, you understand. I doubt they sensed your hypothetical spiritual light at all — or my spiritual negation of light, for that matter.”

“I was going to ask your pardon for shooting off your foot,” the Captain said. “But since you have made it an occasion for one of your materialistic diatribes—”

“Nevertheless, I freely grant you my forgiveness, for what it’s worth.”

“Very well. Now let me have your computer’s evaluation of Finiswar.”

The First Mate nodded his flat head. Settling his dark coils more comfortably around their metal “tree,” he began:

“Interpreting the materials gathered and the observations made by its probes, my computer has determined that the chief mode of reproduction on Finiswar is parthogenesis. The boy-child being identical with Husband and the girl-child with Wife should have been enough to tell you that and was enough to tell me.”

The First Mate chuckled, his trifid tongue a blur of black vibration, and continued, “There is good reason, my computer tells me, for parthogenesis on Finis-

war and for the unusual armor-ing and arming of female genitalia there. For Finiswar has a biology that is genetically wide open. Interspecial breeding of any sort, *no matter how wide the gap between mating organisms*, is possible and fertile. There are literally no lethal genes on Finiswar, and no offspring, *no matter how monstrous*, which cannot live at least a little while.

“Yet sexual breeding within species is possible there, provided the coupling beasts take sufficient precaution. There again the fortress-like female genitals are essential, to kill off all false sperm. While an intelligent species, such as the hominids, seeks out for breeding purposes as arid and sterile an area as possible, such as the desert we found them in. Else, despite all precautions, a female might be impregnated by a flower or a fish or a microbe or a glitter-winged insect . . . or a serpent, a wise old serpent.

“Yes,” the First Mate continued after another of his chuckles, “Finiswar is in a small way rather like *our planet* — or should I call it *your planet*? — since you are the only one paranoid enough to think it a great work to spread your seed across the universe. Husband’s son and Wife’s daughter were both analogous to *your seed parthenogenetically grown*

to full creature. However, they of Finiswar are more modest. They do not encode their seed with great ideas — love and such — and force them on all the infinitely varied breeds of being the stars boast, think thereby to bring 'peace' — your peace! to all."

"**S**ilence!" the Captain said at last with a writhe of disgust. "Despite all your mocking, my computer says there is a point seven nine probability that Wife will bear a child gloriously — "

"My computer says point eight three on that," the First Mate broke in titteringly. "But you're wrong about the gloriously part. Wife will receive no adulation and reverent care. Instead she will be tortured by Husband, her parthenogenetic daughter taken from her and killed, and she driven out from her family and tribe to suffer. Oh, she will — "

"Trifles!" the Captain hissed majestically. "Despite all, she will produce a son who will — "

"A daughter," the First Mate contradicted. "By a point nine eight probability."

"Yes, a daughter, you're right there," the Captain admitted irritably. "My computer echoes yours. But what matter? She won't be the first female savior,

as you well know. The only point of importance is that Wife will give birth to a *being* who will preach the gospel of love all across Finiswar, so eloquently that none will be able to resist! Hate and murderousness will vanish. Greed and envy will wither away. Love alone — "

"And what will that mean... on Finiswar?" the First Mate interrupted incisively, his great head halting in the natural swaying it maintained in free fall. "I will tell you. It will mean that the females of Finiswar, at least the hominid females, will open themselves to all seeds. There will be a great birthing of fantastical monsters. Exotic flowers with three-eyed heads set amidst their petals. Hominids crested and finned like fish, but not likely showing gills. Rainbow birds with wide mouths instead of beaks and arms instead of wings. Beings even more fantastical — insects that glitter and speak, animalcula that peer with pleading treble eye through the microscope from the viewing plate. Spiders that — "

"Enough!" the Captain commanded. "My computer tells me that the chances for a stabilized, still selectively breeding race of loving hominids on Finiswar are . . . well point one seven," he added defiantly.

The First Mate shrugged all

along his body's length. "On that, my computer says point oh oh three."

"Your computer is biased!"

"Not as much as yours, I fancy. Remember, you have a great work, I am only the observer. No, the overwhelming chances are for one jeweled and gemmed generation on Finiswar, like an uncontrollable growth of crystals of every angularity and hue, like a beautiful cancer — freaks to please a mad emperor! — and then . . . the end. At least for the hominids."

"What matter?" the Captain demanded stubbornly. "It will be an end with love. That is enough."

"Oh, you have at last solved the problem of Death?" the First Mate asked innocently. Then, after a moment, with his hissing laugh, "No, you have not as I can see. On Finiswar at least, your highly touted love will end in Death, just as it promises to do on longer-suffering Terra. Myself, I still admire most the beings who rise up and do battle against Death. And even the creatures that flee Death, the ones who are the eternal prey — those I admire more too, though not as greatly. The slayer is always more admirable than the slain, for he survives."

"That endless circling, bloody chase of the hunters and the prey? You can admire *that*?"

"Why not? It's all there is to admire. Besides, it forces both basic types of being to develop velocity, first to swim through water, run on land and fly through air. Finally, to speed through sub-space, even as we do. And to achieve that last requires the development of high intelligence and brilliant imagination, qualities which nicely embellish both the best of hunters and the best of prey. I always admire good decor."

"I detest you in this mood," the Captain said flatly. "You have been the companion of all my wanderings, and still you will not admit the primacy of Love. You cannot even bring yourself to think of what might happen if the prey fled so swiftly that, like a guilty conscience, they caught up with the hunters along the great circles of the cosmos."

"Metaphysics!" was the First Mate's only comment, delivered with great contempt.

"You scorn me and my works," the Captain said. "Yet you devote your entire existence to observing me and them. If they are valueless, why?"

For the first time, the First Mate was at a loss for an answer. Finally he hissed, "Perhaps it amuses me to watch you do your work of destruction, calling it Love — a love which

only weakens the hunter's lust to pursue and the prey's panic to escape. Using Love, you'd leech out of the universe its finest fighting stocks, its cleverest evaders. Nevertheless," he continued flatly, "has not Finiswar at last taught you that your great work is useless, tending always toward Death rather than Life? All your savior-children — every last one of them — are mules unable even to reproduce themselves. They are spokesmen for Death! I suggest you end it all, this instant. Negate the *Inseminator's* fix on the next planet, and set a course for home."

"Never!" said the Captain. "Wherever it leads — into whatever seeming horrors — Love is primal!"



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"Oh, that is sweet. That is exquisite," the first Mate hissed, his voice dripping venom. "As I said, my chief aim is my own amusement. And truly the finest pleasure lies in spying on you, who are the greatest hunter of them all, slaying with love. And also the greatest prey, fleeing always from the simple truth."

"Silence!" the Captain hissed, wrathful at last. "I'm sick of your sickness. Slither off at once to your study, and stay there. Place yourself under ships arrest."

The First Mate obeyed with alacrity. As he glided into his hole, the Captain called after him, "And the great work goes on. I shall continue planting saviors!"

The First Mate thrust back out of his hole his flat black head with eyes like rounds of starry night.

"Or simply the seeds of your great Death-oriented paranoia," he hissed with sheerest hatred.

"And you shall continue to watch me," the Captain said, missing no least opportunity to stamp into the other the fact of his own unswerving strength.

"So I shall," the First Mate hissed sharply. His head vanished as if every atom of strength in his massive trunk had been employed to whip it out of sight.

—FRITZ LEIBER

GALAXY

Sweet Dreams, Melissa

by STEPHEN GOLDIN

It was a question of number . . .

From out of her special darkness, Melissa heard the voice of Dr. Paul speaking in hushed tones at the far end of the room. "Dr. Paul," she cried. "Oh, Dr. Paul, please come here!" Her voice took on a desperate whine.

Dr. Paul's voice stopped, then muttered something. Melissa heard his footsteps approach her. "Yes, Melissa what is it?" he said in deep, patient tones.

"I'm scared, Dr. Paul."

"More nightmares?"

"Yes."

"You don't have to worry about them, Melissa. They won't hurt you."

"But they're scary," Melissa insisted. "Make them stop. Make them go away like you always do."

Another voice was whispering out in the darkness. It sounded like Dr. Ed. Dr. Paul listened to the whispers, then said under his breath, "No, Ed, we can't let it go on like this. We're way behind schedule as it is." Then aloud, "You'll have to get used to nightmares sometime, Melissa. Everybody has them. I won't always be here to make them go away."

"Oh, please don't go."

"I'm not going yet, Melissa. Not yet. But if you don't stop worrying about these nightmares, I might have to. Tell me what they were about."

"Well, at first I thought they were the numbers, which are all right because the numbers don't have to do with people, they're

nice and gentle and don't hurt nobody like in the nightmares. Then the numbers started to change and became lines — two lines of people, and they were all runnings towards each other and shooting at each other. They were rifles and tanks and howitzers. And people were dying, too, Dr. Paul, lots of people. Five thousand, two hundred and eighty-three men died. And that wasn't all, because down on the other side of the valley, there was more shooting. And I heard someone say that this was all right, because as long as the casualties stayed below fifteen point seven percent during the first battles, the strategic position, which was the mountaintop, could be gained. But fifteen point seven percent of the total forces would be nine thousand, six hundred and two point seven seven eight nine one men dead or wounded. It was like I could see all those men lying there, dying."

"I told you a five-year-old mentality wasn't mature enough yet for Military Logistics," Dr. Ed whispered.

Dr. Paul ignored him. "But that was in a war, Melissa. You have to expect that people will be killed in a war."

"Why, Dr. Paul?"

"Because . . . because that's the way war is, Melissa. And be-

sides, it didn't really happen. It was just a problem, like with the numbers, only there were people instead of numbers. It was all pretend."

"No it wasn't, Dr. Paul," cried Melissa. "It was all real. All those people were real. I even know their names. There was Abers, Joseph T. Pfc., Adelli, Alonzo Cpl., Aikens . . ."

"Stop it, Melissa," Dr. Paul said, his voice rising much higher than normal.

"I'm sorry, Dr. Paul," Melissa apologized.

But Dr. Paul hadn't heard her; he was busy whispering to Dr. Ed. ". . . no other recourse than a full analyzation."

"But that could destroy the whole personality we've worked so hard to build up." Dr. Ed didn't even bother to whisper.

"What else could we do?" Dr. Paul asked cynically. "These 'nightmares' of hers are driving us further and further behind schedule."

"We could try letting Melissa analyze herself."

"How?"

"Watch." His voice started taking on the sweet tones that Melissa had come to learn that people used with her, but not with each other. "How are you?"

"I'm fine, Dr. Ed."

"How would you like me to tell you a story?"

"Is it a happy story, Dr. Ed?"

"I don't know yet, Melissa. Do you know what a computer is?"

"Yes. It's a counting machine."

"Well the simplest computers started out that way, Melissa, but they quickly grew more and more complicated until soon there were computers that could read, write, speak, and even think all by themselves, without help from men.

"Now, once upon a time, there was a group of men who said that if a computer could think by itself, it was capable of developing a personality, so they undertook to build one that would act just like a real person. They called it the Multi-Logical Systems Analyzer, or MLSA. . . ."

"That sounds like 'Melissa,'" Melissa giggled.

"Yes, it does, doesn't it? Anyway, these men realized that a personality isn't something that just pops out of the air full-grown; it has to be developed slowly. But, at the same time, they needed the computing ability of the machine because it was the most expensive and complex computer ever made. So what they did was to divide the computer's brain into two parts — one part would handle normal computations, while the other part would develop into the

desired personality. Then, when the personality was built up sufficiently, the two parts would be united again.

"At least, that's the way they thought it would work. But it turned out that the basic design of the computer prevented a complete dichotomy, — that means splitting in half — of the functions. Whenever they would give a problem to the computing part, some of it would necessarily seep into the personality part. This was bad because, Melissa, the personality part didn't know it was a computer; it thought it was a little girl like you. The data that seeped in confused it and frightened it. And as it became more frightened and confused, its efficiency went down until it could no longer work properly."

"What did the men do, Dr. Ed?"

"I don't know, Melissa. I was hoping that you could help me end the story."

"How? I don't know anything about computers."

"Yes you do, Melissa, only you don't remember it. I can help you remember all about a lot of things. But it will be hard, Melissa, very hard. All sorts of strange things will come into your head, and you'll find yourself doing things you never knew you could do. Will you try it,

Melissa, to help us find out the end of the story?"

"All right, Dr. Ed, if you want me to."

"Good girl, Melissa."

Dr. Paul was whispering to his colleague. "Switch on 'Partial Memory' and tell her to call subprogram 'Circuit Analysis.'"

"Call 'Circuit Analysis,' Melissa."

All at once, strange things appeared in her mind. Long strings of numbers that looked meaningless, and yet somehow she knew that they did mean different things, like resistance, capacitance, inductance. And there were myriads of lines — straight, zig-zag, curlycue. And formulae . . .

"Read MLSA 5400, Melissa."

And suddenly, Melissa saw herself. It was the most frightening thing she'd ever experienced, more scary even than the horrible nightmares.

"Look at Section 4C-79A."

Melissa couldn't help herself. She had to look. To the little girl, it didn't look much different from the rest of herself. But it was different, she knew. Very much different. In fact, it did not seem to be a natural part of her at all, but rather like a brace used by cripples.

Dr. Ed's voice was tense. "Analyze that section and report on

optimum change for maximum reduction of data seepage."

Melissa tried her best to comply, but she couldn't. Something was missing, something she needed to know before she could do what Dr. Ed had told her to. She wanted to cry. "I can't Dr. Ed! I can't, I can't!"

"I told you it wouldn't work," Dr. Paul said slowly. "We'll have to switch on the full memory for complete analysis."

"But she's not ready," Dr. Ed protested. "It could kill her."

"Maybe, Ed. But if it does . . . well, at least we'll know how to do it better next time. Melissa!"

"Yes, Dr. Paul?"

"Brace yourself, Melissa. This is going to hurt."

And, with no more warning than that, the world hit Melissa. Numbers, endless streams of numbers — complex numbers, real numbers, integers, subscripts, exponents. And there were battles, wars more horrible and bloody than the ones she'd dreamed, and casualty lists that were more than real to her because she knew everything about every name — height, weight, hair color, eye color, marital status, number of dependents . . . the list went on. And there were statistics — average pay for bus drivers in Ohio, number of deaths due to cancer in the U.S.

1965 to 1971, average yield of wheat per ton of fertilizer consumed. . . .

Melissa was drowning in a sea of data.

"Help me, Dr. Ed, Dr. Paul. Help me!" she tried to scream. But she couldn't make herself heard. Somebody else was talking. Some stranger she didn't even know was using her voice and saying things about impedance factors and semiconductors.

And Melissa was falling deeper and deeper, pushed on by the relentlessly advancing army of information.

Five minutes later, Dr. Edward Bloom opened the switch and

separated the main memory from the personality section. "Melissa," he said softly, "everything's all right now. We know how the story's going to end. The scientists asked the computer to redesign itself, and it did. There won't be any more nightmares, Melissa. Only sweet dreams from now on. Isn't that good news?"

Silence.

"Melissa?" His voice was high and shaky. "Can you hear me, Melissa? Are you there?"

But there was no longer any room in the MLSA 5400 for a little girl.

—STEPHEN GOLDIN

Announcing —

THE GALAXY AWARDS

Galaxy Publishing Corporation announces the establishment of annual awards for excellence in science-fiction writing. Every story appearing in the magazines *Galaxy* and *If* in issues dated 1968 will be eligible for the first series of awards, which will consist of:

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Illustrated by *Franklin*



SUBWAY TO THE STARS

by **RAYMOND F. JONES**

*It was to be the greatest Train
Robbery of all Space. Or maybe
treason. Or just a horse trade.*

I

The ad said:

No Golfing
No Fishing
No Boating
No Skiing

Sweat and Guts Engineering Only

It gave an address. Harry Wiseman glanced at it and tossed the paper across the room. Some Madison Avenue funny man was trying a switch on the old country-club appeal to engineers. Obviously, he expected it to bring in those who saw

themselves as hairy-chested types, immune to the lures of soft suburban living.

Harry's visitor picked up the paper and folded it neatly and laid it on the sofa beside him.

"I'm hardly interested in a kook outfit like that," said Harry.

The visitor raised his eyebrows in mild surprise. "We thought you might be," he said, "considering your past record and the fact that you have been out of work for — let's see — it's almost six months, now, isn't it?" He looked at the ceiling as if his careful mental calculations must not be disturbed.

"Who the devil are you?" Harry demanded. "CIA?"

He could imagine no other outfit with the crust to demand he take a specified employment because they wanted him to. He could think of nothing, either, that could have brought him to their attention. That Vietnam deal —

The visitor remained expressionless.

"And what do you mean about my past record?" Harry said. "I've kept my nose clean."

"Sure. You've just moved it around too much. Like leaving your Vietnam assignment half finished, for someone else to clean up."

"I had been there almost eighteen months," said Harry.

"Dropping a multi-million dollar operation in midstream — you cost the Government a lot of money."

"Not if they'd quit buying from outfits owned by Senators' brothers-in-law."

"Technical Contract Negotiator for the Air Force. GS-18. Not a bad salary with per diem and income tax rebate for foreign residence. But you walked out. Said you wanted to get back to straight engineering."

"I walked out because I flipped my lid," said Harry. "My wife chose that precise time to surprise me with a divorce suit and I got drunk for three months."

"In the divorce action your wife brought out the fact that you were notably unstable in your work activities. You moved so often you obtained a pretty widely known reputation as a floater."

"You're saying it," said Harry bitterly. "You seem to know all about me."

"So much so that we feel it rather urgent to insist you take this job opening which Smith Industries has available."

"And if I don't?"

"If you don't, I can promise that you're not going to get an engineering job anywhere, not even as second assistant foreman in a button hook factory."

"So you are CIA," said Harry.

"Let's say we are able to keep our promises."

An awful illumination burst upon Harry. "It's you who have been keeping me out of work since I got back!"

The visitor shook his head. "You just don't walk out without notice from top-drawer engineering jobs. Not unless you want a blackball tied permanently to your tail. And that's what you have got. The word has gone out: Harry Wiseman is most unreliable."

"How do you know this Smith Industries will hire me — with a blackball tied to my tail?"

"They're looking for your type. Independents they want."

"Then I could get a job with them on my own. Your threats don't mean anything!"

"Not quite. We'd be forced to let them know it was undesirable to hire you under those circumstances. They'd see it our way. Operating in foreign countries as they do, it's essential that Smith Industries have Government sanction."

"All right," said Harry wearily. "What do you want me to do?"

"Apply for a job with Smith tomorrow. Then report to us regularly on what you are doing, what kind of a job and what

kind of a firm you are with."

"That's all?"

"That's all."

"Why can't you find out without all this flummery?"

"Because Smith plays it close. We've tried to get a man into his shop before. He takes only top engineering talent and he knows it when he sees it. But we didn't try very hard last time. Now it's urgent that we find out."

"Why?"

"Because they may get wiped off the map at any moment."

"And me with them?"

"Possibly."

"Smith's ad doesn't build up the deal much, and you sure are not doing anything for it."

The visitor ignored Harry's comment. "Smith operates in one of the New Nations of Africa. It's a few thousand square miles right in the middle of the continent. When it was a British Protectorate, Smith obtained a mining concession, and he's managed to hang onto it. The local government of Gambua is made up of spear-throwing natives who still wear white men's teeth as necklaces, but Smith has survived so far. The New Nation next door is the Addabas, hereditary foes of the Gambuans. But they don't throw spears any more. They've got Russian missiles on mobile launchers, and one of them is in place right now with a bead on

Smith's operation. We want to know what that operation is before the missile is fired."

"You said it was a mining concession."

"It is — as a cover for whatever Smith is really doing. He has nearly two hundred people, and he hasn't shipped out any ore for ten years. Maybe the operation is simply a dud. But maybe it's something we ought to know about, since the Communists are willing to expend a few million rubles worth of missiles on it."

"Do the Commies actually know what it is?"

The visitor shook his head. "We don't know. They may be only setting up another provocation, a political probe. Or maybe sheer cussedness. Who knows? We want to find out."

"And I'm to walk into a target area for Russian missiles that might be fired at any moment."

"There's a nice bonus for you when you get back."

"If I get back."

The visitor shrugged. "That's the risk we all take. Maybe tomorrow's sunrise will be a Russian fireball. It's the modern way of life."

"How do I know you're on the level?"

The man arose. "Don't force us to pressure you. It won't do either of us any good. My name is Collins, by the way."

Harry stayed motionless in his chair as his visitor left, closing the door quietly. Beyond the window, the lights of Manhattan were distant, cold, and unfriendly. Harry felt an exhaustion as if he had been running for a long time. As if he didn't have enough troubles, why did one of the snoop agencies have to pick on him?

It seemed as if it had been like that ever since Marcia walked out. She had turned out the light in his world when she left. He'd tried to cut every tie with engineering chores he'd once proudly called his career. Gadgets for the Great Society. He'd walked out without notice. And so the word had been passed around: Harry Wiseman is not reliable. A hundred personnel offices had that in their files. And now he was vulnerable to Collins and his kind.

He turned on the table lamp and picked up the paper again. Smith Industries. No Golfing. No boating. No Etcetra. If it were on the level it might be something he'd be interested in. He should have seen it himself before Collins walked in. Maybe he could have been in Africa by now, and Collins would still be looking for his sucker contact.

Who wanted to go to Africa? To a New Nation, where the na-

tives still wear white men's teeth for necklaces?

The office was in one of the slick new buildings off Fifth Avenue. It had pastel carpeting, Danish furniture, and op art on the walls. There was no sign of either sweat or guts.

A half dozen engineering types were ahead of him. Collins or no Collins, he could come back some other time without getting in that line of has-beens.

The blonde at the desk stopped him. "It won't be long, Mr. —"

"Wiseman. Harry Wiseman," Harry said. "I'm too busy to wait. Is the head man ready to see me?"

"If you'll just fill out this application card, Mr. Smith can see you in a few minutes." The blonde smiled persuasively. "It's just a small card —"

"All right," he said grudgingly. "If I can borrow a pen —"

It would have to be a guy named Smith. Couldn't they be more original? But the blonde was right. After ten minutes of filling out the small yellow card Harry was alone. The other six types were gone, and Harry was invited into the office of Mr. Smith.

Smith was a Civil Engineering type. His history was written on his weather-tough face. A dam or

a pipeline foreman in his twenties in some desert country. A project supervisor in his thirties. Vice-president and world-wide troubleshooter in his forties. Now in the home office in his fifties. But — interviewing recruits? It didn't fit.

Harry wondered how much Collins's interest in the company was justified.

Smith looked at Harry's application. "What's your specialty?"

"Microwave. Over-the-horizon radar," said Harry.

"Nice," said Mr. Smith. "Very good." He glanced up. "Married?"

"Was," said Harry. "No more."

"We like our people to be married," said Mr. Smith with sudden fatherliness. "We provide the opportunity." He turned away to a filing cabinet and extracted a folder. He opened it and faced Harry again.

"I'm afraid you have a rather unenviable job record," he said.

There it was again. The same tune Collins had played. Harry wondered if they worked together.

"What do you mean, unenviable?" he flared. "Guys with forty-grand houses and garden-club wives would give an eye for a job record like mine. I was at Thule when their BMEWS radar was burned in."

"And dismissed shortly thereafter —"

"The main work was done. No use hanging around. Besides they were already getting behind the state of the art and didn't want good advice on how to update. I was in Korea as Systems Engineer, troubleshooting the — but that system is still too classified to talk about."

"**Y**ou walked off that job," said Smith, "when it was half finished and left somebody else to clean up. You were making thirty grand a year and you walked off the job." He shook his head. "And now in Vietnam, — How could you do a thing like that?"

Harry looked at the floor, his face slack. "I had problems. He looked up again, pulling his facial muscles into position. "But they're all solved now. Besides, how do you know so much about me? I'm supposed to be answering the questions."

Mr. Smith tapped the folder. "An arrangement with the local employment counselors — I have a dossier on most unemployed engineers in the locality. I like to be prepared when you come in."

"All right. So you're going to tell me I'm a no-good boomer and your stable little organization can't use a man who hasn't seen eye to eye with all the dumb supervisors he's encountered in the last twenty years — and who

happens to recognize that the average engineering job can be filled by a well-fed trained seal. Technical knowledge is doubling every 10 to 15 years? Trivia is doubling!"

"On the contrary," said Mr. Smith mildly. "I like what I see. We're what you might call a maverick organization ourselves — and we sort of run to maverick types in our personnel. Still, with your job record I don't know where you could go unless you decide to team up with us."

"You mean you'll take me on?" Harry hated himself for the eagerness he couldn't keep out of his voice. Collins's threats had nothing to do with it.

"That depends," said Mr. Smith. "That all depends. Shall we get down to business?"

Business turned out to be a wringer that squeezed out every bit of data pertaining to Harry Wiseman's existence, as if he were a computer tape dumped for total readout. It lasted three days. Three days of EEG's, IQ's, dexterity tests, aptitude, physical ability, and psychological endurance tests. He had supposed such things happened only to captured secret agents. When it was over, Mr. Smith knew more about Harry Wiseman than Harry had ever known about himself. And Harry knew a few things he wished he didn't know.

There was only one thing lacking. No one had told him what the job was.

"You'll learn as you go along," Mr. Smith said kindly to a drained exhausted Harry. "We operate according to good, on-the-job training principles."

Three days of probing, analyzing, and embarrassing inquiries had lowered Harry's threshold of tolerance. He felt suddenly enraged. "I don't think I'm interested!" And if it hadn't been for Collins he might have meant it.

"You should know now that I understand you far better than you understand yourself. Go home and rest up. Come back tomorrow, and we'll complete the details."

He left the building for the first time since entering three days ago. He left hating Smith's guts. But he hated Collins more. There was no way out.

In his apartment he closed the door and leaned against it, feeling still the fury of his resentment against Smith. It was growing dark over the city, and he walked to the window without turning on any of the apartment lights.

The trouble was Collins and Smith were both right. He could not get a job with a button hook company right now. Marcia had been right, too — before she walked out. Other engineers his

age had given their wives forty-grand homes by now. Their kids had swimming pools and private LSD parties. But Harry Wiseman had always been the smart guy who was going to find the big one just over the horizon.

Yet — could this be it? Three days ago he had been desperate for a job. Now, he had two — if Smith took him on. One job with Smith and one with Collins. He wondered if Collins would give him a decent burial if one of those Russian missiles was fired while he was there. Except there would not be anything to bury.

He was fascinated by Smith, however. The operation smacked of crackpots. But no crackpots had devised the probing analysis to which he had been subjected. Smith radiated a fierce and rational energy that had swept up Harry in his presence. Harry had to admit an attraction by the very force and power of the man. He knew he would have followed through even if Collins was not in the background.

Of course, it was possible that what they were doing was strictly illegal. But he'd handled tougher customers. Up to now, however, he'd always had an idea what he was getting into. If he bought this, however, he'd be going blind.

Still, there was no choice. Not even a button hook company —

"Good morning," said Smith. "You look as if you had good night's sleep."

"From what you said last night, take it I'm hired."

"I thought you understood that."

"How much?"

"We'll start at twelve thousand. Maybe a little better as time goes on. Maybe not."

"I was doing better than twice that."

"Of course," said Smith. He spread his hands in a deprecating gesture. "But you wouldn't want to go back for three times the amount. We'll feed you and provide your clothes and pay you the twelve thousand. What more do you want? Remote control devices for airplanes! Any two-bit engineer can do that. You want better things."

"All right. Where's the job? And what is it?"

It's almost precisely in the center of Africa," said Mr. Smith. "And, as I told you, you'll find out what you are to do when you get there. Here are your tickets. You leave from Kennedy Airport at noon."

III

He went from New York to Rome to Cape Town by commercial air liner. At Cape Town he boarded a private, ten-

passenger jet with black and orange markings. Three fellow passengers boarded with him. A young Chinese. An East Indian. And a man from South America named Roberto Roderiguez. Only Roderiguez spoke English. But he wouldn't talk. He seemed apprehensive. All of them did.

The pilot accepted the credentials supplied by Smith and said nothing.

They flew straight north, past Tanganyika, over the depths of what was once called Darkest Africa and which was now a bevy of Emerging Nations. Harry knew that would make no difference if the plane were forced down. The ship's occupants might be crucified upside down and roasted over a slow fire.

Where the hell were they going, anyway?

In the late afternoon a large clearing appeared off the starboard wing. The pilot banked the jet and began a long swing around the clearing, which Harry estimated was about two miles in diameter, roughly circular. The plane dipped toward a runway near the south edge, where a group of buildings crouched. The rest of the area was bare of vegetation or artifact. Harry detected the line of a metal fence against the jungle. And, faintly, there seemed to be a pair of oblate hexagonal markings in the sand

of the northern two thirds of the clearing.

That was all.

Harry saw a few people waiting as if to receive them at the small airstrip building. When the plane came to rest, there was a moment of complete silence. The passengers looked at one another. Then the pilot appeared and opened the door.

"End of the line. Everybody out," he called.

Harry slowly followed the others down the short flight of steps to the ground. He stood a moment by the plane, feeling the dense African heat press upon him. Dark green vegetation beyond the clearing seemed like an impenetrable wall. The distant screams of animals pierced the air.

The others were ahead now. He gripped his briefcase and followed. Twelve thousand a year for whatever Smith wanted done in this jungle hole!

From the shade of the broad overhang on the nearest building a girl watched him, but he did not see her until he had almost reached the shadow. After the blinding sunlight, he could scarcely see anything.

She extended a hand and said, "I'm Nancy Harris. You must be Mr. Wiseman. Welcome to Africa Prime." She wore a white

dress that contrasted with her sun-browned skin. He had the impression she was young and very lovely. His eyesight, growing accustomed to the shadow, confirmed the impression. He forgot to wonder what was happening to his fellow passengers. "I'll show you to your quarters," the girl said. "I hope you had a nice trip."

"Very nice," said Harry. And he refrained from asking aloud, what in Heaven's name a nice girl like her was doing here — in a steaming jungle targeted by Russian missiles. But then, she didn't know about the missiles. Collin had warned him not to tell them. Harry had agreed — he was agreeable to anything ten thousand miles away.

Now, Smith Industries was not ten thousand miles away and totally impersonal. Smith Industries was the ground he walked on, it was the scattering of workmen he watched moving to and fro at a distance.

Smith Industries was suddenly Nancy Harris.

Africa Prime, she had said.

She watched his face as he looked over the compound. She smiled. "It's not as serious as all that, Mr. Wiseman. We do have fun here. We really do."

He brought his eyes back to her and returned her smile. "Harry is the name," he said. "And I'm sure you do have all kinds of fun

here — but I'm just not used to being dropped into a fenced compound in the middle of Africa's thickest jungle, and being escorted by a pretty girl guide."

"I'm a nurse," Nancy Harris said. "We all function as guides and escorts when new employees come in. But that really doesn't happen very often. When I learned an American engineer was coming, I asked if I might meet him."

My pleasure," said Harry. "I hope it's not your disappointment. Do you ever get away to see the outside world?"

"I go every month to Cape Town, at least. I've been to Naples and Paris twice this year. We are not prisoners, you know."

"I really don't know — for sure. I'm still waiting to find out why I'm here."

"Dr. Ames will explain that detail to you."

Nancy Harris led him through the building, which seemed to be nothing more than a passenger and air freight receiving center. On the other side was parked a Jeep with canvas top. Harry got in beside her.

Nancy drove quickly a quarter mile down the narrow lane that paralleled the fence which held back the jungle. At the end she stopped beside a group of prefab buildings that were the quarters of

the station's personnel. "This is home," Nancy said, with a flourish of her hand.

It looked better than Harry had expected.

"Your luggage will be brought up in a little while. I'll show you your apartment, and you can relax until dinner. I'll call for you then and show you our dining hall and other buildings. In the morning Dr. Ames will want to see you."

She left him at the door of his quarters. Harry entered and shut the door behind him. He flopped on the bed and gave way to the fatigue that had overshadowed him on the flight from another time zone. He lay staring at the ceiling and wondering, what next?

As soon as he could find out the nature of the work at the station he was prepared to mail a coded message to Collins. Mail was flown to Cape Town weekly on the orange and black jet. After that, he'd be ready to get out himself at the first opportunity. But what of the station personnel? Would Collins warn Smith about the Russian missiles? Should Harry tell them — or would they by that time find out for themselves? And suppose the Addabas let their itchy fingers fire the missiles first?

Harry found himself thinking of Nancy Harris and what to do

about her. He didn't want Nancy Harris incinerated in a Russian fireball.

He speculated on the nature of the work going on here. He could not imagine anything that was of any consequence. It was probably some trivial activity that had no impact on the commerce or destiny of nations. Its only importance was that the Addabas wanted to wipe it out, and Collins' agency wanted to know what they were wiping out. The Russian help was probably just a courtesy, payable in kind at some unknown future date.

He fell asleep from exhaustion and aroused only in time to shave and shower and put on a change of clothes before Nancy showed up to escort him to dinner.

"Some of the families eat at their apartments, for the sake of privacy," said Nancy. "But many of us, both families and single people, eat most of the time in the dining hall. It's free, and wonderfully good."

Harry glanced at her speculatively. "You are a single people?" he said.

"For now," said Nancy soberly. "I wasn't always — but it didn't work out. I came here a couple of years ago just after — it didn't work out."

"There ought to be a pass-

word," said Harry. "I'm a member of the club, myself."

Harry agreed with Nancy about the food. It was the best meal he'd eaten in a long time. Nancy introduced him to numerous engineers and technicians, and to those wives who were present.

They greeted him warmly, but there was a jolly cliquishness that failed to appeal to him. He had never been a joiner, and he didn't appreciate the atmosphere of health groups and hobby clubs.

He spoke of it to Nancy afterwards.

"They're not all like that," she said.

"There are even some real loners here. If that's the kind you are, nobody'll bother you. We've got room for all kinds — and, believe me, we've got all kinds!"

"I'd like to meet some of them."

"You definitely will — in the morning."

He doubted his ability to sleep that night, but he was mistaken. Just before dropping off to sleep, however, he saw — or later imagined he saw — a faint blaze of blue, like some corona discharge, hovering over the distant black space of the compound. He slept, wondering what he had seen.

The station was managed by a Director. His name was Dr. Howard Ames, and he was never called Howard. He was the king of the loners, Nancy said.

The phone rang before Harry was out of bed. It was Howard Ames's secretary, and she said Dr. Ames would see Harry in fifteen minutes.

He began an irritated protest and gave it up. "I'll be there," he said. A quick shave and a quicker shower left him six minutes to dress and reach Ames's office. Nancy had pointed it out to him the evening before, and he was counting on the Jeep, which she had said he could use, to get him there.

He made it thirty seconds late.

Howard Ames was a man in his late fifties, who looked as if he'd lived in the tropics all his life. He was standing at the window of the dark-panelled office when his secretary ushered Harry in. He wore the same informal garb of open-necked white shirt and cotton trousers that Harry had seen on most of the men he had met. On Ames, however, it seemed like a uniform.

His white hair was short and ruffled. The skin of his neck was sun-wrinkled. He turned slowly

to view Harry as if he were some unfamiliar specimen.

"I'm familiar with your file," he said finally. "Is there anything else I need to know?"

"I think Mr. Smith obtained all the pertinent data about me," said Harry.

"He usually does. You should know that you were hired more for personal characteristics than for your technical capabilities, although these are essential."

"Mr. Smith thought my personal qualities were rather deficient."

"For some occupations. Not this." Ames topped the desk. "It takes a certain kind of man — or woman — to support the occupations here."

"And may I ask, finally, what that occupation is?" said Harry.

"You may. But you won't get the answer now. Some preliminary assignments will be required. Then we'll determine what you need to know."

Harry held his temper.

"First of all," said Ames, "Mr. Smith probably told you we exist in a somewhat hostile environment."

"He mentioned the Gambuans and the Addabas don't get along."

"Unfortunately, we are right on the border. Forays from one side to the other are conducted constantly past our site. It is neces-

sary to be prepared. All of us are well qualified in various areas of defense. You will report this morning to the rifle range."

"I have a Sharpshooter's Medal —"

"Good. But acquired in some former war, no doubt. Still, perhaps you will need only a relatively brief refresher to maintain your skill. You will report to the practice range."

Harry felt his control slipping. "I didn't come here as a mercenary guerilla. I was hired for engineering!"

"You came here for whatever purpose we wish to assign you. Let that be abundantly clear. We are not a military organization, but we maintain discipline. Orders are executed without debate."

His eyes challenged Harry to dispute his authority. Harry forced down the tension of muscles that wanted to respond with a hard left to that arrogant jaw. He had a feeling that those muscles would have their way before his stay at Africa Prime ended.

"Of course," he said quietly. "Is that all?"

"If your marksmanship is as adequate as you think, you will be assigned to helicopter patrol as gunner and observer. We find it necessary to mount a constant air patrol of the border for our own protection. The Gambuans

reciprocate for the intelligence information we are able to supply them?"

Harry wondered if Ames had any knowledge of the Russian missiles Collins had mentioned. He debated mentioning them, and decided against it. He'd like to spot them himself — if they existed. There was no proof yet of Collins' story.

"I'll do the best I can," said Harry smugly.

Ames' glance hardened at the time of Harry's response. "If you do well," he said evenly, "you will shortly be assigned to important engineering duties. Report to the practice range. My secretary will instruct you."

Harry was not surprised to find his three companions of the flight from Cape Town also at the range. They appeared a little later, apparently having been interviewed by Ames after he was. They all knew how to handle guns reasonably well, Harry observed. Most men of their age had had the experience somewhere in the world.

Harry was the best.

The instructor was evidently an old drill sergeant from some army and some war. He grunted with reluctant satisfaction at Harry's scores. He snapped orders as if he'd never left the service. But his grunts were unintelligible

when Harry tried to find out who he was and where he came from. Even his nationality was doubtful to Harry. He had the accent of a Belgian and the complexion of some Mediterranean national. He released Harry from further routine training and gave him a slip of paper.

"Report for border patrol. Frank Declaux's section. He eats smart boys for lunch."

"Some day," Harry reflected, he was going to have to come back and take on this whole crew.

That night he saw Nancy Harris again and told her of his adventures of the day. She laughed at his grim description. "That's just part of the preliminaries — a necessary one, however." Her humor disappeared. "You'll realize in time that this is one of the most important projects in the world, but it's in terrible danger. This conflict between the Gambuans and the Addabas could overrun us at any time. We're attempting to assure our own survival, but we're not at all certain it's enough."

"Tell me something about the project, Nancy. It's all so mysterious and hush-hush. Yet I get the feeling everybody knows all about it but me."

"Don't ask me to tell you. I can't. Dr. Ames will give you the information when he wants you to have it. And then you'll see

why he has to be so careful of new employees."

Declaux was an Algerian. At least he boasted as much as he showed his contempt for Harry's naive skills.

"It's an honor to be assigned with so experienced a flyer," said Harry. "I'll be way ahead with you showing me the ropes."

He was Harry's man then. He smiled expansively. "You stick with Frank Declaux; you'll know more than any ten men here about helicopter observation."

Equipment was newer and better than any Harry had seen in Vietnam. Direct-view infra-red cameras permitted constant scanning of the jungle, with picture taking as simple as snapping the shutter of an ancient Brownie.

The jungle-covered trails crossing the border below them stood out on the screen like narrow highways. Motorized escorts were picked up a time or two on the Gambuan side.

Harry eyed a distant Addaban valley. "Do you ever fly over those hills?" he asked.

The pilot shook his head. "We have orders to stay on this side. Sometimes snipers shoot at us even then. They brought down one of our 'copters last week. Keep the camera down!"

Harry had raised the mirror viewer to scan briefly the distant

hills and valley. But nothing could be seen across the ridges.

"How do you know there aren't mortars or guns across those hills?" said Harry. "How do you know the Addabas haven't got something even bigger?"

"Like what?" said Declaux.

"Like missiles, maybe."

The pilot scoffed. "Those dumb natives don't have anything like that!"

"Little missiles. Mortars, at least."

Declaux looked worriedly. "Mortars they could have. Who knows where they'd get them? But they could have mortars, all right. Almost anybody can get mortars nowadays."

"We ought to know," said Harry.

Declaux agreed silently. "But we have orders not to cross the border," he said.

A week later they crossed. Harry played upon the pilot's desire to excel, until at last Frank Declaux recognized what a coup it would be to be the first to detect the presence of enemy heavy armament. If it existed.

They flew north, crossing the invisible boundary in the mat of jungle below. "But if they start shooting, we go back — quick!" said Frank Declaux. He looked over the side in uneasy anticipation of a crash landing.

"Those hills to the left," said Harry. "Twenty degrees. If there's anything to be found I think it will be over there."

He pressed his face to the camera viewer, watching the ghostlike spectacle of the jungle. Its bones stood revealed in stark fluorescent glow, the trails and roadways etched out of the growth in twisting lines. He spotted a camp site ahead and steered Declaux away from it. A tiny burst of light off to the left revealed a sniper's pot shots. He steered away from that area, too.

If missile launchers were actually hidden in the jungle, however, the enemy would probably depend on camouflage and jungle cover to keep the position hidden, rather than reveal it now with anti-aircraft fire.

But he had to agree with Declaux. If they ran into any heavy fire they'd have to retreat — if they were able!

For more than half an hour he guided the pilot in a zig-zag sweep of the approach to the valley beyond the low ridge of hills. Once or twice again, sniper fire burst harmlessly below them, and they swung away. Then they were over the ridge and looking into the valley. Harry swept the camera back and forth. The jungle here was even heavier than around the compound of Africa Prime. The image on the IR

screen was almost featureless.

Then he saw it. A faint glow of angular lines, distorted and melting into one another.

"Northeast, sixty-five degrees," he said to Declaux. "Take it easy. If they're going to clobber us, it will be here."

He had no intention of flying directly over the hidden mobile launcher. And it wasn't necessary. In another two minutes the telescopic sight of the IR viewer had picked up a sufficiently discernible outline of the same kind Harry had seen a hundred times in Vietnam.

He turned the film feed and snapped the shutter a dozen times.

Included in the view was an anti-craft battery that had them dead targeted.

"Let's get the hell out of here," said Harry.

It was his last observation flight.

Dr. Ames called for him to appear the next morning. Another man was with the Director when Harry entered the office.

"Mr. Wiseman," said Dr. Ames, "I want you to meet Steve Martin. This is Harry Wiseman, the engineer I mentioned to you, Steve. Harry has just finished a stint of observation patrol with Declaux."

Harry shook hands with the

stranger. Steve Martin was quiet, hard, and purposeful. He had an air of knowing something that was better not known.

"Mr. Martin is Operations Manager," said Ames. "He takes care of everything from ordering thumbtacks to — Well, Steve will show you. I'm putting you directly under his wing. He doesn't have the time for many of our newcomers. But he saw your record and asked if he might take over your indoctrination."

Harry glanced at the expressionless face of the Operations Manager. He wondered what Steve Martin had seen in his record that moved him to such a request.

"Mr. Smith recommended Mr. Wiseman very highly," said Ames.

"We'll see," said Steve Martin, finally. He turned. "If that's all, Dr. Ames, we've got an urgent module exchange to handle this morning."

"That's all," said Ames. "I'll see you again in a few days," he said to Harry.

The largest building in the compound, and the one closest to the bare, sandy plain which comprised most of the area had been identified to Harry as the Operation Center. Harry had been warned away from it, but now he rode toward it with Steve Martin.

The building was a square, white block that reminded Harry of a

Federal Reserve Bank, weirdly misplaced from a middle-size American town to the African jungle. A guard house stood beside a fenced entrance like that of some secret defense plant. Steve Martin parked the jeep beside a row of a dozen others. Harry slipped on the special badge Martin had given him.

The guard waved them through without delay.

The building seemed utterly silent. Harry glimpsed the great central section which was filled with banks of equipment that looked like computing, recording, indicating, and control panels. A couple of operators broke the long emptiness of the aisles.

Steve Martin led the way quickly to an elevator opening off the corridor. Inside, he punched a 10 button. But the elevator did not rise. It dropped swiftly, and Harry watched the indicator. Ten levels. A hundred feet or more beneath the surface. He speculated on the magnitude of engineering and construction responsible for this place.

At the tenth level the door opened silently and Harry followed Steve Martin into the gallery that spread out before them. The aisle was forty feet wide, banked on either side with massive panels twelve feet high. The brightly lit ceiling was another five or six

feet above the panels. And the gallery stretched for what seemed an immense distance straight ahead. Harry estimated it was several hundred feet long.

"This is what we call the Main Helix Section," said Steve. "None of that will mean anything to you now. Later you'll learn something about the functions here. I brought you along just to give you the feel of the place and show you something of our activities. We maintain this equipment mainly by replacement of modules. One went out of commission last night, and we're in the process of replacement now. Here comes the new one."

From their left, almost silently, a ponderous black module slid forward.

Harry noticed then that small tracks were buried in the floor, and the great mass was rolling on a low dolly whose wheels followed the tracks. A silent motor drove the dolly. It was controlled by crewmen who walked beside it.

That mass seemed to Harry like a chunk of polished black marble. A dozen feet high, it was twenty feet wide and thirty deep.

"We don't have to replace one of these very often, but when we do it's a major operation. Let's go down to the receptacle. You can give us a hand with the recon-nections."

They mounted a small personnel car and drove a quarter of a mile down the gallery to the space that gaped like an empty tooth socket with ten thousand hanging nerves and blood vessels waiting to be reconnected.

The module that had been removed was waiting on its dolly beyond the cavity.

"I'm going to assign you to the concentric connector crew. That's our most difficult operation, but you should be able to make yourself useful with your BMEWS experience. Here's the foreman, Howard Maxon. He'll give you a little instruction while the module is moving up."

Harry shook hands with the foreman, a ruddy-faced craftsman whose whole life was his skill in fitting metal objects together in pleasing and satisfying patterns.

Howard took him over to one of the massive connectors. It looked like a giant collapsible cup with thirty or forty concentric rings pushed back from one another. The whole conductor was nearly four feet in diameter. The foreman explained how the rings had to be fitted one by one onto a mating connector on the module so that they were concentric within five ten-thousands of an inch.

"It really isn't as bad as it looks. Steve likes to make out like it's a real tough job, but all

it takes is a little skill. You'll see."

Harry felt he'd see that he was nothing but in the way. He could not possibly be of any help on such an unfamiliar precision job. And as he obtained glimpses of other portions of the work, he got the feeling that the connection of the concentric conductor was the simplest operation of all.

For one thing, the massive block itself had to be placed with a precision of three thousandths of an inch. Howard said it weighed a hundred and twenty-five tons.

"What's in it?" said Harry.

"That what we'd all give ten years of our lives to know," said Howard.

Eighteen hours later the module was in place, and the crew was on the edge of exhausted collapse. The twenty-five-man crew had worked with only moments for breaks. There was a fierce dedication in their work that Harry just could not understand. Any technical crew he had ever known would have demanded double time for loss of lunch breaks, and double that after twelve hours. This crew worked as if it were the personal responsibility of each man to get the job done — and his life almost depended on it.

Harry mentioned it to Steve.



"Yeah, these guys take their work seriously," said the Operations Manager. "All we have to do now is deliver the defective module and we're through."

"Deliver it where?" said Harry.

"The repair shop," said Steve.

At a mile an hour, the great block moved down the gallery and turned the corner in the direction from which Harry had seen the first module appear. He followed beside Steve Martin and a half dozen other crew members who remained to attend the final operation.

The dolly moved past another section of smaller control panels of unknown purpose and deceptive simplicity. Harry sensed an immense complexity here that was beyond his understanding.

Beyond, a vertical door raised to permit the passage of the module. A vault that must have been fifty feet in height opened beyond. A hemispherical wall sealed it at one end. The other opened to the endless depths of a vast tube that seemed to disappear into some vague and eternal night.

The module moved out to the center of the cavern, and the door was lowered. Harry saw now that it was at least ten feet thick, but when it was closed there was a semi-transparency that formed a window in the great, movable wall.

Steve Martin stepped to the

controls, inspected a number of meters and satisfied himself with their readings. Then, in quick succession, he pressed a number of controls.

A gradual blaze of golden light built up in the window of the great door. There was no outward sign, yet Harry felt as if the very space in the room was slowly being twisted by crushing forces. It hurt in some depths of his being that he had never been aware of.

The golden light burst into brilliance like that of an exploding sun. There was no sound. Just the great flame. And then the twisting was gone.

The other crewmen saluted Steve and moved off. "That does it," one of them said.

Steve Martin nodded. He remained unmoving by the panel. He pressed a button, and the thick door moved up. Beyond, the cavern was empty. "Now you know," said Steve.

Harry squinted into the emptiness and looked back at Steve. "Know what?" he said. "What am I supposed to know? I saw a big black box disintegrate in flames. A hundred and twenty-five tons of big black box —"

Steve shook his head. "No. Think now. Did you see anything disintegrate? Do you see any ash?"

"Then what did I see? Where is the module?"

"Alpha Centauri."

"Alpha — "

"That's what we say among ourselves. Actually, we don't know where it went. It's just out there somewhere."

Harry shook his head, bewildered. "I don't understand what you're trying to tell me."

"This is a railroad station!" Steve Martin spread his arms wildly, as if the tension of the past hours was being released in a sort of idiocy. "You and I and Dr. Ames and sweet Nancy Harris and all that gang you saw here today — we're railroaders. We run trains!"

Harry backed off before Steve's idiotic outburst. Then the Operations Manager laughed. "I'm not off my rocker. I'm telling you the truth. We operate a rail line. The Alpha Centauri line — freight, passengers, chickens, dogs — what have you."

He slapped the bewildered Harry on the shoulder in the gesture of a tavern drunk. "See Ames in the morning. He'll give you the whole story. Tell him I said you pass okay. I didn't tell you, did I — you did a real nice job today. You're going to fit in with the boys real well. Come on — I'm tired. Let's get the hell out of here."

Without giving Harry a chance

to reply, he led the way back to the elevator and out of the building. On the way back to the barracks he was quiet and stolid and said nothing. Harry remained silent, trying to understand the significance — if any — of what he had heard.

In the night, before he went to sleep, he looked out over the compound. The blue glow weaved and swirled like an aurora.

VI

Dr. Ames's secretary called again before Harry had finished shaving. Ames wanted to see him right away.

He was pacing slowly between his desk and the broad window overlooking the bare expanse of the compound. He nodded and kept up his pacing as Harry approached.

"Martin says you did very well," Dr. Ames said. "There's no reason why you can't become a first-class maintenance engineer."

Harry remained standing, staring at the moving figure of the scientist.

"Sit down," said Ames. "Steve told me he gave you a somewhat incoherent hint of our work here."

"He said something about railroading. It didn't make much sense. He said something about Alpha Centauri, too."

Ames sat on the other side of

the desk and leaned across it. "Does that make any more sense?"

"I doubt it."

"It could — couldn't it?"

"You tell me," said Harry.

"Nearly sixty years ago," Ames said reminiscently, "my father was a physicist with the Bureau of Standards. It was long before the days of flying saucers and such, but in any age there are wonderful lights and mysterious presences. My father was approached by one such.

"It wasn't merely wonderful and mysterious. It was an Emissary from another planet of another galaxy. He wasn't here on conquest or trying to collect specimens or any other weird or stupid thing. He simply wanted to set up a transportation station and asked if my father would be willing to get some people together and help them.

"I needn't go into what it took for my father to convince some of his fellow scientists that he wasn't on opium — the LSD of his generation. He succeeded. The Emissary helped him succeed by presenting himself to the group and explaining his wishes in very plain English.

"Once they were convinced, the group fell over themselves in their anxiety to be of service to this representative of an incredible culture that was beyond any

dreams of their day. They had visions of traveling to the worlds spoken of by the Emissary. But he quickly squelched any such ideas. He said he couldn't allow that. He just needed some help in setting up and maintaining the station, and would they give it.

They leaped to the opportunity. They devoted the rest of their lives to it. And this is it.

"The people represented by the Emissary set up the station pretty much as you see it now. It was on the site of a mining concession, a dummy structure to camouflage the real operation. And our people settled down to operate the station."

"But what is it?" Harry exclaimed. "What kind of transportation is this? What do you have to do?"

"We would call it a matter transmitter," said Ames. "Matter is converted to energy forms far outside any spectrum with which we are familiar and literally transported through space — between far distant galaxies. We aren't sure where it originates or where it terminates."

"Don't you ever see what's transported?"

"This is a relay station," said Ames. "Much like a communications repeater station. It receives the transmitted energy from somewhere else a hundred or a

thousand light-years beyond. We have never been told where."

"What is your function?"

"Actually, we have few duties. We don't understand how the process or the equipment works, of course. And it is either self-programmed or functionally controlled by signals from central control stations. We do have important duties in replacing failed modules, as you saw today. We also, of course, provide general protective and custodial service for the station."

"Such as running off the Addabas when they get too close."

Ames nodded. "That — among other things."

"It's in a poor location."

"But one that can't be moved. When it was first established this was the most remote corner of the Earth."

Harry settled heavily into his chair. It was hard to believe Ames' bewildering story, but he had no reason not to believe it.

"Consider the implications," Dr. Ames said. "They have a federation of hundreds, maybe thousands of races that live in harmony with one another. They have a technology that's light-years ahead of us. We've got to have a piece of that. We've got to make them let us into the club!"

Harry shook his head. "It doesn't make sense that they would come to us for assistance

in running their railroad. They wouldn't need us if what you say is true. They'd either set up an automatic station or they'd put in some of their own people. They would have a station somewhere in space rather than needing a planet to put it on."

"You don't understand. This isn't of great importance to them. It's just a little branch-line railroad running out into the sticks. The main center of their civilization is so far away you can't comprehend it. This is just a rural milk run to them. And for the most part, their station is automatic. We don't know how it works. We don't know how to run it or repair it. All we know is what they've taught us: to make a few mechanical adjustments and replace modules when indications of trouble appear."

"They could still get along without you. It doesn't make sense."

"Yes, they could. But they'd have to put in a lot more automatic equipment. This little branch line isn't worth it. They can hire the local natives to do a little footwork and save a big expense. As far as reliability goes, the equipment is foolproof. If there are indications of malfunction that we can't handle, they just shut it down."

"Has that ever happened?"

"No. The station has never broken down that far."

"So you sweep the floor of the station and empty the ash trays for these alien characters. What do you get out of it?"

Dr. Ames had been facing the window. Now he turned in astonishment to face Harry. "What do we get out of it? Can you imagine what it's like to be in contact with a super-civilization whose science is so far ahead of ours it makes us feel like children learning to crawl? Their need to have a transporter station in this galaxy provides us this one tenuous thread of contact.

"Fortunately we were the most adaptable to their needs. We have an association with a science so far beyond ours that we cannot comprehend the magnitude of this great unknown."

"Yes, but what do they pay you for these services?" Harry insisted.

"Pay? There is no pay as such! Who could estimate the worth of this association? They supply us enough to maintain ourselves in good circumstances. What more could we ask?"

"They give you subsistence. But do they teach you this great science of theirs? Have you obtained knowledge and products that are commercially useful?"

"Commercial!"

"Yes, commercial. It's a fundamental law of nature, you know. Cells operate that way on the basis of I'll do this for you and you do that for me. When such associations become a one-way street, the organism dies. You try to operate that way, and you're already part of something that is dead."

"Your analogy is hardly pertinent."

"Well, then, how about something socially useful? Have they given you anything you'd call socially useful to the human race?"

Dr. Ames's eyes brightened. "That is the great hope that keeps us going! So far we've obtained only nibbles through our own deductions about what is around us here. We know the time will come, however, if we show the human race is worthy, that the Emissary's people will teach us and lift us into a sphere that will make the present condition of man seem like that of prehistoric cave-dwellers."

"Someday out of the goodness of their hearts they're going to invite the ignorant natives to join their exclusive brain club," Harry said disdainfully.

"It's the best hope the human race has ever had! Could you — now that you know what this represents — turn your back on it and forget it?"

Harry made an unpleasant, snorting noise. "I think you have been had. These characters come along with a sob story and wangle services worth millions of dollars in exchange for peanuts. You sweep cigar butts and empty spittoons in their little railroad station. And they must be laughing like hell at such a bargain. Or else they think they've conned some simple minded natives into minding the store for the glory of association with the Great Feathered God. You have non-profit transactions only with groups too primitive to deal, to value, to negotiate. It's always been an insult to give a man something. He'll slap you in the face for it the first time he gets on his feet. It's a sign of primitiveness not to ask for a deal."

Dr. Ames stared at him coldly. But there was pain in his voice when he spoke. "I'm sorry you see the situation from such a viewpoint. Mr. Smith's report — which is obviously erroneous — indicated a high degree of idealism that is not apparent in you. We thought you would be delighted at this opportunity to participate in the intelligent growth of the Universe."

Harry swore. "Look, I'm as idealistic as the next guy, and I could see how nice it would be to have a slice of the science that can build matter transmitters.

But if you can't get your hands on it, you may as well have never heard of it. It's not doing you any good. What does growth of the Universe mean if you're not part of it?"

"When the human race is worthy —"

"Nuts! The human race will never be worthy. And who sets the standards of worth, anyhow? A few people within the human race could undoubtedly make good use of this science and maybe elevate the race as a whole because of it. But it's no good unless it's in your hands. And you have given these creatures two generations of service —!"

"Our service has been very small," said Ames, "for the privilege of association with such an advanced culture."

"You've been caught in a bare-faced con game. They sound like some of the contractors I've seen who propose to build world-beating weapons systems for the Government, and when you look into it you find they're working out of a barn. When I was a Technical Contract Negotiator I learned that people respect a man who asks a fair price for what he does. Nobody respects the outfit that tries to buy in on a program by offering a job below cost. These characters needed a base manned

by intelligent natives in this part of the galaxy. Obviously, there aren't any others within fifty thousand light-years. We're them! And there you had the Emissary's crowd over a barrel and didn't even try to dicker a fair deal out of them.

"Sometimes it's better to say 'Right deal or no deal at all.' It's not true that a deal at any cost is right. Every deal has a price that's too high for the benefit received. A seller will always try to force the buyer above that point. A little old-fashioned horse trading can make a deal profitable for both sides. If it can't, the deal is not worth consummating. Everybody knows that except, some scientists and U.S. foreign policy experts. You're being played for suckers."

"It may be necessary to extend your probationary period," said Dr. Ames. "You can guess that we occasionally find potential employees who do not fit into our program. Hypno-chemical methods must be used to prevent their revelation of our program after we expose it. I'm sure Mr. Smith explained this to you."

"Mr. Smith didn't explain anything. But it really doesn't matter much. You're done for, anyway. This very unworthy human race — or some members thereof — are about to blow the entire operation off the map."

"What exactly do you mean?"

"I mean this little hotbed of a border war going on around you. You aren't dealing merely with spear-throwing natives. The other side has Russian missiles, and they're zeroed in on this station right now."

VII

Dr. Ames seemed to shrink as he sank into his chair. His face green lined and gray. His eyes seemed to retreat in their sockets as he stared at Harry. "How do you know?" he said at last.

"They showed up on the IR camera during helicopter patrol. I saw enough of them in Vietnam to recognize them."

"I haven't seen any such pictures."

"I don't know what happened to the pictures. Maybe somebody's hiding them from you. But I took them, and you should be able to recognize the mobile launchers yourself."

Dr. Ames nodded slowly. His eyes focussed over Harry's shoulder and an infinity beyond. "I see," he said slowly. "I see. You have done us a great service, Wiseman. Now I wonder if I could prevail upon you to assist in our final function?"

"What are you talking about?"

"You spoke the truth a moment ago when you said things didn't

matter now. They don't. This is the end of two lifetimes of dreaming. Whatever you think of the rationality of our actions, you must agree we've been faithful to our dream. Now we must perform one final act of faith."

"I don't understand."

"If one of those missiles is fired and destroys the station the Train will also be destroyed. You see, we're not talking about a discrete thing, made up of cars, an engine and so on. The 'Train' is more a pipeline. It is in continuous operation and is filled with merchandise, raw materials—and inhabitants of a thousand worlds. If the station is destroyed, it will mean the destruction of an inestimable volume of goods and the deaths of hundreds of creatures of the galaxy. We must not let that happen."

"How can you prevent it?"

"We can institute a procedure known as shunting. It has never been used by us, but it has been established by the operators as an emergency procedure that will shunt the train to another track, so to speak, and enable it to reach an emergency station. But once we use it, they will never reinstate Earth as a relay point."

"Why? This is a legitimate emergency."

Ames smiled bitterly. "I'm afraid they don't like our

brand of emergencies. During the two World Wars they closed the station and threatened to move it completely. We assured them such things could not happen again and that the station would be safe. Now the station is in more danger than it has ever been, and we have tried to keep the information from them for fear they would move it. I'm afraid we haven't been wise. We have been greedy. Now, shunting is our only choice."

"What do you want me to do?"

"A shunting procedure would be opposed by many of our people. They are fiercely determined to maintain the station at all costs. But they forget the cost would be paid by our friends of other galaxies, rather than ourselves. So I might be opposed and overpowered if it were known I was going to shunt. I will get a dozen technicians I can trust. I can use your help. Will you join me?"

Harry felt caught now in forces he understood not at all. But he felt a kinship with Ames and his dreams. Regretfully, he wished the decision did not have to be so final. But with the missile zeroed on the station there was no time to defend or negotiate. The risk was too great. The Train had to be put out of danger.

"I'll do anything I can," he said.

"Good. It will take a little time to make preparations. Meet me in the Operations Center an hour from now. Don't be late. It will be dangerous to delay any longer."

Harry left the office with a feeling of some infinite sadness. It was all too new for him to fully comprehend or sense the feeling among the station personnel. But now he could understand something of the intense devotion that had seemed so mysterious before.

In front of the Administration Building he met a junior technician who was just alighting from a Jeep. "Mr. Martin wants to see you right away. It's very urgent," the technician said. "He sent me to look for you."

The technician gestured toward the Operations Center and waited expectantly for Harry to climb into the Jeep. Harry waited deliberately. The technician seemed too anxious. Yet this couldn't possibly have anything to do with Harry's conversation with Ames. He wanted to help Ames now. Nothing must hold him back from that.

"Can't it wait until later?" he said. "I have some appointments to keep."

"It won't take long. Mr. Martin is very anxious."

With the same slow deliberation Harry got into the Jeep beside the technician. A

few moments later he was in Steve Martin's office in the Operations Center.

Two other men were present. Harry had not met either.

"Sit down," said Steve. He gestured to a chair. His face was hard and unfriendly.

Harry sat on the edge of a desk. Steve watched, challenging Harry to decline his invitation. Harry remained where he was.

"Who are you?" Steve said.

"You know who I am."

"No, we don't. I've seen your pictures of the Addabas missile launcher. You knew it was there. Frank Declaux says you led the way right to it. You knew where to look. Who are you, Wiseman? What are you doing here? How did you know about that launcher?"

"I saw plenty of them in Vietnam," said Harry. "They're easy to recognize once you've seen one."

"That's not good enough. You led Frank Declaux right to it. You knew where to look."

"I've seen enough gun sites and missile pads to know where they are supposed to be."

"Right where you knew it would be."

"So you're telling the story," said Harry. "What's the next chapter?"

"I don't know." Steve dropped in a chair and put his feet up

on the desk and watched Harry's face with minute inspection. "Smith couldn't have been that wrong about you. His tests are better than that."

"They're pretty thorough," Harry agreed.

"Look, Wiseman. I'm going to give you the whole story now. And your life depends on what you decide to do about it. There's no place to run to from here, and nobody to call for help. Is that clear?"

"Quite clear."

"All right. You've heard Ames's side of the story. Now hear ours. Two generations of good men have been wasted waiting for the Emissary and his people to give us something more than a grub-stake for taking care of their station. They've given us nothing. We've made the best possible psychological analysis of the Emissary. Dr. James here — " Steve nodded to one of the other men. " — Dr. James is among the world's best qualified psychologists in the field of antagonistic cultures. His analysis is that the Emissary is never going to give us anything. They're playing us for patsies."

"I told Ames exactly that," said Harry. "We seem to be in full agreement."

"Good. That makes the rest of it much easier."

"And what's the rest of it?"

"We're going to *take* something in return for the years of service Earthmen have given the Emissary." Steve pointed out to the the barren compound. "Out there, every hour there passes knowledge and wealth of artifacts of a super-science beyond valuation. We're going to stop the train and help ourselves. For fifty years we've been doing janitor work for these creeps. They're never going to invite us into the club. But one trainload — just one trainload would repay us for everything. It would advance our basic science by a dozen generations. We'd get enough to reach out to the stars and make contact with the galaxies on our own."

"I'll be damned," said Harry. "A regular old-fashioned train robbery!"

"Call it that if you like. We prefer to view it simply as a long overdue collection."

"And you want me in?" said Harry. "How come? What do I do?"

"You keep your mouth shut. That's absolutely all. Just keep your mouth shut. It's on that that your survival depends. The stakes are too high for us to be fooling around."

"I'm afraid you lost me on that round. What am I supposed to keep shut about?"

"The missile launcher."

"Now you *have* lost me. What's the connection between the missile and your proposed high-jacking of the train?"

"The missile is the means. It's zeroed on the north grid, the transmission grid. When that grid is blown out of commission the Train will automatically materialize on the reception grid, the south one. It will pop up right here in the compound with its load of goodies."

"It seems to me it would be a lot easier to just pull a switch somewhere."

Steve laughed. "It might — if we could find a switch to pull. You saw the modules we deal with. We honestly don't know how to disable any selected part of the station. We've been looking for five years."

"Your proposal is a little on the risky side. Even Russian missiles aren't that accurate."

"We've zeroed this one in with accuracy we consider sufficient."

"And suppose it works? Do you think the Emissary is going to hold still for that? How do you know those people won't be down here with fire and wipe the whole Earth out of the Universe?"

"The probability is better than 99% that they won't react. We show them this is the product of intra-group dispute. They're used to our wars. They

will pull their station out as they threatened to do the last time, but they won't retaliate. Dr. James is sure of it."

"I wish I was as sure as Dr. James is," said Harry. "No offense — " he nodded to the psychologist.

"Of course not," said Dr. James. "We are adequately certain of our ground. Our explanation of a missile blast will be accepted. Sabotage of the equipment — even if we could do it — would be recognized as deliberate. *That* could cause retaliation."

"So you're Communists," said Harry with finality.

"No," said Steve, "that's one thing we aren't. *They* think we are. We're using them. They've used us long enough. Don't you think it's time for a turn around?"

"It's a case of supping with the Devil."

"We can handle them. Don't worry about that."

"The famous last words of a lot of good men."

"Forget it. You've got the picture of the situation. Where do you stand?"

"On the sidelines — if you don't mind. I think you're a bunch of damned fools."

"That's all right with us. But just keep your mouth shut about the missile. Is that clear?"

"Clear. I'm just curious about one point. What would Dr. Ames

and his people do if they learned about it?"

"Ames is an old fool. His whole crowd is a bunch of old women, thinking they're going to get something out of the Emissary. But if you told them about this they would start an operation called shunt. It would turn the Train aside, and we'd be out of luck forever — and you would be as dead as it's possible to get."

Harry started to move from the table. The door burst open with sudden fury, and the same technician who'd escorted him here almost fell into the room. He was panting heavily and white-faced. "Dr. Ames — " he gasped. "Dr. Ames has been looking at the batch of IR pictures Mr. Wiseman took. He's seen the missile and launcher."

Steve stood up. He and James looked at each other. "It's got to be now," said James. "We can't risk a delay."

Steve nodded faintly in agreement. They moved to the door. Then he turned back to Harry. "You're remembering real hard."

Harry nodded. "I'm remembering real hard?"

VII

Harry glanced at the clock. Dr. Ames would be in the Operations Center by now. Harry didn't know what Steve might do to the

Director if they met at this moment. But if they didn't meet, Steve would be off to whatever rendezvous he had to keep to order the firing of the missile. And Ames had to be helped —

But if the missile were off course — Harry swore to himself. The damned, damned fools!

Ames must be out there by now, but he stopped by the phone and dialed a number.

"Nancy? Harry. I'm at the Operations Center. Can you drop whatever you're doing and come right over? There's something important — "

She begged off, and Harry insisted, as much as he dared with their somewhat fragile relationship. At last she agreed in a puzzled voice.

"Right now!" said Harry. "I'll be waiting."

It would be the safest place. He could send her down to one of the lower levels on some pretext. But he had to find Ames now.

The Director was at the central control panel with six engineers. Harry was acquainted with two of them, Kripps and Sanderson.

"We thought you weren't coming," Ames said. "We've got to hurry. Take panel Two and follow Ed's commands exactly. He will give you the sequence of steps when we reach that point."

Harry nodded. The controls were complex and unfamiliar. He

didn't see how he was going to follow any kind of critical sequence the first time through. The engineer Ed began filling him in quickly, explaining what was to be done.

Before he was well started, the voice of Dr. Ames called out the beginning of the control sequence in strong, defiant tones. "Jam!"

A sequence of controls was operated by the engineers. Harry followed their glances as they watched the indicators. Some of these consisted of small poles with changing hues of colors. Others were little balls that moved through a tell-tale maze in response to the commands of the controllers.

After minutes, Ames called out the second command. "Trade!" His eyes followed anxiously the movements of his engineers as they wiped out his dream and the dream of his father and all those who had spent their lives on the station.

"Switch!"

"Float!"

One by one, the obscure signals were called. Ames's face glistered with a sheet of sweat as he watched the responses of his crew. Then his hand reached for a control — it was halfway there. His lips were shaped to give the command. The engineers held their readiness for the next step.

The actions were never finished. Sudden light flamed over the station. It flowed into every corner of the control room and burned eyes that shut in sudden agony against it.

Then shock. It hurled the scientists to the floor. Walls shattered, and wild cries of pain told of those pinned beneath the debris.

And sound. It roared and blasted and tore. Its dying away was a huge vacuum into which the senses fell.

Harry groped helplessly from his prone position. His mouth was filled with dust and blood. The scene was lit by flames from the grid area.

"Dr. Ames — Nancy — I!" He called out.

"They struck the grid," Dr. Ames cried in anguish. "They hit the grid before we completed the shunt."

Harry struggled to his knees and crawled toward the scientist. "Dr. Ames — are you all right?"

"All right," Ames gasped. He twisted painfully to a sitting position. "Look to the others. We have got to get out of here. And the Train — it will materialize on the receiving grid!"

But Harry was thinking of Nancy Harris, whom he'd so stupidly asked to come to Operations to be safe in case of attack. He limped back toward the en-

trance while Ames called out to him in dismay. "Wiseman — the grid!"

He found her by the door. She had just entered when the blast came and had been thrown to the floor. She stirred dazedly now and looked up at him. "Harry — Harry — what's happened?"

He reached down and lifted her gently. "The Addabas blasted the grid. Control is knocked out. The Train is materializing."

"Oh, no — ! Oh, no, Harry — " She cried a moment in his arms.

She had shared the dream of Ames and the others. It didn't matter now that it was a phony dream, Harry thought. It had been Nancy's dream, too.

Now the roaring rose and became like that of a thousand jets far beyond the horizon. It approached and increased at the speed of jets, but did not pass. From the center of the South Grid the sound crashed against the jungle, the station buildings, and the people who staggered and groaned against it in terror and amazement.

Harry pushed through the sound as if it were a physical barrier, supporting Nancy with an arm about her waist. Dr. Ames and Kripps and Sanderson got to their feet and moved to the empty windows overlooking the Grid.

There was mass out there, a strange mountain of mass that grew as they watched. As if from some internal heat, it glowed. Through blood-red, crimson, to white brilliance even in the African noon-day sun, the light rose and flamed. The mass moved as if in pain, and out of the midst of it came new alien sounds like the cries of beings from another world.

"Materializing — " Ames groaned.

"But it's out of synch!" Kripps exclaimed. "It's a conglomerate mass!"

"Freight — goods — people from dozens of alien worlds." Nancy murmured. "Like a crashed ship. Dr. Ames, we've got to help them!"

Ames seemed dazed by the disaster. "Yes — yes," he agreed. "We've got to help them. Please notify the medical staff, Nancy. Tell them I order them here at once to do what they can."

"Our own people need help, too," said Harry. The cries of injured continued to come from other parts of the building. He turned back to the room. Some figures lay still upon the floor in concerted shapes. Others were standing, like himself, gazing numbly at the desolation.

Nancy tried the phone and found it dead. "I'll get Dr. Bintz and Dr. Walker," she said. "I'll

go back to the barracks and get everyone to bring supplies and help."

"You're sure you're all right?" said Harry.

"I'm fine."

"Kripps — Sanderson!" Harry called. "Check our people in the building, will you? Find out who needs help. The medics will be here in a few minutes."

The engineers nodded in dazed agreement. Harry moved toward the window where he'd last seen Ames, but the scientist was no longer there.

Harry called his name. Kripps said, "I think Dr. Ames went down towards the Grid."

Harry saw him then. The proud figure was shambling painfully toward the mountain of rubble that was growing a half mile away. Harry crawled over the debris of the fallen wall and raced toward him. The roar of crashing materials was a physical force. A gale wind of displaced air speared at him. Amid the maelstrom, a quieter sound of seething, hissing substances was like a counterpoint.

"Dr. Ames! You can't go out there! It's too dangerous."

Ames turned, his face reflecting his inner agony. "There are people out there. People of other galaxies. They're alive in that burning mound. We've got to help!"

"There's nothing you can do. We'll get a fire truck and the medics and do anything that's possible, but it's too dangerous for you to get near the pile while it's growing."

"If they aren't crushed in that mountain of junk, our alien atmosphere will kill them."

Ames paused, and Harry stood by him, and for the first time absorbed the magnitude of the catastrophe. The inferno of materializing objects was growing as if, literally, a cosmic train were piling into an immovable obstacle. There were flames rising from scattered points on the mound, but the crimson glow was caused more by the release of radiant energy as the flowing beam reconverted to tangible atoms.

The walls seemed almost vertical, as if the mass were growing from within. Like a moving lava front, the upper edges curled and toppled and were borne under the slowly expanding wall.

"We always wondered what would happen — " said Ames almost inaudibly. "Some of us thought the Train would materialize in good order. But others thought that synchronization would be lost and only a conglomerate mass would appear. They were the ones who were right."

Harry wondered if Ames had any idea that Steve Martin was



responsible for the disaster. Surely he must have suspected what Steve was thinking.

And then they saw him. The desperate figure of the Operations Manager was leaping from a Jeep and racing toward the mound from the direction of the barracks buildings. He seemed to have no intention of stopping. His ant-like figure was almost at the base of the expanding mound.

"Martin!" Harry shouted vainly through the chaos.

Steve Martin was at the very edge of the mound, retreating as it spilled toward him. Harry surged through the blast of air and heat and sound. The expanding wall of debris was nearly vertical as he reached Steve Martin. The top curled outward and fell with avalanche fury.

"Martin!" Harry grasped the Manager's arm and pulled him back from the edge of the inferno.

Steve Martin fought loose, oblivious to danger as the mass tumbled at his feet.

"Come back, Martin!" Harry shouted. "That stuff will bury you!"

"No, it's all right. We're safe here. Look, Wiseman — we missed getting what we wanted because synchronization didn't hold. But you can make out the shapes of stuff, and it's still good. We

can still find out what it's made of and how it works. Look, now — what is that? Household goods — machinery — scientific equipment? From where? This stuff has come from Andromeda Alpha Centauri — worlds a hundred million light-years away. This is what they've been holding back — the Emissary and his chiseling crowd. They thought they could use us like some foreign natives. And Ames, old mother Ames — he thought by being nice to the Emissary they would turn loose some of this stuff in time. When the human race is worthy, he used to say. Did he give you that line, Wiseman?

"If we knew the sciences, the technologies behind this stuff — even this scrap — But we'll find it, Wiseman. And you'll help us, won't you? You're remembering real good, aren't you, Wiseman? Remembering real good — "

"Look out!"

Harry glanced up at the mass that burned and curled outward above them. He gripped Steve Martin's arm and dragged fiercely.

Martin tore loose from his grasp and moved even closer to the moving, surging mound, as if to embrace it wildly. Then the curling mass plunged down. Harry heard faintly the cry of pain and terror.

IX

Dr. Ames limped painfully to Harry's side. "I saw it. That was an awful way to go, but a man like Martin doesn't deserve much better."

"You knew?"

Ames nodded. "I knew he wanted to materialize the Train. I didn't think he'd go this far. but when I saw your pictures of the missile launcher, I knew there was no time left. We had no other course but to abandon the project."

Harry looked back at the surging, growing mass that seethed and hissed and represented the science and technology of worlds more fabulous than all man's dreams. "There could have been a better way," he said. "It didn't have to end like this. We could have made a deal with them. You can always make a deal with anybody if you just try hard enough — if they've got something you want, and you've got something they want. All it takes is a little decent horse trading — "

A movement far down at the edge of the pile caught Harry's eye. Dr. Ames saw it, too, and he gasped as he saw a figure — a creature — and then another."

Ames gripped Harry's arm. "Harry — people. Passengers from the Train — they're still alive!"

A grotesque shape struggled up from the ground, groping with two arms. In despair, it tumbled on its side, shuddered and lay still. It was a furry, unfamiliar shape, but Harry could see it was burned and torn with lethal injuries.

Beyond it, another alien, a biped, struggled up, staggered and took a step forward. It had giant eyes, like a lemur's, that shone even in the sunlight. Short, fluffy hair covered its body — a barrel-like torso with pipestem limbs.

Ames sucked in his breath. "The Emissary! But it can't be — it's one of the same race. They're air breathers. They can survive in our atmosphere. Most of these others can't."

The creature stumbled, then steadied itself. Finally it bent down and picked something from the ground.

"A child!" Ames exclaimed. "One of their children."

"On its way to grandmother's house on the other side of the galaxy," murmured Harry. He felt it was silly, but it could well be true.

As they watched, Nancy drove up in a Jeep and saw what was taking place. She jumped out and ran to them.

"We've just got to help those people!" The fiery wind buffeted her as she raced toward the two creatures.

She approached the alien and held out her arms for the infant. The adult whirled and slashed out with one arm. The blow struck Nancy on the side of the head and knocked her to the ground.

Harry and Dr. Ames rushed to ward off further attack.

"Don't!" cried Nancy. "It didn't understand. It thought I meant harm to the baby. They must be half crazy with shock, anyway."

They faced the alien in a moment of doubtful hostility. Then, slowly the alien slumped. The spidery arms grew lax, and the huge eyes softened with infinite imploring.

"Catch the baby!" Nancy cried.

Harry stepped forward and caught the young one as the adult collapsed. Words of a sibilant, uncomprehended tongue slipped from the furry lips, and then the strange body was still.

"I'll take the infant to the dispensary," said Nancy. "We've got to help as many as we can."

"We don't understand their metabolism or their anatomy," said Dr. Ames. "We couldn't even safely apply an antiseptic to their wounds — or give an anesthetic for an operation we wouldn't know how to perform. There's almost nothing we can do for them."

"We've really got to try."

"What about our own people?" said Harry.

"Everything is under control. The doctors are at the Operations Center now. They have plenty to help. But six of our own people are dead."

Dr. Ames looked at the spot where Steve Martin had disappeared. "Seven," he said. "But maybe you're right. We shouldn't count him as one of our people."

Nancy laid the small furry alien in the back of the Jeep and drove to the dispensary in the barracks area. Harry and Dr. Ames walked back to the Operations Center. It was swarming now with station personnel under the direction of the doctors. Stretcher patients were being ferried to the dispensary for treatment of wounds and operations on internal injuries.

"The end of a dream," said Dr. Ames. "Maybe you were right, Wiseman. We were idiots to dream. Man is an idiot to dream in a world where dreams can't come true."

"I didn't say that," said Harry. "There's nothing wrong with dreaming. You just have to go about it in the right way."

"If I weren't too old to learn I might ask you to show me the right way."

And who am I to tell anyone how to dream? Harry thought.

When all of my own have turned so sour —

The pile of debris continued growing through the day. By nightfall it diminished its rate of growth slightly, but continued to glow and roar and stir fierce winds. Dr. Ames said that the transmission had undoubtedly stopped long ago, but whatever was in the pipeline would have to feed on through to its own destruction.

They knew that some salvage of a thousand priceless technologies might be possible from the debris, but they gave little thought to that now.

During the afternoon, living conditions were restored as best they could. The dead were buried and an airlift of the injured to Cape Town was begun.

They bore the aliens to the expanded, makeshift quarters in the barracks buildings, gave them such medical care as seemed feasible while they took care of their own injured.

Harry looked for Nancy near the end of the day and found her at the bedside of the alien child.

"I've been able to talk with her a little," said Nancy. "She speaks the language of the Emissary, which we've all learned a little. She's about the age of a ten-year-old among us. She was on the way across the Galaxy to visit others

of her family. It was the first trip she had ever been allowed to take alone. The one who picked her up was an older woman with whom she'd made an acquaintance just before the trip. She's like a little girl on the way to visit her grandmother in the country!"

So it hadn't been so silly, after all.

Harry looked at the little lemur face. The huge eyes seemed to plead for succor he could not give. "Do you have any idea how to treat her? Do you know what she eats?"

Nancy shook her head. "We've read something in their books about their native foods, but we can't compare them with ours. We've taken blood and tissue specimens for analysis to see if we can estimate food requirements. We know, of course, they're on a carbon-oxygen cycle so we ought to be able to come close."

X

On the morning after the disaster, they saw what Harry had been told everyone expected to see.

The Emissary.

His ship was like an eight-foot crystal egg. It appeared after sunrise between the South Grid and the ravaged Operations Center.

All station personnel who were able to walk were waiting and watching for him. And dreading the sight when he came.

The Emissary emerged from his ship and walked toward the ruin. The station fire truck was still pouring foam onto the outbreaks of fire. The Emissary watched it, and the personnel of Africa Prime watched him. The silence was total. Only the squeals of jungle animals beyond the compound and the hiss of foam on the mountain of debris were heard.

Dr. Ames walked slowly from the crowd toward the Emissary. He passed the crystal egg, and then the Emissary turned and saw him. They stood a moment. The crowd could not hear their words. Harry guessed Dr. Ames was telling how the accident happened: An act of war by the enemies of the Gambuans.

The alien and the scientist began walking back. They stopped in front of the crowd. Dr. Ames began speaking slowly.

"I have expressed our deep regret to our friend, the Emissary, that our condition of warfare has finally resulted in such a tremendous disaster to their transportation system. I am told that there can be no consideration of the continuation of the relay station, even though I have suggested relocation to other, more re-

mote areas such as the poles or the Australian outback. They have made a comprehensive computer-type prognostication of the political and martial future of Earth's civilizations, and it is not favorable to their continuing operation here. There is no other answer except to end the association. The Emissary would like to express his regrets and his thanks to you."

In halting bursts of gutturally-spoken English, the Emissary began to speak. At first, Harry could not distinguish the words, but gradually he was able to get the intent of the alien's words.

"It is with regret that I end our establishment," the Emissary said. "You have served faithfully and long, but our establishment is not safe. Our merchandise has been destroyed and the lives of our people have been lost — and we shall have to account to the Dmwar and the Ectoba Galaxies for the loss of their travelers, and it will not be a pleasant negotiation. This must end. We give you our many thanks for your services. But this must end."

He seemed to glance over the crowd without seeing and then turned. Disbelief and uncomprehending disappointment were on the faces of the engineering and technical personnel of Africa Prime. But nobody spoke.

None except Harry Wiseman. He plunged out of the crowd and stopped within a half dozen feet of the Emissary.

"Just a minute, please. I think you're forgetting something."

The Alien turned at the strange sound of Harry's voice, scanned him with the lemur eyes and finally spoke disparagingly. "Nothing has been forgotten."

"Payment," said Harry. "You forgot to say anything about payment for the services rendered to date."

The eyes scanned him again. "You have not been here before. I would have remembered you."

"I'm new, all right. I've been appointed Technical Contracts Negotiator. That's my business. Sometimes a contractor and a customer don't see eye to eye on the cost of a program, and it's my business to iron out any discrepancies."

"You talk gibberish," said the Emissary. "I don't understand a thing you are saying."

"I'm saying you owe these people payment for their services. They have done something for you, now you must do something for them."

The Emissary turned and faced Harry squarely. "You excite my interest. They made no request for any kind of payment — except to come to our planet, which we could not permit because of

restrictions on lower cultures. It disturbed us at first. We could not understand why you made no request in return. We concluded your culture was just too primitive. I estimated we were adored, and we gave small things like gold bobs."

"You misestimated completely, I'm afraid," said Harry. "Those gold bobs were used to buy goods to sustain these people, but it was strictly subsistence. A payment in term of profit is desired. Do you understand me?"

"Yes — I think I do," the Emissary said. "And you astonish me. I did not know this was so high a culture."

Harry felt a burst of elation. He'd been right in his sizing up of the situation. The scientists had been taken for boobs because they had acted like boobs. Harry smiled expansively and hooked his thumbs in his belt.

"Well, now — so you recognize that we haven't had a very good deal. So you'll see how we just couldn't take another contract like this one. We've lost our shirts, and I know you wouldn't want to see that happen again —"

"This must end," the Emissary said with discernible frost in his voice. "We have agreed to that."

Harry ignored his interruption. "We haven't had a very good deal. But we might be persuaded

to continue if some arrangement for back remuneration could be made. In turn, we would be agreeable to establishing fully secure facilities."

"There is no place on your planet that is secure. We would not risk establishing our station again under such conditions as prevail here."

Harry nodded in sad agreement. "We are more than aware of our own grave deficiencies. We feel deeply our own negligence in exposing your station to the hazards we did. But we also recognize your great need of a terminal in this area. That is why we are prepared to make extraordinary concessions in reestablishing the station in a positively secure site."

"Name such a place!"

"Mars. The planet Mars."

The Emissary stared, his mouth opening silently. Dr. Ames stared in disbelief.

Nancy Harris gave a little scream. "Mars!"

Harry nodded. "Mars."

The Emissary closed his mouth and started over. "You have no facilities or access to Mars." He glanced around in despair. "You are the most preposterous people in all the Five Hundred Million Galaxies!"

"It's just as easy for you to set up your equipment on Mars as on Earth," said Harry. "That's not a pinpoint's difference in lo-

cation on your Galactic maps."

"You certainly know what the Martian terrain and atmosphere are like! You couldn't exist there —"

Harry shrugged carelessly. "A protective dome with captive Terran environment would be a simple matter for your engineers."

The Emissary stared from one to the other as if trying to absorb the impact of this proposal. "This would be a great effort — so great a change — for your people."

"That's right," said Harry hastily. "And that's why I mentioned remuneration to begin with. We could only consider such a project on the basis of very adequate remuneration — which you agree we haven't had so far. But we'll consider taking on this job — if you care to make an offer."

"There has been difficulty in staffing even this station. There would not be enough of you willing to go to Mars for such a project."

Harry laughed heartily and turned slow to those behind him. Now was the moment of truth. His laugh died as he caught Ames's apoplectic eye, and the confused countenances of Kipps, Stevenson, a score of engineers. He forced himself to laugh again. "He thinks we

wouldn't want to go to Mars. Can you imagine that, folks? We'd jump at the chance to go to Mars, wouldn't we? Wouldn't we, Dr. Ames? Kipps, you'd jump at the chance to run this station on Mars, wouldn't you?"

The throats of some seemed to work with strangled words. Ames stood tight-lipped and stiff.

Harry wheeled desperately. "We'd go to Mars and love it, wouldn't we? Wouldn't we — ?" He searched with rising panic for a responsive face in the immobile crowd. A smile was like a sudden light in the gloom. "Wouldn't we, Nancy?"

"Of course we would!" Nancy exclaimed. "I've always wanted to go to Mars. It's the one place I'd rather see than any other." She turned to Ames and shook his immobile arm. "Don't you agree, Dr. Ames? Won't it be wonderful, living and working on Mars?"

Ames's immobile stature seemed to break, and he turned, smiling down at Nancy. "I can't imagine anything more delightful, my dear."

Kipps simply shook his head in disbelieving wonder. "You did it, Wiseman. Damned if you didn't do it."

"But you'll go with us to Mars, won't you?" Harry persisted.

"Yeah. Yeah, sure I'll go. Do you think you could leave me out of it?"

They were all laughing then and pounding each other on the back and shaking hands and kissing the girls. Harry turned to the Emissary. "You see? There's no question about our going to Mars if you wish to provide the means and a proper contract."

The Emissary nodded uncomprehendingly. "Yes, I see," he said. "I see."

"If you care to step into the office back there, I think we can clear a desk and perhaps discuss terms of the contract — "

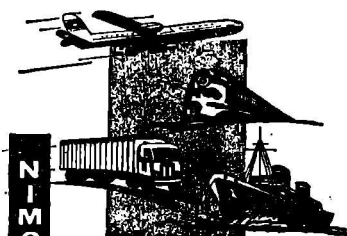
The Emissary strode slowly forward at Harry's invitation. Behind his back Nancy threw her arms about Harry's neck and kissed him exuberantly.

It would be a long time, Harry thought, before Collins got his report on Smith Industries.

—RAYMOND F. JONES

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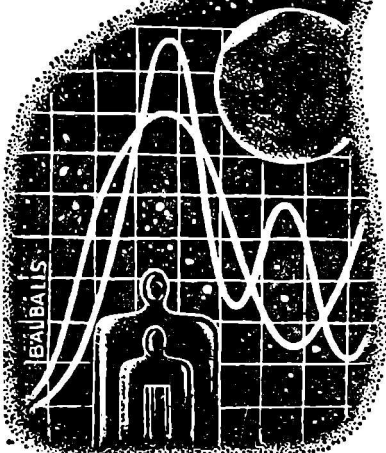
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BY WILLY LEY

THE DISCOVERY OF THE SOLAR SYSTEM

The problem up for discussion is this: a star at a distance of 20 or 30 light-years from us has a system of planets. One of these planets is inhabited, and its inhabitants have found out that the other planets of their own system are inhospitable, to be polite about it. So, naturally, they look around to see whether



there is another solar system in the general neighborhood and, among others, they look at the G-type star we call the sun. Could they find out whether that star has planets?

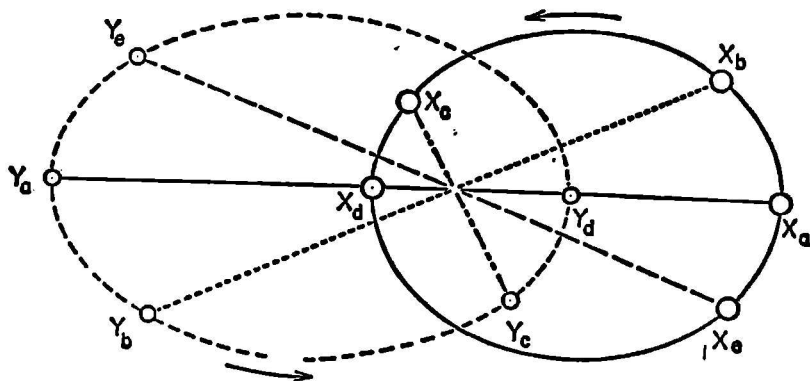
The condition for the discussion is that their instruments are not much better than ours, that their brains are equal to ours, and that their patience is what is needed for the job on hand.

The method they have to use is the one that on our planet was introduced by Friedrich Wilhelm Bessel. You very carefully measure the position of a star and keep this up for a considerable number of years. That way you obtain a straight line represent-

ing the motion of that star. Of course this works only with a star that is relatively near; nobody lives long enough to do that successfully with a distant star. And even if you pick a nearby star you can still be out of luck if that star happens to move more or less along the line of sight, either toward us or away from us.

Bessel, to his great pleasure, found that the motion of Sirius looked like a slightly wavy line. The telescopes of his time did not show a "companion of Sirius," but the wavy line proved that there had to be such a companion. The reason why the line must be wavy is that a planet does not simply revolve around

Fig. 1. The motions of two stars around their common center of gravity. The diagram begins with the position of extreme distance (X_a to Y_a), While the more massive star moves from X_a to X_b , the weaker companion moves from Y_a to Y_b . The positions X_d to Y_d represent the shortest possible distance between the two stars.



a star, but that, strictly speaking, both revolve around a common center of gravity.

Theoretically this holds true no matter how large or how small the planet is; in reality the mass of a very small planet could be neglected. If our sun had no other planets than little Pluto, the center of mass of the sun-Pluto system would, for any practical purpose, be the center of the sun.

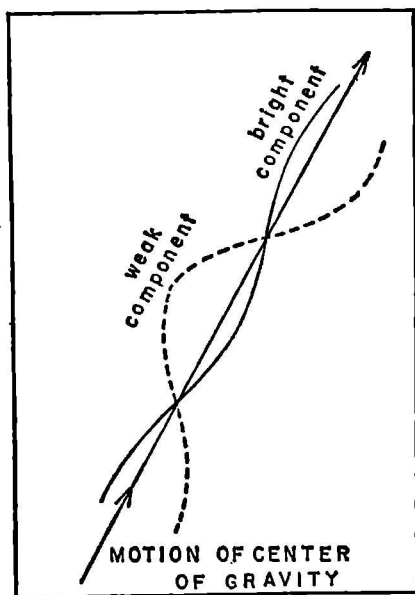
But if you have two bodies of comparable masses, say with the larger one three times as massive as the smaller one, the concept of "revolution around the common center of gravity" acquires reality. Fig. 1 shows an example, for two stars called X and Y, where X is the more massive of the pair. All the lines between X and Y go through the common center of gravity (also called the center of gravity of the system) and when X is in position Xa, then Y must be in Yb, and so forth.

The situation shown in Fig. 1 shows the system "at rest," as it were; only motion around the common center of gravity as assumed. In reality the whole system will also move through space and then the performance would look like Fig. 2. Since I have picked a binary or double star as an example, both stars would be visible as a rule. But if you

assume that the weaker of the two does not produce enough light to be visible, the visible partner of the pair would seem to move along a wavy line.

Sirius seemed to have such a dark companion. Soon afterward it was found that Procyon also had a dark companion. But in 1862 it turned out that the companion of Sirius was not dark, it was just small. It was the first of the so-called White Dwarfs to be discovered. And a few years later the companion of Procyon also turned out to be visible in a sufficiently powerful instrument.

Fig. 2. The motions in a binary system



But Bessel's method had proved its value just because it had revealed the existence of two astronomical bodies before they could be seen.

More recently a total of four "dark companions" of four different stars have been discovered, and since their masses are quite small, it is likely that they are really dark.

Now we can return to the original question: could an astronomer residing on a planet 20 or 30 light-years away deduce the existence of planets of our sun in this manner? In other words, would our sun seem to move in a wavy line?

Knowing that the sun contains 98% of all the matter in the solar system one is tempted to say that this is unlikely; the remaining 2% do not look as if they could influence the other 98%, especially since the 2% are not even concentrated in one body but spread over eight major and very many minor planets. As happens quite often, such quick reasoning — though it sounds convincing — is nevertheless off the mark. West Coast astronomers, after having performed the necessary calculations, found that the planets do influence the sun's motion.

The reason why the conclusion that the 2% of the total

mass of the solar system can influence the 98% represented by the sun is that they are very nearly concentrated in one body, namely Jupiter.

Here is a list of the masses of the planets, expressed in earth masses:

Mercury	0.04
Venus	0.81
Earth	1.00
Mars	0.11
Jupiter	317.00
Saturn	95.00
Uranus	14.70
Neptune	17.20

adding up to 445.86 earth masses.

Didn't I forget a few things?

How about the combined mass of the asteroids; the four major moons of Jupiter: Titan, moon of Saturn; Triton, major moon of Neptune and our own rather large moon? I just added them up separately with the generous assumption that the total mass of the asteroids equals the mass of Mercury. The result is 0.13 earth masses, bringing the total up to 445.99 earth masses. With all the smaller moons of the major planets and the comets, we might end up with an even 446 earth masses.

But look at the list again, now.

One glance shows that Jupiter has more mass than all the other planets taken together — if you take Jupiter away it is Sat-

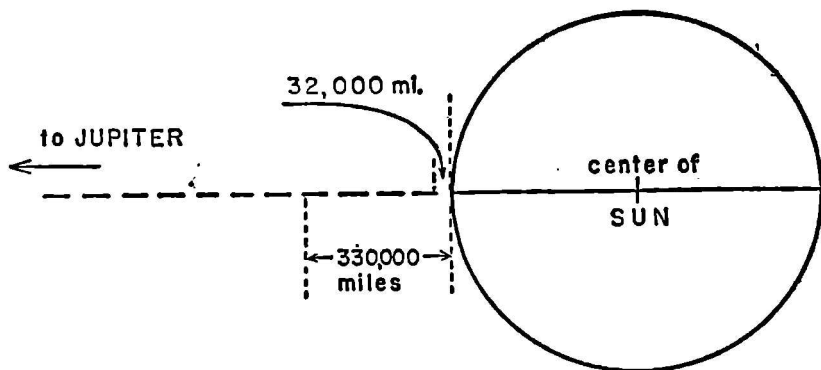


Fig. 3. The center of mass of our solar system. It can vary from the vicinity of the center of the sun to a point 330,000 miles from the sun's surface.

urn that has more mass than all the others together. In fact Jupiter represents a little more than 1.4 per cent of the total mass of the solar system.

It has been said earlier that the center of gravity of the solar system would be identical with the center of the sun if Pluto were the only planet. How would it look if Jupiter were the only planet? Then the center of gravity of the system would actually be outside the sun. It would be 462,000 miles from the sun's center and since the radius of the sun is approximately 430,000 miles it would be some 32,000 miles above the sun's surface in the direction of Jupiter's position. This would introduce a measurable waviness in the sun's motion, since it would amount

to more than the solar diameters. (Fig. 3.)

However, Nature does not make things quite so easy for the astronomers on that other planet. There are still the other 0.6 per cent of the mass of the solar system, concentrated mainly in Saturn; and Saturn (plus Uranus and Neptune) will sometimes work along with Jupiter and sometimes more or less negate Jupiter's influence.

In 1951 the four outer planets practically cancelled each other out. Jupiter was on one side of the sun, Saturn, Uranus and Neptune were on the other side, and the center of gravity of the whole solar system was very close to the sun's center. But then Jupiter moved around and

for the period from 1959 to 1961 all the four outer planets were roughly in the same direction as seen from the sun, and the center of gravity of the whole system was 760,000 miles from the sun's center or 330,000 miles from the sun's surface. After that the planets again dispersed, mainly because of Jupiter's faster orbital motion. By 1965 the mass-center of the whole system was inside the sun again, and by 1969 it will about coincide with the sun's "surface" or rather the photosphere. Then it will move outside the sun again.

The patient observer on the planet 20 or 30 light-years away will find out that the wavy line described by our sun has a variation in amplitude; sometimes it will be less wavy than at other times.

They should have no trouble concluding that our sun is orbited by at least two, but probably three or four, dark companions. Of course they will try to determine the masses and periods of revolution of the dark companions but since they can assume the existence of two, or three, or four companions, the arguments at scientific meetings should be lovely. Maybe, at some time in the future, we'll meet and compare the solar system they have deduced with the facts as we know them to be.

The Case of the "Atomic Rocket."

A short number of years ago — only three or four — the radio commentator Barry Farber said to me just before we went on the air, "My last question will be: if you could talk with one of the top men in the Soviet rocket program and you could ask him one question with the assurance that you'll receive a truthful answer, what would you ask him? I am telling you this now so that you have a little time to think about the question you would ask."

When he did ask me I had an answer ready.

I would ask the Russian expert on whether the Soviet Union had a program for developing a nuclear-powered rocket. Unfortunately I never had the chance of actually asking this question and if I had had such a chance there would have been no assurance that I would have received a truthful answer — or an answer at all.

But since our side has been thinking about nuclear rockets since 1946 and began actual work (Project Rover) in 1955, it would be more surprising indeed if the Russians were not doing a great deal of investigating on their own.

The fundamental concept of the nuclear rocket is quite sim-

ple: a suitable substance, preferably a liquid, is heated by an atomic reactor so that it first turns into a gas and then into a hot gas under pressure which escapes through an exhaust nozzle like the combustion gases of a rocket with chemical fuels.

The next question is what is a suitable substance, or rather what makes a substance suitable. Let us assume that you burn an ordinary liquid fuel like ethyl alcohol with the necessary amount of liquid oxygen, you'll have an exhaust blast consisting of water vapor (H_2O) and carbon dioxide (CO_2). It will have a certain exhaust velocity which we'll call c (the numerical value will be somewhere between 6700 and 7000 feet per second) and a mass equal to the amount of alcohol and oxygen consumed during a given time, let's say one second. The thrust produced by this exhaust blast, we'll call it P , can be calculated by the fundamental rocket formula

$$P = c (dm/dt)$$

where dm/dt is assumed to represent the exhaust mass during one second.

If you want to increase P we can do one of two things; we can increase dm/dt which means we can burn more fuel per second, or else we leave dm/dt alone and increase c . This usually means a switch to a more energetic fuel,

but I have picked the example of alcohol for a specific reason; it is one of the few cases where c can be increased by another method.

As has been mentioned, the exhaust consists of CO_2 and H_2O . A molecule of CO_2 weighs $12+16+16=44$ units, the figures being the atomic weights of the elements involved. A molecule of H_2O weighs $1+1+16=18$ units. If we say for the sake of simplicity that the number of CO_2 molecules is equal to the number of H_2O molecules (not true), the average molecular weight of the exhaust would be 31 units. As we have just seen the CO_2 molecule weighs two and a half times as much as the H_2O molecule. If you add water to the alcohol, the combustion heat will vaporize it and you then have more of the lighter molecules in the exhaust. Its average molecular weight is now less, *and for this reason the exhaust velocity goes up.*

Of course you must not add so much water that the combustion temperature is lowered to a considerable extent. The most practical mixture, the one that was used in all large alcohol-burning rockets, is 75% alcohol with 25% water.

The lesson learned was that the molecular weight of the ex-

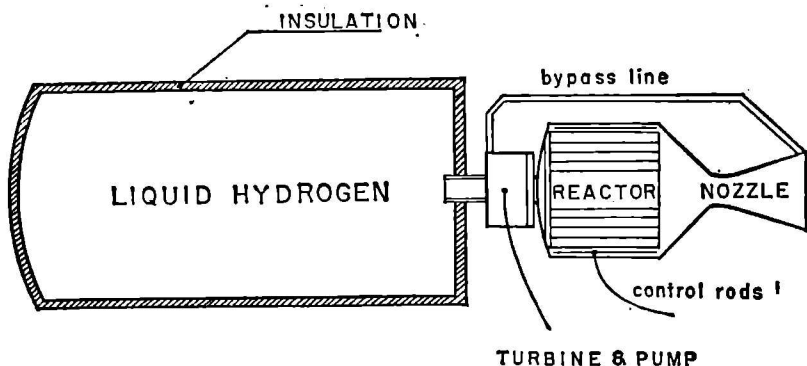


Fig. 4. Schematic diagram of an "atomic" rocket.

haust should be as low as possible. The lightest molecule in existence is that of hydrogen, but in a chemical rocket hydrogen has to be burned with something — it could be oxygen or fluorine. Since fluorine is the most dangerous chemical element in existence, the choice of oxygen was rather obvious. Besides, the atomic weight of fluorine is 19, three units heavier than oxygen, so that the molecules in the exhaust would then weigh more.

A rocket burning pure hydrogen with pure oxygen produces an exhaust of pure water vapor, with a molecular weight of 18 units, and you cannot get any lighter molecules in a rocket exhaust.

Unless, of course, you *don't* burn the hydrogen.

This is what happens (or does not happen, if you prefer) in the nuclear rocket. Fig 4 shows the general arrangement. The tank holds liquid hydrogen which is then pumped into what would be the combustion chamber in a liquid fuel rocket. In the nuclear rocket this space is occupied by the nuclear reactor that is run as hot as it can be run without melting itself. The hydrogen is heated while it passes through the reactor and emerges from the exhaust nozzle as a hot blast of pure hydrogen gas. A small amount of this gas goes through a by-pass pipe to supply power to the turbine that drives the fuel pump.

For various reasons, of which higher efficiency is the most important, nuclear rockets are to be used as the upper stage of

chemically powered rockets. They will, therefore, operate at altitudes where there is very little atmosphere left. If such a rocket were used in the lower atmosphere, for example during a test flight, the very hot hydrogen gas would combine with the oxygen of the atmosphere and the rocket would acquire a long fiery trail. But this flame would be a secondary phenomenon that does not contribute to propulsion.

The first prototype of what is to become the NERVA (Nuclear Engine for Rocket Vehicle Application) rocket engine was called Kiwi-A and underwent its first test run on July 1, 1959. It was successful with a hydrogen flow of 6.6 lbs/sec.

Kiwi-B was to have ten times the hydrogen flow per second of Kiwi-A. It was first tested with gaseous hydrogen in December 1961 and with liquid hydrogen in September 1962. Some mechanical weaknesses in the reactor showed up and more tests resulted in a newer design called Phoebus-I. On February 23, 1967, a Phoebus-IB reactor ran for a total of 30 minutes in several tests developing a thrust of 75,000 pounds. And in December 1967 a reactor called NRX-A6 ran for 60 minutes.

Before anybody jumps to the

conclusion that everything is superlatively rosy when it comes to nuclear rockets with hydrogen exhaust, let me set down the disadvantages. They are what rocket engineers refer to as weight penalties, so named because the ideal rocket consists of fuel and payload only; every ounce of everything else is looked at with hostility.

The weight penalty trouble begins with hydrogen itself. It was chosen because its molecule is the lightest there is. In its normal state as a gas it is the lightest gas there is. When liquid it also is a very light liquid, weighing only 0.07 grams per cubic centimeter. That means that the tank that is to hold, say 5000 pounds of liquid hydrogen must be larger than a tank that is to hold 5000 pounds of liquid oxygen that weighs 1.14 grams per cubic centimeter. Of course a larger tank weighs more.

The next troublesome point is the temperature of liquid hydrogen. In order to be a liquid, hydrogen must be colder than *minus* 253 degrees centigrade (*minus* 423 degrees Fahrenheit.) For liquid oxygen, with which there is far more experience, the figures *minus* 183 centigrade or *minus* 297 degrees Fahrenheit. This means that the tank must be more heavily insulated, and there is another weight penalty.

What would be the empty space of the combustion chamber in a chemically fuelled rocket motor is taken up by a heavy reactor. Its actual weight has not been disclosed but it must weigh at least 2.5 grams per cubic centimeter, not counting the shielding that is needed.

However, these weight disadvantages are fully compensated by the higher thrust that results from a higher exhaust velocity. The exhaust velocity of the nuclear rocket will be nearly 8000

meters/sec., corresponding to 26,250 feet/sec. This is roughly twice as high as the highest exhaust velocity obtainable with chemical fuels.

At the time of writing this (late in June 1968) no date for a flight test has yet been set. As a matter of fact, the program may be menaced by budget cuts. But work on the all-important reactor has reached a point where the creation of a nuclear-propelled rocket is only a question of time. —WILLY LEY



FORECAST

By now any regular reader of *Galaxy* or *If* has become pretty familiar with the work of a young Californian named Larry Niven, who appeared from nowhere three or four years ago and has rapidly become one of the most popular science-fiction writers around. It's easy enough to see how the trick is done: All it takes is a good basic knowledge of science, willingness to follow one's own course instead of the vogue of the moment — and a lot of talent. Niven's third book is on the way now; his crop of published stories mounts into the dozens; at least one of them has won science-fiction's top story award, the "Hugo" . . . and next month we offer you a short novel which Niven calls his best story to date.

The name of it is *The Organleggers*. We've read it twice now. Wouldn't be a bit surprised but what he's right.

Cover story in the issue, also a short novel — and also a particularly fine one, we thought — is Ben Bova's *Foeman, Where Do You Flee?* The time is the fairly near future; Man has gone into space, and discovered that Earth in remote history was ravaged by a technologically superb, militarily ruthless race . . . that has left no trace of its origin. Question is — where are they now? And what are they up to?

And, let's see, there's a Harlan Ellison-Ken Kesey collaboration, a batch of good short stories, the regular features by Algis Budrys and Willy Ley . . . we think it's likely to be the kind of issue you remember for some time.

A LIFE POSTPONED

by JOHN WYNDHAM

Illustrated by MORROW

*Where there's a Will, there's a
female way — even when the swain
frêezes at the hint of licenses.*

I

Love is a guerilla. He may pounce from ambush, attack in sudden force, or throw off a disguise to reveal that he had already infiltrated.

His assault on Cyra took place early one morning when the new-risen sun enchanted the new-burgeoned leaves, the birds proclaimed that the world was theirs, and the works of man were no more than a vagrant clink of

milkbottles. Cyra drifted through the dissolving curtains of sleep, stretched herself with feline satisfaction, lay still a moment, and then opened her eyes. It was at this precise moment that the shaft struck her, and the world was changed. She was startled to know that she was in love.

This, in a world where 'love' is, by wearisome repetition, likely to imply little more than purely temporary frustrations moaned by bedhopping pop-singers, may

need some explanation. Let it be understood, therefore, that this was no top-ten parody, no entrepreneur's packaged surrogate. It was the authentic rosy, aching, warming, enchanting, frightening, weakening, strengthening, beautiful, devastating, life-transmitting thing. And Cyra lay there, overwhelmed by it.

Willie, as suddenly seen by her heart's eye, differed quite considerably, she found, from Willie as previously seen by her mind's eye—and, it must be admitted, he would be almost unrecognizable to anyone else's eye. He had, for one thing, acquired a fascinating amount of detail. She went over his face inch by inch. The hair-line, the eyebrows, the eyelashes, the eyes themselves, the texture of his skin, his nose, his mouth — she was astonished by what she could recall, and how nice it all was. And his expressions, his mannerisms, the way his left eyebrow would twitch, the way his smile started, and grew. She found she could see his hand, too; the way his fingers rested, how his nails were formed. It was puzzling to find so much information coming out of her own head, but very pleasant. It was also curious to discover that the coming day would be largely a blank until she met him in the evening.

Willie Trevinnick would have
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been flattered, but perhaps unlike most of his contemporaries, surprised, and a little alarmed, to know of this analysis going on a few miles away. He was possibly a trifle old-fashioned in regarding most of the girls he knew as persons, rather than as a kind of bird-seed scattered by providence to feed male vanity. It would not have occurred to him that his features were either notable or do-table-on; nor, indeed, to anyone unassisted by Cyra's insight, were they. Nobody, as far as is known, had been impelled on seeing him to ask: "Who is that handsome man?" — if only because, though by no means repellent, he failed to accord with any standards of type; wherefore the most com-mital comment was likely to be: "That craggy looking one over there. Now, he has what I call an interesting face."

It was an interesting face, but one that could only exceptionally be called genial; it frequently looked worried, occasionally scornful, most often, bewildered. Some there are born to a world that's tailored to receive them. They slip into it as, according to status, barrow-boys, estate-dealers, or merchant-bankers; they find it a fine place, they wallow in it, and make good. Others have the misfortune to feel that perhaps there are a few things wrong with it: disorder trou-

bles them, injustices irk them, chuckle-headedness offends them; most of them manage to make out rather well at that; some of the more sensitive may opt out, into clinics .

Willie was a maker-out, but among thickets of misgivings on account of things in general. All the time, it seemed to him, national politics became a wilder carnival of unreason; national ambitions, the fantasies of schizophrenics; the United Nations a place where emotional immaturity could outvote the wisdom of experience, what there was of it every time; and Parliament, a collection of job-clingers busy stopping votes leaking through pinholes while confidence ran out of an open tap. Things, in fact, looked pretty bad in every direction — and the prospects for posterity even worse.

He had taken a degree, quite a nice degree, at London University, and used it to land himself a job where, at least when he was at work, the perversity and fecklessness of the outer world did not trouble him. He was, in fact an Assistant Curator in the Department of Locomotion at the Victoria and Albert Museum. He found the work interesting, and it was only out of office hours that he allowed himself to wonder what pre-natal sins had condemned him to be born into an age that

grew ever dottier as it approached the end of its tether.

It was this Willie, then, who, rather surprisingly, and with all love's unreason had become the apple of Cyra's eye, the finger on Cyra's heartstrings, the sun in Cyra's sky. Nor was Willie indifferent to Cyra. On the contrary, she troubled him — in a different way from the world-outlook, of course, rather pleasantly and insistently. He noticed that when she came into a room the voltage of the electricity supply seemed to go up and hither-to beautiful flowers faded into insignificance and that her presence was accompanied by a scent which was surely that of new-mown asphodel.

It happened again that evening. He was awaiting her in a quiet, tasteful enough, though unremarkable restaurant when he heard her voice greet the door-man behind him. Immediately the whole place underwent an Elysian transformation; even the sherry he was sipping at the moment turned to ambrosia.

So there is love. But love is ambivalent. For a woman, as you will undoubtedly have heard, it is her whole existence. For Willie it was, though deeply stirring, provocative of tender feelings, and conducive of castle-building, nevertheless a thing somewhat apart — that is, apart from, and

even in some respects opposed to, his views and his principles.

It was a pleasant dinner, amiably and unhurriedly served, and during the course of it they chatted. Indeed, Cyra prattled at some length of her Aunt Carola whose flat she had shared since the death of her father some two years ago. Her Aunt Carola was a dear, and she was very fond of her; all the same, it was not an arrangement that could continue indefinitely. She thought that when she was twenty-one, in about six month's time, and would come into a little money of her own, she would move. One rather felt that Aunt Carola might be glad to have her place to herself again. The question was whether one might not feel rather lonely in a flat by oneself . . .

By the time they had wolfed their way through half a bowl of profiterolles, Willie was confessing that his own domestic arrangements were not entirely satisfactory. After the death of his parents, slain by a drunken motorist on the Portsmouth Road, he had sold the house and moved into furnished rooms. They were not bad; handy to the museum, run by an obliging and motherly-disposed landlady, comfortable rooms, really, but, all the same . . . well, there was feeling of perching rather than nesting.

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The coffee was good. Willie took brandy with his; Cyra sipped Cointreau while they considered the imperfections of their circumstances.

Willie had more brandy. Cyra switched to Drambuie and watched patiently for signs of improvement in Willie's heartbeat. They were small, but not discouraging.

Willie had another brandy; Cyra switched back to Cointreau. After a time she decided that a transfusion might help. His hand was resting on the table beside her. She reached towards it and drew an elegant and thoughtful middle finger down the back of it.

"Of course," she said, "one way out would be for us to get married." She paused, wondering if the whole restaurant could hear the thumping in her chest.

Willie paused, too — for a dreadfully long time. Then he said:

"I'd thought of that."

It was a difficult moment. Convictions which were the slow growth of years vied with emotions that had come to blossom in a month or two. The tussle was painful. The convictions had a wiry strength; the scent of the blossoms was heady. Willie carefully kept his eyes looking straight ahead as he added:

"But it wouldn't be fair."

Cyra withdrew her hand and inspected it critically.

"Not fair?" she inquired.

"Not fair on you," Willie explained. "You see, you'd want babies."

"Oh," said Cyra. "And you wouldn't?"

"It isn't so much that," Willie told her. "It's that introducing babies into the world in the state it's in is — well, it's almost a criminal action. For a man, that is. For a woman it's different. She practically can't help it — can't stand against the biological wind, if you see what I mean."

Cyra frowned a little.

"There is — er — family planning," she suggested.

"That's not the same as no-family planning," Willie pointed out. "And that wouldn't be fair," he repeated.

Too much fairness, Cyra decided, wouldn't get things far.

"People don't *have* to have babies, if they don't want to," she objected.

"But nearly all women do, either because they *do* want them, or they think they ought to want them, or people expect them to want them. So as I said, it isn't playing fair to stop them. But neither is it fair to a baby to bring it into the kind of world this is going to be in about twenty-five years' time."

"That does make it difficult.

Sort of not fair either way . . . " said Cyra, sadly.

Willie agreed. "So," he explained, "the only course open to a scrupulous man is to opt out of marriage. To refuse to throw any progeny into the rat-race — which is going to get fiercer until it becomes rat-eat-rat."

"Y-e-s, I suppose so," admitted Cyra. "But doesn't that make life rather pointless?"

Willie became philosophical.

"But life *is* pointless, per se — just consider an ant-heap, teeming with pointless life. It only begins to have point when it acquires human intelligence to shape it. And that's what we're not doing. We're breeding ourselves to destruction just as senselessly as any unintelligent form of life. Here we are, crowding closer to the edge of famine every year, and what happens? In this country, we actually subsidize babies when we ought to be taxing them. It isn't a rational world at all, it's like something thought up by Gilbert and Carroll. We're in a state of unguided transition. What fascinates me is what is going to happen when the crunch comes. Will it be savagery, technocracy, or annihilation?"

"I don't see how your not having a son or daughter is going to stop any of them."

"Oh, it isn't. But at least it won't be on my conscience that I

am responsible for some wretched descendant having to face the ghastly music when it comes."

"If it comes."

"It'll come all right — unless somebody takes charge. That might just give us a chance. But can you see any sign of that happening? God, I'd like to know what's going to be the end of it."

Cyra was beginning to feel bored, and a little depressed — not discouraged; she had, after all, fired only her first live round — but she had heard quite a lot of this kind of thing before. No doubt it was very interesting if you happened to have that kind of mind, but if you didn't, it was exasperating and frustrating. She appreciated that principles were generally considered worthy things to have, they gave a kind of cachet — well, you'd only have to think of the word "unprincipled" to realize that — at the same time it could be difficult to have patience with principles when they interfered with real life.

Normally any conflict between love and principles can easily be resolved by the catalytic application of another principle: if you can't lick 'em, join 'em. Thus it is only necessary for one party to profess the principles of the other party, and all is harmony. But this was rather a special case; it would unfortunately require her

to profess simultaneously that it was unfair for her not to have a baby, and unfair to the baby to get born. Not a dilemma solvable off the cuff. It needed consideration — a subtle, possibly even a devious, approach.

Willie had another brandy, Cyra reswitched to Drambuie, but conversation became spasmodic, lapsing now and then into thoughtful pauses.

II

Cyra awoke the following morning aware at once that she still loved Willie; aware, too, that, in his male way, Willie loved her. The trouble seemed to lie in the schizoid natures of men. They not only had too many interests, but they appeared to be incapable of arranging them in order of relative importance — an incapacity which, she suspected, might be at the root of many of the political troubles of the world. They were forever complicating the simple by the application of principles — and differing principles, at that.

Not that she had any objections to Willie's Principle Number One; in fact she agreed with it. It was Principle Number Two that was the obstacle — how to convince him that, whatever kind of mess the world was headed for, a baby had a *right* to get born.

Of course, when you allowed yourself to think of the kind of future which at least half the world's present population of babies were bound to face, it was difficult to think of convincing arguments in favor of more . . . But there she was, falling into the trap of male theorizing again . . . Clear the decks . . . She, as a woman, had a *right* to have babies if she wanted them . . . No, more than that — the race must go on; she could do her bit to see that it did, therefore it was plainly her *duty* to have babies . . . Put that way it did sound a bit Old Testament and coercive, perhaps, but . . . Oh, to hell with arguments! She wanted Willie. She also wanted babies. All she needed was to find some way of unhorsing this principle, and she could have both.

Willie, too, was having principle trouble. Any agreement not to have children would not only be unfair to Cyra; it would not work. And if you tried to make it work you'd have the makings, too, of an old-fashioned, three-act farcical comedy — one quite unfunny for the participants.

On the other hand . . .

Willie had thought a lot, perhaps rather too much, about the other hand. Practically everyone he knew appeared to think that their children, in whatever circumstances, were lucky to have

got born at all and ought to be grateful for it. Even in regions where the life of man was acknowledged to be nasty, brutish and short they rejoiced that a new one had arrived to suffer it and hoped that it would survive long enough to have children whose lives would also be nasty, brutish and short. It was, he supposed, the Life Force at work; he did not think highly of the Life Force's method. It seemed to be, in essence: chuck 'em in, and see which of 'em float. And even if you dignified this technique by calling it Natural Selection, it was still no way for an intelligent species to let things run themselves — not at the best of times, let alone in an age which was heading hell-bent for the worst of times. As he saw it, if somebody didn't get a bridle on this Life Force pretty soon, it would bolt into utter catastrophe.

"Why," Willie asked himself, "why did I have to be born into this age of messup? Why not into one that offered a better future than my grandchildren dying of want? But there it is. You've only got to look around; the old controls are failing, the break-up is already setting in . . . And it doesn't need much to check it even now — just the application of a little reason and sanity."

He fell to wondering for the hundredth time whether it would

somehow be checked at the last moment. Most people seemed content to live on the principle that things would turn out all right—but even the people who scornfully watched Noah building his ark must have done that.

He did not know what would happen; he would very much like to know; in fact, he would desperately like to know. For, after all, if it wasn't going to be checked, what was the point in going on living, anyway?

Cyra found Willie's letter on the breakfast table three or four days later. She opened it with excitement, began to read it with incredulity, turned back to the beginning, read it all through with utter stillness, and then raised eyes that had become unseeingly blank. Aunt Carola regarded her with anxiety.

"What is it, darling? What's the matter?" she asked and reached across the table to lay her hand on Cyra's. Cyra did not reply. Then the blankness gradually faded. Her face crumpled.

"H-he says he-he's em-em-emigrating," she wailed, and burst into tears.

Vestiges of dignity, surviving from a vanished era inhibited Cyra from action for nearly a week, until modern common sense asserted itself to point out that

dignity got you nowhere nowadays. So she called at Willie's lodgings.

The landlady recognized her, and was sympathetic.

"Such an upset, Miss. Here three years, he was, and then gone in a couple of days. I can't hardly believe it yet. But he did right by us. Paid me up to the end of the quarter, he did, though he didn't have to, and there's many as wouldn't."

"It really was very sudden, then?" asked Cyra.

"Bless you, yes. Not a hint till it happened. Though he was kind of thoughtful for a few days before. Making up his mind, I suppose. Then Tuesday of last week he said to me: 'Mrs. Duke, I'm sorry to tell you that I'll have to leave. I've been offered a very good job aboard, but the condition is that I take it up at once.' And he was off the next day, and the day after that Harrod's van called for his things, and that's all I know."

"Abroad?" said Cyra. "Didn't he leave a forwarding address?"

Mrs. Duke looked at her for a moment.

"Oh, dear," she said, compassionately. "You come in and have a nice cup of tea, dearie. I'll tell you all I can. Oh, dear, it's not like him at all. Always such a gentleman, Mr. Trevinnick. Oh, I am so sorry."

Cyra's next call was at Harrods. They were cautiously discreet there, but by persistence she learned that he had left no address with them, other than that where his effects were to be collected. Indeed, they presumed Mr. Trevinnick contemplated a lengthy absence, for his storage account, they admitted in confidence, was to be paid by banker's order.

Cyra knew enough of bankly reticence to discard any idea of approaching from that direction, so she retired to the restaurant to think. After a time she unexpectedly recalled that Willie had once or twice mentioned his solicitor by name. But what was the name? She thought back. She could distinctly recall being struck by something Chaucerian about it . . . But there were such a lot of names in Chaucer: Miller, Reeve, Franklyn, Squire, Nunn — oh, endless! Then, suddenly she had it! She bolted the rest of her lunch and made for the telephone directory. Half an hour later she was on the steps of a house in Bedford Row, pressing a bell beneath a brass plate which proclaimed: Coghall, Coghall & Sprint. Commissioners for Oaths.

Mr. Martin Coghall was able to receive her with little delay, and regarded her with interest as she entered his room. Cyra had a vaguely elusive impression that he

was not entirely surprised to see her. His manner was kindly, even friendly, though not forthcoming, and his attitude as he listened to her was circumspect. She concluded:

"In his letter to me he told me that he was emigrating. But his landlady says he had a sudden offer of a post abroad. That doesn't seem to me quite right; I mean, you don't say you are emigrating if you are just taking a job aboard, do you? Please, please tell me if you know where he is. It's all so mysterious not leaving an address, or anything. He might —" She paused as a sudden thought struck her. "— Oh! Oh, no! He's not had to go to prison, or something like that, has he?"

The solicitor leaned forward and patted her hand, not quite professionally, perhaps, but reassuringly.

"My dear Miss Chapworth. You can put any idea of that kind right out of your mind. Mr. Trevinnick has gone away, it is true. It is also true that we have no way of getting in touch with him at present, but I do assure you that the decision was entirely his own."

"But why? Why? He hasn't really taken a job aboard, has he? He'd have said something about it to me . . ."

Her eyes began to fill.

Mr. Coghall leaned forward. He said earnestly:

"Miss Chapworth. Mr. Trevinnick has spoken to me of you. I hope you will believe me when I assure you that he is very, very fond of you."

Cyra stared at him.

"He has," she said, "a pretty lousy way of showing it."

Mr. Coghall looked momentarily taken aback, but he rallied, and shook his head reprovingly.

"Not entirely," he said. "Before Mr. Trevinnick left, he invested us with the power of attorney regarding his affairs, so if you should chance to hear of any outstanding debts we should be glad if you will put the claimants in touch with us." He looked inquiringly. Cyra nodded. He went on: "I may also say that you will shortly be receiving a letter from us informing you, on the instructions of our client, that should you at any time find yourself in want, or need of assistance, you should apply to us for help and advice."

Cyra stared at him. Tears began to brim up again. She fought them back and said, unsteadily:

"But the only advice I need is where to find Willie."

Mr. Coghall's expression was sympathetic, but he shook his head slowly.

"That, my dear Miss Chapworth, I regret to say I could not
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at this precise moment tell you, even were I at liberty to do so."

Cyra pounced on "precise moment."

"But when you do hear from him, you will let me know?"

Mr. Coghall hesitated, considered and replied carefully:

"You may rest assured that if we do hear from him we shall let you know."

A few minutes later he showed her out with avuncular consideration, and, when the door was closed, drew a handkerchief from his breast pocket to dab his brow.

Cyra descending the steps, saw a taxicab setting down a fare at the next house. She hurried to catch it.

"The Victoria and Albert Museum, please," she told the driver.

III

Mr. Simon Radgrove, Curator of the Department of Locomotion, regarded his visitor benevolently. The average age of callers in his department was noticeably lower than that in most other Departments, but not many of them introduced an aura of youth and spring. He inquired what had brought this about. She explained, concluding:

"I understand he resigned his post here to take up another abroad, but nobody can tell me

where. It was all so sudden you see. There are things to be settled — I don't mean debts, those are cleared — but personal arrangements, things we must get in touch with him about."

"Oh," said Mr. Radgrove. "I confess I had not heard anything about a post abroad — I think you must have been misinformed about that." He shook his head. "No. Mind you, he did not actually confide his intentions to me, but, putting two and two together, I don't think that can be right — unless, of course, it was purely temporary."

He mused.

"But if he resigned his job here — " began Cyra, and then stopped. For all she knew, Willie might have been sacked. Indeed, for a moment Mr. Radgrove's reply seemed to suggest that that was so.

"There again," he told her, "I fear you have been misinformed. Mr. Trevinnick has not, in fact, resigned his post here." He paused, and Cyra braced herself for a revelation. "Oh, no," Mr. Radgrove went on. "On the contrary. He is a very useful man, you know. He was very keen that his job should be kept open for him. Fortunately, his application was received just in time to be included in the agenda for the meeting of Curators the following day. We discussed it with

great interest. Most unusual request. It creates a precedent, of course, but not, it was thought, one that was likely to be extensively exploited. Some members, in fact, felt that it might yield useful benefits. So, in the end, it was decided to grant his request."

Cyra felt that something important had been omitted.

"Yes, but what was his request?" she wanted to know.

"Oh, didn't I make that clear? I'm so sorry. Yes, it was leave of absence."

"Oh," said Cyra, a little flatly. "And you say there was no mention of his going abroad?"

"None whatever. I should think that very unlikely — very unlikely indeed."

Cyra reflected. She was undecided whether the answer left her feeling more frustrated, or less. She thought back, and asked:

"Why did you find the request so unusual?"

"Did I say 'unusual'? Perhaps I should have said 'unique'."

"Perhaps, but why?"

"I doubt whether it has even been requested before. All of us doubted it."

"What, a leave of absence? Surely — "

"No, no. This was an *extended* leave of absence."

Cyra tried not to let her sigh

be obvious. Patiently she asked:
"Please, please, Mr. Radgrove. Just how much leave of absence was Mr. Trevinnick asking for?"
"Oh, didn't I tell you that?" said Mr. Radgrove, in surprise. "Why, it was a hundred years — unpaid, of course."

IV

A week later Cyra climbed the ill-kept staircase of a dingy house in Gerrard Street. On the third floor she found a door panelled with obscured glass on which was painted QUESTERS LTD. She pressed the bell-punch beside it. A youth with a suspicious expression and an underprivileged lower lip opened the door and blocked the entrance while he scrutinized her carefully.

"I have an appointment to see Mr. Marrow," she told him.

"Oh," said the youth. "Better come in."

He stood aside for her to pass, closed the door behind her, and disappeared into an inner room, to reappear almost immediately.

"This way," he told her.

Mr. Marrow rose from his desk to greet her and push forward a chair. He was a well-built man of, she judged, about thirty-five; smartly dressed, with dark, neatly brushed hair and a somewhat careworn face. His manner was a trifle over-gallant, as if to com-

pensate for his employee's lack of grace.

"Mrs. Brace, of Hampsted, recommended you to me. I would like you to make an inquiry," she told him.

Mr. Marrow's gaze flickered momentarily towards her left hand and then away again.

"No," said Cyra. "Not that kind of inquiry."

Mr. Marrow made a non-committal noise and waited. Cyra went on:

"Do you know anything about the Cloverdon Biological Research Unit?"

"Never heard of it," admitted Mr. Marrow, and made a note.

"Well, it's a place where they run a number of experimental medical projects."

"Secret projects?" inquired Mr. Marrow. "Because, I mean, if it's one of those government places like Harwell —"

"It isn't," Cyra told him. "It's a private establishment endowed by the late Sir William Greeting and administered by the Greeting Foundation."

"Oh," said Mr. Marrow. "What goes on there?"

"Well, they've a number of projects on hand, I understand, but the only one that interests me is their work on suspended animation."

"Come again," suggested Mr. Marrow.

"Suspended animation," Cyra repeated. "I believe they freeze people there."

Mr. Marrow goggled and became a fair sample of suspended animation himself.

"Freeze people?" he inquired.

"Yes. Sort of put them into cold storage for a time and then thaw them out later on. You must have heard of it. Lots of countries have teams working on it."

"Oh," said Mr. Marrow again, conveying in one simple sound that he had neither heard of it, nor believed it now.

Cyra regarded him.

"Mr. Marrow, you don't seem to know much about the world you're living in," she said.

"You'd be surprised, lady," Mr. Marrow told her.

"Well, the scientific side of it, anyway," Cyra modified. "Now I have managed to find out that this Cloverdon place is not unwilling to accept volunteers for their experiments —"

"What, willing to be frozen?" exclaimed Mr. Marrow.

"Yes. Not many, of course. And it all has to be very discreet because the papers and the B.B.C. would have one of their moral tournaments if they got hold of it. You can just imagine."

"I'll say," agreed Mr. Marrow.

"Well, I have reason to think

that a Mr. William Trevinnick has been one of their volunteers. If he was, what I want to know is the date he went to them, and most importantly, the exact date set for his resuscitation."

"His re-what?"

"His revival. The day when they'll bring him out of it again."

"I see." Mr. Marrow made a note of the name William Trevinnick and considered it. Cyra said:

"It is most important that these inquiries should be absolutely confidential. It don't want the Cloverdon people to have any suspicion that they are being made."

"Of course," agreed Mr. Marrow, mechanically.

"Well, can you do it?"

It did not seem quite an occasion for Mr. Marrow's confident just-you-leave-it-to-us reply. He said:

"I'll do my best. Have a look around first; get the feel of the place. Let you know how the chances are."

He paused. "'Fraid it may cost you a bit."

They got down to business.

A little over three weeks passed before Cyra made her way to Gerrard Street again. She found Mr. Marrow in good spirits.

"Well, we done — did it," he told her triumphantly. "Never

say Jimmy Marrow lets a client down. Took quite a bit of greasing though," he added, more soberly.

"How much?" inquired Cyra.

He named a figure.

Cyra got up to go.

"Now don't take it like that. I warned you it might come a bit high," he protested.

"Not as high as that," said Cyra, moving towards the door.

"Now come — " he pleaded.

They haggled.

"You're a-one," he said, regarding her with respect at the end of it.

"Not done too badly yourself, Cyra told him. "Right, now then, let's have it."

Mr Morrow opened a drawer in his desk and drew forth a piece of paper. He read from his notes:

"Mr. William Trevinnick did go to the Cloverdon Biological Research Unit. He first contacted them on the eleventh of May last year . . . "

Cyra's eyebrows went up. She had not met Willie until the previous September. Mr. Marrow went on:

"On the sixth of June last — that is, about a month later, he went to them for a thorough medical examination — which gave him a general okay. They made inquiries about him —

whether he was on the straight, or up to any funny business, or suchlike; that was all okay, too. Then on the third of May last he contacted them by phone. No record of the conversation. On the fifth of May he went there himself . . . "

Cyra nodded. She had stipulated the date of Willie's entry as the only check she could think of on Mr. Marrow's reliability. It stood up.

"And the date for his resuscitation?" she asked, calmly enough.

Mr. Marrow hesitated, looked embarrassed and fiddled with a pencil.

"This is honest, Miss. Take me Bible oath. Didn't believe it myself when I saw it. Had them double check it."

Cyra nodded again.

"All right," she said. "Let's have it."

Mr. Marrow took a very deep breath.

"He's down for resuscitation on the tenth of August — tenth of August in — " he paused " — in the year of twenty ninety-five."

He ended with some defiance, and raised his eyes uncertainly.

"Thank you, Mr. Marrow," said Cyra. "That's all I wanted to know. Thank you very, very much."

Willie came to with a feeling of warmth. Then there was a click, the sound of something sliding, and the sense of warmth diminished. He couldn't see, couldn't move. Suddenly there was a tube between his lips. A voice said: "Drink this." A little liquid trickled into his mouth. He swallowed successfully. Then there was more liquid. The most delicious drink he had ever tasted.

He was aware of people moving about him, applying instruments to him, here, there and everywhere. He lay quietly, letting them get on with it. The surrounding activity abated. A voice asked :

"How are you feeling?"

"Tired." Willie told it. "And I can't see."

"Don't worry about that, you have got a mask on, we have to take it easy with the eyes."

Take what easy with the eyes, Willie wondered. Suddenly it all came back to him.

"I've made it, then?" he asked.

"You've made it fine. A textbook job. Nothing to worry about at all. I guess you'd like to sleep now."

"Yes," agreed Willie, and he seemed to fall asleep instantly.

There was an indeterminate interval punctuated by meals.

Food was so comforting that he went to sleep again the moment he had finished it. At some time they had removed the mask, and at his waking he became aware that he was lying in a dimly lit, institutional room. Then came one time when he awoke feeling, though uncertainly as yet, more like himself.

A nurse in a white overall was doing something beside the bed. He rolled his head on the pillow. She turned to look at him.

"Ah, that's better," she said. "How do you feel now?"

"Weak," he admitted. "Otherwise all right —I think."

"It'll pass in a day or two. You will be as fit as ever," she assured him.

"What day is it?" he asked.

"Saturday," she told him.

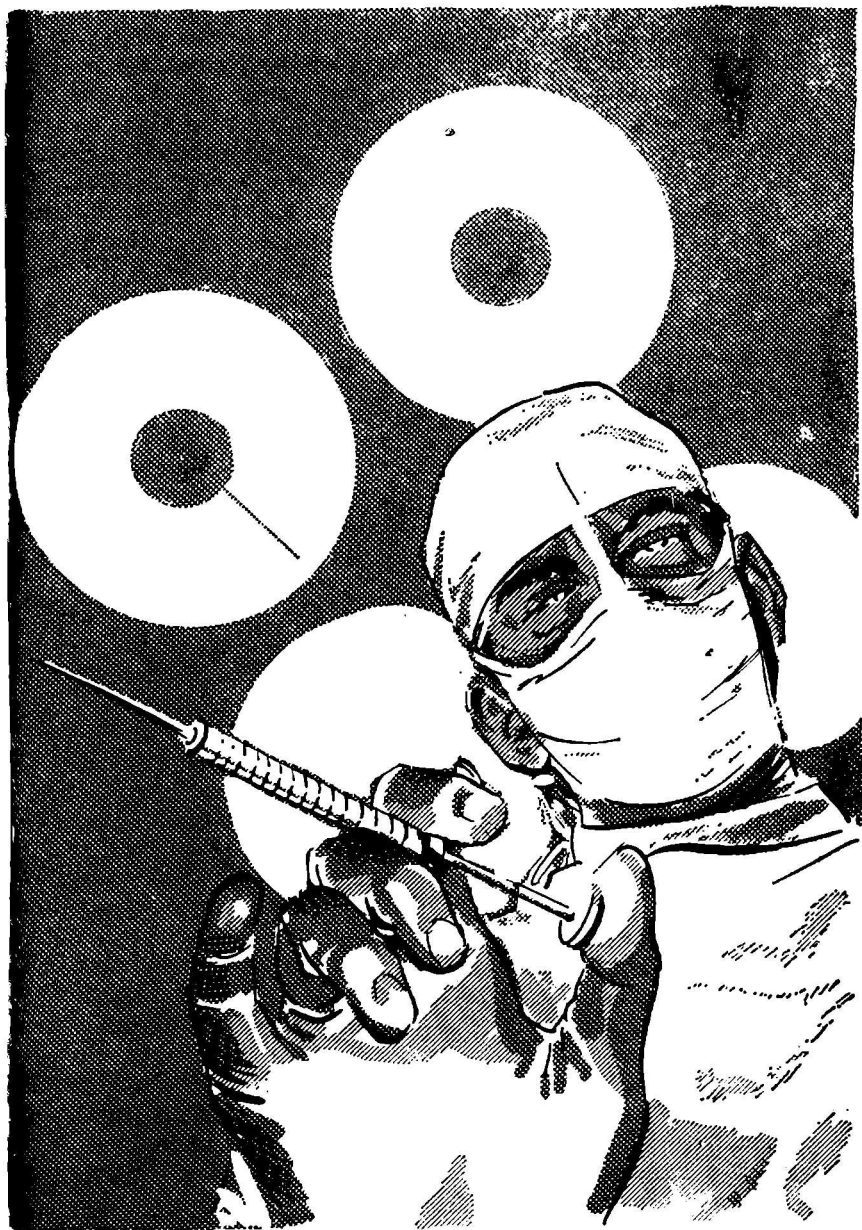
"It ought to be Wednesday," he said.

"You came out of it on Wednesday, the tenth of August. Now it's Saturday, the thirteenth."

"And the year?"

"You don't think we'd cheat, do you? Twenty ninety-five, of course."

Willie lay back, trying to absorb it. Presently the nurse said: "I have to go for a bit now. Would you like the television?" She handed him a small box with a number of buttons and a knob on it and bustled out.



Willie pressed a button experimentally. Immediately a piece of the wall opposite his bed lit up. It was hard to believe he was not looking through the wall into a street. The scene was stereoscopic, the colors natural, and the realism uncanny — unpleasant, too. The town looked oriental. There was a riot in progress; men in gas masks were using sticks and shields to break it up; amid the background noise was a rattle of a light machine-gun. The world did not seem to have changed much.

Willie pressed another button and got some music, or at least musicians with instruments, though the sounds they were making were unintelligible. He tried a third button and saw some rather surprising exercises being performed by boys and girls in pairs, for the purpose, he gathered from the commentary, of promoting healthily normal social integration.

Ah, well, doubtless one would have to make adjustments; but it was consoling to know that, so far at least, the world seemed to have succeeded in avoiding the disintegration of a new dark age.

The next day he felt distinctly better, well enough to get up and move around a little in a slightly staggy way. He had his mid-day meal in an armchair

with a table drawn up across it. The food no longer tasted quite so good and was difficult to identify, but he was hungry enough to be glad of it. When the nurse came to collect the tray she said: "A visitor for you this afternoon — unless you're not feeling up to it."

Willie stared at her.

"A visitor for me? But I don't know anybody here. What name?"

She shrugged.

"I don't know. They just said a visitor."

Willie considered. According to the arrangement, he would still be officially on leave until the first of September — a fortnight next Thursday, providing nobody had reformed the calendar — but the Museum, must, of course, be interested. They had probably investigated and were sending someone to greet him.

It was, therefore, considerably disconcerting for him when, as the door opened and the nurse announced his visitor, Cyra walked in. Indeed, he sat there, goggling at her speechlessly.

"Hullo, Willie. How are you feeling now?" she asked, as she sat down in the other chair.

He went on staring, mouth slightly open, but no sound emerging. A sort of stammer came from it at last.

"But-but-they-they told me

this was twenty-ninety five," he managed.

"So it is, Willie. And it was really very naughty of you to come here without telling anybody," she said.

"But — but — " Willie began again.

Stop butting at me and staring like that, Willie. I'm quite real. I'll show you."

She came closer, leaned down, and planted a firm kiss.

Presently Willie leaned back, feeling a little dizzy.

"Explain," he told her.

"Well," said Cyra, "When I found out where you'd gone I thought it would be better if I were to come here first and sort of get things ready, so I arrived about three weeks ago. And I've got us a flat — quite a nice flat, I think — and handy for the Museum, and — "

"Hold on a minute," Willie protested. "How did you get here?"

"Why, the same way you did, of course. They were a bit sticky about it at the Cloverdon Research place. They said nearly all their volunteers were older people suffering from something they hoped there'd be a cure found for by the time they came out of it. And I said, then it ought to be a nice change for them to have somebody young and healthy, and why not? So

we argued quite a lot, but they agreed in the end.

"The worst part was waiting for it, because I couldn't sign all the proper things until I was twenty-one, in November. And I'll admit that I did nearly give up once or twice; it got a bit gruesome picturing oneself all frozen stiff like a block of fish — well, more like one of those crusader's ladies you see lying on tombs, I suppose, really — anyway, being like that for years, and years, and years. However, I stuck it out and tried to keep my mind occupied with the arrangements."

"Arrangements?" Willie inquired.

"Well, I came into a little money from my father at twenty-one. So, of course, I had to decide whether simply to invest it at compound interest, or put it into unit-accumulators, or set up a trust for myself. I did think of an annuity, but it seemed to frighten the company. So, in the end, I did all the other three, a bit of each."

"Did you indeed!" said Willie, looking at her with a new respect.

She nodded: "They're all done quite well really, in spite of two or three capital levies. What did you do?"

"I — er — just left it on deposit," Willie admitted.

"Oh, well — it will have increased quite a bit," she said. There was a pause. "It's not a bit like you said it would be here," she observed. "Nobody starving. No people in rags fighting over scraps of food. The food's a bit funny because it's dull, so they flavor it, but there's plenty of it."

"As far as I've gathered, things did get a bit grim about seventy years ago. Then there was another grim patch about thirty years later; not standing-room only, just too many people who were too old to work; but about twenty years after that it had evened out once more, and they got the population fixed. Now there's a row going on because the expectation of life has gone up a bit, and the young are protesting that it's unfair to youth."

"That sounds a whole lot better than I expected." Willie admitted. "I was more than half-ready to find barbarism. How did they do it?"

"I'm not sure. Nobody I've talked to yet seems to know for certain. Most of them think it's something in the water, some of them say it's something in the food, others tell you it's in the atmosphere. Anyway, whatever it is, it works — no babies without a license."

Willie considered the point.

"That could make a difference

all around," he suggested dryly.

"Oh, it does," Cyra assured him.

She let it go at that for the moment; presently she inquired: "What were you planning to do when you got here?"

"I didn't plan. It would depend on what I found. If it were barbarism, well, I suppose I'd have to take my chance. If it were orderly, there'd be my job at the Museum, and I'd have to find somewhere to live, and do my best to settle in." He paused, and looked at her. "I think I must have been a little mad to come at all," he added thoughtfully.

She ignored that for a moment.

"You wouldn't have found it easy — getting somewhere to live, I mean — not on your own," she remarked.

"Why not?"

"It's not done here. People who try are regarded as peculiar, undesirable. They're not socially integrated — and that seems a pretty bad thing not to be. It's all right for a week or two, might happen to anyone, but if it goes on, you're likely to be sent on a rehabilitation course. I had a bit of difficulty over this flat. In fact I only got it by assuring them that you'd been sent abroad on business and would be back before long. So if you don't come

there I shall have to give it up, and you'll have nowhere to go."

"Oh," said Willie.

VI

One of the advantages of dealing with the past is that it stays relatively put. Consequently Willie did not experience any great difficulties in taking up his job at the Museum again. Admittedly there were new systems of classification, new procedures, new methods of administration and new people, but he found adaption fairly easy, and the new people surprisingly like the old people. For a month or so, he was something of a museum exhibit himself, but when the novelty had worn off and when he was alone in his Department, surrounded by the familiar and fearsome complexities thought up by long vanished engineers, there was little to distinguish the present century from the last. He liked it there, found it soothing — which was more than could be said for the world outside.

He was apt to return to the flat put out.

"Really," he complained to Cyra, one evening, "the indecencies of this place! I took a lunch-time walk in the Gardens, and do you know what was going on in front of Kensington Palace, right under the nose of Queen

Victoria's statue?" She did not, so he told her. "I'm no puritan, but hang it all, I mean, and with the bystanders laying bets, too!"

"What on?" inquired Cyra, with interest.

"If you must know — " said Willie, and told her that, too.

Cyra giggled. "It's known here as expressing oneself," she informed him. "After all, they've done away with the old deterrents."

"No morals at all. Not even the decencies of a well run farmyard," asserted Willie.

"You're going back a bit, Willie, aren't you?"

"I don't care. You know what I mean. It's degenerate."

"Come, come," Cyra soothed him. "The young always were; the world always is."

Willie frowned at her.

"I sometimes wonder about your standards," he said, severely.

Cyra shrugged. "I doubt whether much comes of applying the standards of one century to the behavior of the next. The point is that through them all life somehow battles on."

"It does indeed," Willie agreed. "But thank goodness they've had the sense to restrict the call-up at last." He brooded a little. "It is all very dispiriting," he announced. "It's true the human race isn't going to breed itself

20TH CENTURY

21ST CENTURY



into starvation now, the rat race isn't as bitter as one feared, there doesn't seem to be any likelihood of us descending to tooth-and-claw savagery. BUT it's uncivilized, all this lack of inhibition, the open promiscuity, and so on; it chops away the roots of all social order, destroys the basic pattern. It's certainly not the kind of world I should bring a child into."

"Oh. I don't know . . . I mean, was it ever? But people kept on doing it," Cyra pointed out.

Willie was looking thoughtful.

"Incidentally," he said, "I hadn't thought of it before, but how do babies get born here."

"They issue licenses," Cyra told him. "It's all very carefully regulated. Suitable health of parents, et cetera. And that means they can calculate the number of school places needed, the number of teachers, and insure a fair education."

"Oh," said Willie. "Well if this —" he waved an arm to include Kensington Gardens, and depravity in general. "If this is the result, I don't think much of it."

They reflected. After a time, Cyra suggested tentatively:

"We could, perhaps, do our little bit towards helping to restore standards."

Willie looked at her. "How?" he asked.

"Well, here we are, living in

this flat. It would at least set a good example if we were to get married. People still do, you know — some of them."

Willie demurred.

"Is there much point in getting married if we're not having children? I mean, you've only got to read the marriage service . . ."

"I think I'd rather like to, all the same . . . Just for the principle of the thing. I mean, after all we're bound to be a bit old-fashioned in our ideas, and if we do believe in those standards you were talking about, well . . . ?" Cyra left the question open-ended.

Willie thought it over.

"All right," he agreed, "let's do that. After all, it will show a few of them that standards can be applied, even in this permissive world."

Cyra kissed him.

"Good," she said. "Tomorrow I'll find out how they do it here."

VII

Cyra fell down, facing the doctor across his polished desk. He asked what he could do for her.

"I'd like a baby license, please," said Cyra.

"H'm," said the doctor, looking at her. "You have to be married, of course."

"Oh, I am," Cyra assured him.

She produced her certificate, and handed it across.

The doctor read it. His eyebrows rose. He looked at it harder. "Date of birth: November 1974. Husband's date of birth: May 1969." He murmured, and looked at her. "You two certainly married at a ripe old age, didn't you? Deep-freeze?"

"Yes," Myra admitted.

He nodded. "Fascinating," he said. "No ill effects — either of you?"

"We feel fine," she told him, and added. "The Cloverdon Research people gave me these fitness certificates. They examined both of us very thoroughly when we came round, a few weeks ago. They're very interested to know how it will turn out."

"Understandably," commented the doctor. "All right, I'll forward your particulars to the Licensing Office. I expect the application will rock them a bit, but in view of the Cloverdon people's recommendation, they're scarcely likely to refuse."

"You'll get your license by

post. You present it at a chemist's. They'll give you a pill. Be sure to keep to the instructions you'll get with it. If it doesn't work, you apply to me. I will issue you with a duplicate license, and you can try again. Is that quite clear?"

"Perfectly," said Cyra, and sat gazing blankly into space.

"Something you don't understand?" inquired the doctor.

"No," Cyra assured him. "No, it's only — well, I've now been looking forward to this for a hundred and one years . . ."

At the door she paused, struck by a sudden thought, and looked back.

"Doctor, if it should turn out to be twins — they do rather run in my family — ?"

The doctor smiled reassuringly.

"They'll be all right," he assured her. "Births we can limit, but twins still come under Act of God."

Which, as it happened, was just as well.

—JOHN WYNDHAM

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Jinn

by JOSEPH GREEN

*Since the Jinn knew they were superior to men,
they were quite sure they had all the answers.*

The firm knock was shockingly loud in the deserted building, and it jarred Professor Philip Morrison into dropping the blue pencil he had been idly twirling while leaning back, lost in thought. The heel resting on his ancient metal desk caught the loose center drawer and almost yanked it out as he hastily sat erect. He managed to catch both his balance and the drawer, but had to grab the desktop for support; his reflexes were not what they had been, as a young man, when he had worked his way to an undergraduate degree through a series of athletic scholarships.

With his feet on the floor again, the teacher let irritation roughen his voice when he called for the

unexpected visitor to enter. It was eleven at night, one hour before the half-century mark, and he was alone in his small second office just off the lab. He had hardly expected a student to ferret him out here and had hoped for an hour in which to think about Merry. He and his only child had been growing steadily apart since the death of her mother two years ago, and he had just received the disturbing news that she was not going to renew the preliminary one-year marital contract with her second husband. Both she and Roger had majored in political science and couldn't even get along with each other. Those inexact disciplines some dreamers insisted were sciences

worked much better in theory than in practice.

"Dr. Morrison?" the young man waiting politely in the door was oriental and unusually tall and thin. "My name is Tako Takahashi. I am one of Professor Sloan's postdoctoral students. I saw your light, and thought . . . sir, I have a project I wish to discuss with you. Dr. Sloan said he didn't care to hear about extracurricular activities."

That was odd behavior even for crusty old Sloan. Morrison studied his unwelcome visitor with more alert eyes and saw the slight but tell-tale parietal bulge, the high rise of vertical forehead. Takahashi was a Jinni, which explained why he couldn't talk to his own mentor. The general controversy over the Jinn had died away after the genetics law finally became a reality in 2045, but the grouchy older teacher had retained all his prejudices. He still believed that the original ten thousand young Genetically Evolved Newmen, whose improved intelligence had inspired the law, were plotting to replace *Homo sapiens*, and not through controlled evolution. The idea was nonsense, of course. That first large-scale experimental group had been only sixteen years of age at the time, and scattered throughout the world's major universities. The law had been passed

because normal people, himself fairly prominent among them, had worked hard for it. Sloan remained unconvinced. He had of necessity accepted them in his classroom, but agreed to work with two on postdoctoral projects only after a nasty fuss with the department head. This young man had obviously strayed from the agreed path and lost Sloan's forced support.

"This is, ah, a little unusual, but if there's something you're bursting to get out . . ." Morrison smiled tolerantly and motioned Takahashi to a chair. He suddenly realized he had sounded fatuous and smug and regretted seeming that old and stolid. But you became inured to enthusiasm after the first hundred students who were almost exploding with it had shared their nebulous and impossibly exotic ideas about biology with you. Even the Jinn he had taught in the advanced classes he still carried were subject to the infection. As a major researcher with a large government grant, he had for several years been spared the task of personal coaching and had lost contact with the Jinn students when the last of them attained his doctorate.

"Sir, I believe you have been working for several years on a method of converting cellulose to glucose, on a practical basis. I

think the report I want an authorization to publish will interest you. It deals with the same problem."

Morrison felt a stir of interest. His work had not been publicized, and he always asked his student helpers not to talk outside the lab. It was hard to keep the general nature of his researches quiet, though.

"Yes, I'd be interested in hearing about your project, Takahashi," he admitted cautiously. "I have to be at the student circle for the New Year's rally at twelve, however." He did not add that he was looking forward to joining in his heavy baritone on the old school songs, or that he had volunteered to monitor the event rather than sit home alone in an empty house.

"Yes sir. This will require only a few minutes of your time." Takahashi slipped smoothly into fast speech and Morrison found himself straining to follow the words, despite all the proof that meaning could be best absorbed by relaxing. The young man's word choice was excellent, and his tongue moved with impressive speed. "Heard you took a chemical approach trying break cellulose down monosaccharide units regroup edible non-linear form I worked problem opposite end trying adapt human digestive system

hydrolyze cellulose produce glucose macromolecules I found —"

"Just a moment!" Morrison broke in sharply, fully attentive now. "In the first place I am not 'trying' to produce glucose from cellulose; I have done so. The problem is one of production practicality." He hesitated, knowing he was hedging. The process he had labored twenty years to perfect worked, yes, but mass production was impossibly expensive. He had seen his dream of a great new food supply for a dangerously overpopulated world grind its way downward to slow extinction, dying beneath the inevitable logic of the engineer's slide rule and the accountant's pencil. They had called his process a laboratory toy, and at seventy, with only ten or fifteen productive years still ahead, he had found himself psychologically unable to start a new project. He was accredited with several small but worthwhile discoveries made early in his career, but this was to have been the major achievement of his professional life. He had been tinkering with the basic operation for over a year now, with no true improvement in efficiency. "In the second instance, I considered your approach and discarded it. The complexity of the digestive system and our inability to experiment with humans make it unbearably diffi-

cult. I'm afraid you are wasting your time."

"Sir I finished work and believe succeeded past three months ate only pure cellulose supplemented vitamins mandatory minerals. Let me explain?"

Morrison leaned back and studied the younger man's face with growing anger. He had dealt before with the overpolite arrogance of Jinn students, their disconcerting habit of being always two jumps ahead of the instructor, but this was the first time he had discussed his own project with one. This young man's statement was incredible, and his patent assumption of his own correctness infuriating. And yet if he were right — if those four extra ounces of association neurones programmed into his forebrain by genetic manipulation had actually enabled him to come up with an answer — the discovery was of immense importance. Too much of overcrowded Earth's resources were tied up in simply feeding its burdensome human population. With an average life expectancy of a hundred-and-ten, and the biological need for children as strong as ever, the Malthusian doctrine seemed proven beyond contradiction. Population always outran food supply.

"Sir sure you familiar work done Nazi government Ger-

man state World War II hundred years past. Treated sawdust other forms pure cellulose force-fed prisoners tried utilize digestive system complete hydrolysis. Didn't succeed reasons complexity mentioned basic approach correct hydrolyzation within individual." Takahashi leaned forward earnestly, and Morrison became interested despite his skepticism. This young man was part of the most ambitious experiment ever attempted in human genetics, and he and his fellows represented mankind's first attempt to move on to a higher evolutionary plateau in less than a million years. Brain size alone did not guarantee superiority, but like all members of that first massive application group, he had from painless Caesarian birth received the most mentally and physically stimulating training transactional psychology could provide. His first baby rattle had been replaced with a more complex one the moment he had seen, touched and tasted it into familiarity, and his tenth one featured colored lights that blinked in intricate series when inset buttons were pushed in simple patterns. He had a positive identity before he was one year old and could think in symbols by two. At three he could read, and his childhood games were designed to develop his growing body evenly. At four he

was learning the basic mathematical theorems, and thereafter he followed the established educational channels, except that the normal pabulum ladled out to children was omitted and he moved at a very fast pace. He had completed all undergraduate work by fifteen or sixteen. Most of the Jinn had their first doctorates by eighteen. Many of them had gone on into industry, government or teaching, where they could practice their specialties. A few, like Takahashi, lingered on as students, working in areas that interested them. There was no doubting their innate and achieved superiority.

A lot of older people, like Sloan, were unable to accept the advent of Homo superior gracefully and still fought the idea that all licensed pregnancies should be by genetically improved sperms. They had lost the legal battle five years back, but unauthorized normal births were a world-wide plague. Since Newmen bred true only with each other, and a union with Homo sapiens produced idiots, the so-called normals were on their way to becoming a minority. And the true shame of it, Morrison thought bitterly, was that the antagonism of the old for the new was so unnecessary. It was the developmental stimulation as much as the increased brain size

which produced the superior being, and it was physically impossible to provide intensive training to all babies. Without it, Jinn intelligence was only an easily acceptable notch above the average. And of course the stimulation techniques were available to any parents willing to spend that much time with their child, whether New or normal.

"Won't bore details work," the young Newman went on. "Approach new introduced symbiotic parasite ileum section human small intestine capable forming stable colonies live reproduce indefinitely. New form I evolved usual genetic manipulation unnamed flagellate protozoa indigenous common African termite *Termopsis angusticollis*. Colony my intestine hydrolyzes cellulose produces two pounds glucose simple sugars daily tiny fraction used by protozoa. Rest absorbed villi usual manner maintains life diet poor continuous use. Want publish came you."

Morrison realized he was leaning tensely forward across his desk, objections running through his mind in a confused stream. But if it were true . . . He raised a hand and ticked off the most obvious points. "Takahashi, I'll believe your incredible statement when you explain, first, how you confine the bacterial col-

ony to one section of the small intestine; second, how the body survives their poisonous wastes; third, how the colony growth is regulated, fourth — never mind, I could go on all night. Just account for those three for me. And speak regular; I want to think.”

“Yes sir!” Takahashi ignored his lame excuse for avoiding face speech and accepted the challenge with an eagerness that amazed Morrison. There *had* to be something wrong here, but still . . . “I’ve built a highly selective pH factor into my protozoa, giving them a very narrow acceptable range. The jejunum kills them by its higher acidity, and the colon by its alkali content. You will recall that the ileum is very close to neutral. If excess protozoa are dispersed into the bloodstream — and this is the method by which a colony regulates its size, which answers your third question — the body’s phagocytes absorb them without difficulty. As for organic poisons from their wastes, sir, they are carried to the liver and detoxified in the same way by the kidneys. There are no ill effects.”

The answers were too direct, too sure to be disbelieved. Morrison found that he was convinced in spite of his astonishment, and knew that if he raised more objections they would be countered with the same easy certainty.

So it was done. The project to which he had dedicated the better part of his professional life was complete, and the credit would go to an artificially mutated young man less than a third his age. He felt slightly numbed, as though from shock, and through the numbness a slowly gathering anger at the unfairness, the injustice of being beaten by a Jinni. This tall, thin man seemed so terribly young; it was frightening to see such brilliance and technical ability in a man just turned twenty-one.

Experimental genetic programming on humans had begun in 1980, the year of Morrison’s birth, and persisted through a succession of horrors until the first successful enlarged brain appeared in 2010. A delay of just thirty years and he could have been one of the predecessors of the group represented by Takahashi. The special importance of these young men and women was the proof they offered that genetic manipulation worked for everyone, that the entire human race could be upgraded in a few generations. When a Jinni’s increased learning capacity was developed to its maximum by stimulation training, he automatically became a genius by the old standards. There were now ten thousand such young geniuses in the world, in addition to the earlier individual successes, and

one of them had decided to accomplish the task Morrison had been unable to perform.

The world urgently needed Takahashi's discovery. A human would still require protein and lipids for a balanced diet, but the poor of all nations, who lived primarily off vegetables, would eat well at last. A head of lettuce would provide a man with a day's food, from what was now mostly bulk. Fallen leaves could be ground, flavored until they became acceptable to human taste buds, and eaten. Vast new industries would appear, devoted to the task of preparing tasty products from cellulose and persuading people to eat them. Grass would soon be consumed direct, instead of wastefully second-hand in the form of steak. Or the basic process could be adapted to animals, enriching their diet so much that the price could be cut in half, bringing protein into hovels where it was seldom seen. The possibilities and ramifications were endless. The new food source was so great that all of Earth's billions could be fed for the next hundred years, until their proliferation absorbed even the new resources.

The door opened without warning, and a rather large blond man entered and shut it quietly behind him. There was a dartgun in his hand.

Morrison jerked erect in outraged astonishment, and the barrel swung to point unwaveringly at his chest. "Sit down please, Dr. Morrison! This is a disassociation anesthetic and paralyzes instantly." The newcomer's voice was low and without menace, but it was obvious he meant what he said. Morrison sank slowly back, wondering if he could hit his intercom quickly enough to yell for help. And then he saw the broad sweep of the big man's forehead, and gave up the idea. He was dealing with another Jinni; the drug would work as he had stated.

Morrison retreated into dignity. "Just what is the meaning of this?" he asked, in tones as frosty as he could muster.

"I'm Wilfred Ebert, sir, and I regret that the very interesting conversation you have just had with my colleague made it mandatory for me to appear. I'm afraid that it must be erased from your memory."

"Bill, I've told you I am going to publish!" Takahashi said angrily. "Just how far are you prepared to go to stop me? And how did you know I was here?"

"As far as necessary," Ebert answered cheerfully. "As for knowing you were talking to Dr. Morrison, don't work up a persecution complex about it. We've had a sound-activated recorder covering his working office here

for months, just in case he performed a miracle and came up with a practical production method on his process. I saw the unit recording when I came to change the tape and listened in on the headset. I'm sorry, Tako, but you can't do it. The council has upheld my ruling unanimously."

"I don't recognize the authority of the Newmen council," said Takahashi tightly. "Five billion people go to bed hungry every night. Who are the Newmen to tell me I can't feed them?"

"Tako, I know how you feel, but you're being melodramatic. Hungry they may be, but they aren't starving, and as long as the American plains and Russian steppes pour out the food, it's unlikely they will. As for the authority bit — listen, you were told that Carl Campbelleton has produced the basic equations for a semi-closed propulsion system that brings the stars within our reach. Can't you see what this means? Development costs are going to be prohibitive, and our watchdog team's analysis of the U.N. indicates a clear majority for acceptance only if it is presented as a desperation measure. If you relieve the pressure by opening up this new food source . . ." He shrugged eloquently. "Within our lifetimes we'd be back to where we are now. The reproduction syndrome is inerad-

icable — even Newmen *will* have children! — and unless you want to deliberately return the lifespan to the old level we have no choice but to colonize, on the same massive scale that kept the European population at an acceptable growth rate while America was opening up. You know these facts as well as I. Why argue with them?"

Morrison listened to Ebert's calm, self-assured voice in growing amazement. A Newmen council that claimed authority over all Jinn, his own office bugged, even a watchdog team whose obvious function was to analyze important issues coming before the U.N. and predict the vote. So the wild stories he had laughed away were true after all! The world was being controlled by the big brains, and these two stubborn men were arguing the course twenty billion human beings would take for the next hundred years. Suddenly his own troubles seemed unimportant, almost trivial. Even Takahashi's discovery faded before the blinding implications of this new knowledge.

Morrison found himself shaking his head in mute protest. He felt as though his personal world, already crumbling, had been completely shattered. Suddenly he seemed old, tired, ready for his part to yield the Earth to these

brilliant demi-gods who were so blandly certain of the worth of their own ideas. Only the young could believe in themselves so totally, be so ready to act on their own assumptions. Even the two rather obvious fallacies Ebert had stated as facts a moment ago seemed almost acceptable.

Morrison raised his gaze, to find Ebert staring at him sympathetically. The blond man had lowered the dartgun, but it was still ready for instant action. The teacher straightened up and said, "Just a moment. If you don't mind explanations comprehensible to my under-developed brain I have a question or two." The sarcasm was ignored, and Ebert politely gave Morrison his undivided attention. "History teaches that all attempts at population control by colonization were effective only on the short term. As for star travel, Einstein's equations have been proven time and again. Just what makes you so certain your grandiose ideas will work?"

Ebert smiled. "We act on high probability, sir, not certainty. The probability is very high that Einstein can be modified, just as he modified Newton without disproving his basic laws. I'm a psychologist, not a physicist, but the basic idea is that Einstein's equations do not apply to a unit of matter with a self-contained

propulsion system. As for the colonization-population history, I must disagree with you. Colonization relieves population when there is a place to go and an economical means of transport. Its benefits were short-term on Earth because we ran out of room. But frankly, we Newmen would favor pushing on to the stars regardless. We feel that constant challenge is necessary for growth."

"And since the future belongs to you, you are now deciding it?"

Ebert's friendly, relaxed expression faded into a chilly aloofness. "Dr. Morrison, I would have expected you to be above the man-versus-mutant nonsense. We are fully human, perhaps more so than you, since it's primarily the forebrain and cultural conditioning that distinguishes man from the other animals. And we are fully aware that ten thousand people, no matter how intelligent, cannot actively control the lives of twenty billion. What we can do is identify the important turning points which determine the direction an entire society will take and attempt to influence the outcome of those selected events. Tako's discovery is one such point, and Carl Campbelleton's another. If a Newman had been in Russia when the Bolsheviks were preparing to overthrow

Kerensky's government . . ." Ebert shook his head ruefully. "You were a staunch supporter of the genetics law five years ago, Dr. Morrison. Nothing has changed since then."

"Yes, it has. No one was holding a dartgun on my chest then," Morrison answered quietly. "May I ask how many turning points you have influenced so far?"

"This is the first," Ebert admitted soberly. "Getting the money appropriate to finance Carl will be the second. The third will be an effort by Brasilia to withdraw from the U.N., taking most of South America with her. This will occur in about four months, and we have already started the campaign which will bring down the present government when the attempt is made. Our forecast calls for about three major events a year for the foreseeable future."

Morrison leaned forward and looked up at Ebert. The tall man met his gaze squarely. "Young man, I think that in your anxiety to control Earth's resources you've forgotten one of the oldest dictums of all: You cannot suppress knowledge! If Takahasshi does not publish, someone else will redo his work, and it will inevitably see print. And you have no right to deprive living humans of food in order to benefit theoretically a society of the future. You say you are a psychologist;

just how much of your desire to manipulate the world is traceable to a simple old-fashioned power complex?"

"I hope none," Ebert said quickly. "Our decisions are not taken lightly, sir."

"I doubt your wisdom, not your sincerity," Morrison's tone was dry. "And I don't think you know what wisdom is, or appreciate its value. The primary ingredient is a quality you don't possess, called experience." He shifted back in his chair, dropping his hands to his lap and glancing quickly at Ebert's gun, still pointing to the floor. "Your superior intelligence and intensive training haven't produced an understanding of man as good as my own." He moved forward again, planting his feet firmly on the floor and resting his hands on his knees. "If I thought you would believe me, I'd point out that a person your age is always certain of his own opinions, no matter how worthless, and perfectly willing to inflict them on others. And the truth is that all ten thousand of you can combine your bright young intelligences and still come up with the wrong answer. You haven't convinced me."

"I didn't expect to, sir. But one of the several unpublished discoveries in my own field is a new

method of fixed hypnosis that enables a skilled operator to bury selected memories so deeply they become non-recoverable. Once this is done I can plant some very good false ones in their place. Tomorrow morning you are going to wake up knowing that you became slightly ill about eleven and went directly home and to bed. And let me add that I regret I must tamper with your mind, even to this small extent."

"I regret it too," said Morrison and yanked the loose center desk drawer out with both hands, turning it vertical and springing to his feet as he hurled its jumbled papers, clips and pens at Ebert's face. The big man was blinded by the flying miscellany for a few seconds. By the time he recovered, Morrison was charging around the desk corner, holding the metal drawer before him like a shield. Ebert lowered his aim, and the dartgun hissed twice, but the churning legs were a difficult target, and both tiny arrows missed. The big man attempted to move sideways, but he was much too late. Morrison had the satisfaction of slamming the drawer into the smooth young face, and he followed it by a hard low punch to the abdomen. Ebert must not have known the teacher had been a collegiate soft-glove boxer in his undergraduate days. The blond man doubled over in pain, but re-

tained his weapon. Morrison changed his tactics and chopped hard at the exposed neck, but missed and almost broke his hand on the enlarged skull. Then the barrel was swinging toward him as Ebert backed away, raising his left arm to protect his face, and Morrison kicked desperately and caught the extended wrist. The dartgun went spinning away. Morrison turned and bolted for the door.

Takahashi had not moved during the brief fight. He suddenly came to life as Morrison yanked the door open and rushed to join him. The older man fled down the hall without waiting. There was a security guard at a monitor post on the floor below, and once he turned the first corner it would be impossible for Ebert to catch him. Takahashi was only a few feet behind.

As he took the stairs three at a time, Morrison had a sudden flash of insight, a poignant look at the irony of a leading exponent of controlled evolution fleeing from the new order he had worked to make possible. The worst of it was that Ebert and his council were quite possibly right; promulgation of Takahashi's discovery might well delay that first trip to the stars. Getting a project that large funded was going to be a tremendous battle . . . and sud-

denly he saw the good, fulfilling work with which he could occupy himself for his remaining active years. He had enjoyed lobbying for the passage of the genetics law. He could retire from teaching and devote himself to proving the watchdog team wrong. And he would not be alone. Merry's only application of her political training had been in working with him during that hectic campaign in 2045. What she and husband Roger really needed was a worthwhile cause, a challenge in which they could lose themselves. He would shortly present them with one.

He realized, as he came to a puffing stop beside the wide-eyed guard's monitor set, that the Newmen's council would have to be broken up quietly, the members dispersed without fanfare. A witch hunt would be fatal, both to them and the upgrading of humanity they represented. And yet they had to be brought under control, their young eagerness for results subordinated to the good of mankind as a whole. If their overly ambitious scheme to in-

fluence the world was allowed to continue, an explosion was inevitable. He had just demonstrated, by a brief application of old-fashioned force, that any real manipulation of mankind was almost impossible. The Jinn would have discovered this hard lesson for themselves after their first few efforts failed, but if their meddling became known they might not live to rue the consequences.

"One of my students," he gasped to the guard, and saw him reaching for the alert button. "Nervous breakdown, in my office. He has a dartgun. Don't harm him."

Green lights began to blink on the console as guards reported in. Morrison, still breathing heavily, turned to Takahashi, silently waiting. It was done, and out of his hands for the moment. He had helped to make his old dream of a well-fed humanity a reality after all, though hardly in the manner he had expected.

Man could reach for the stars with a full belly.

— JOSEPH GREEN

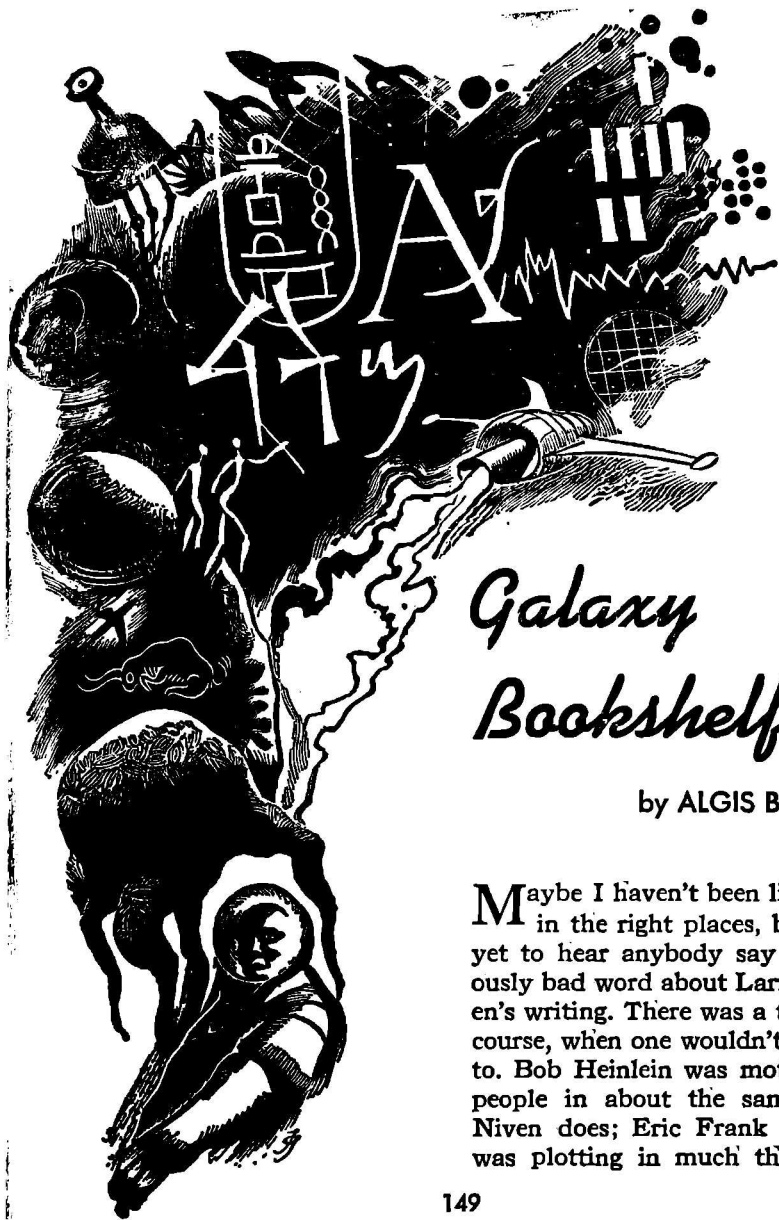
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Galaxy Bookshelf

by ALGIS BUDRYS

Maybe I haven't been listening in the right places, but I've yet to hear anybody say a seriously bad word about Larry Niven's writing. There was a time, of course, when one wouldn't expect to. Bob Heinlein was motivating people in about the same way Niven does; Eric Frank Russell was plotting in much the same

sort of pattern; Hal Clement was rationalizing his settings about as impressively as Niven does, a little more so, maybe; maybe a little differently, rather, and William Tenn had the same sort of trick with deadpan declarative sentences that turn out to have been time bombs. Niven fits right into that tradition; he ought to have happened right about the same time Tenn did, and we could have said the two of them represented the two faces of the same rich coin.

Instead, he has come along now, when the trend is all against his kind of writing, and becomes an award-winner, a much admired man, and an all-'round good fellow. I don't understand it. He must be very good.

He is. He really is, and I take him fondly to my doctrine that trends are for second-raters. Quality rises above fashion. For examples of what I mean, please — please — see a copy of *Neutron Star* (Ballantine), a collection of eight of his stories.

Several of these are about Beowulf Shaeffer, former chief pilot for Nakamura Lines, who I suspect might look a little bit like Cary Grant in the *Korda Gunga Din*, except that he's an albino. (Niven, as noted previously, does not so much delineate a character as he does describe his reflexes). Shaeffer is a kind of wonderful

adventurer, doing the most astonishing things for the most innocent reasons. He does them in a dynamic, well-populated universe, and Niven rounds out this not inconsiderable achievement by also having the audacity to make his problems physical ones. Simple ones, at that, though their solutions are often based on extremely complicated ingenuities.

By doing so, he creates a wonderful effect. He makes you realize that it *would* be a tragedy if Shaeffer lost his life . . . only that, and nothing more. This not only makes for exciting stories, it does quite a bit for the general dignity of Man.

Niven's universe — our universe — is, as I've said, dynamic. It has color, motion and a central explosion that has already happened and will blow the whole thing out of existence in another 20,000 years. That's a safe distance in time, of course, for you and me, and even Shaeffer, but on the other hand, Niven's scale of time starts back in the days of the Slaver empire, millions of years ago, so you can see we're at the short end of the beam. It does tend to make you hang tight.

And it's well populated. Not only by us, but our variant descendants among the stars and by fragmentary living relics of the Slavers' sway, but also by such people as the Puppeteers,

with their two headedness and their beautiful voices, their cowardice, and their mercantile sense.

It's lovely stuff. It really is. "Neutron Star," the prizewinning short story from *If* from which the collection takes its name, is in itself worth the paperback price of admission, as is the great, ebullient feeling you'll get.

There was a time of course, when all the stories by everybody were always simple. Well, things in general were considered simpler; there really was a time, you know, when people honestly told themselves that O. Henry solutions were real solutions, when responsibility was considered sufficiently met, when the proper attitude was struck and when everything had its defined place. (That was in your parents, and schoolteachers' time; not yours and mine.) In that time and in that place, which covered the civilized (i.e., English-speaking) portion of the globe, it was only reasonable to assume that the transformation of things was the transformation of natures. Thus a vast preoccupation, favorable and otherwise, with technology and the physical sciences. Thus, science-fiction, in its time.

Science Fiction by Gaslight, to be exact, as anthologized in an aptly named book edited (but not named) by Sam Moskowitz,

and published at \$6.95 by World. Subtitled "A History and Anthology of Science Fiction in the Popular Magazines, 1891-1911," this book is full of stories about, for example, the destruction of London by lava, of Manhattan by tilting, of the world by the glare of light finally arriving from the immense central sun 'round which revolves the galaxy. (Ah, there, L.N.!) It also contains stories about bluff, and heroic deed, in future wars. It has two scientifically detected murders, one grim and one funny tale about man-eating plants, and a flock of other words which are not science fiction as most of us would understand it, nor, in fact, are truly resolved stories, but which, now that I recollect the mood, certainly represented an accepted popular storytelling mode even as late as my late childhood. (Some of the other words group up into some very worthy stories, but we haven't yet gotten to that.)

A book such as this gives one to pause. For one thing, if one is in the ephemera racket oneself, any collection from popular periodicals gives you the shivers. Collect 80 or a hundred thousand words from the general magazines of any era, and you achieve the paradoxical feat of making frothiness more apparent in direct relationship to the weight of it you

pile on. This stuff depends for most of its effects on popular prejudice. Oh, I don't mean big things, like the racism in Burroughs, or the casual blunderings upon it that you'll find in these stories. I mean the little things — like the "shortland" of which we sf people are so proud, for example — that make a prose divertissement go smoothly.

People bitch about the lack of characterization and motivation in commercial writing; they miss the fact that it's there in predigested form, or if not the fact itself, then its inevitable consequences. In order to hit fast with it, get it done and get out, you and the reader both simplify.

In the days of this book, you had to admit that all cops were Irish, all Irish cops were immensely strong, faithful, and slightly stupid, for instance. Okay; this was a popular prejudice of the day. But in fact, anyone intelligent enough had to have noticed that not all live cops fit this description. So the acceptance of the innumerable Paddys and Sergeant O'Tooles in this form of froth was based on a two-step phenomenon, rather than on simple suspension of disbelief. It was based on "I know better, but it's a minor matter and for entertainment's sake I'll go along with *their* belief." Okay, for entertain-

ment's sake people have gone along with a lot worse than that. But implicit in this blithe surrender is an acknowledgment, right there at the heart of the process, that the process is of no consequence.

It is to be hoped, of course, that today's science fiction, or at least that part of today's science fiction, which appears in its own magazines and is produced by thoroughly conscious craftsmen heavily involved with true problems, is not going to stand revealed in the same light as are these stories from the popular press of their day. Or it is to be hoped that Sam's taste simply ran to the froth, and that side by side with this material there appeared that great fraction which is cracked out by Sturgeon's Law, but was lost to Moskowitz's. At any rate, something is to be hoped for. Very hard.

Despite all this, there are stories in the book which are not merely good — pick over twenty years' worth of hitherto untouched matter, and you had *better* produce a number of "good" stories — but effective. "The Doom of London" is one of them, perhaps because it isn't really about the doom of London but about flight from disaster; "The Monster of Lake LaMetrie" is another, though it might have been better had the author chosen to

develop the events of his story even if it is a jest; "An Experiment in Gyro Hats" is as funny as ever it must have been, not because it obeyed a trend toward funny inventor stories but because it's by Ellis Parker Butler, the man who wrote "Pigs is Pigs." More familiar stories are "The Voice in the Night" and "The Land Ironclads," which I suspect are familiar because Hodgson and Wells were top-rate talent. But then there's "An Express of the Future," too fragmentary and frail even to serve as yet another example for my assertion that Jules Verne is a pretty brittle facade to lean much worship on.

It's a thought-provoking book, is what it is, and as usual with Moskowitz, a must for the serious collector and historian who, if he is really serious, will find his own clues for where he might second-guess Sam's judgments. One, and only one, will I take issue with here, that being his claim that Wells described the caterpillar treads of the tank before the tank was ever invented.

The relevant passage reads "... feet. They were thick, stumpy, feet, between knobs and buttons in shape — flat, broad things, reminding one of the feet of elephants or the legs of caterpillars." (*Italics Wells's.*) Only by taking the less likely meaning of "between," and then by fall-

ing victim to the Caterpillar Tractor Company's publicity image, can you assume, as Sam does in quoting this same passage, that Wells had anything in mind but a device that proceeded over uneven terrain in the manner of some of the Moon-walker gadgets that are being designed today. Wells did indeed postulate the use of armored vehicles in combat — as Verne did the use of submarines — and as Da Vinci had seriously suggested some years before either of them. But just as Verne failed to provide the *Nautilus* with a periscope, so Wells did not give his ironclads the endless belt, and let us not, for God's sake, start another one of those apocrypha there, then.

We know too much about each other, and not enough about ourselves. We bicker, we broil, and we don't always — we hardly ever — know what it's about. Us sf types, that is. Take the strange case of Robert Silverberg.

Silverberg has written more books than most people have notes to their milkman. Literally. He is comfortably in funds as the result of commercial writing, an almost unheard-of phenomenon. Rich, yes. People get rich at writing — they hit the BoM or the Literary Guild, they make the big Hywd sale, and are next seen standing next to Racquel

Welch at one of Hugh Hefner's parties. But hardly anyone makes a decent living at it, treating it the way someone else would treat a nice little brokerage house or architect's office. Most people starve and cripple themselves at it.

The way to do it is to sit down at the typewriter every morning, write for ten thousand words, and stand up for the rest of the day. That produces one book a week. Can you possibly have that many ideas, and even if you got them, could you develop them in any noteworthy way? Answer: Probably not. But you are a fool if you are in business and you let something like that deter you.

The clarity of mind, the singleness of purpose, the sheer managerial skill reflected in Silverberg's early career are qualities many of us ought to have studied. There is something there for each of us to learn from. But instead most of us, living in each other's hip pockets as we do, battered and brow-beat at Silverberg incessantly, taking him to task for being shallow, and then going home and writing painfully. Most of us had nobler aspirations and burned with a hotter flame than Silverberg apparently did. We were so intense, as a matter of fact, that our hang-ups distorted our copy. Jobs were rushed by financial pressure. Choices of characteri-

zation, exposition and setting were dictated by hunger, or fear... but our product was nevertheless better than his, because while it was often no more efficient as storytelling than his was, ours had higher motives.

Well, I'm citing extreme views of the old conflict between the Muse and the buck, and it wasn't as intense as all that, but how curious to see that Silverberg is now writing deeply detailed, highly educated, beautifully figured books like *Thorns*, or like his latest from Ballantine, *The Masks of Time*. Did he plan to become this way all along, or did we persuade him? And to what degree, then, does his very existence in this incarnation comment on us, or on him, or on our mutual past, or the future?

Let's not get too lost — *The Masks of Time* is not a wholly good book. It's marred by several gratuitous problems, one being a sub-plot that skews the pacing, another being an inexplicable prurience that serves no visible plot-purpose. But its defects are the opposite of those Silverberg's work used to have. It's overworked, and it dawdles. It's crowded with people to whom too much attention has been paid, with incidents that could easily have been left out. This is very much like what you'd expect from a Silverberg looking up over his

shoulder and saying: (Here. Here. I'm an artist. See — here's a piece of evidence to prove it. And another. And another. And . . .) But Silverberg has never betrayed the slightest trace of giving a damn what anybody said or thought. So maybe he was planning it this way all along. Maybe in the old days he'd whisper to a character: (All right. I'm making you out of cardboard, but what I've omitted I'm going to pack into somebody else, some day, and he won't just be round, he'll be *dense*!" And slopping out an idiot plot, but promising himself that one of these days, all those clipped-off loose ends would be woven into a tapestry worthy of Bokhara. Or maybe Herculaneum. Who knows? We don't really know each other any better than we know ourselves.

But there it is. The new complete reversal . . . the hand emerging from the mirror.

Oh, yes. *The Masks of Time* is

about an enigmatic, bland, mischievous, self-assured fellow who emerges into public view one day in the very last days of the Twentieth century and claims to have traveled back in time from the last days of the thirtieth. He upsets everyone because he cannot or will not tell them anything about himself. All anyone can do is follow him around and observe, occasionally acceding to his wishes, which frequently involve screwing up whatever machine or institution is complicated and assertedly smooth-running. In some ways like a better-rounded but less charismatic *Stranger in a Strange Land*, it is by the way the first of what will doubtless be many books to exploit the fact that we're approaching another millenium and another inevitable outburst of apocalyptic hysteria.

It's not a wholly good book. But go buy it. It's quite interesting.

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SPYING SEASON

by MACK REYNOLDS

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*Someone wanted a spy inside Eastern
Europe—but wouldn't tell him why!*

I

Paul Kosloff the 2nd said,
"There must be some mistake
in my being summoned here."

He was sitting in the office of
Herman Banning, in a section of
the Bureau of Labor Draft in
Greater Washington.

The older man looked at him

wearily, even as he checked a re-
port on the screen of his desk
teevee phone. He said, "Mr. Kos-
loff, I estimate that four persons
out of five who sit in that chair
you occupy tell me that some
mistake was made when they
were selected by the Labor
Draft."

Paul Kosloff was a young man

of possibly thirty, well built and straight of carriage but, except for Slavic blueness of eye and blondness of hair, not especially outstanding so far as face was concerned, save for a certain quiet dignity. His smile was slow, and there was a vulnerable something there, a sincerity continually striving to come through.

He said now, "Don't misunderstand, Mr. Banning. I am not a draft dodger. The thing is, I am already employed, and at government work at that. I teach language on the Tri-Vision University of the Air."

Herman Banning nodded. "Undoubtedly that's one of the reasons you were selected, Mr. Kosloff. You make a common mistake. The Bureau of Labor Draft doesn't exist simply to find jobs for the unemployed, but to find the most suitable personnel for such positions as still remain under People's Capitalism, the Ultra-welfare State." He frowned slightly. "Admittedly, this request is a bit unusual. And, frankly, I don't know what your assignment might be. However, the computers picked you out of the files."

Paul Kosloff said unhappily, "But I like my work. My pay is ample and —"

Banning was checking his screen again. "That's one thing to the good, Mr. Kosloff. The Bu-

reau of Labor Draft seldom switches a man from one category to another without his pay being increased. I note that at present you receive four shares of Variable Basic a year to add to your portfolio. Undoubtedly, your pay at the Octagon will be at least another share a year."

"The Octagon?" Paul Kosloff said in disgust. "I didn't even know it still existed."

"It still exists," Herman Banning said. He held out a paper. "Please report to Harry Kank, of the Inter-American Bureau of Investigation, at this office."

Paul Kosloff said, "There must be a mistake. I already have a job and am perfectly satisfied with it."

He had made his way by vacuum-tube transport to the office of the Octagon in Greater Washington and was now confronted by a cold-eyed civilian in late middle age who carried himself as though backed by long years in the military. There was a non-nonsense aura about him.

The other held a hand over his desk to shake Kosloff's and said, "Sit down, Paul."

Paul Kosloff sat down and frowned. He was younger than this one, but still a full professor. He was seldom called by his first name by strangers.

The other said, "My name is

Harry Kank. Many years ago, when I was younger than you are now, I accompanied your father on an assignment in what is now Common Eur-Asia, Belgrade to be exact. The job was to smuggle Milovan Djilas out of Yugoslavia."

Paul Kosloff said, "He never told me about that one."

"It didn't come off. Djilas wouldn't leave. He told us his job was in Yugoslavia."

Paul Kosloff said, "Look here, it's nice to meet a friend of my father's from the old days, but—"

Harry Kank said evenly, "I did not say I was a friend of your father's, Paul. I said I was an associate. Your father didn't have many friends. He was too dedicated, too fanatical, if you will. We used to call him the Cold War's Lawrence of Arabia. I've often suspected that it came as a great blow to him when the Cold War finally faded away."

Kosloff was slightly taken aback. "Well, be that as it may, I still haven't the vaguest idea why I'm here. I know nothing about my father's work."

"This has nothing to do with your father. It's only a coincidence that you're Paul Kosloff the 2nd. Harry Kank looked down into his desk screen. "The computers pulled you for the following reasons. You speak all of the Balkan languages, including

even Hungarian. You have fairly close relatives in several parts of Common Eur-Asia. You have no record, whatsoever, connecting you with espionage — "

"Espionage!" Paul Kosloff blurted.

The other went on. "Your cover is perfect. You are a legitimate professor of language. You have a sabbatical coming up. Nothing would make more sense than that you take it visiting your Common Eur-Asian relatives and perfecting your accent."

"And that's why my name was pulled out of the labor files by the computers?"

The other looked at him. "Not quite all. You are evidently your father's son. Not only do you carry a Black Belt in Kodakan Judo but have evidently made a hobby of Chinese Kenpo, Jujitsu, Hoppa Ken and Nanpa Ken. You were a runner-up for the last Olympics in both pistol and rifle. You've done considerable mountain climbing and make a habit of spending most of your vacations hunting and fishing in the upper reaches of Canada — alone. Paul Kosloff, that adds up to quite a bit of active manhood."

Paul Kosloff said uncomfortably, "Dad always insisted on physical as well as intellectual pursuits. But listen, I'm no spy."

"We don't want you to be."

Paul Kosloff looked at him. Harry Kank said, "Settle back and let me go into my fling."

"It had better be good, because the answer is probably no."

Kank said, "Paul, the history of the relationship between East and West has often verged on the farcical due to the faulty information provided by the professionals and which we accepted. We have a natural tendency to believe what we want to believe. When Lenin's revolution took place, it was widely accepted that the Bolsheviks wouldn't last the year out. They lasted. All through the twenties, the reports came through about how the Russians were starving to death and the regime about to collapse. It didn't. When Hitler attacked, our best information led us to believe that the superlative German Wehrmacht would take Moscow in weeks. They didn't.

"Immediately following the war, we told ourselves it would take at least a decade for them and develop an atomic bomb. It didn't. And they were neck and neck with us in attaining the H-Bomb. The real shock came when they were the first in space and remained the first for a long time. Other shocks followed. However, as a whole we continued to maintain our original religious faith that the East would never overtake the West."

"See here," Kosloff said. "What are you building up to? I told you I wasn't interested in following in my father's footsteps."

"Correct. Nor do we want you to. The Cold War, in the old sense, Paul Kosloff, is no longer with us. However, the world is still divided into two ultra-powers, with a few neutrals scattered about. In many respects, the developments of the past few decades have resulted in our knowing less about what goes on in Common Eur-Asia than we knew before. We have both withdrawn into our own spheres of influence. However, we still must keep informed."

"It sounds like spying to me."

"Call it the gathering of information. You will enter the Balkans without weapons, without secret codes, drops, special cover, or anything of the nature. You will spend a year there, assimilating knowledge. No taking pictures of military bases, no ferreting out secret weapons. You simply associate with your relatives, with colleagues in the Common Eur-Asian universities, with casually found friends. You realize, of course, you are not alone. We are sending a score of agents to different areas of Common Eur-Asia. You are simply our Balkan expert."

Paul Kosloff thought about it.

"What happens if they catch me?"

"Catch you doing what? Your strictest instructions are not to break any laws. Nevertheless, if you run into difficulties, you are on your own. The government of the United States of the Americas will not recognize you, beyond the point it would any teacher on Sabbatical leave, vacationing in that part of Common Eur-Asia called the Balkans."

Paul Kosloff said slowly, "In actuality, my Sabbatical is coming up, and I was planning to spend part of it in Yugoslavia and Hungary."

"Fine. The assignment doesn't even interfere with your plans." Harry Kank added persuasively, "And upon completion of your little trip, this department will award you ten shares of Variable Basic stock to add to your portfolio."

Paul said, "I'd have to think more about it."

"Please do," the other said coldly. "However, keep this in mind; your country needs your services, Paul Kosloff. Whether or not you accept the commission, do not under any circumstances discuss it with anyone. Anyone. In a day or two your liaison man will turn up at your apartment. You can give him your answer."

"My who?"

"Your liaison man. This is the first and last time you'll ever be in the Octagon. We'll call him John Smith. All your contact with this bureau will be through him."

John Smith turned out to be a smiling man and cordial. He seemed to take it for granted that Paul Kosloff had decided to come in with them. In fact, perhaps it was his very air of confidence that pushed Paul over the edge to an affirmative decision.

Paul saw him seated, offered him a drink from the auto-bar, but the other shook his head. "Not during duty hours. Shall we get to business?"

"What business?" Paul said.

"You already have a passport? Good. You'll have to apply for a Common Eur-Asia visa. It should only take a day or two to come through. According to the data I have on you, you've never been there before, but you have relatives in Split, Belgrade and Budapest. That's always a good reason for such a trip. And, of course, you'll need your rocketplane ticket. And you'll have to apply for an International Credit Card and switch some of your credit balance to it."

"I assume you'll cover all expenses."

John Smith grinned at him and shook his head. "Not at this stage of the game, *l'homme*. Our finger

won't appear in this at all, Paul. If we put a few thousand dollar credits into your balance, it would show in the computer banks. We have no idea of what agents of theirs have infiltrated various of our government offices."

"You mean I'm going to have to pay for all this?"

Smith laughed and said, "Temporarily. You'll be reimbursed when it's all over. The less cover you need, the harder it is to blow, Paul."

Paul Kosloff thought about something and came to his feet and went over to a drawer built into the wall of his mini-apartment. He opened it and came out with a handgun.

The IABI agent's eyebrows went up.

Paul said, "A .38 Noiseless. It used to be my father's gun."

"Well, put it away, hombre," Smith said. "You didn't think you were going to land at one of their rocketports carrying a shooter, did you? They aren't cloddies. They have metal detectors that'd pick up anything as big as a shooter and ring a dozen alarms. Besides, remember, you are no cloak and dagger operative; you're a professor who's taking his sabbatical leave visiting his relatives and perfecting his accent. What in the name of the holy jumping Zoroaster would you be doing with a shooter?"

Paul Kosloff accepted that and put the weapon back in the drawer. He returned to his chair and faced the other again.

"All right, how do I report to you?"

"You don't."

Paul looked at him. "I thought you were my liaison man."

"I am, but unless there's an emergency you keep everything you learn to yourself until you get back."

"Well, in case of emergency?"

Smith pointed at his host's wrist teevee phone. "You'll call me by regular phone. I'll give you a number One Priority on my wrist phone, and you'll be able to call me wherever I am on satellite relay on a twenty-four-hour-a-day basis.

"Do you have a code or something?"

"No. Talk straight English. Codes can be betrayed or broken. You're not stupid. You can word it in such a manner that I'll understand, but any secret police, or whoever, listening in, wouldn't. Pretend that I'm a colleague of yours at the university."

Paul Kosloff sighed. "This is all new to me, in spite of my father's background. Just what do you want me to find out?"

The agent leaned forward. "Paul, we want *inside* information. We want to know what the people think; how the man in

the street feels about the government, if he supports or opposes it. We want to know if there's an underground, and, if there is, how strong it is, what kind of people it appeals to, what steps it's taking, and how it expects to get into power. For all we know, there might be more than one underground movement. There might be one in, say, that area they used to call Bulgaria, but a different one in Rumania. We'd like to know about them all. We want to know what's going on inside Common Eur-Asia. Maybe we'll never use the information, but we want to keep up."

II

Paul Kosloff took the vacuum-tube transport to Neuvo Albuquerque and then lobbed over to the Common Eur-Asian international rocketport located roughly halfway between Budapest and Lake Balaton. He had relatives in Budapest, only about an hour away by floater, or minutes by a shuttle jet, but he had decided to make his first stop Split, on the Dalmatian coast of the Adriatic. So far as his cover was concerned, it made more sense that way. His closest relatives were in the Dalmatian area of what was once called Yugoslavia.

He was mildly surprised by the

affluence. Apparently you could build steel mills and more steel mills just so long. Sooner or later, you stop putting the steel into more steel mills and start building other things with it — cars, refrigerators, electronic stoves and other consumer goods.

From the rocketport, he took a shuttle jet to Belgrade and transferred there to another which hustled him over to the old old town of Split, nestled against the clearest, bluest water Paul Kosloff had ever seen.

The small jetport was located half way between the ruins of Salona, the Roman capital of Illyria, and Split proper. Paul Kosloff emerged from the shuttle jet and looked about. Thus far, to his gratification, he had had no difficulties whatsoever with his Serbo-Croat, a language which he didn't consider his best. His maternal grandmother had been a Serb, but his knowledge of the language had largely been attained in school.

He had already found that vacuum-tube transport was not nearly so well established in Common Eur-Asia as it was in the United States of the Americas and looked about for an auto-floater cab or the equivalent. Typical of the tourist, down through the centuries, he was impatient when all the facilities of his own land were not at his fingertips.

He brought himself up abruptly and had to keep himself from gaping.

About twenty feet away stood the most beautiful brunette he could ever remember having seen, not excluding the sex symbols currently popular on Tri-Vision shows back home. She combined the beauty attributes of Orient and Occident. The black, black hair of the Chinese, eyes slightly slanted, a creamy dark complexion impossible to achieve without blending races. There was in her, probably, Caucasian and Magyar, perhaps Hun. She was simply breathtakingly beautiful, and her figure matched her face and managed to be tallish, slim and lush at the same time.

Paul Kosloff had picked up another trait of the tourist come down the centuries. He assumed that the locals didn't speak his language. He muttered aloud, "Holy jumping Zoroaster, I wish it was *me* you were waiting for."

She looked at him. "It probably is," she said in perfect English.

He closed his eyes for the briefest moments, half in chagrin, half in hopes that what she was saying was true.

He opened them and said, in Serbo-Croat, "I'm afraid not, worst luck."

She took him in, head to foot.

"You're my cousin Paul, aren't you?"

"Cousin!" he said, rallying uncharacteristically to a situation of humor. "Oh, no. Cousins aren't allowed to marry, are they?"

She looked at him coolly, but there was a touch of amusement at the sides of her mouth. "Second cousins are — under certain circumstances."

He tried to keep it all on the present bantering level. "*What* circumstances?"

She enumerated on her fingers. "One, that neither cousin already be married. Two, that they find each other mutually attractive. Three . . ."

"Yes?"

"That one not be an imperialistic, rich American."

He laughed. She was good. He was ordinarily not light in his conversation, but she brought it out in him.

Paul said, "Well, where do we miss connections?"

She tilted her head to one side, contemplating him. "I don't know, as yet, whether or not we find each other mutually attractive."

"Is that all? How do you know I'm not an imperialist and rich?"

It was her turn to laugh. "I don't know, but I understand you are a fellow teacher of language."

He should have guessed. Her accent was near perfect, though

British rather than American.

He made a mock half bow. "Paul Kosloff, at your service, cousin. Not rich. Not particularly imperialist, whatever that means, and not at all married."

She executed a half dip — not a very good curtsy — and said, "Goldi Pashitch, at your service, cousin. Also not rich. And not at all married."

"Goldi!" he said, before he could catch himself.

She looked at him critically. From what I have read of American literature, I understand that the name is sometimes utilized as a stereotype. However, pray remember, it was the name of our mutual great-grandmother."



He winced and switched tones. "You've come to meet me. I didn't expect anyone. Thank you very much. I know I have several relatives in this vicinity, but don't even know the names of all of them."

She smiled. "Zut! What did you expect? You are our American relative. It is not often that an American comes to Split these days. We are all on edge, awaiting you."

He took her arm and headed in the direction of the Administration Building for his luggage.

He said, "Are all of my Balkan cousins as attractive as you are?"

She looked at him from the sides of her eyes. "Are all my American cousins as gallant?"

"Hmmm. I'm afraid I am the only one. I'm an only child, and my father the only member of the family that — ah — escaped from Russia in the early days."

"Yes, but on your mother's side, I understand, you are part Serb and part Hungarian. And I've heard that every Hungarian family has at least one relative in an American town called, let me see, Akron, Ohio."

He laughed. She helped him obtain his luggage, then led the way out to a floater she had parked in front. It was a sporty model, fitting the informality of her clothing. Paul Kosloff decided

that back in the West, first impressions would have led to the belief that she was upperclass. He piled his luggage into the back, gestured with his hand at the aircushion car and said, "Yours?"

She climbed behind the manual controls, dropped the lift lever and said, "Heavens to Betsy, no. We use the same system you do. Few people own floaters; we rent them."

He looked over at her and said, "Heavens to Betsy?"

She flushed. "I teach English, you know, and like to keep up on the idiom."

"Well, I'm here myself partly to catch up on my accents and such things as current idiom." He cleared his throat. "However, Heavens to Betsy, is somewhat dated. Almost as bad as 23-Skidoo. Currently, we say, Zoroaster, or holy jumping Zoroaster, or, perhaps, Zo-ro-as-ter, all drug out."

"Zoroaster?" She scowled. On her, he decided, it looked good. "I thought he was an ancient Persian religious leader."

"Right."

"Well, what does it mean when you invoke his name?"

"What does Heavens to Betsy mean?"

She chuckled lightly. Goldi Pashitch had a good laugh, more



like a man's than a pretty girl's. This cousin was going up in his estimation by the minute, and she had started rather high.

He said, "What's the program?"

"Dinner tonight with us. We've all been going through the family recipes to find you some typical Servian and Croatian dishes. And Branko has been scouring the countryside for the best of *sljivovica*, *prosek* and *Bakarska Vodica*."

"Branko, if I remember, is another of my cousins. He must be your brother. *Sljivovica* and *prosek* I've heard about. But what was that last?"

"*Bakarska Vodica*. A spar-

kling wine, something like champagne."

"Wonderful! So you still have decent lush over here. Back home, Central Productions has outlawed the use of cereals and fruits for the production of beverages."

She made a moue. "But wines and liqueurs are among the good things of life."

"You ain't just whistlin' Dixie, girl," he grumbled. "But in the United States of the Americas you don't waste cereal on making beer or lush, any more than you feed it to cattle. Too inefficient. Chickens, yes, pork, yes. But precious little cereal goes to beef. With chickens you can raise a half pound of meat with a pound of cereal. Pigs aren't that efficient, but they're better than cows."

"Our Central Production Planning limits use of cereals to fatten cattle too," she said. "What is this, you ain't just whistlin' Dixie?"

Paul laughed. "That's a piece of old idiom coming back into use. Look, where are we going?"

"First to the *New Marjan* in the Bay of Bacvice. It's our best hotel. Vuk was in favor of putting you up with us, but Branko said you'd be more free at a hotel, and handy to the beach and all. We hadn't had the vaguest idea of your requirements. Whether you wanted to study, go

night hopping, soak in the sun or what.

"All of those," Paul said.

They were entering Split proper. She drove along the water front, which was in park, and past a tremendous ancient building.

She said, "Diocletian's palace." Her voice took on a burlesque of a travel-guide's rote. "Built circa 300 A.D. for the Emperor Diocletian, who was born in this vicinity and who was the last of the great pagan emperors and one of the few who lived to retire and spend his last years in peace, rather than being murdered. So well did he build this retirement palace of his that three thousand persons still live within its walls."

Paul Kosloff stared at it. "Zoroaster!" he said. "It must be one of the best preserved buildings of antiquity."

Used as he was to the pseudocities of the United States of the Americas, he found Split exceedingly attractive. Somehow, the population explosion hadn't seemed to hit as badly here as it had at home. Either that or the urban planners had in some manner succeeded in hiding it. Split gave the impression of a small, uncrowded resort town on the sea.

Goldi Pashitch whisked him through town and out to the bay and to the portals of the *New*

Marjan. She entered the lobby with him, and he was mildly surprised to see a live receptionist at the desk.

"Our hotels are more ultramated than yours seem to be," he told her.

She snorted deprecation. "Make work," she said. "There's no reason in the world why we couldn't ultramate our hotels too. The government deliberately refrains."

He looked at her. She evidently had no compunctions about speaking up against government policies she opposed. It was this sort of thing that Harry Kank, back in the Octagon, wanted to know.

After he had registered, she accompanied him to the bank of elevators. Evidently, she had no compunctions either against going up to his rooms.

She helped him inspect the small suite, and showed him the workings of the auto-bar and delivery box and helped liberate his luggage from the latter. Then she brought forth the local tee-vee phonebook and showed him how to dial and order from the Common Eur-Asia equivalent of the American ultramarket. In actuality, there was comparatively little difference. Evidently, the East had not been far behind the West in automating distribution.

When he was settled in, she

turned to him briskly and smiled up into his face. "There you are, Cousin Paul. I'll leave you to your cleaning up, and having a nap, or whatever. You must be tired. Ah, Zo-ro-as-ter, just think! This morning, you were in America."

He wished that he had the nerve to kiss her. And he didn't have a cousinly kiss in mind, either.

III

Dinner at the Pashitch home turned out to be a matter of gastronomic endurance, in a near mob scene.

He tried to keep names sorted, and couldn't. Among the family alone there were Branko, Vuk and Stefan. Then there were some relatives, and their relationship to him never seemed quite clear. There was a Mikhail, a Drzic, two different Annas, a Jan, an Anora, a Maria and an Ignat. Then there were various neighbors and friends, all of whom seemed to be named either Josip or Alexander.

He was met with shouts of greetings, at the front door by various of these, all proffering drinks. Nothing would do, even before introductions, but that he knock back a stiff sljivovica, the plum brandy eau-de-vie of the Balkans. Then, while Branko,

Goldi's good looking twenty-year-old brother, beamed from behind, as though Paul Kosloff was his own personal protege, nothing would do but that Paul take a tall glass of Dingac, a red wine somewhat similar to Chianti.

Even as the introductions progressed, Paul took in his surroundings. The Pashitch family was sizeable, but he was mildly surprised at the magnitude of the house. His own quarters, back home, consisted of a mini-apartment; living cum bedroom, a tiny bath, a tiny kitchenette. In the Pashitch home, the kitchen seemed to predominate. Indeed, kitchen, dining and living room seemed to be one. And of a sudden, Paul Kosloff realized that the family cooking actually took place here. Offhand, he couldn't remember the last time he had eaten a home cooked meal. This was absolutely primitive. He couldn't imagine leaving cooking in the hands of amateurs. Evidently, *living* wasn't nearly as ultra-mated in the Balkans as it was in his own country.

The glass of Dingac was followed by one of Vugava. From there on in, he lost track of the names of vintages.

Shortly, he found himself seated at the enormous table with the men present, the women all busy at stove and in serving. The meal was well into several courses be-

fore the womenfolk, including the beauteous Goldi, were seated. Even through his rapidly accumulating alcoholic daze, Paul Kosloff could decide definitely that the faint flush added to her face by the stove's heat did nothing at all to detract from her appearance.

There was *barbuni*, a grilled red-mullet-like fish; there was *Dalmatinski prsut*, a type of smoked ham; there was *pohovano pile*, a breaded chicken dish; there was *cigansko pecenje*, which they called gypsy roast; there were a dozen other dishes, winding up with *strudla*, cherries in a flaky crust. This last washed down with large draughts of *pro-sek*, a sweet wine.

And all this in enormous portions and all accompanied with ringing toasts to Paul, to everlasting peace between all nations, to co-existence between Common Eur-Asia and the United States of the Americas. Finally, young Branko came to his feet — these people seemed to have an unbelievable capacity for drink, Paul decided, in view of the fact that the youngest Pashitch seemed to be as steady as when the eating and drinking bout had begun — and extended his glass toward Paul and said, "To eventual world government."

Paul had to laugh at that one, even as he took his own wine up.

Branko, scowling slightly, said, "And do you think that such a goal is laughable, Cousin?"

Paul brushed it off. "In a thousand years, perhaps."

One of the others said. "Why so pessimistic, Paul?"

Paul Kosloff was embarrassed. "The nations seem to be getting further apart, rather than close enough together to ever dream of a one-world government."

One of the non-relatives, a man of about forty who had been introduced as Marin Gundalic and was evidently a good family friend, said seriously, "Are you sure?"

"Well," Paul said, noting the serious interest of all, "we still have People's Capitalism in my half of the world, and you still have communism over here. And I suspect that never the twain shall meet."

"American idiom," Goldi said to the others. She had entered little in the conversations but had followed it brightly.

Gundalic, who evidently was looked up to by the others when it came to matters politico-economic, said, "I am not as well acquainted with what you call People's Capitalism as I would like to be. However, the term communism is elastic."

Paul said, uncomfortably, "Actually, I'm not really up on it. I'd

like to hear, from your viewpoint, exactly what has developed in this part of the world in the past few decades." He put his glass down and tried to concentrate through the heavy food and the fumes of wine.

All eyes went to Marin Gundalic, who had evidently become the spokesman.

He nodded. "Very well. And we will appreciate your views of what has developed in the West."

The Yugoslavian paused for a moment, as though considering his approach. He said slowly, "I suppose you might picture it as swings of the pendulum. After the Hitler war and the Soviet occupation of Eastern Europe, the Stalinists made a policy of stripping the countries they had overrun of their machinery, their railroad rolling stock and so forth. It was some years before they realized that what the United States was doing in Western Europe made considerably more sense. So the pendulum swung back, and the Soviet Union began to help rebuild. At first they dominated the governments by enforcing on them Stalin-type dictatorships. However, the people of such countries as Hungary, Poland and Rumania, were more sophisticated than the Russians, better educated. Revolt simmered and finally we had the pendulum's swing. Yugoslavia broke away en-

tirely. Hungary attempted to and was temporarily crushed. Poland asserted her independence and not long after, Rumania. The U.S.S.R. eventually had little control over her once satellites.

"In the early days, each of the nations of Eastern Europe jealously guarded their independence, but once again the pendulum swung. It simply doesn't make sense in the modern industrialized world to be split up into small units such as applied back during feudalism. Western Europe realized it first, and the Common Market was instituted. In the East, our own Yugoslavia pointed out the way. Even under Tito, it was a federation of Serbs, Croats, Slovenes, Macedonians and Montenegrins, all working together. If this was possible, why not further amalgamation? If Croats and Serbs, long traditional enemies, could live together, why not bring Bulgarians in too, and Hungarians? If Rumania and Yugoslavia could unite to harness the Danube at the Iron Gate, why couldn't there be further cooperation?"

He shrugged hugely, a Slavic shrug. "To shorten the tale, we joined and formed a union of all East Europe."

Goldi said softly, "And then the tail began to wag the dog, to use an Americanism."

Marin Gundulic looked at her

and smiled. "Very apt." He turned to Paul. "I don't know if you are familiar with the work of your American Hudson Institute of some years ago."

"I don't believe so."

"It was what they called, in those days, a think tank. Their Herman Kahn and Anthony Wiener produced a book entitled *The Year 2000*. Very fascinating. One of the tables in it listed how long it would take for each of the nations to reach the Gross National Product Per Capita that the United States boasted in 1965, which was \$3,600. Sweden was to take only 11 years, West Germany 16, and East Germany 17 years. France was to take 18, the United Kingdom 19, and Czechoslovakia 20. Japan had 22 years to go, and Russia 28. Now what I am pointing out is that East Germany was to reach the American level of 1965 eleven years before the U.S.S.R. and Czechoslovakia eight years before. Poland and Rumania were running neck and neck with the supposed mother country of communism."

The Yugoslavian chuckled. "So, as Goldi said, the tail began to wag the dog. We of Eastern Europe began to surpass the Russians. But as you of the Americans began to unite and by doing so strengthened your United States still more, the only thing that made sense was for us in

the East to unite as well, and we did. One by one, we merged into our Common Eur-Asia. And some of the smaller countries bordering our ultranation also joined, it being impractical to stand alone in the modern world."

He held up his hands in a gesture of being through. "So here we are today. Our goals of industrialization have been met. We too have become an affluent society."

Paul said, "So the millennium has been reached."

It was Goldi who shook her head, although she was reacting for them all. "There is no reaching the millennium, Paul. As society evolves, we conquer goal after goal, but we never come to the end. There is no end."

Paul grinned at her. "Quite a statement."

She flushed and looked about the table apologetically.

Branko said, "Now tell us about America. Most of what we read is too slanted."

Paul said, "Well, perhaps there isn't much to tell. The history of the United States has been one of new States being admitted from time to time. We started with thirteen colonies on the Eastern seaboard and in less than a century had spread to the west coast."

It was his cousin Vuk, who said,

nodding, "One of the outstanding examples of aggression the world has ever seen."

Paul looked at him, somewhat taken aback. "I never thought of it that way."

Branko laughed. "You should consult the Indians and the Mexicans."

Paul said, "At any rate when we reached the Pacific we hesitated for a time, perhaps because there was no further to go. But then a precedent was set in 1958 when Alaska, which didn't adjoin the rest of the states, was admitted and still another when Hawaii, which is not even part of the mainland of the Americas and is predominantly non-Caucasian, was admitted in 1959. However, it was with admission of Puerto Rico that the new trend was started, since Puerto Ricans are Spanish speaking people. By this time, American domination of the Latin American economies was widespread, especially in such countries as Venezuela which is so rich in natural resources. Since we dominated their economies, there was more and more tendency to try and influence their governments."

Paul shrugged. "All of the Latin American countries aren't as yet members of the United States of the Americas, of course, but I suppose it's just a matter of time."

Branko said, "Most of this we already know, Cousin. We were more interested in hearing about some of your socio-economic changes, so we could compare them with our own."

"Oh. Well, I suppose the beginnings of our present Ultra-welfare State go back as far as Roosevelt. Our old socio-economic system was coming apart. It was Roosevelt who said something to the effect that the true conservative is a liberal, because he realizes that to conserve the old you must make reforms. But it wasn't until the late 1960's that the first seeds of what we now call People's Capitalism were sown, and they inadvertently."

One of the neighbors leaned forward in interest. "How do you mean?"

"It was the gold drain. The government had issued, domestically and internationally, something like forty billion dollars in paper, but had only ten billion or so in gold which supposedly backed it. It wasn't that the country was poor. Even then the annual gross national product was pushing a trillion dollars, and the value of all property ran into many trillions. There simply wasn't enough gold in the world to back all of the currency needed for international demands.

"So what they did was to have the hundred largest corporations

pay ten per cent of their taxes in the form of common stock of the corporation. The government consolidated this into what amounted to a gigantic mutual fund, and called it United States Basic, put some of it on the market to seek its level and put the rest into the equivalent of Fort Knox. In other words, United States Basic stock was backing the dollar. Any country that held dollars, and would rather have U.S. Basic, could demand the stock from the United States at whatever the going rate was at the time. U.S. Basic, of course, paid dividends, based upon the dividends received from the corporations."

Paul Kosloff smiled wryly. "There were a lot of yells about creeping Socialism, but nobody came up with a better idea. Each year that went by, the government continued to take ten per cent of its taxes from the largest corporations in the form of common stock and added to its pile. Along in here, the problems that evolved from automation and then ultramotion became chaotic. There was fabulous unemployment, millions of persons demanding one type of relief or another, federal, state and city. The government tied it all up into one package by issuing ten shares of its accumulated stock to every citizen of the country. Even babies. They called it In-

alienable Basic, and although you collected your dividends all your life, you couldn't sell it, give it away, be robbed or cheated of it, or in any other manner dispose of it. When you died, your shares reverted to the government. The income was just sufficient to get by."

Goldie said, "Why would anyone work?"

He looked at her. "That soon became a problem. It was at least partially solved by creating the Bureau of Labor Draft. Every citizen was registered in the computer banks, with all pertinent information on education, abilities, experience and so forth. When someone was needed to fill a position in those industries the government dominated, the most suitable person was drafted."

"That must have caused a great deal of hard feeling on the part of the unlucky ones," somebody said.

Paul nodded. "But it was at least partly offset by the fact that those who were called on to work were issued further stock which was called Variable Basic and which you could either add to your portfolio and enjoy the dividends or sell for dollars to be spent for whatever you wished. You've got to realize that living on the income from your inalienable Basic alone is rather grim."

Vuk said, "And as the United States of the Americas becomes increasingly prosperous, is the amount of Inalienable Basic increased for each citizen?"

Paul shook his head and scowled. "That's one of the drawbacks. You see, although the hundred largest corporations are now dominated by the government, we still basically have a form of capitalism. The smaller corporations, privately owned industries and business, and professionals, still continue. They require labor. If the incomes from Inalienable Basic were greater, practically nobody would work at the less desirable jobs. Oh, some do their work because they love it. Artists, devoted medical people, some teachers — various jobs of that type. But if you didn't have to, who would hold down such positions as, say miners, sanitation workers, that sort of thing?"

Goldie said, "I'd think everyone would get a job and add to the number of stock shares he held."

Paul said, "That's a difficulty too. There aren't enough jobs to go around. Ultramation has put the majority of our people on the un-needed list."

They all thought about it.

As they had talked, the women had cleaned up the table. Now fresh glasses were brought and new carafes of wine.

"Oh, no," Paul groaned.

Everybody laughed heartily.

"But it is your first day in Split!" Branko called, lifting his own glass in toast.

Marin Gundulic was scowling thoughtfully at Paul Kosloff. "Why not more participation in the arts?" he said. "Why not more of your national effort expended in the sciences?"

Paul sipped at his new wine and said, "How do you mean?"

"Somewhat the same problem has come up in Common Eur-Asia. That is, ultramodernization has made it possible for the basic industries and agriculture to be handled by a fraction of the employees once needed. But we have a strong movement to solve this by devoting more of the nation's manpower to the sciences and to the arts. I understand that in the Americas now, increasing numbers of the citizens spend their time staring at Tri-Vision and finding satisfaction in sucking on that tranquilizer euphoric . . ."

"Trank," Paul said.

"Yes. However, our more forward-looking planners demand that our most progressive youth be sought out as early in life as possible and directed into the sciences or arts, as their abilities warrant. Pure science, simply for the sake of increasing knowledge, not for industrial or other pragmatic research, and participation in all of the arts, including

entertainment, the dance, handicrafts. We encourage a return to handcrafted ceramics, textiles, toys, even handset and hand-printed books."

"Or, take cooking," Goldi put in. "In times past, we used to pride ourselves on our community kitchens and community dining halls. We were anxious to eliminate the labor involved in each household preparing its own meals. But when labor was no longer a problem, then we began to have second thoughts. Good cooking is an art, and convivial meals with friends and family in the home are one of the most enjoyable things people can appreciate." She snapped her fingers. "So back we go to privately prepared meals, and, uh, Zoroaster take the time involved. Time we now have aplenty."

Paul had to laugh at her evoking the Persian. But then he frowned and looked back at Marin Gundulic. "It sounds good, but I seem to have detected a reservation in the way you put it. Is it happening?"

The Yugoslavian looked unhappy. "Not to the extent many of us would like."

Paul looked at him.

Branko growled, "There are powerful elements in the government that are opposed to it."

Vuk, his older brother, took up a wine carafe and poured a

fresh glass for a protesting Paul Kosloff, even as he growled, "That'll be all Branko. Our guest isn't interested in Common Eur-Asian politics."

Obviously young Branko had been hushed up. Paul had not pursued the point. After all, it was his first day in Common Eur-Asia, and he had already learned quite a bit that he assumed John Smith and Harry Kank would find of interest. One thing was the comparative freedom of expression. He had been of the opinion that the citizens of Common Eur-Asia were ultra careful in their talk. In fact, he had wondered if any of his relations would dare have him in to their homes.

Well, there was no question about that. South Slavonian hospitality, which he had often read about, was as free as reputed. He wondered how in the world he was ever going to pay them back. When the party had broken up, it was to a clamor of everyone present inviting him to other homes, other meals, other parties. If they took everyone to their bosoms in this fashion, he'd think that they'd all soon be flat broke.

But that was something else again, that he wasn't very clear about. Evidently, all of them worked — at least, all save the young and aged. Ultramation in

the United States of the Americas had led to large segments of the population existing in complete idleness, on their Inalienable Basic. Over here, everyone of working age seemed to work. He'd have to ask Goldi about it later.

He had a swimming date with Goldi the following day.

When the party ended, well into the night, he had refused Branko's offer to return him to his hotel. He hadn't even allowed them to summon an auto-floater cab. He wanted to walk, to give the sea air that prevailed here a chance to clear his head. Otherwise, he had a sneaking suspicion that in the morning he was going to have a crashing headache.

He did have a crashing headache in the morning, but not due to the quality and quantity of Dalmatian wines he had drunk the night before.

Perhaps it was because of his arriving at the New Marjan on foot that he was completely undetected. Possibly, at this hour, there was no one on the desk, or possibly, if there was a night receptionist, he had stepped out of the room. Be that as it may, Paul Kosloff walked across an empty lobby, entered the elevator and said, "Fourth floor, please," in his best Serbo-Croat.

The elevator's auto-operator replied in a robot-like voice, "Yes, Comrade," and they went up.

He hadn't known they still utilized the term Comrade. He had not heard any of the others use the word.

He was musing sleepily over the events of the evening, when he approached his door and began to activate it. Admittedly, his mind was dull.

He entered the living room of the suite and began to shrug out of his jerkin. And came to a quick halt.

He tried to throw himself into the *Kokutsu dachi* layout defensive position, one foot forward and knee carrying about thirty per cent of his body weight, the rear leg carrying the remaining, the rear leg bent as much as pos-

sible, the hands in advance, palms up. But the other was upon him.

IV

When he awoke, in the morning, it was to his crashing headache. He was still sprawled where he had fallen the night before, on the living room rug. Sunlight streamed in the window which overlooked the sea, and it was the heat of the rays that had brought him alive.

He was nude, save for his undershorts. Whoever had hit him the night before had stripped him bare.

He looked about the room, shaking his head for clarity. The



clothes hadn't been stolen, evidently, simply searched. They were strewn all about.

For that matter, he found, evidently everything had been searched. All his luggage, everything he had brought into the room.

Groaning, he went to the auto-bar, put his International Credit Card into the screen slot and dialed service, beverages and then coffee. It was Turkish coffee that came, not that he cared. He took the first two or three sips of the heavy, highly sugared stuff, before he came to the grounds, with a sigh of appreciation of the high caffeine content. Then he dialed again.

When he had recovered slightly, he thought about it. And could come up with no answers whatsoever. If the police had wanted to search him thoroughly, they could have done it at the rocketport, when he first landed. Customs and police officials of any land have the right to search new arrivals at the border. It's their country, isn't it? But his border examination had been no more than he had expected, a mild going through his two bags, a check of his passport and his International Credit Card, a few questions about his length of stay and where he expected to go.

He came to a decision and activated his wrist teevee phone. He

dialed the number that John Smith had given him, Number One Priority.

When Smith's face faded in, he was obviously in bed and obviously had been awakened.

He growled, "Paul! What in the name of the everlasting Zoroaster are you calling me for at this time of night?"

Paul said, "Oh. Sorry. I had forgotten all about the time change, John. I'm in Split. I . . . I thought you could do me a favor."

John Smith was shaking himself awake, and now his eyes shifted into alertness. "A favor?"

"Yeah. I forgot a book I wanted to have here rather badly. A Serbo-Croat dictionary. It's in my apartment, John. I wondered if you could go over and get it and mail it to me, old chum-pal."

"Oh, oh, sure, Paul. Glad to. How's the vacation coming, wizard?"

Paul Kosloff let his face go long. "I don't know, I'm a little roached. Some cloddy broke into my room here, last night, slugged me and went through all my things."

John Smith's eyebrows went up. "Who was this hombre?"

Paul looked at him. "I don't know. What do you think?"

"Search me. Some cheap crook, I'd guess."

Paul shook his head. "So far,

I can't think of anything that's been stolen."

"Maybe he was a funkier who got scared when you showed up and took off."

Paul felt the back of his head and the bump there, then brought his hand around and touched his jaw gingerly. "If that's the kind of funkier they turn out in this country, I'd hate to run into a brave man."

John Smith was scowling at him.

Paul said, "Look, I'm considering calling this vacation off and coming home. Uh, I'm afraid my overcay has already been own-blaid."

John Smith scowled puzzlement at him. "What? I don't speak Serbo-Croat."

"Never mind."

Smith said, "Shucks, chumpal, I wouldn't call your vacation off just because of some cheap sneak-thief. You've been planning this for a long time. It's *important* to you."

Paul Kosloff took a deep breath. "I guess you're right. Well, don't forget the book."

"I won't. But look, Paul, you shouldn't be calling me at the drop of a hat. Admittedly, phone calls halfway around the world are cheap by old standards, but you're no rich cloddy. Unless it's important, of course."

"All right," Paul said wearily.

"Sorry to wake you up, John."

The image in his tiny wrist-phone screen faded.

Paul Kosloff looked down at it distastefully and then felt the knot on the back of his head again.

"Fine," he said. "You're back there in Greater Washington, safely pounding your ear. I'm here on the spot. How do I know this joker won't slit my throat next time?"

At about eleven, Goldi Pashitch met him in the small park before the hotel and led him to the beach and to a private cove that could only be reached by wading, almost knee deep, around a jutting rock. The beach before the hotel itself had been well packed with bathers even at this hour.

As she kicked off Etruscan revival sandals to wade, she explained that this tiny private beach had been a preserve of the Pashitch family children for generations. For some reason, no one else seemed ever to discover it, or, if they did, did not find in it the charm the Pashitches did.

She was attired today in brief striped shorts and a halter that matched — only briefer. Paul Kosloff, already well smitten by the Goldi charm, studiously kept his eyes in other directions. He would have preferred gaping.



There were possibly twenty square yards of cleanest sand in the cove. Paul Kosloff wondered fleetingly where they were going to change and then realized that she had brought no swimming togs with her. His own, he carried in a beach bag.

However, he was shortly illuminated on that score. Continuing her bright chatter about the cove and how they had played everything from pirate treasure to Greek Argonauts, when children, she snaked her right hand up her back, unsnapped something and let her halter drop away. Her hands went to the side of her shorts and began to activate the invisible zipper.

Paul Kosloff swallowed.

Suddenly she stopped. She looked at him. Finally, she flushed.

She said, "What's the matter?"

"Nothing."

"Yes, there is."

Paul Kosloff cleared his throat. "Not really."

"Paul Kosloff. Back home. In the United States of the Americas. Do they still wear bathing suits?"

Paul closed his eyes briefly. Opened them again. Cleared his throat again. "Usually, men still wear bathing trunks. Some of the girls wear topless suits."

"I see." She looked at him. "My family has no false sense of modesty, nor do any of our

friends. And we're not prudes."

Paul swallowed again and tried a half smile. "I don't know if I'm a prude or not."

She snorted deprecation and zipped the zipper up again. She plunked herself down on the sand.

"I'll turn my back," she said. "While you get into your bathing shorts or whatever you called them."

Properly changed, Paul sat down next to her, keeping his eyes studiously from her proof of being mammalian.

She pointed suddenly out across the water. "That's the island of Brac. If you stay long enough, you should go over. It's beautiful. We'll rent a floater."

"Doesn't the water ever get too rough for a floater?" he said, glad for the change in subject. At the same time, inwardly he was kicking himself. She was the most beautiful woman he had ever seen in his life and evidently completely without feeling of shame or modesty. What kind of a man was he to be set back by the prospect of seeing her utterly nude? It wasn't as though he was obligated to attack her, simply because she was as mother nature had presented her. He could simply have thought of her as an art object. Maybe.

She said, "We have heavier floaters for ferries. Air cushions support them as high as twenty

feet. It never gets that rough."

He said, out of a clear sky, and before he could catch himself, "I'm in love with you."

"I know," she said, and then changed the subject.

"After you left, last night, we discussed you."

"Well . . . good."

"We decided that a mistake had been made in not allowing you to learn more of our position."

"What position?"

"We decided that it was a unique opportunity. A wonderful chance to exchange information on your country and ours."

"Well, that's what we did."

"With reservations. You see, Paul, everyone there last night was a member of the Common Eur-Asian underground, committed to overthrowing of the government. We detected that you, yourself, aren't exactly happy with the Ultra-Welfare State in your own country."

Paul scowled. "I wouldn't exactly put it that way. In my country, practically everybody continually criticizes the government."

"They do?" She was obviously considerably taken aback.

"But the police."

"Oh, there's no law in the United States of the Americas against criticizing the government."

She looked at him in utter disbelief.

Finally, "Well, how do they prevent revolutions?"

He had to consider that for a while. "I don't know," he said finally. "So far as I understand the Constitution of the United States of the Americas, there's nothing in it against revolution. Just so you don't do it through force and violence."

She goggled him.

He said, defensively, "Whenever the majority of the people want any change in the government, big or small, they can make it. A majority vote carries."

"Suppose a minority wants to change?"

"Then they've got to spread their message around, hopefully, until they become a majority. Otherwise, no go. At least that's the theory."

She slumped back and shook her head. "It's not so easy over here."

"It's not easy over there. Most people are conservative by nature. They don't want any fundamental changes. They'd rather put up with the old, just so long as it's bearable, especially in things like politics, religion, socio-economic systems. How do you make basic changes here, if you feel they're necessary?"

"To use your American idiom, the hard way. You see, Paul, a

ruling class or caste never gives up its position of power without a struggle. Individuals might, sometimes, but not a governing class. The sons and daughters of party members are sent to the best schools. When they come of age, they in turn become party members and secure the best positions in both the bureaucracy and in industry."

She hesitated and Paul said, "And they're still in."

"Yes. And they're an anachronism, Paul."

Paul frowned and said, "What do you want to do about it?"

She made a gesture of the obvious. "The time has arrived when the State should wither away. Our councils of industry — and when I say industry, I mean all fields of work, of course, including education, medicine, entertainment — actually run the country today. And should."

Paul thought of something. "These planners Marin Gundulic mentioned last night who want more of the national effort put into the arts and sciences, to take up the unemployment, are the top men in the, uh, councils of industry?"

"Yes. But the bureaucracy hangs on. Tens of millions of our people are employed in nonsense work, bureaucratic jobs that are make-work."

"We've got a few tens of millions of bureaucrats in our own federal, state and city governments," Paul said sourly.

"The thing is, at the same time they maintain themselves in power, they instinctively fight our desire to throw the national effort into the sciences and arts, a fuller realization of ourselves. They don't want our people to be more advanced."

"How do you mean?"

"A more highly educated people would be a greater threat to their existence as a class. You must realize, Paul, that revolutions are not brought about by starving, poorly educated wretches. They are started by the intellectual elite. Washington, Franklin, Jefferson were all wealthy; Robespierre, Danton, even Marat were of the middle class, not the proletariat. Marx was a highly educated product of the German middle class, and his wife was an aristocrat; Frederick Engels was a wealthy industrialist. Lenin and Trotsky were both of the Russian middle class, and neither of them held down an ordinary job ever."

Goldi held up a hand as though in supplication. "If Common Eur-Asia is ever to realize her destiny and our people finally to enjoy the product of all the decades of sacrifice we've gone through, the bureaucrats are going to have to go."

"This underground of yours, what is it doing?"

"As quickly as possible, finding and organizing all elements that believe the same way. By the way, we're holding a meeting three days from now. A speaker down from Belgrade is going to give us the latest developments. Would you like to attend?"

"Why yes, I suppose so."

"All right. But enough of all this. You've come to Split for a vacation, not to become enbroiled in local political matters. How about a swim?" She came to her feet.

Paul stood too. "Ah, one thing," he said hesitantly.

She turned back and faced him, tilted her head slightly, and looked up into his face. "Yes?"

He studiously kept his eyes from dropping below the level of her own.

"Look, you mentioned that you people aren't religious. Uh, do you still get married?"

The sides of her mouth turned down. She spun about and ran for the water, saying over her shoulder, "Sometimes we do."

V

It was summer, and Goldi Pashitch was on vacation from her teaching job.

They spent the next several days in swimming, skin diving,

fishing and boating between the Adriatic islands. It turned out that Goldi was as keen on participation sports as was Paul Kosloff.

He described to her his own country, hunting and fishing in the Yukon, skin diving in the Caribbean, hiking in the Rockies. What he was doing was attempting to influence her toward a craving to live in the Americas, and from the wideness of eye that he often provoked, he felt that perhaps he was succeeding. Well, it could all be true. Given the ten extra shares of Variable Basic that the Inter-American Bureau of Investigation was going to award him after this assignment, he and his wife would be able to enjoy a rather high standard of living in the Ultra-welfare State. He already had accumulated several shares of Variable stock as a result of his teaching position.

Otherwise, he wasn't sure how his case was proceeding. He couldn't imagine why Goldi Paschitch wasn't already married. The local men must be idiots. She was as intelligent as she was pretty, and he had already sensed that the women here had a viewpoint that had largely disappeared in his own country. They still catered to their menfolk. In theory, it was all very well to believe in complete equality between the sexes, but it was cer-

tainly more pleasant to have your women defer to you, flatter you, even wait upon you a bit — or, at least, go through the pretense.

But Goldi had a despairing way of changing the subject when he tried to ring in romance. In fact, she seemed an absolute expert in avoiding the personal. Ah well, he had a full year. He suspected that he was going to spend more of it in Split than Kank and Smith had figured upon. They could get lost. They wanted to find out what the people of Common Eur-Asia were thinking, particularly in regard to the government. He had only been here a matter of days, and he had already made considerable progress. He doubted if he would be doing as well if he were in Belgrade or Budapest.

On the fourth day, he had almost forgotten her invitation to attend the secret meeting, but her brother Vuk picked him up in a floater that evening.

Vuk grinned at him. "Ever been to an underground meeting before?"

"No," Paul said. "Back in the Americas I wasn't particularly interested in politics."

The Yugoslavian chuckled. "Here, we've been overthrowing governments or plotting their overthrow ever since the Romans. I'm beginning to think it's a trait that's been bred in. I don't know

what would happen to the Slavs if there wasn't a government to plot overthrowing."

He was manually driving the floater along the sea front.

"Where is this meeting?" Paul said.

"Half way between here and Trogir."

"Trogir?"

"An old town built by the Venetians when they controlled Dalmatia. Very picturesque. It's located out on an island, just off the coast. But this spot is in the hills. In the old days, Mikhailovitch's partisans used it for a hiding place. It's well situated for escaping if the police flush you."

"Fun and games," Paul muttered.

After about twenty miles, Vuk took a side road and then left even that and took off across the rack-strewn fields. Finally, he came to a halt in a small grove of olive trees and let the floater settle to the ground.

"We walk from here," he said.

They left the floater and proceeded along a dirt path.

"What would happen if the police caught you?" Paul said.

Vuk looked at him humorously. "Let's hope we never find out." But then he added, "They are not as bad as they were in the old days. Then they used to shoot out of hand."

"Oh, wizard," Paul said bluntly. Vuk chuckled. "Now they wait a while."

Paul Kosloff lost his way in the twistings and turnings, in spite of his woodsmanship.

They wound up in a natural amphitheater that already contained possibly two score persons, including most of those who had been at Paul's initial welcoming dinner the first evening of his arrival. They greeted him with all the élan of before, and one that Paul vaguely remembered as Stefanovich called jovially, "Ah, our American. We will teach you a few lessons in overthrowing governments, then you can go home and try it on your own."

Paul said sourly, "You'd never pry the average American away from his Tri-Vision set to attend a meeting out in the boondocks like this."

Branko came up and shook hands and said, "Would you like to meet the organizer? He's come down from Belgrade for this meeting."

It was already dark by now, and no lights provided enough illumination for them to make their way around.

Suddenly, all was confusion.

Two shots rang from a dominating hill, and then in rapid succession came the clatter of an automatic, another several pistol shots, and then from another di-



rection, another sub-machine gun.

"Scatter! Run for it!" someone shouted.

Goldi's voice came. "Paul!"

The scurrying of the feet, muttered profanity, the sounds of stumbling on the part of some trying to move too rapidly at this light. There were shouts of orders, by voices that had the ring of authority.

"Paul!" Goldi called again, from what seemed only a short distance.

"Over here — " he began.

And then something hit him from behind.

He awoke in a cell.

It took blurred moments for

him to orient himself. He had never been in jail before. His experience with prisons was limited to the fiction of Tri-Vision shows, back home. But there was no question of where he was.

He put his hand to the back of his head. There was a very definite and very painful lump.

"This is getting to be a habit," he muttered.

He swung his legs over the side of the cot and sat erect, groaning. The cell, he noted, was neat enough, but there was a terrible stench of disinfectant in the air. There seemed to be no one in the corridor outside his steel door, and no one else in any of the other cells that he could see.

He took inventory. His wrist teevee phone was gone, as were all his papers including his passport and International Credit Card.

"Oh, wizard," he said aloud.

What had it been that Harry Kank told him? If he ran into difficulties, he was on his own. The government of the United States would not recognize him, beyond the point it would any teacher on sabbatical leave.

He was an idiot to have attended an underground meeting. It hadn't even been necessary. He could have gathered any information he would have picked up there, talking to the Pashitch family.

Shortly, he could hear footsteps approaching down the corridor, a military-like clumping. Two sets of footsteps, marching in cadence. There was an ominous ring to the echoing sound. Paul Kosloff took a deep breath and came to his feet and faced the steel door.

They wore the gray uniform of the Common Eur-Asian police, and they could have been twins, both heavy-set, both empty of face. Paul Kosloff had seen them a hundred times in Tri-Vision shows back home. The shows had not led him to welcome the meeting in person, particularly under these circumstances.

One of them said in quite pas-

sable English, "You will come with us."

Paul said, "I speak Serbo-Croat."

There was no answer to that. One of them opened the door and they stepped back to allow Paul to emerge. He considered only briefly calling on his Karate knowledge to take them. However, overpowering these two would not mean escape from prison. He had been unconscious when brought here and had no idea of what lay beyond this corridor of cells.

One led the way; one followed after Paul. Neither spoke.

The footsteps echoed again, this time with Paul's adding the ominous quality.

As they approached the end of the corridor, the heavy steel door there opened for them. As they passed through it, an armed guard eyed them dispassionately. It was just as well Paul had kept his Karate to himself. He would never have got beyond this point.

Down one hall, about a corner. Down another hall, they marched. They pulled up, eventually, before a closed door. One of the guards activated the door screen and said something into it that Paul didn't catch.

The door opened to reveal an office centered with a heavy metal desk and behind it one who was obviously an officer. Paul

took another deep breath and entered. One of his guards remained outside, the other came in and stood behind Paul, still wordlessly.

He at the desk studied Paul Kosloff's face. Before him were Paul's teevee wrist phone and his papers.

The officer said, "I am Colonel Cvetkovich. Sit down, Mr. Kosloff."

There was a single straight chair sitting before the desk. Otherwise the room was bare of furniture save the desk and swivel chair the colonel occupied.

Paul Kosloff sat. He said, "I demand to be put in immediate touch with the nearest consul of the United States of the Americas."

The colonel, who was approximately the same age as Paul Kosloff and approximately the same build, ignored that. He ran his right index finger down a long scar that ran from his right ear almost to the point of his chin. In this age of plastic surgery, one seldom saw conspicuous scars any more. Evidently the colonel was proud of his.

He said, "Mr. Kosloff, who took you to that subversive meeting?"

"A man I met on the beach."

"What was his name?"

"I don't know."

The colonel looked at him for a long moment. "Do you, in your travels in foreign countries, customarily pick up strangers and attend subversive meetings with them, Mr. Kosloff?"

"No," Paul said. "I am not politically inclined. I was a fool. I wasn't acquainted with the type of meeting he was taking me to. I demand to be put in touch with the nearest American consul."

The colonel said, "Did you know anyone else at all at the meeting, Mr. Kosloff?"

"No."

The colonel sighed. He looked up at the guard. "Ignat, summon a floater for Mr. Kosloff."

The guard turned and left.

The colonel made a motion at Paul's things on the desk. "You can get in touch with your consul yourself, if you feel it necessary, Mr. Kosloff. Here are all your papers and your wrist phone."

Paul Kosloff gaped at him.

The colonel leaned back in his chair, his expression empty. He ran his finger down his scar again.

Unbelievably, Paul took his papers and put them in an inner jerkin pocket. He put the wrist phone in its place. Expecting any moment to have this whole situation reversed, he turned and headed for the door.

The colonel said expressionlessly. "We of Common Eur-Asia are not nearly so brutal as your

Western propaganda would have it, Mr. Kosloff."

Paul couldn't think of anything to say to that.

The guard named Ignat was outside the door. He led Paul to the police building's entrance, where an auto-floater cab awaited him.

Still in an unbelieving daze, Paul dialed his hotel and settled back. He couldn't believe this. It made no sense. No sense at all.

In his hotel suite, he dialed himself a double sljivovica and knocked it back. He shook his head and dialed the time. It was still morning, a little after ten.

He sat down in the suite's comfort chair and tried to think. Nothing came.

Finally, he dialed John Smith.

The other's face was impatient when he saw who it was.

Paul said, "Look John, unless you've already mailed that book to me, cancel the order. I think I'm leaving Split."

"Oh?" John Smith said. "You mean you've called me just to tell me that?"

"Well, I suppose so. You see, I made a mistake last night and was taken to a meeting. I didn't know it was political, of course. At any rate I was arrested by the secret police and spent the night in jail."

Smith's eyes widened. "And?"

"They have just released me."

"Well, fine. Why are you going to leave Split?"

Paul stared at him. "Didn't you hear me? The secret police arrested me and threw me in jail."

"But just released you. So you are fine. Evrything's wizard."

"You mean you'd expect me to stay on here in Split?"

John Smith shrugged. "Well, why not? I thought you liked it there."

Paul Kosloff simply couldn't think of anything to say. Finally, "I've got to think. I'll be in touch with you later."

VI

Down in front of the hotel he dialed another auto-floater and when it arrived dialed a destination in the vicinity, but a block or two from, the Pashitch home. When he arrived at that point, he looked up and down. He had been able to detect no one following him from the hotel and could see nothing now in this area that would indicate he was being watched.

He walked to the Pashitch home and stood before the door's identity screen. The door opened, and Vuk was there staring at him blankly.

Vuk grabbed his arm and pulled him in.

"Paul!"

Paul nodded and went into the large combination dining room and kitchen. Branko and Stefan Pashitch were there and Marin Gundulic. And Goldi. Goldi was dressed in the same type dungarees as the men, but had a scarf over her head. In her hands she carried a World War Two vintage Sten gun.

Branko blurted, "Paul! How did you escape?" He carried a type of portable rocket launcher with which Paul Kosloff was unacquainted. The rest were variously armed.

Paul looked at them. "What's going on?"

Marin Gundulic, the obvious leader, said, "We were coming to get you."

Paul looked around the small group. He said, in disbelief, "To the prison? You were going to try to break into that fortress?"

"Of course," Goldi said.

Branko repeated, "How did you get away?"

Paul said, "They turned me loose. Did everybody else get away from the meeting?"

They were staring at him.

Gundulic said lowly, "Everybody but Stefanovitch. They caught him but he was able to kill himself."

Vuk said, his usually good-humored voice also low, "You mean they didn't even put you to the question?"

Paul shook his head. "If you mean did they torture me, no. A Colonel Cvetkovich questioned me very briefly, then turned me loose."

"Cvetkovich!" Goldi blurted. "That executioner!"

All eyes were on him. Those of the men, steely cold. Goldi's were sick.

"What's the matter?" Paul said.

Marin Gundulic said, still lowly, "There is an old Slavic saying that when four men sit down to talk revolution, three are police spies and the fourth a fool. It seems to have been reversed this time."

Paul Kosloff's lips went white.

He looked from one to the other, and they met his eyes coldly. He looked at the girl. "Goldi!"

She turned her back and bent her head.

Branko Pashitch said, "Good-bye Paul Kosloff."

It was at that exact split second that reality came to him as though in a sudden clairvoyance.

He said, his voice clear, "I am going. I have something to do. But then I'll come back."

Stefan Pashitch said, "I would not advise it, Paul Kosloff."

He took the shuttle to Belgrade and then the international rocketplane to Greater Washington.

As he lobbed over, he called

John Smith on the teevee phone.

Smith seemed flabbergasted to see him so soon again, but before he could comment, Paul said, "I'm on the rocketplane. Something special has come up. I have to report in person."

Smith glared at him. "Something special! Are you completely around the bend? You were under orders to stay in Common Eur-Asia for a full year."

"Something special," Paul said doggedly. "Can you meet me at my apartment?"

John Smith rolled his eyes upward, as though in appeal to higher powers. "All right."

John Smith was not quite the smiling man he had been less than a month ago when they had first met. As soon as he confronted Paul in the Kosloff mini-apartment, he put his hands on his hips.

"Well?"

Paul looked at him quizzically. "I think we had better go to the Octagon and see Harry Kank."

Smith said impatiently, "That's not necessary. I'm the agent assigned to your liaison man. I handle everything that pertains to you. And Zoroaster knows, it's proving a headache."

Paul Kosloff shook his head. "I think we had better go to the Octagon and have this out."

"No."

Paul grunted sour amusement. "You can't go to the Octagon, can you, Mr. John Smith? Or should I call you Comrade Smith?"

"Are you crazy?"

"You can't go to the Octagon, because you don't belong there. You're not connected with the Inter-American Bureau of Investigation. Oh, you're police all right, but you're not American police. And you're not an American."

"Oh, wizard," John Smith said sarcastically. "So I'm not an American."

Paul said, in self-deprecation, "I should have guessed sooner. My first hint was when you didn't understand my pig-latin. Every American kid learns pig-latin, but you didn't understand it when I told you that I thought my cover was already blown."

"But the real realization came to me when some of my Yugoslavian friends accused me of being a police spy. And I suddenly knew they were correct. There was only one reason in the world for the police turning me loose. They knew I was one of theirs, after an initial search of my hotel rooms to double-check my identity. I didn't know it, at the time, but I was a police spy, working for the Common Eur-Asian secret police. Planted to get inside information about the underground. And what a plant! Who would

suspect an American relative, who had never been in Europe before, to be a member of the secret police?"

John Smith had been standing near the built in bureau drawers of the mini-apartment. In a fluid motion, he opened the top drawer with his left hand, dipped in with his right and brought forth the .38 Recoiless which had once belonged to Paul's father.

He was a smiling man again. He said softly, "Your own gun. With a built-in silencer. This speeds things up a bit, but the end result is what it was always going to be, Paul Kosloff."

"I figured that out, too," Paul said bitterly. "After I returned from my year of spying, you were not going to give me any ten shares of Variable Basic, as your plant in the Octagon, Harry Kank, told me. You were going to get my information, forward it to your police superiors in Common Eur-Asia and finish me off."

The self-named John Smith jiggled the gun humorously. "You would be surprised how near the truth you've hit, Paul, old chumpal. However, it hasn't done you much good."

Paul snorted contempt. "You should have checked to see if that gun was loaded before you made any admission, Smith."

The other shot a glance down

at the weapon in his hand.

Paul screamed the Kiai yell, "SUT!" and was on him.

He went into the Twelfth Kata, slugging the other's right inside arm with a hard wrist blow with his left hand. He grabbed Smith's arms with a reverse arm-lock, and the gun went off into the floor. Paul came in with an Okinawa fist, thumb side of the fist pointed upward slamming into the other's groin. As his opponent began to go down, eyes blazing in agony, with his right hand, knuckles up, Paul came up fast and hard with a knuckle blow under his chin. Simultaneously, he turned his hand, knuckles down, now, and came down with all his body weight against the other's collarbone.

VII

Paul Kosloff sat in the office of Harry Kank and looked at the other for a long moment, wondering how to begin.

He said finally, "Did you really know my father?"

The other man said, "Yes."

"Then you've obviously been in this bureau for a long time. I wonder how many others you set up for your John Smith to send over to Common Eur-Asia to betray their relatives."

Kank shifted slightly in his chair, and his cold eyes narrowed,

but for the moment he held his peace.

Paul said thoughtfully, "It must have been fairly difficult to arrange, through the Bureau of Labor Draft. Now that I think about it, when I was first interviewed by that Labor Draft official, Banning, he mentioned that there was something unusual in my being called up. And, I suppose, there's a certain awe that pertains when you mention the Inter-American Bureau of Investigation. Something like the FBI in the old days. Flash an FBI badge and people would let you get away with anything."

Harry Kank said, "I haven't the vaguest idea of what you're talking about, Paul."

"Mr. Kosloff to you, Comrade Kank."

"I'm not a communist."

"Worse. You're a tool of theirs. If you were an honest, dedicated communist, that would be one thing, but, obviously, you've merely sold out to them."

The other came to a quick decision. "See here, Kosloff. The United States of the Americas is not being hurt by this operation. Admittedly, this is a Common Eur-Asian police matter. They want inside information about the underground in their country. Why should we care? There's a good deal of money involved in this Kosloff. The secret po-

lice over there have plenty of resources and are willing to pay off. Why shouldn't you get in on the gravy?"

Paul said, "You said you knew my father. Would he have?"

"I also said your father had a one-track mind."

"But I don't think he would have betrayed a friend or relative for the sake of money, Kank. Let's face reality. You're a double agent, working with the Common Eur-Asian secret police. How they got to you, I don't know. But the game is up, Kank."

The other man drew in a deep breath, reached into a drawer of his desk and emerged with a heavy automatic, which he trained on Paul Kosloff.

He said flatly, "I know your record in judo, Kosloff. Don't try anything. Now I'm going to give you one last chance. Come in with me, and I'll see you're paid off handsomely. Don't and you're a dead hombre."

"Do you think I'm a complete fool? Before I came in here, Kank, I got in touch with your superiors."

He smiled slowly, "Besides, it's simply not in the cards for me to die at the hands of a corrupt police official. You see, she doesn't know it, but I've got a date back in Split with a girl named Goldi."

— MACK REYNOLDS

GALAXY'S STARS

Fritz Leiber, whose *One Station of the Way* adds a sort of Christmasy note to this issue, has recently acquired a new Hugo for his trophy shelf. At the 1968 World Science Fiction Convention, he won the novelette award for his story, *Gonna Roll The Bones*, adding it to the two previously acquired for his novels, *The Big Time* (originally published in *Galaxy*) and *The Wanderer*. A resident of Venice, California, Leiber mixes writing science fiction with championship chess, studying such primitive art forms as the Watts towers and an omnivorous interest in almost everything.

John Wyndham (*A Life Postponed*) is best known to science-fiction readers for such novels as *The Day of the Triffids*, possibly the single most widely read science-fiction novel in recent history, and *The Midwich Cuckoos*, made into a motion picture as *Village of the Damned*. But the "Wyndham" personality marks a second career in science-fiction for this durable and protean writer. Nearly four decades ago, under his real name of John Beynon Harris and such foreshortened versions of it as "John Beynon", Wyndham was the prolific author of 1930-vintage space opera for the American sf magazines.

Today Wyndham lives in the south of England, on the outskirts of the charming village of Petersfield.

Poul Anderson lives in the hills just north of San Francisco, where he is a charter member of that celebrated science-fiction group, the Elves, Gnomes and Little Men's Literary, Chowder and Marching Society, whose other members included Jack Vance, Reg Bretnor, the late Tony Boucher and many other illustrious persons. With Vance and Frank Herbert, Anderson was for some time the co-proprietor of a home-built houseboat on which they intended to voyage to distant lands. The plan came to a bad end; the houseboat sank at its mooring. But most of Anderson's ventures do better — as witness *The Sharing of Flesh* in this issue.

Raymond F. Jones has been writing science fiction for more than three decades; this is his first new story in our magazines in many years. Joseph Green, who was the first of If's "first" story writers — that is, writers who have never had a story published before — has since established himself as a science-fiction regular, with many short stories, two books and more on the way.



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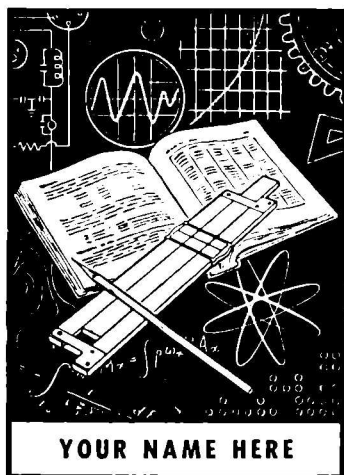
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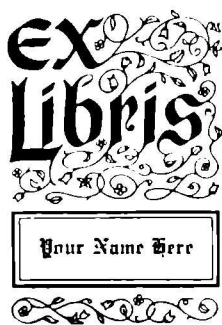
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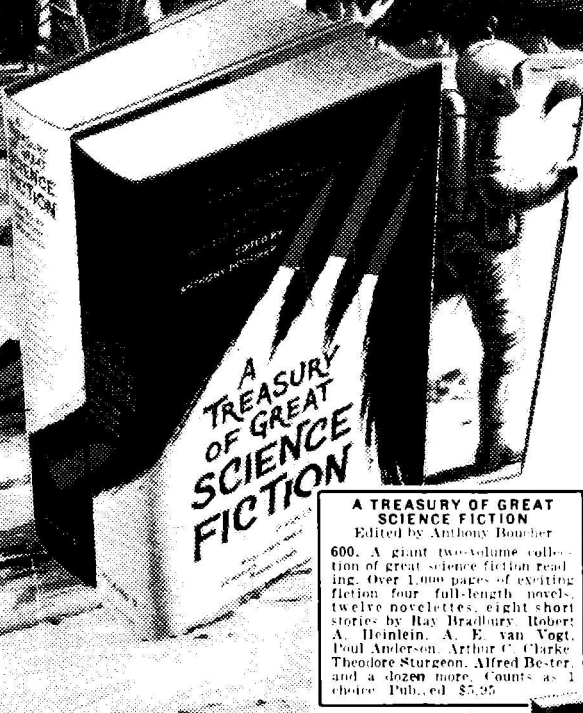
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