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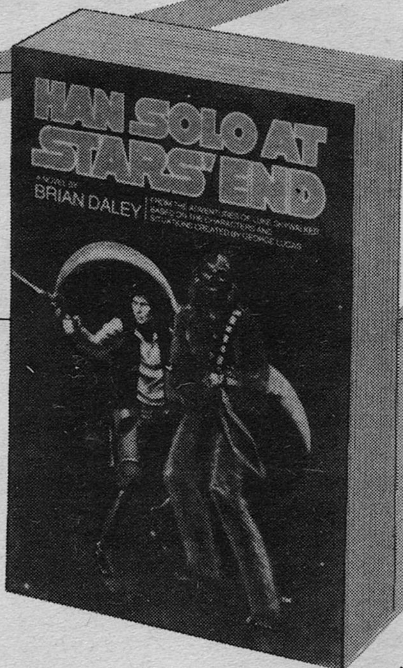

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SAFETY FIRST

by Stanley Schmidt

After the incident at Three Mile Island (which, as I write this, was not very long ago), I was struck by a certain irony in the widespread outcry for the immediate shutdown of all nuclear power plants. Consider the parallels between the use of nuclear energy and the use of large airliners. In each case, one accident can be very destructive, but the probability of any one unit having such an accident is so low that the overall probability of an individual's being killed or injured in one is quite small. Both nuclear plants and large airplanes are, individually, potentially quite dangerous, but collectively, in terms of probabilities, safer than the available competitors. A nuclear plant accident *could* do a lot more damage than a plane crash, but the probability seems to be correspondingly lower, so that the comparison is at least somewhat valid.

And nobody demands that people stop using airplanes because one crashes, do they?

Shortly after Three Mile Island, a DC-10 crashed—and shortly after that, all DC-10's were grounded.

"Indefinitely," and immediately—with no advance warning or attempt at a gradual transition. Airports were thrown into chaos (a fact I can personally vouch for, as I had occasion to fly then) as displaced passengers struggled to find new ways to get where they were going and airlines struggled to accommodate them.

Was this really necessary?

Consider first the safety record of the DC-10. That in itself is not my principal concern, but it is a significant piece of background. The National Transportation Safety Board published figures for the twelve most-used American-made airliners, showing the number of fatal accidents per 100,000 hours of flight by each type during the ten-year period from 1968 through 1977. The DC-10 had 0.06. The best record was compiled by the Boeing 737, with 0.04, while eight of the twelve planes had *higher* accident rates than the DC-10, ranging from 0.07 to 0.58. These figures suggest that the DC-10 is at least comparable to the other commonly used airliners, and in fact, at least by this method of measurement, better than many. Even if it had the worst safety record

of any—which it doesn't—this would hardly be a rational basis for grounding it. If you fly several different types of plane, it is inevitable that some will have better safety records than others.

Yes, I know that a series of inspections following the Chicago crash—unusually stringent inspections—turned up some flaws in other DC-10's. This is what inspections are for. When flaws are found, they should be fixed before the planes having them are returned to service.

But why ground planes that *pass* the inspections?

OK—a design flaw is suspected. Then certainly an attempt should be made to verify and, if it is real, to correct it. (Just as, if flaws are found in the design, operation, or regulation of power plants—nuclear or otherwise—they should be corrected.) But what is the degree of urgency? The DC-10's record strongly suggests that the flaw, if there is one, is not of such a kind and magnitude as to pose an immediate largescale threat. It would seem reasonable that those planes which passed inspection could be left in service—perhaps with more frequent follow-up inspections—until the problem is resolved. I suspect that adequate crews could be found willing to fly them, and I'm sure that many of the passengers who held reservations on them (and understood anything about probabilities) would have preferred the very slight additional risk to the considerable inconvenience imposed by the out-of-the-blue grounding order. Any who were scared off could cancel their reservations.

Comparing the safety record of air travel in general with that of other forms of transportation reveals that the public and government tend to be not only ignorant of probability (and the fact that *everything* involves some risk) but also just plain inconsistent. We have outcries demanding the shutdown of nuclear plants (which haven't yet killed anybody) and DC-10's (which have killed more, but still very few), but hardly anybody seriously suggests the immediate and total abolition of the automobile. I hesitate to point this out, lest it give certain people ideas, but National Safety Council figures (published very inconspicuously in a *New York Times* full of DC-10 articles) indicate that scheduled airlines caused 0.04 deaths per 100 million passenger miles in 1977, while passenger cars caused 1.33. On that basis airliners (of which, remember, the DC-10 is at least as good as average) are some 33 times as safe as cars.

But airliners get grounded—because of one crash.

It seems to me that we are dealing with a peculiar kind of hysteria which has become rampant in the recent past. It is, I suspect, symptomatic of a deep, pervasive change in attitudes, at least in this country. Somehow, large numbers of us have come to demand perfect safety (hardly a realistic goal in a universe where Murphy's Law prevails) and to become panicky at the slightest deviation from it. The clamor to shut down an entire industry because of a single accident with no

casualties, and the act of grounding a whole species of aircraft because one of them failed while many others didn't—in both cases without a careful analysis of the actual risks—seem more than a little extreme. But these are only two examples. Others abound, and in bureaucratic hands they sometimes become rather droll. Consider, for example, the Kitty Litter manufacturer required to comply with all the safety rules laid down by the federal Mine Safety and Health Administration for coal miners working in deep shafts—because clay also comes from the ground.

The statistics quoted earlier might seem to suggest that the automobile is an exception to the safety mania, but (as I also suggested earlier) it is not a consistent exception. Governmental concern with the high rate of automobile-related deaths and injuries—which, properly directed, is commendable—has led to an assortment of safety devices and requirements, some of which, ironically, can become not only nuisances but safety hazards in themselves. Case in point: the seat belt buzzer and ignition interlock system required on 1974 American-made cars. (This particular requirement was later modified, presumably because legislators realized belatedly what a nuisance these contraptions could be on *their* cars.) These systems would not let the engine start unless the driver's and at least some passengers' seat belts were fastened, and would buzz endlessly if any occupant's belt was unbuckled while the

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car was in forward motion. You can easily imagine how dangerous this could become with just a slight malfunction (such as all mortal machinery is heir to) if your car stalled on a railroad track. When I bought a '74 Chevy, the interlock-buzzer system was erratic enough that some of it had to be replaced right away, and it didn't take many months to get that way again—buzzing intermittently for no good reason and thereby distracting the driver. Rather than wasting money having it fixed again, I disconnected the whole interlock system—which, amusingly, was legal for me to do, but not for a mechanic hired by me. (Incidentally, the *mechanical* interlock was so awkwardly made and located that the first time I attempted the operation, I succeeded only in cutting a finger on this "safety device.")

I still use my seat belts most of the time—I do appreciate having them available. But I *don't* use them to back up six feet for easier access to the hood, and there's no reason why I should have to. If I'm too stupid to wear them when they are needed—maybe it would be better for the future evolution of the species to let me make my mistake.

Absolute safety. How did we develop this obsession?

I'm not sure, of course. But it seems plausible, to me, that it's at least partly an ironic consequence of the real progress that's been made. No, I *don't* think that everything about here and now represents progress, but some of it does. One thing that's fairly clear is that people now enjoy an overall level of safety in their lives that is far higher than it has ever been before. (Please don't bother me with statistics showing minor noise fluctuations within this century. I'm talking about the average state of affairs over the last few decades compared to all previous history.) Perhaps, having so recently achieved a state of safety so unprecedentedly close to perfection, modern man is excessively sensitive to the relatively few risks that remain. Perhaps this is understandable.

But what does it imply about our *future* progress? All pioneering, whether exploratorial or technological, tends to be dangerous in its early stages. Where would we be if the first Europeans to cross the Atlantic had refused to board the *Mayflower* or the *Santa Maria* because they lacked adequate plumbing, medical services, and navigational aids? What if those who crossed the prairies had been unwilling to board wagons because there were no supermarkets, free clinics, or highway patrol posts at convenient intervals along the way?

What if Ben Franklin had refused to experiment with electricity until his kite was UL-approved? What if the Wright brothers had waited for FAA certification of their prototype plane?

Examples from the past provoke chuckles. But where will our future lead if we become too timid to try anything new involving some risk—and let our governments tie the hands of any who are not too timid?

If the unthinking "Stop Nuclear Power Now" crowd has its way with the power reactors, will research reactors and accelerators soon follow? If so, we will never finish the inquiries into the nature of things on which we have made such tantalizing and promising progress.

What will happen to space programs when a space shuttle crashes—as one surely will, eventually, if enough flights are made?

Safety is an important and desirable thing—but *not* first and to the exclusion of all other considerations. There's an urgent need for people—and governments—to realize that anything they do involves risks, and that risks must be evaluated—usually much less precisely than you'd like—and weighed carefully against probable benefits before making far-reaching decisions.

There's a book called *The Complete Walker,* by Colin Fletcher (first published by Alfred A. Knopf, Inc., in 1968), which contains one paragraph which has haunted me since I first read it. It says:

". . . if you judge safety to be the paramount consideration in life you should never, under any circumstances, go on long hikes alone. Don't take short hikes alone either—or, for that matter, go anywhere alone. And avoid at all costs such foolhardy activities as driving, falling in love, or inhaling air that is almost certainly riddled with deadly germs. Wear wool next to the skin. Insure every good and chattle you possess against every conceivable contingency the future might bring, even if the premiums half-cripple the present. Never cross an intersection against a red light, even when you can see that all the roads are clear for miles. And never, of course, explore the guts of an idea that seems as if it might threaten one of your more cherished beliefs. In your wisdom you will probably live to a ripe old age. But you may discover, just before you die, that you have been dead for a long, long time."

Fletcher was writing about backpacking alone—a very solitary, individual activity, quite possibly incomprehensible to many who haven't tried it. But the underlying thought goes far beyond backpacking, and, I think, far beyond the individual. I can easily conceive that it can apply to civilizations, as well.

Let us be warned. ■

The true scientist never loses the faculty of **amazement** *It is the essence of his being.*

HANS SELYE

First contact may be quite different from the way it's usually been imagined.

CLIFFORD D. SIMAK

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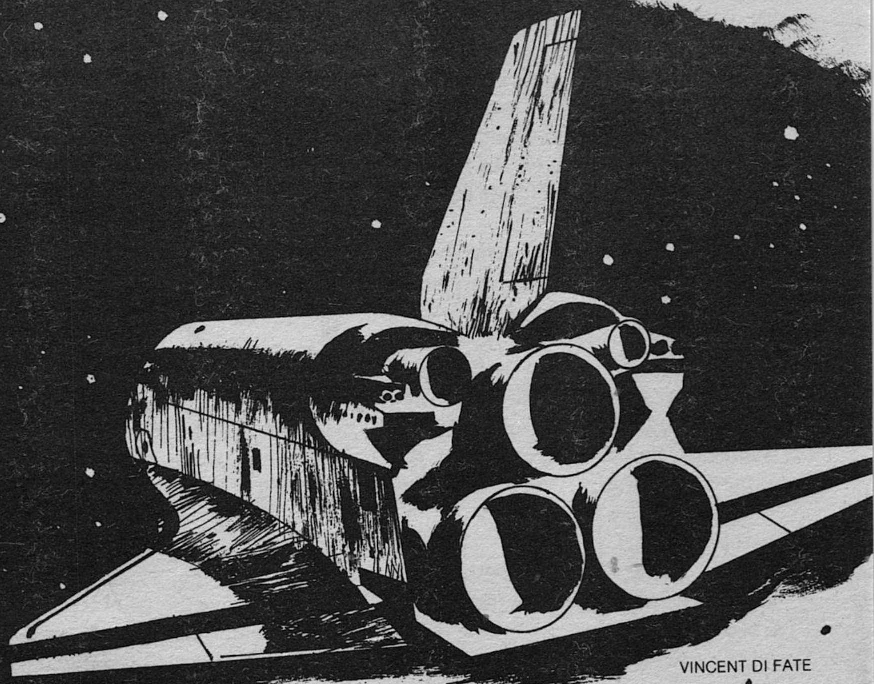

PART ONE OF THREE PARTS

1. LONE PINE, MINNESOTA

George, the barber, slashed his scissors in the air, snipped their blades together furiously. "I tell you, Frank, I don't know what goes with you," he said to the man who sat in the barber chair. "I read your article on what the fish and wildlife people did up on the reservation. You didn't seem too upset about it."

"Actually, I'm not," said Frank Norton. "It doesn't mean that much. If people don't want to pay the reservation license, they can go fishing someplace else."

Norton was publisher-editor-advertising manager-circulation manager-general sweeper-out of the Lone Pine *Sentinel,* which had its offices just across the street from the barber shop.

"It galls me," said the barber. "It ain't right to give them redskins control over the hunting and fishing rights on the reservation. As if the reservation wasn't a part of the state of Minnesota or even of these here United States. Now a white man can't go fishing on the reservation on the regular state license. He'll have to buy a license from the tribe. And the tribe will be allowed to set up their own rules and regulations. It ain't right, I tell you."

"It shouldn't make much difference to people such as you and I," said Norton. "If we want to go fishing, we have this trout stream right at the edge of town. In the pool below the bridge, there are rainbow of a size to scare you."

"It's the principle of the thing," the barber said. "The fish and wildlife people say the redskins own the land. Their land, hell! It's not their land. We're just letting them live there. When you go to the reservation, they will charge you to fish or hunt; they'll charge you plenty for the license. Probably more than you pay the state. They'll put on their own limits and restrictions. We'll have to live by their

laws, laws that we had nothing to do with making. And they'll hassle us. You just watch, they'll hassle us."

"George, you're getting yourself all worked up," said Norton. "I don't think they'll hassle anyone. They'll want people to come up there. They'll do everything they can to attract fishermen. It'll be money in their pockets."

George, the barber, snipped his scissors. "Them goddamn redskins," he said. "Always bellyaching about their rights. And putting on airs. Calling themselves native Americans. Not Indians any more. Oh, Christ, no, now they're native Americans. And saying we took away their land."

Norton chuckled. "Well, when you come right down to it, I would suppose we did take away their land. And no matter how you feel about it, George, they are native Americans. If that is what they want to call themselves, it appears to me that they have a right to. They were here first and we did take away their land."

"We had a right to it," said George. "It was just lying there. They weren't using it. Once in a while, they'd harvest a little wild rice or shoot a duck or kill a beaver for its fur. But they weren't really using the land. They were letting it go to waste. They didn't know how to use it. And we did. So we came and used it. I tell you, Frank, we had a right to take it over and use it. We have the right to use any land that isn't being used. But, even now, we aren't allowed to.

"Take this land over across the river. Big, tall, straight trees that have been standing there since Christ was a pup. Waiting to be used. Somehow, in the early days, the loggers missed them and they're still just standing there, like they been standing almost since creation. Thousands of acres of them, just waiting. Millions of board feet waiting to be sawed. There are lumber companies that want to go in there. They went into court to gain themselves the right to harvest them. But the judge said no. You can't lay an axe to them, he said. They're a primitive wilderness area and they can't be touched. The forest service told the court those thousands of acres of trees are a national heritage and have to be saved for posterity. How come we get so hung up on heritage and posterity?"

"I don't know," said Norton. "I'm not upset about it. It's nice to stand here and look out over that primitive wilderness, nice to go out for awhile and walk in it. It's peaceful over there across the river. Peaceful and sort of awesome. Sort of nice to have it there."

"I don't give a damn," said the barber. "I tell you it isn't right. We're being pushed around. Pushed around by fuzzy-headed do-gooders and simple-minded bleeding hearts who scream we got to help those poor, downtrodden redskins and we got to save the trees and we can't pollute the air. I don't care what those bleeding hearts may have to say, those redskins have no one but themselves to blame. They're a lazy lot. They ain't got an honest day of work in all of them

together. They just lie around and bellyache. They always have their hands out. They're always claiming that we owe them something—no matter how much we give them, they claim we owe them more. I tell you, we don't owe them nothing but a good, swift kick in their lazy butts. They had their chance and they didn't make it. They were too dumb to make it, or too lazy. They had this whole damn country before the white men came and they did nothing with it. For years, we've been taking care of them and the more we do for them, the more they want. Now they're not only asking for things, they're demanding them. That's what everyone is doing—demanding things they haven't got. What right have any of them to be demanding anything? Who do they think they are?

"You mark my word. Before they are through with it, those redskins up on the reservation will be demanding that we give them back all of northern Minnesota, and maybe some of Wisconsin, too. Just like they are doing out in the Black Hills. Say the Black Hills and the Bighorn region belong to them. Something about some old treaties of a hundred years or more ago. Saying we took the land away from them when we had no right to. Got that bill in Congress and a suit in the courts demanding the Black Hills and the Bighorn. And, more than likely, some silly judge will say they have a right to it and there are eggheads in Congress who are working for them, saying they have a legal right to the land that the white men have spent years and millions of dollars making into something that is worthwhile. All it was when the Indians had it was buffalo range."

The barber flourished his shears. "You just wait and see," he said. "The same thing will happen here."

"The trouble with you, George," said Norton, "is that you are a bigot."

"You can call me any name you want to," said the barber. "We are friends and I won't take offense at it. But I know what is right and what is wrong. And I ain't afraid to speak out about it. When you call a man a bigot, all that you are saying is that he doesn't believe something that you believe in. You've come to the end of your argument and you call him a name instead."

Norton made no answer and the barber ceased his talking and got down to work.

Outside the shop, the two blocks of stores and business places in the town of Lone Pine drowsed in the late afternoon of an early autumn day. A few cars were parked along the street. Three dogs went through elaborate, formal canine recognition rites, three old friends meeting at the northwest corner of an intersection. Stiffy Grant, tattered and disreputable man-about-town, sat on a nail keg outside the town's one hardware store, paying close attention to the smoking of a fairly decent-sized cigar stub that he had rescued from the gutter. Sally, the waitress at the Pine Cafe, slowly swept the sidewalk in front of her place of

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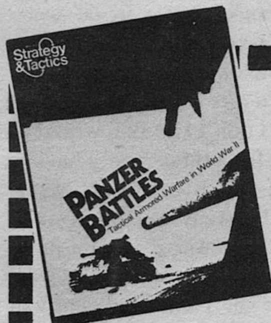

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employment, making the job last, reluctant to leave the warm autumn sunshine and go inside again. At the end of the eastern-most block, Kermit Jones, the banker, drove his car into the corner service station.

Jerry Conklin, forestry student working for his doctorate at the University of Minnesota, parked his car at the end of the bridge that spanned the Pine River below the town and got out his cased fly rod, began assembling it. When he had stopped at the Lone Pine service station several months ago, en route to a forestry camp in the primitive wilderness area, the attendant had told him of the monster trout that lurked in the pool below the bridge. An avid fly fisherman, he had kept this piece of information in his mind ever since it had been given him but with no chance until now to act upon it. On this day, he had driven a number of miles out of his way from another forestry camp where he had spent several days studying the ecology of a mature and undisturbed white pine forest, so that he could try the pool below the bridge.

He looked at his watch and saw that he could afford no more than thirty minutes at the pool. Kathy had a pair of tickets for the symphony—some guest conductor, whose name he had quite forgotten, would be directing the orchestra and Kathy had been wild, for weeks, to attend the concert. He didn't care too much for that kind of music, but Kathy did and she would be sore as hell if he didn't get back to Minneapolis on time.

In the barber shop, George said to Norton, "You put the papers in the mail today. It must feel good not to have much to do for another week."

"You are dead wrong there," said Norton. "You don't just snap fingers and get out a paper, even a weekly paper. There are ads to be made up and sold, job printing to be done, copy to be written and a lot of other things to do to get together next week's paper."

"I've always wondered why you stay here," said George. "A young newspaperman like you, there are a lot of places you could go. You wouldn't have to stay here. The papers down at Minneapolis would find a place for you, snap you up, more than likely, if you just said the word to them."

"I don't know about that," said Norton. "Anyhow, I like it here. My own boss, my own business. Not much money, but enough to get along on. I'd be lost in a city. I have a friend down in Minneapolis. He's city editor of the *Tribune*. Young to be a city editor, but a good one. His name is Johnny Garrison..."

"I bet he'd hire you," said George.

"Maybe. I don't know. It would be tough going for a time. You'd have to learn the ropes of big-city newspapering. But, as I was saying, Johnny is city editor there and makes a lot more money than I do. But he's got his worries, too. He can't knock off early in the afternoon and go fishing if he wants to. He can't take it easy one day and make up lost time the next. He has

a house with a big mortgage on it. He has an expensive family. He fights miles of city traffic to get to work every day and other miles of it to get home again. He's got a hell of a lot of responsibility. He does a lot more drinking than I do. He probably has to do a lot of things that he doesn't want to do, meet a lot of people he'd just as soon not meet. He works long hours; he carries his responsibilities home with him . . ."

"I suppose there are drawbacks," said George, "to every job there is."

A confused fly irritably, and with stupid persistence, buzzed against the plate-glass window of the shop front. The bar back of the chair was lined with ornate bottles, very seldom used, window dressing from an earlier time. Behind the bar, a .30-.30 rifle hung on pegs against the wall.

At the corner gas station the attendant, inserting the nozzle into the tank of the banker's car, looked upward across his shoulder.

"Christ, Kermit, look at that, will you!"

The banker looked up.

The thing in the sky was big and black and very low. It made no noise. It floated there, sinking slowly toward the ground. It filled half the sky.

"One of them UFOs," the attendant said. "First one I ever saw. God, it's big. I never thought they were that big."

The banker did not answer. He was too frozen to answer. He couldn't move a muscle.

Down the street, Sally, the waitress, screamed. She dropped the broom and ran, blindly, aimlessly, screaming all the while.

Stiffy Grant, startled at the screaming, lurched up from the nail keg and waddled out into the street before he saw the black bigness hanging in the sky. He tilted back so far in looking that he lost his balance, which wasn't as good as it might have been, a result of having finished off what was left in a bottle of rot-gut moonshine made by Abe Parker out somewhere in the bush. Stiffy went over backwards and came to a solid sitting position in the middle of the street. He scrambled frantically to regain his feet and ran. The cigar had fallen from his mouth and he did not retrace his steps to retrieve it. He had forgotten that he had it.

In the barber shop, George ran to the window. He saw Sally and Stiffy fleeing in panic. He dropped his scissors and lunged for the wall back of the bar, clawing for the rifle. He worked the lever mechanism to jack a cartridge into the chamber and leaped for the door.

Norton came out of the chair. "What's the matter, George? What's going on?"

The barber did not answer. The door slammed behind him.

Norton wrenched the door open, stepped out on the sidewalk. The barber was running down the street. The attendant from the gas station came running toward him.

"Over there, George," the attendant yelled, pointing to a vacant lot.

"It came down near the river."

George plunged across the vacant lot. Norton and the attendant followed him. Kermit Jones, the banker, pelted along behind them, puffing and panting.

Norton came out of the vacant lot onto a low gravel ridge that lay above the river. Lying across the river at the bridge, covering the bridge, was a great black box—a huge contraption, its length great enough to span the river, one end of it resting on the opposite bank, its rear end on the near bank. It was not quite as broad as it was long and it stood high into the air above the river. At first appearance, it was simply an oblong construction, with no distinguishing features one could see—a box painted the blackest black he had ever seen.

Ahead of him the barber had stopped, was raising the rifle to his shoulder.

"No, George, no!" Norton shouted. "Don't do it!"

The rifle cracked and almost at the instant of its cracking a bolt of brilliant light flashed back from the box that lay across the river. The barber flared for an instant as the bolt of brilliance struck him, then the light was gone and the man, for the moment, stood stark upright, blackened into a grotesque stump of a man, the blackness smoking. The gun in his hands turned cherry red and bent, the barrel drooping like a length of wet spaghetti. Then George, the barber, crumpled to the ground in a run-together mass that had no resemblance to a man, the black, huddled mass still smoking, little tendrils of foul-smelling smoke streaming out above it.

2. LONE PINE

The water boiled beneath Jerry Conklin's fly. Conklin twitched the rod, but there was nothing there. The trout—and from the size of the boil, it had been a big one—had sheered off at the last instant of its strike.

Conklin sucked in his breath. The big ones were there, he told himself. The attendant at the station had been right; there were big rainbow lurking in the pool.

The sun was shining brightly through the trees that grew along the river. The dappled water danced with little glints of sunlight shining off the tiny waves on the surface of the pool, set in motion by the rapids that came down the ledges of broken rock just upstream.

Carefully, Conklin retrieved his fly, lifted the rod to cast again, aiming at a spot just beyond where he had missed the strike.

In mid-cast, the sun went out. A sudden shadow engulfed the pool, as if some object had interposed itself between the sun and pool.

Instinctively, Conklin ducked. Something struck the upraised fly rod and he felt the tremor of it transmitted to his hand, heard the sickening splinter of bamboo.

He looked over his shoulder and saw the square of blackness coming down upon him. The blackness struck the bank behind him and he heard, as

if from far off, the crunch of tortured metal as it came down upon his car.

He tried to turn toward the bank and stumbled, going to his knees. He shipped water in his waders. He dropped the rod. Then, without knowing how he did it, not even intending to do it, he was running down the stream along the edge of the pool, slipping and sliding as his feet came down on the small, water-polished stones at the pool's edge, the shipped water sloshing in his waders.

The far end of the square of blackness, tipping forward, came down on the far river bank. Timbers squealed and howled and there was the rasping of drawn nails and bolts as the bridge came apart. Looking back, he saw timbers and planks floating in the pool.

He had no wonder of what had happened. In the confused turmoil of his mind, in his mad, instinctive rush to get away, there was no room for wonder. It was not until he reached sunlight again that he realized he was safe. The high banks of the river had protected him from harm. The blackness lay across the river, resting on the banks, not blocking the stream.

The pool ended and he strode out into the shallow stretch of fast-running water below it. Glancing up, he saw for the first time the true dimensions of the structure that had fallen. It towered far above him, like a building. Forty feet, he thought—maybe fifty feet—up into the air, more than four times that long.

From some distance off he heard a vicious, flat crack that sounded like a rifle going off and in the same instance a single spot in that great mass of blackness flashed with a blinding brilliance, then winked out.

My God, he thought, the rod busted, the car smashed, and I am stranded here—and Kathy! I better get out of here and phone her.

He turned about and started to scramble up the steep river bank. It was hard going. He was hampered by his waders, but he couldn't take them off, for his shoes were in the car and the car now lay, squashed flat more than likely, beneath the massive thing that had fallen on the bridge.

With a swishing sound, something lashed out of nowhere and went around his chest—thin, flexible something like a piece of wire or rope. He lifted his hands in panic to snatch at it, but before his hands could reach it, he was jerked upward. In a blurred instant, he saw the swiftly flowing water of the river under him, the long extent of greenery that lined the river's banks. He opened his mouth to yell, but the constriction of the wire or rope or whatever it might be had driven much of the air out of his lungs and he had no breath to yell.

Then he was in darkness and whatever it was that jerked him there was gone from about his chest. He was on his hands and knees. The platform on which he found himself was solid—solid, but not hard, as if he had come to rest on top of thick, yielding carpeting.

He stayed on his hands and knees,

crouching, trying to fight off the engulfing terror. The bitter taste of gall surged into his mouth and he forced it back. His gut had entwined itself into a hard, round ball and he consciously fought to relax the hardness and the tightness.

At first it had seemed dark, but now he realized there was a faint, uncanny sort of light, a pale blue light that had a spooky tone to it. It was not the best of light; there was a haze in it and he had to squint to see. But at least this place where he found himself was no longer dark and he was not blind.

He rose to his knees and tried to make out where he was, although that was hard to do, for intermixed with the blue light were flares of other light, flaring and flickering so swiftly that he could not make them out, not quite sure of the color of them nor where they might be coming from. The flickerings revealed momentarily strange shapes such as he could not remember ever having seen before and that was strange, he thought, for a shape, no matter what its configuration, was no more than a shape and should not cause confusion. Even between the flashes, there was one shape that he could recognize, rows of circular objects that he had thought at first were eyes, all of them swivelling to stare at him with a phosphorescent glare, like the eyes of animals at night when a beam of light caught them by surprise. He sensed, however, that what he was seeing really weren't eyes, nor were they the source of the faint, blue, persistent light that filled the place. But, eyes or not, they stayed watching him.

The air was dry and hot, but there was, unexplainably, a feeling of dank mustiness in it, a sense of mustiness imparted, perhaps, by the odor that filled the place. A strange odor—not an overpowering smell, not a gagging smell, but uncomfortable in a way he could not determine, as if the smell could somehow penetrate his skin and fasten to him, become a part of him. He tried to characterize the odor and failed. It was not perfume, nor yet the smell of rot. It was unlike anything he had ever smelled before.

The air, he told himself, while it was breathable, probably was deficient in oxygen. He found himself gasping, drawing in great rasping breaths of it to satisfy his body's needs.

At first, he had thought he was in a tunnel and why he should have imagined that he did not know, for as he looked further he could see that he was in some great space that reminded him of a dismal cave. He tried to penetrate the depth of the space, but was unable to, for the blue light was too dim and the flickering of the place made it difficult to see.

Slowly and carefully, he levered himself to his feet, half expecting his head would bump against a ceiling. But he was able to rise to his full height; there was sufficient head-room.

In the back of his mind a whisper of suspicion came to life and he fought to hold it back, for it was not a suspicion that he wanted to admit. But gradually, as he stood stark in the blue-lit,

flickering place, it forced itself upon him and he felt himself accepting it.

He was, the whisper said, inside the huge black box that had fallen astride the river. The rope or wire or tentacle, or whatever it might have been, had been extruded from it. Seizing him, it had jerked him here, in some manner passing him through the outer wall and depositing him here in its interior.

To one side of him he heard a slight sound that was between a snick and a gulp and when he looked to see what had occasioned it, he realized there was something flopping on the floor. Bending over to peer at the place where the flopping was taking place, he saw that it was a fish, a rainbow from the size and shape of it. It was about sixteen inches long and muscular of body. When he put a hand down to grasp it, it had a hefty feel to it. He got his hand around it, but it slipped away from him and continued flopping on the floor.

Now, he told himself, let's look at all of this realistically. Let's step away from it and have a long, hard look at it. Let's not go jumping to conclusions; let's try to be objective.

Item: A huge blackness had fallen from the sky, landing on the bridge and, judging from the crunch of metal he had heard, probably crushing his parked car.

Item: He was in a place that could be, more than likely was, the interior of the blackness that had fallen, a place quite unlike anything he had ever seen before.

Item: Not only he, but a fish, had been introduced into this place.

He took the items, one by one, into the computer of his mind, and tried to put them all together. They added up to one thing: He was inside, had somehow been spirited or absorbed inside a visitor from space, a visitor that was picking up and looking over the fauna of the planet upon which it had landed.

First himself and then a fish. And in a little while, perhaps, a rabbit, a squirrel, a coon, a bear, a deer, a bobcat. After a time, he told himself, the place was going to get crowded.

The gleaming circular objects that were watching him could be receptors, watching and recording, extracting data and storing it, making note of him (and the fish as well), picking up every vibration of his brain, every quiver of his psyche, analyzing him, breaking down the kind of organism that he was and classifying him by whatever code that might apply, tucking him away in memory cells, writing him up in chemical equations, seeking an understanding of what he was and what might be his status and his purpose in the ecology of the planet.

Probably it was not only the circular objects that were doing the work. Perhaps the flashing lights and the mechanisms behind the flashing lights were a part of it as well.

He could be wrong, he thought. When he could really come to think of it, he *must* know that he was wrong. Yet it was the one explanation that squared with what had happened. He had seen the blackness fall; he had

been snatched up from the river—he remembered the running water under him as he was hoisted in the air, he remembered the long line of trees that grew along its banks, he remembered seeing the town of Lone Pine, set on its gravel terrace above the river's bed. He remembered all these things and the next that he had known had been the darkness of this cave-like place. Except for the interior of the object that had fallen on the river, there was no other place into which he might have been tucked.

If all of this had happened, if he were not mistaken, then it meant that the object that had fallen across the river was alive, or that it was operated by something that was alive, and not only alive, but intelligent.

He found himself instinctively fighting against what he was thinking, for in the context of human experience, it was utter madness to believe that an intelligence had landed on the Earth and forthright snapped him up.

He was astonished to find that whatever terror he had felt had drained out of him. In its stead, there was now a coldness, a bleak coldness of the soul that, in a way, was far worse than terror.

Intelligence, he thought—if there were an intelligence here, there must be a way to talk with it, in some manner to work out a system of communication with it.

He tried to speak and the words dried up before his tongue could shape them. He tried again and the words came, but in a whisper. He tried once more and this time the words came louder, booming in the hollowness of the cave in which he stood.

"Hello," he shouted. "Is there anyone around?"

He waited and there was no answer, so he spoke again, even louder this time, shouting at the intelligence that must be there. The words echoed and reverberated and then died out. The circular eyelike objects still kept on watching him. The flickering continued. But no one, or nothing, answered.

3. MINNEAPOLIS, MINNESOTA

Kathy Foster sat at her typewriter in the *Tribune* newsroom and hammered out the story—such a stupid story and such stupid people. Damn Johnny for sending her out on it. There must have been other assignments he could have sent her on, assignments that did not have the phoney mush content that this one did, nor the sloppy mysticism. The Lovers, they called themselves, and she could still see the sleepy innocence of their eyes, the soft, smooth flow of posturing euphemisms—love is all, love conquers all, love encompasses everything. All you have to do is love someone or something hard enough and long enough and the love would be returned. Love is the greatest force in the universe, more than likely the only significant force, the be-all and the is-all of everything there is. And it was not only people, not only life, that would respond. If you loved any kind of matter, any kind of energy, it would return the

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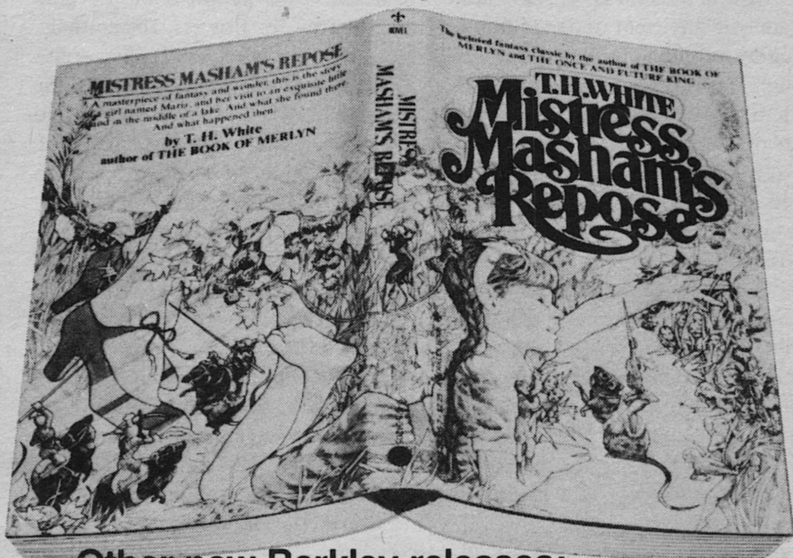

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love and, in consequence of that love, do anything that you wish it to, even to the point of disobeying or disregarding all empirical laws (which, they had told her, may not exist in fact), perform in any manner, do anything, go anywhere, stay anywhere, do anything one wished. But to accomplish this, they had told her solemnly, with the innocence in their eyes gleaming brightly at her, one must strive to understand the life, the matter, the energy, whatever it might be, and to love it so that it became aware of you. That was the trouble now, they said. No one had sufficient understanding, but understanding could be obtained through the force of love. Once the depth of love was great enough to secure the understanding, then man in all truth would be in control of the universe. But this control, they had said, must not be a control for the sake of control alone, but to perfect the understanding and the love of all that went into the makeup of the universe.

That damn university, she told herself, is a hot-bed for the nurturing of such phony misfits groping for significance where there is no significance, employing the search for non-existent meaning as a means to escape reality.

She looked at the clock on the wall. Almost four o'clock and Jerry hadn't phoned. He had said that he would phone to tell her he was on his way. If he made her late for the concert, she would have his hide. He knew how she had counted on the concert. For weeks she had dreamed of it. Sure, Jerry didn't like symphonic music but for once he could do what she wanted, even if he squirmed the entire evening. She had done a lot of things, gone to a lot of places that she hadn't wanted to, but had gone because he wanted to. The wrestling matches—for sweet Christ's sake, the wrestling matches!

A strange man, Kathy told herself, strange and at times infuriating, but a sweet guy just the same. He and his everlasting trees! Jerry lived for trees. How in the world, she wondered, could a grown man get so wrapped up in trees? Other people could develop an empathy for flowers, for animals, for birds, but with Jerry it was trees. The guy was silly about his trees. He loved them and seemed to understand them and there were times, she thought, when it seemed he even talked with them.

She jerked out the finished page, threaded in another. She hammered at the keys. The anger boiled within her, the disgust smothered her. When she turned in the story, she'd tell Johnny that she thought it should be spiked—or better yet, thrown into the wastebasket, for then no one could rescue it from the spike if the day's copy should run thin and a news hole need filling.

Across the newsroom, John H. Garrison, city editor, sat at his desk, staring out across the room. Most of the desks were empty and he ran down the list—Freeman was covering the meeting of the airport commission and it would likely come to nothing, although with all the flurry about the need of extra runways, it was a meet-

ing that the newsroom had to cover; Jay was at Mayo Clinic in Rochester, getting the story on the new cancer procedures that were being developed there; Campbell was still at city hall, piddling his time away at a park board meeting that, like the airport meeting, probably would fizzle out; Jones was out in South Dakota working on the Black Hills-Indian controversy, getting together material for a Sunday feature; Knight was at the Johnson murder trial; Williams was in the suburban town of Wayzata interviewing that old gal who claimed to be 102 years old (although she probably wasn't). Sloane was tied up with the oil spill at Winona. Christ, Garrison wondered, what would he do if a big story suddenly should break. Although that, he knew, was unlikely. It had been a bad day and was not improving.

He said to Jim Gold, the assistant city editor, "What does the budget look like, Jim?"

Gold looked at the sheet of paper in his typewriter. "Thin," he said. "Not much here, Johnny. Not much at all."

A phone rang. Gold reached out, spoke into the mouthpiece softly.

"It's for you, Johnny," he said. "Line two."

Garrison picked up the phone at his desk, punched a button.

"Garrison," he said.

"Johnny, this Frank Norton," said the voice at the other end. "Up at Lone Pine, remember?"

"Why, Frank," said Garrison, genuinely pleased, "how great to hear from you. Just the other day I was talking with some of the fellows here about you. Telling them about the great setup you had. Your own boss, the trout fishing at the edge of town. One of these days I'll come up primed for some of those fish. How about it, Frank?"

"Johnny," said Norton, "I think I may have something for you."

"Frank, you sound excited. What is going on?"

"Just maybe," said Norton, "we may have a visitor from space. I can't be sure . . ."

"You have what?" roared Garrison, jerked upright in his chair.

"I can't be sure," said Norton. "Something big came down out of the sky. Landed straddle of the river. Smashed the bridge to hell."

"Is it still there?"

"Still there," said Norton. "Just sitting where it landed, only ten minutes or so ago. It's huge. Big and black. The town is wild. The place is in an uproar. One man was killed."

"Killed. How was he killed?"

"He shot at the thing. It shot back. Burned him to a cinder. I saw it happen. I saw him standing here and smoking."

"Oh, my god," said Harrison. "What a story, right on top of you."

"Johnny," said Norton, "I can't be certain of what is going on. It happened too short a time ago to know what's going on. I thought you might want to send someone up to get some pictures."

"Hold on, Frank," said Garrison.

"I tell you what I'm going to do. I'll get right on it. But first, I want to turn you over to someone here on the desk. You tell him what happened. Tell him everything. When you get through, don't hang up. I'll be with you whenever you are finished. In the meanwhile, I'll get hold of a photographer and do some other things."

"Fine, I'll hang on."

Garrison cupped the receiver with his hand, held it out to Gold.

"Frank Norton is on the other end," he said. "He's owner and editor of a weekly paper at Lone Pine. An old friend of mine. We went to school together. He says something fell out of the sky up there. One man's been killed. Fell just fifteen minutes or so ago. You get down what he has to tell you and then ask him to hold for me. I want to talk with him again."

"I'll get it here," said Gold. He picked up his phone. "Mr. Norton," he said, "I'm Jim Gold. I'm assistant city editor . . ."

Garrison swung around in his chair, spoke to Annie Dutton, city desk secretary.

"Annie," he said, "get hold of the plane charter people. See if they can have a plane standing by for us. To fly to—what the hell town with an airstrip is closest to Lone Pine?"

"Bemidji," said Annie. "That would be the closest."

"All right. Then get hold of a car rental outfit in Bemidji and arrange for a car to be waiting for us. We'll phone them later and tell them when we'll be getting in."

Annie picked up her phone and started dialing.

Garrison stood and looked over the newsroom, flinching at what he saw.

Finley over in a corner, pecking away at a story—but Finley was the rankest cub, still wet behind the ears. Sanderson, but she was not much better and had the unfailing habit of writing a bit too cutely. Some day, by god, he thought, she would have to mend her ways or be out the door. Jamison, but Jamison took forever. All right on an in-depth story, but too slow and deliberate for a story that was breaking fast.

"Kathy!" he bawled.

Startled, Kathy Foster stopped her typing, got up and started for the city desk, fighting down her anger. Jerry hadn't called as yet and her story, as she wrote it, seemed sillier and sillier. If she had to miss that concert . . .

Gold was on one phone, listening, speaking only now and then, his fingers stabbing at the typewriter, making notes. Annie was busy on another phone. Garrison had sat down again and was dialing.

"This is Garrison," he said into the phone. "We need a good photographer. Who you got back there? Where is Allen? This is an out-of-town assignment. Important. Top priority."

He listened. "Oh, hell," he said. "You mean Allen isn't there. He's the man for the job we have. Where is he? Can you reach him?"

A wait, then, "Yes, I forgot. I do remember now. Allen's on vacation.

All right, then. Send him up."

He hung up the phone and turned to Kathy. "I have something for you," he said.

"Not now," she said. "Not tonight. Not overtime. I'm almost through for the day. And I have tickets for the symphony tonight."

"But, good god, girl, this could be important. The most important assignment you have ever had. Maybe our first space visitor . . ."

"First space visitor?"

"Well, maybe yes, maybe no. We don't know quite yet . . ."

Gold was holding out the phone to him. He took it and spoke into it. "Just a minute, Frank. I'll be right with you."

Annie said, "There'll be a plane waiting, ready to go. There'll be a car at Bemidji."

"Thanks," said Garrison. He asked Gold, "What have you got?"

"Good story, far as it goes," said Gold. "Solid. Lots of facts. Loads of detail. Sounds exciting. Something did fall out of the sky up there."

"Solid enough to go after?"

"I'd say so," said Gold.

Garrison swung around to Kathy. "I hate to ask this of you," he said. "But there's no one else. No one I can reach out and grab quite fast enough. Everyone is working. You and White fly up to Bemidji. There'll be a car there, waiting for you. Play story. I'll guarantee you that. Byline. The works. You ought to be in Lone Pine by six or before. Phone before eight. We can make the first edition that way, with what you have."

"All right," she said. "If you'll buy this pair of tickets. I'll be damned if I'm going to be out the price of these tickets."

"All right," he said, "I'll buy them. I'll work them into my expense account somehow." He dug his wallet out of his pocket. "How much?"

"Thirty bucks."

"That's too much. That's more than you paid for them."

"They're good seats. Anyhow, that's what you'll have to pay for them."

"All right. All right," he said, stripping out bills.

"And if Jerry Conklin calls, be sure someone tells him what happened. He was to be my date tonight. Promise."

"I promise," said Garrison, handing her the money.

He lifted the receiver and said, "Some last minute details, Frank, that needed taking care of. You heard? I have the damnedest staff. They read me like a book. I'll have someone up there by six o'clock or so. I'll ask them to look you up. But how come? You have a paper of your own. Why give this all to us?"

"Today was my press day," said Norton. "Won't publish again until this time next week. This kind of news doesn't wait. I wanted to give you a jump on it. A couple of state patrol cars came roaring into town just a few minutes ago. Otherwise everything's the same."

"I wonder if you'd mind keeping us filled in," asked Garrison, "until our

people get there. Something happens, just give us a call."

"Be glad to," Norton said.

4. WASHINGTON, D.C.

It had been a rough day. The press, at the early afternoon briefing, had been out for blood. Principally, the questions had had to do with the movement by the Native American Association for the return to the federated tribes of the Black Hills of South Dakota and the Montana Bighorn region, although there had been considerable sniping about the energy situation, centered on the administration's proposal to develop a southwestern desert solar energy system and its advocacy of substantial funds for research into a cryogenic transmission system. The press had stormed out considerably indignant at his unsatisfactory answers, but, David Porter told himself, that was not unusual. For the past several months, the press, in general, had been either enraged or disgusted at him. Any day now, he felt sure, there would be a move by some factions of the media to get him canned.

A hush hung over the pressroom office, scarcely broken by the teletype machines ranged against the wall, chuckling among themselves as they continued to spew out the doings of the world. Marcia Langley, his assistant, was gathering up and putting away, getting ready to leave for the day. The telephone console on Marcia's desk was quiet; for the first time in the day no lights were blinking, signalling incoming calls. This was the calm of the news-gathering period. The last afternoon editions had gone to press, the morning editions were being readied for the presses.

Shadows were beginning to creep into the room. Porter put out a hand and turned on his desk lamp. The light revealed the clutter of papers. Looking at them, he groaned. The clock on the wall said it was almost 5:30. He had promised to pick up Alice at 7:30 and that left him little time to get through with his paperwork. There was a new eating place out in Maryland that some of Alice's friends had been recommending, with Alice mentioning it off and on for the past several weeks. Tonight, they planned to go there. He relaxed in his chair and thought about Alice Davenport. Her old man, the senator, and Porter had never gotten along too well, but, so far, the old man had raised no objection to their seeing one another. Which, Porter thought, was rather decent of the old buzzard. Despite her parentage, however, Alice was all right. She was a lot of fun, bright and cheerful, well-informed, a good conversationalist. Except that, at times, she had the unfortunate tendency to engage in long and partisan discussion of her currently favorite social enthusiasm. Right at the moment, it was the Indian claim to the Black Hills and the Bighorn, which she passionately believed should be returned to the federated tribes. A few months earlier, it had been the blacks of South Africa. Which all came, Porter told

himself dourly, from too good an education in exactly the wrong disciplines. She didn't always talk about these things and tonight perhaps she wouldn't. In the last few months, they had spent some happy times together, for Alice, when she left off her crusader togs, was a good companion.

It wouldn't take more than half an hour or so, he estimated, if he really applied himself, to get his desk at least haphazardly cleared off. That would give him time to get home, get showered and shaved and change his clothes. For once, he promised himself, he'd pick Alice up on time. But, first, he needed a cup of coffee.

He started across the room.

"Do you know," he asked Marica, "if there's any coffee left out in the lounge?"

"There should be," she told him. "There might be some sandwiches left but they will be stale."

He grumbled at her. "All I need is a cup of coffee."

He was halfway across the room when one of the teletype machines came to sudden, insane life. A bell rang loudly and insistently, clamoring for attention.

He turned about and went swiftly back across the room. It was Associated Press, he saw. He came up to the machine, grasped each side of it with his hands. The printer, blurring across the paper, was typing a string of bulletins.

Then, *Bulletin—Large object reported to have fallen from the sky in Minnesota.*

The machine stopped, the printer quivering.

"What is it?" Marcia asked, standing at his shoulder.

"I don't know," said Porter. "Perhaps a meteorite."

He said to the machine. "Come on. Come on. Tell us what it is."

The telephone on his desk shrilled at them.

Marica took a step and picked it up.

"All right, Grace," she said. "I'll tell him."

The teletype came to life: *What may be a vehicle from outer space landed today near the town of Lone Pine in northern Minnesota . . .*

At his elbow, Marcia said, "That was Grace on the line. The President wants to see you."

Porter nodded and turned away from the machine. Bells on other machines began to ring, but he walked away, heading for the door and going the few steps down the corridor.

As he came into the outer office, Grace nodded at the door. "You're to go right in," she said.

"What is it, Grace?"

"I don't really know. He's talking to the Army Chief of Staff. Something about a new satellite that has been discovered."

Porter strode across the office, knocked on the inner door, then turned the knob and went in.

President Herbert Taine was hanging up the phone.

"That was Whiteside," he said. "He's got a hair up his ass. Seems some of our tracking stations have

sighted something new in orbit. According to the general, something so big it scares you. Not ours, he says. Most unlikely, too, to be Soviet. Too big for either of us to put up. Neither of us has the booster power to put up anything as big as the trackers spotted. Whitehead's all upset."

"Something out of space?" asked Porter.

"Whitehead didn't say that. But it was what he was thinking. You could tell he was. He was about to come unstuck. He'll be coming over as soon as he can get here."

"Something fell, or landed, I don't know which, yet, in northern Minnesota," said Porter. "It was just beginning to come in on the teletype when you phoned."

"You think the two of them could be tied up?"

"I don't know. It's too early to know what came down in Minnesota. I just caught part of a bulletin. It might be no more than a big meteorite. Anyhow, apparently, something came down out of the sky."

"Jesus, Dave, we have plenty of trouble without something like this happening," said the President.

Porter nodded. "I quite agree, sir."

"How was today's briefing?"

"They roughed me up. Mostly the Black Hills and the energy situation."

"You doing all right?"

"Sir, I'm doing what I'm paid to do. I am earning my wages."

"Yes," said the President. "I suppose you are. It ain't easy, though."

A knock came on the door, which opened a ways, Grace sticking in her head. "Marcia gave me this," she said, waving a sheet of paper ripped from the teletype.

"Give it to me," said the President. She walked across the room and handed it to him. Quickly he read it and pushed it across the desk to Porter.

"It makes no sense," he complained. "A big black box, it says, sitting on a bridge. A meteorite wouldn't be a black box, would it?"

"Hardly," said Porter. "A meteorite would come in with a hell of a rush. It would dig a monstrous crater."

"So would anything else," said the President. "Anything that fell out of the sky. A decaying satellite . . ."

"That is my understanding," said Porter. "They'd come in fast and dig a crater. If they were big, that is."

"This one sounds like it is big."

The two men faced one another across the desk, staring at one another.

"Do you suppose . . ." the President started to say, then stopped in mid-sentence.

The intercom on the President's desk purred and he flipped up the toggle. "What is it, Grace?" he asked.

"It's General Whiteside, sir."

"O.K.," he said. "Put him on."

He lifted the phone and said, out of the side of his mouth, to Porter, "He's heard about the Minnesota business." He spoke into the phone and then sat listening. From where he sat, Porter could catch the buzz and hum of the torrent of words the man at the other end of the line was pour-

ing into the phone. He waited.

Finally, the President said, "All right, let's keep our shirts on. Let me know when you have anything more."

He hung up and turned to Porter. "He's buying it," he said. "Someone in the National Guard phoned him from Minnesota. Says the thing came down and landed, that it didn't crash, that it is still there, that it is the size of a good-sized building, all black, like a big box."

"Strange," said Porter. "Everyone is calling it a big box."

"Dave," asked the President, "what do we do if it should turn out to be a visitor out of space?"

"We handle it as it comes."

"We have to get some facts fast."

"That's right. The news wires will give us some of them. We ought to send out an investigating team, fast as we can. Get hold of the FBI in Minneapolis."

"The area should be secured," said the President. "We can't have the public piling in, interfering."

He looked at Porter. "What I'm afraid of is panic."

Porter glanced at his watch. "The first evening news programs will be hitting TV in another hour or less. Even now, they'll be flashing bulletins. The news will spread fast. I imagine my phones are ringing now. Asking White House reaction, for Christ's sake. They probably know more about it than we do."

"Is Marcia still out there?"

"She was getting ready to leave, but not now. With this, she'll stay on. The woman's a pro." There was a pause.

"We may need to issue some sort of statement."

"Not yet," said Porter. "Not too fast. No shooting from the hip. We've got to know more about it . . ."

"Something to give the people," said the President. "Some assurance that we are doing what we can."

"They won't start wondering for a while what we are doing. They'll be all agog over the news itself."

"Maybe a briefing."

"Perhaps," said Porter. "If there is enough to go on before the night is over. No one knows about this new object in orbit, I take it. Only Whiteside and the two of us—and, of course, the trackers. But they won't say anything."

"It'll leak out," said the President. "Given a little time, everything leaks out."

"I'd rather we be the ones to tell them," said Porter. "We don't want to give the impression of any cover-up. That's what the UFO believers have been saying all these years, that the UFO information has been covered up."

"I agree with you," said the President. "Maybe you better call a briefing. Go out and start the ball rolling. Then come back in again. I may have people with me, but barge in when you're ready. There should be more information by that time."

5. LONE PINE

The fish was gone. The rabbit had hopped into the darkness and now

was hopping back again, hopping slowly and deliberately, its nose aquiver, a much puzzled rabbit, wondering, perhaps, Jerry told himself, what manner of briar patch it might have landed in. The coon was pawing and nuzzling at the floor. The muskrat had disappeared.

Jerry had done some cautious exploring, but never moving so far away as to lose his orientation to the spot on which he had been deposited when he had been jerked into the place. He had found nothing. Approaching some of the strange shapes that had been revealed in the flicker of the lights, the shapes had gone away, receding and flattening into the level floor. He had investigated the circular patches that he first had thought of as eyes. He had thought when he had first seen them that they were positioned in walls, but found that they were located in midair. He could pass his hand through them and when he did, it seemed to have no effect upon them. They still remained circular luminosities and they still kept on watching him. He had felt nothing when he touched them. They were neither hot nor cold and imparted no sensation.

The flickering still continued and the pale blue light persisted. It seemed to him that he could see slightly better than he had earlier, probably because his eyes had adjusted to the paleness of the light.

He had tried on several occasions to talk with the strange presence that he felt was there, but there had been no response, not the slightest indication that he had been heard. Except for the sense of being watched, there was no sign that anyone or anything in the place was aware of him. He did not have the feeling that the imagined observer was in any way hostile or malignant. Perhaps curious, but that was all. The alien smell continued, but he had become somewhat accustomed to it and now paid it slight attention.

The terror and apprehension had largely fallen from him. In its stead came a fatalistic numbness and a wonderment that such an event could happen. How could it be, he asked himself, that he had been so positioned in time and space for this incredible happening to befall him? From time to time, he thought of Kathy and the concert, but this was something, he told himself, that could not be remedied and the thought then was swept away by the concern for his predicament.

It seemed to him that from time to time he could detect some motion in the structure in which he was imprisoned. On a couple of occasions, there had been a lurching and a jerking as if violent movement were taking place. Of none of this, however, could he be positive. It might be, he told himself, no more than certain convolutions or biologic readjustments in the organism.

And that was the crux of it, he thought—was it biologic? There had been nothing to start with, at the time it had fallen from the sky, to indicate it was—and perhaps not even now. It could be, rather, a machine, a pre-

programmed, computerized machine able to react appropriately to any number of arising situations. But there was about it the sense of the biologic, a feeling, for whatever reason, that it was alive.

While he had no evidence, he was becoming more and more convinced that it was a biologic being, a functioning consciousness that was observing him. A visitor from the stars that, immediately after it had landed, had set about learning what it could of the life indigenous to the planet, snatching up himself, a fish, a rabbit, a coon and a muskrat. From the five of them, he had no doubt, could be gleaned some basic information, perhaps even the beginning of an understanding of the principle upon which life here had evolved.

It was alive, he told himself; this great black box was a living thing. And even while he wondered how he could be so convinced, suddenly he knew, as if a voice had spoken to him, as if a special light of intellect had blinked inside his brain. It was like a tree, he thought. He could feel within it the same aliveness that he found in any tree. And that, he told himself, was ridiculous, for this thing was nothing like a tree. But the thought persisted: this thing inside of which he had been thrust was similar to a tree.

He tried to squeeze the idea out of his thinking, for it was, on the face of it, a silly idea at best. But it hung on, refusing to be banished, and now another idea came out of nowhere to link up with the idea of the tree—the unsummoned thought of home. But what this new idea meant, he did not know. Did it mean that this place was home to him? He rebelled at the thought, for it certainly was not home. It was about as far from home as any place he could imagine.

How, he wondered, had the idea come to him? Could it be that this living alien—if it was living alien—was trying to communicate with him, that it was planting suggestions in his mind, trying to bridge the gap that lay between their two intelligences? If that should be the case, and he could not bring himself to think it was, what then did the alien mean? What connection could there be between a tree and home? What connotation was he expected to derive from the two ideas?

Thinking this, he realized that he was more and more beginning to accept the premise that the big black box was a visitor from outer space and that it was not only alive, but intelligent.

The ground, he reminded himself, had been well laid for such a thought and such acceptance. It had been talked about and written about for years—that some day, an intelligence from outer space might come to visit Earth, with all the attendant speculation of what might happen then, of how the great unwashed, uncomprehending public might react to it. It was not a new idea; for years it had lain skin-deep in the public consciousness.

The rabbit came hopping up to him. Crouched tight against the floor, it stretched out its neck to sniff at the

toes of his shoes. The coon, through with its worrying of the floor, went ambling off. The muskrat had not reappeared.

Little brothers, Jerry thought. These things are my little brothers, gathered with me in this place, common denizens of what this alien being regards as an alien planet, gathered here to be studied by it.

Something whipped around him. He was jerked from his feet and slammed against the wall. But he did not hit the wall. The wall opened in a slit and he went through, sailing free of it.

He was falling. In the darkness he could see very little, but below him he could make out a blob of shadow and jerked up his hands to protect his face. He crashed into a tree and the upward-thrusting, but resilient branches slowed his fall. Desperately he reached out with one hand, the other still up to protect his face. Grabbing blindly, his fingers closed around a branch. It bent beneath his weight, slowing his fall; with the other hand, he stabbed out and his fingers found and closed upon a larger branch, which was stout enough to halt his fall.

For a moment he hung there, dangling in the tree, the sharp, welcome scent of pine redolent in his nostrils. A gentle wind was blowing and all around him, he could hear the murmur of the conifers.

He hung there, thankful—filled with a surging thankfulness that he had escaped from inside the alien structure. Although escaped, he knew on second thought, was not quite the word for it. He had been thrown out. They, or it, or whatever it might be, had gotten all it needed from him and had heaved him out. As it probably earlier had thrown out the fish and, in a little while, would heave out the rabbit, coon and muskrat.

His eyes by now had become partially adapted to the darkness and carefully he worked his way along the branch to the body of the tree. Once he reached it, he clutched it with both arms and legs, resting for a moment. Because of the thickness of the branches, he could not see the ground and had no idea how high he might be in the tree. Not high, he told himself, for he could not have been thrown out of the structure more than forty feet or so above the ground and he had fallen for at least a short distance before the tree had intervened to break the fall.

Slowly, he began his descent down the tree. It was not easy work, especially in the dark, for there were many branches sprouting from the trunk and he had to do some maneuvering to make his way down through them. The tree, he judged, was not very large or tall. The bole, he estimated, was no more than a foot in diameter, although, as he descended, it increased in size.

Finally, without warning, his feet touched the ground and his knees buckled under him. Carefully, he felt about with one foot to be certain he had reached the ground. Satisfied that he had, he released his hold on the trunk and fought his way clear of

the low-growing, drooping branches.

He stood to one side of the tree and peered all about him, but the darkness was so thick that he could make out very little. He calculated he was some distance to one side of the road down which he'd driven before he parked the car, and was astonished and slightly terrified to find that he had no idea of direction.

He moved around a bit, hoping to find a place where the tree growth was less dense and he would have a chance of seeing better, but he had moved only a few feet before he became entangled in another tree. He tried another direction and the same thing happened. He crouched against the ground, peering upward, in hope that he could catch the dark outline of the thing that had come down from the sky, but was unable to locate it.

From where he was, he told himself, he should be able to glimpse the lights in the town of Lone Pine, but, try as he might, he could not see so much as a single light. He tried to make out some familiar patterns in the stars, but there were no stars—either the sky was overcast or the forest cover was too thick to see through.

Christ, he thought, crouched against the ground, here he was, lost in a woods not more than a mile from a town—a small town, of course, but still a town.

He could, of course, spend the night here until morning light, but the air was already chilly and before morning, it would get much colder. He could start a fire, he told himself, and then realized that he had no matches. He didn't smoke, so never carried matches. And the approaching cold, he told himself, was not the sole consideration. Somehow, as quickly as possible, he had to find a phone. Kathy would be furious. He'd have to explain to her what had held him up.

He remembered one adage for a lost man—travel downhill. Traveling downhill, one would come to water and by following water, soon or later people would be found. If he traveled downhill, he'd come to the river. By following along its bank, he'd come to the road. Or he could try to cross the river, which might put him in striking distance of Lone Pine. Although that had small attraction, for he did not know the river and trying to cross it could be dangerous. He could run afoul of deep or rapid water.

Or, perhaps, he could find the contraption in which he had been caged. If he could find it, then by turning to his left, he would find the road that led to the bridge. But even so, he could not cross the river, for the bridge was out. Or the contraption might still be sprawled across the river; he had thought he felt it move, but he could not be certain that it had.

He couldn't be too far away from it, he thought. He had been thrown from it and he could not have been too distant from it when he'd crashed into the tree. The structure in which he had been caged, he felt certain, could be no more than thirty feet away.

He started out or tried to start out. He got nowhere. He collided with

trees, he became entangled in undergrowth, he tripped over fallen logs. There was no possibility of covering more than a few feet at a time; it was impossible to travel in a straight line. He became confused; he had no idea where he was.

Worn out with his effort, he crouched against a tree trunk, with the drooping branches almost on top of him, almost brushing the ground. God, he thought, it seemed impossible a man could get so thoroughly lost, even in the dark.

After a short rest, he got up and went on, floundering blindly. At times, he asked himself why he just didn't give up, hunker down for the night, waiting for the dawn. But he could never persuade himself. Each new effort that he made might be the lucky one. He might find the alien structure or the road or something else that would tell him where he was.

What he found was a path. He hadn't been expecting to find a path, but it was better than nothing and he decided to stick with it. The path, or trail, would surely lead him somewhere if he could only follow it.

He had not seen the path. He had found it by stumbling on it, tripping on something and falling flat upon his face upon it. It was fairly free of obstructions and he made it out by patting the ground with his hands, tracing out the narrow, hand-packed pathway. Trees and underbrush crowded close on either side of it.

He got up and tried to follow it, but found that erect and walking, he kept blundering off it and getting tangled up with the trees on either side.

There was only one way to follow it—on his hands and knees, feeling with his hands to keep himself upon it. So, thoroughly lost, not knowing where he was or where he might be going, he inched his way down the trail on his hands and knees.

6. LONE PINE

Frank Norton spoke into the phone, "I don't know where they are, Johnny. They just haven't showed. You said six o'clock and I've been waiting for them here. It might be the traffic jam."

Garrison's voice rasped, "What the hell, Frank? Since when have you developed traffic jams up there?"

"Worse than the opening day of fishing season," said Norton. "Everyone's trying to reach here. Traffic is backed up on all the roads leading into town. The state patrol is trying to close us off, but they're having a hard time doing it. As soon as radio and television began flashing bulletins . . ."

"It's too late now to get pictures of the thing that fell," said Garrison. "You say it moved?"

"Quite some time ago," said Norton. "It moved across the bridge and up the road into the forest area. It's dark now. There's no chance to take any pictures. But I did take some before it moved . . ."

"You took pictures!" yelled Garrison. "Why the hell didn't you tell me that before?"

"Johnny, they aren't much. Not the kind of pictures you'd take with the press cameras you have down there. Just a small ordinary tourist camera. I got two rolls of film, but I can't be sure there is anything worth looking at."

"Look, Frank, is there any way you can get those two rolls to us? Would you be willing to sell them?"

"Sell them? They're yours if you want them, Johnny. I'd like some copies of them, that's all."

"Don't be a fool," said Garrison. "Those films are worth money. A lot of money. If you'll let us have them, I'll get you, from this end, all that the traffic will bear. Is there any way you can get them to us? Anyone who would drive them down? I don't want you to bring them yourself. I would like you to stay right there until Kathy and Chet show up."

"There's a kid here who works part time at a gas station. He has a motorcycle. He'd get them to you the fastest, if he doesn't kill himself getting there."

"Can you trust him?"

"Absolutely," Norton said. "I give him work now and then, a few odd jobs every now and then. He's a friend of mine."

"Tell him there's a hundred in it for him if he gets them here before midnight. We'll hold up part of the press run to get the pictures in tomorrow morning's paper."

"I think he's at the station right now. I'll get in touch with him. He can find someone else, or I can find someone else, to man the pumps for him. Hell, I'll handle them myself if I have to."

"Are there any other newsmen in town? Have any of the TV crews shown up as yet?"

"I don't think so. TV crews I'd see. I suppose Duluth will be sending someone, but if they got here, they'd probably look me up. So far, there's been no one. The highway patrol has the roads sealed off fairly well. Not too many people have actually gotten into town. Some of them left their cars at the roadblocks and are walking in. The roads are clogged with cars. That way, a motorcycle is better than a car to get out of town. This kid I told you of will take to ditches, go across country if he has to."

"You'll do it, then."

"Almost immediately. If I can't get the kid, I'll get someone else. One thing, Johnny. How's the country taking it?"

"It's too soon to know," said Garrison. "I have a man out talking to people in the street. Going into bars, standing at theater entrances, catching people wherever he can, asking what they think of it. A man-in-the-street reaction story. Why do you ask?"

"I had a call from Washington. Army Chief of Staff, he told me. Said his name, but I don't remember it. A general, I do remember that."

"There's been no reaction so far from Washington," said Garrison. "They need time to get their feet under them. You still think it may be something from the stars?"

"It moved," said Norton. "It moved across the river and went a ways into the forest. It could mean it was alive, or at least a very sophisticated machine, or a machine operated by intelligence. People up here have no doubt. So far as they are concerned, it's a visitor from space. You should see it, Johnny. If you saw it, you might believe it, too."

The door to the office came open and a woman came in; following her was a man loaded down with camera equipment.

"Just a minute," said Norton. "I think your people are here. They just came in the door."

He said to the woman, "Are you Kathy Foster?"

Kathy nodded. "And the man all loaded down is Chet White."

"Frank," said Garrison.

"Yes?"

"Let me talk with Kathy, please."

"Right," said Norton. "I'll get going with the films."

He handed the phone to Kathy. "Johnny's on the line," he said.

"Did I hear you say films?" asked Chet.

"Yeah. I shot two rolls before the thing moved across the bridge. While it could still be seen."

"It's not there any more!" wailed Chet.

"It moved. Across the bridge, up the road into the woods. It's too dark to see it. No way to get at it."

"You sending those rolls to Johnny?"

"I have a man with a motorcycle. He'll take them for me."

"That's good," said Chet. "A car couldn't get through. These damn two lane roads of yours. I never saw such a snarl. We walked a couple of miles, I'd judge, to get here. The car's back there somewhere."

"See you later," said Norton, ducking out the door.

On the phone, Kathy was saying to Garrison. "It was awful, Johnny. Everyone is trying to get here. The cops have stopped them. The cars are piling up."

"Well, you're there now," said Garrison. "Hang in there. Get us what you can. Talk to people. Get reactions from them. How is the town taking it? What do they think it is? You know what we want."

"Johnny, did Jerry phone?"

"Jerry?"

"Dammit, Johnny, I told you before I left. Jerry Conklin. My date for tonight. I explained it to you."

"I remember now. I spread the word around. Just a minute."

Faintly over the line, she heard him bellow, "Anyone get a call from a guy by the name of Jerry Conklin? Kathy's date."

Mumbling voices answered him while Kathy waited.

Garrison came back on the line. "No Kathy. No one got the call."

"Dammit," said Kathy.

"Let me see," said Garrison, swiftly dismissing Jerry Conklin. "It's a quarter of eight now. We'll have to go with what we have on the first press run. Frank's been keeping us filled in.

We know about the thing moving across the river. Phone me in a couple of hours. Sorry about your being tied up on the road. Glad you got there."

"Johnny, what else is happening? Fill me in."

"The governor has about half the state patrol funneling in on Lone Pine. Closing off all the roads. He's put the National Guard on alert and standby. No one as yet has any idea of what is going on. Idea seems to be that this really is a ship from space, but no one can say for sure."

"If Jerry does call, you'll explain to him."

"Sure will," said Garrison.

"I'll phone you," said Kathy. "Wait a minute. I have a hunch the phone lines into this place will be jammed. Why don't you have someone use the WATS line to get in here by nine thirty or so. Keep trying if they can't get through. You have this number?"

"That's right. Will you have someone who can answer there and hold the line for you?"

"I'll get someone," said Kathy. "How much can I pay them? How's the budget on this operation?"

"As little as you can," said Garrison. "As much as you have to."

"All right, then," said Kathy. "I'll be in touch."

As she hung up the phone, Norton came in the door. "Jimmy is on his way," he said, "with the films. He got one of his pals to take over the station for him."

"That didn't take long," said Chet.

"I was lucky," said Norton. "Found Jimmy right away and there was this pal of his loafing around the station."

"We'll need one thing more," said Kathy. "Johnny will be calling back nine thirty or so. We'll need someone to hold the line for us until I get back here. The lines may be jammed, hard to get through."

"I think I have the man for you," said Norton. " I saw him just up the street. Old codger, name of Stiffy Grant. He'll do anything to get the price of a drink."

"Reliable?"

"If there's a drink in it."

"How much should I pay him?"

"Couple of bucks."

"Tell him I'll give him five. Impress on him he's not to give up the phone to anyone at all. For no reason, whatsoever."

"You can rely on him. He's got a single track mind. Sober now. He'll understand."

"I don't know what we'd have done without you," said Kathy.

"That's all right," said Norton. "Johnny and I have been friends for a long time. Went to school together."

"There was a car crushed under the thing that fell," said Chet. "Is it still there?"

"Far as I know," said Norton. "Patrolman is guarding it. Orders not to move it until someone shows up."

"Who's going to show up?"

"I don't know," said Norton.

"Let's get going, then," said Kathy. "I want a look at that car.

Take some pictures of it."

"Go straight down the street," said Norton. "Follow the road down to the river. Not far. There's a police car with red lights. That's where you'll find it. I'll get hold of Stiffy and put him to work. See you later on."

At the end of the first block, they spotted the flashing red lights of the patrol car. When they reached the car, a patrolman stepped out of the shadows to meet them.

"Newspaper people," Kathy told him. "The Minneapolis *Tribune*."

"Could I see identification, please?"

Kathy took her wallet out of her bag, handed him her press card. He pulled a flashlight from his pocket, directed a beam of light on it.

"Katherine Foster," he said. "I have seen your byline."

"The man with me is Chet White. He's our photographer."

"Okay," said the officer. "Not much to see here. The thing, whatever it is, is across the river."

"How about the car?" asked Chet.

"It's still here."

"How about taking some pictures?"

The patrolman hesitated. Then he said, "I guess that would be all right. Don't touch it, though. The FBI has asked us to leave it as it is."

"What has the FBI to do with it?" asked Kathy.

"Ma'm, I wouldn't know," said the officer. "But that's the word I got. Some of them are headed up here."

They went around the patrol car and walked a short distance down the road. The crushed car lay at the end of the bridge—or rather, at the end of where the bridge had been. The bridge was gone. The car was flattened out, as if it had been put through a rolling mill.

"Is there anyone in it?" asked Kathy.

"We don't think so, Ma'm."

Chet was taking pictures, walking around the flattened machine, the camera's light mechanism winking.

"Any identification?" asked Kathy. "A license plate, perhaps?"

The officer shrugged. "I suppose there is, but not visible. It's a Chevrolet. Several years old. Can't be sure of the model."

"No idea of who was in it? What might have happened to them?"

"Probably someone stopped to fish the pool under the bridge. Supposed to be some big trout in there. People often do that, I am told."

"But if that's the case," said Kathy, "wouldn't you think whoever it was would have showed up by now to tell about his big adventure?"

"That does seem strange," said the patrolman. "He might be in the river, though. The bridge collapsed when it hit. A timber might have hit him."

"Someone must have made an effort to find him."

"I suppose," the patrolman said. "I don't know about that."

"Did you see the thing that fell?" asked Kathy.

"Briefly. Before dark closed in. It had already crossed the river before I

got here. It was there across the river. A few hundred feet beyond the river. Just sitting there. And big."

"It still was on the road?"

"On it, but extending over it on each side. Many times wider than the road. It had knocked down a few small trees."

"It's still sitting there, right now?"

"I'm almost certain it is. If it moved, it would knock down more trees. There'd be some noise. It's been quiet over there ever since I arrived."

"What's up ahead? Up the road, I mean?"

"Ma'm, that is a primitive forest area over there across the river. A stand of primeval pines. Big trees. Some of them hundreds of years old. The thing, whatever it is, is trapped. It won't be able to get through the trees. It has no place to go."

"Any signs of life in it?"

"Not that I saw. Just a huge black box. Like a huge, awkward army tank. Except it seemed to have no treads. I can't imagine how it moves."

"And that was your impression of it? A big army tank?"

"Well, no. More like a big black box. A big oblong box that someone had painted the deepest possible black."

"Is there any way we could get across the river?" Kathy asked.

"Not a prayer," he told her. "There's this deep pool under the bridge and fast water at both ends of it."

"A boat, maybe?"

"You could ask around," the patrolman said. "Probably you could get across the pool in a boat. If you can find a boat."

"Up here," said Chet, "everyone's got a boat."

"I wish you wouldn't try," said the patrolman. "I'd have to check on my radio. Probably I'd be told not to let you go."

"Any other way to get around?"

"Not on the roads. The roads are all closed."

"How about the people over across the river?"

"There aren't any people. That's a primitive forest area over there. Miles of forest. No one lives there."

"Officer," said Kathy, "could I have your name? Could I quote some of what you've told me?"

Proudly, the officer gave his name. "But go easy on the quotes," he said.

7. WASHINGTON, D.C.

Porter stood and watched the press corps enter the room. They seemed more subdued than usual and there were more of them than he had expected. After all, this was a late hour for a briefing.

They filed in and took seats, quietly waiting.

"I must beg your indulgence for the lateness of the hour," he told them. "Perhaps we should have waited until tomorrow morning, but I thought some of you might want to know what we know. This, however, may not be a great deal more than you know.

"Basically, we only know that an object fell out of the sky near the town of Lone Pine in northern Minnesota.

The Pine River flows just north of the town and the object fell so that it bridged the river, one end of it on the near bank, the other on the far bank. Curiously enough, it fell on a bridge that spanned the river. The bridge was demolished and a car parked at the near end of it was crushed. No one, at the time, seems to have been in the car. Just before dark, the object moved across the river and, apparently, is still there.

"I think there is one additional matter to report. Whether this ties up with the object that fell in Minnesota we don't know, but tracking stations have discovered a previously unknown and rather large object in orbit about the Earth."

The New York *Times* asked, "Mr. Secretary, you say large. Can you tell us how large and describe the orbit?"

"Mr. Smith," said Porter, "no determination as to size has been made as yet. The best estimate is that it may measure some miles across. As to orbit, I think it is what is called a synchronous orbit. Its height is about twenty thousand miles and its speed such as to match the revolution of the Earth. At the moment, as I understand it, it is hanging somewhere over Iowa."

"Dave," asked the Chicago *Tribune,* "you say the new object has been detected by tracking stations. Does that mean it has just now been discovered after achieving orbit, or was it seen earlier before it established orbit?"

"My impression is that it was discovered, already in an established orbit, within just the last few hours."

"Would we be justified in speculating that it might be a mother ship from which came the object that fell at Lone Pine?"

"That, I think," said Porter, "must be up to you—whether you so speculate or not. At this early stage, I'm not engaging in that sort of speculation. Such speculation would imply that both the object in orbit and the one that fell in Minnesota is from some other area of space. This we don't know as yet."

"From your preliminary estimate of the mass of the object in orbit, however, the size of it would seem to rule out it having been launched from Earth."

"Yes, I would think so, but, as I say, there is as yet no certainty."

The Washington *Post* asked, "You said that the Minnesota object moved. I think you said it fell so as to bridge a river. Then moved across the river."

"Yes, that's correct."

"Can you tell us how it moved? How would you characterize its movement?"

"Joe, you have me at a loss for words. I don't know how it moved. That's all the word we have—that it moved. I would assume that to mean it moved independently. You must realize that at the time it moved, there were present no qualified observers. All we have is what a number of townspeople said they saw."

"Can you give us any further detailed description of it—better than

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what we have so far? Better than the big black box description?"

"I'm afraid I can't. We have no new information on that point. So far as we know, no pictures have been taken of it. It fell late in the afternoon. Only a few hours later, darkness closed in."

Associated Press asked, "You continue to say you don't know and I imagine no one really can know at this point—but from all that is known, the evidence seems to point strongly to the fact that it may represent an intelligence out of space. Would you have any comment?"

"I'll try to give you a fair answer," said Porter, "and not fall back on my 'I don't know' routine. The thing did fall on a roadway, so you could argue that it was able to pick a good landing spot. It has moved, apparently by itself, which might argue either that there is an intelligence on board or some sort of sensory-controlled machine. As you all know, when a man fired a rifle at it, it, in effect, fired back and the man was killed. This would argue a defense capability. These are points that most of you must have thought of yourself, that anyone might think of. But having said this much, summarized thus far, nothing more can be said. This is not sufficient evidence to justify any solid conclusions. We'll have to wait and see. We need more evidence."

"You appear to be ruling out an Earth origin for the new object in orbit," said NBC. "Could it be some sort of new experimental craft?"

"I suppose, under the circumstances, that anything could be possible. I'm sorry if I seem to be ruling out anything at all. But our people assure me it is nothing of ours."

"Of someone else's?"

"I would doubt it."

"Then you're saying it's a space visitor."

"You said that, Carl. I didn't."

"Could I intrude for a second time?" asked the New York *Times*.

"Certainly, Mr. Smith."

"Could you outline for us what the government is doing? Has there been conversation with any other governments? I understand the Lone Pine area has been sealed off. Was that by federal order?"

"So far as I know, there have been no conversations such as you mention. Later there may be, once we know more about the matter. The area was sealed off by the state. The governor has been in contact with the President, but we had nothing to do with securing the area. I assume that some of the federal agencies will be sending in observers, but so far I have not been advised of it."

"Thank you, sir," said the New York *Times*.

"But wouldn't you agree," asked the L.A. *Times*, "that if this object, or both of these objects, the one on the ground and the one in orbit, should turn out to be from outer space, that the matter then becomes a matter of international concern rather than simply national concern?"

"I can't presume to speak for the

secretary of state," said Porter, "but I would think there might be some logic to the form your question takes."

"Let us pursue this assumption a little further," said the Kansas City *Star*. "If it should be established that the object that fell at Lone Pine is actually a spaceship from the stars, or at least from outside our solar system—assuming that this could be the case, then what would be the national attitude. Will any attempt be made to establish some contact, perhaps a limited conversation, with the intelligence that may be aboard it?"

"Our thinking," said Porter, "has not advanced that far. As yet there is no evidence . . ."

"But, if in the next few days such evidence should come about, is there any indication of what our attitude might be then?"

"If you are asking if we intend, willy-nilly, to blow any visitors out of the water, I don't think so. This is not an expressed official attitude; it simply derives from my knowledge of how our government works. It is true that someone did take a shot at the object when it landed. But that was the action of an irresponsible citizen, overwrought, perhaps, by what he saw. I would hope that the rest of us may act as reasonable men."

"And how would you think a reasonable man should act?"

"I think," said Porter, "that a reasonable man might attempt to achieve some sort of reasonable communication. On a very limited basis, more than likely. But once that sort of limited communication was achieved, we could go on to something else. I think that you have forced me to over-extend myself. I have nothing on which I can base an official answer to such a question. The matter has not even been discussed. To my knowledge, at least."

"You realize, of course," said ABC, "that if this should be the case—that here we have contact with another intelligence from somewhere in the galaxy—this might be the most significant event in all of human history?"

"Personally, I do realize this," said Porter. "Again, I am not reflecting official thinking. As I told you, the matter has not been extensively discussed. Our assessment of the situation has not advanced to that point."

"We appreciate that, Dave," said ABC. "We're only asking questions that must occur to many other people."

"Thank you," Porter said.

"To come to more practical matters," said the Baltimore *Sun*. "Can you tell us what the administration's next step might be."

"I imagine it might be observation. During the next twenty-four hours or so we'll be putting in as many qualified observers as we can. Many of them will probably be scientists drawn from many parts of the country. Not only men who are associated with the government. Other than that, I would think we would be guided by events. I doubt if anyone can foretell

what may happen next."

"Returning again to the new orbit in space," said the Detroit *News*, "could it be possible that the large mass that has been sighted may be no more than a collection of space junk? We have a lot of stuff up there. Could it somehow have pulled together by some sort of mutual attraction?"

"That's a possible explanation," said Porter. "I know nothing of physics. I can't tell you if that would be possible. The question has not been raised. The space agency might have some thought on it."

"Could we send someone up to have a close look at it? Has that been considered?"

"I doubt it has as yet been considered. It's possible that one of the shuttles on the space station might be sent out. Certainly the capability to do so does exist. That is a matter of future consideration."

"If it should be established that we are being visited by someone from the galaxy," said CBS, "would you have some comment on what might be the impact on us . . . on the human race? The realization that there is someone out there."

"The impact, undoubtedly, would be significant," said Porter, "but I'm in no position to comment. A sociologist might have some answers for you."

"Mr. Secretary," said the New York *Times*, "we thank you for seeing us at such a late hour. You, of course, will keep in touch."

"At all times, Mr. Smith," said Porter, with professionalism and polish.

He watched the press file out. Marcia got up from her desk and came over to stand beside him.

"I think it went rather well," she said.

"This time they weren't out for blood," said Porter. "This business may get political later, but so far it hasn't. It's too new to be political. Give the boys up on the Hill a few days and it will be."

He went to his desk and sat down, watching Marcia get ready to leave, and finally go.

The place was quiet. Somewhere, some distance off, a phone was ringing and someone was walking, the footsteps sounding hollow in the distant corridor.

He lifted the phone and dialed. Alice answered.

"I thought you might call," she said. "I was sitting by the phone. How did it go?"

"Not bad. Didn't chew me up."

"Poor Dave," she said.

"It's all right. I asked for it. I take the money."

"You never asked for it."

"Well, maybe not, but I jumped at the chance to take the job."

"Any chance of you running out here. I'd have a drink waiting."

"Afraid not, Alice. I better stay where I can be reached. For a while at least."

"All right, then. Later. Wait a minute. Daddy is signalling frantically. He wants to talk to you."

"Put the senator on. I'm always

glad of the opportunity to talk with him."

"Good night, dear. Here's Daddy."

The senator's voice boomed in his ear. "Dave, what's going on down there? TV is full of it, but hell, they don't know what's going on. No one seems to know what's going on. Is there anything to this business of our being visited?"

"We don't know anything more about it than the TV people do," said Porter. "One new piece of news. Our trackers have picked up something new in orbit."

Swiftly he told the senator about the new object.

The senator said, "Maybe there's something to it, then. Not like the movies and the TV represent it in their silly shows. No little men so far."

"No little men," said Porter. "We'll have to get used to the idea that, if anyone is there, they might not be men."

"If there is anyone."

"That's right."

"Us Americans jump to conclusions," said the senator. "We have too much imagination and too little sense."

"So far, the country's taken it well. No hysteria. No panic."

"As yet," said the senator, "there's nothing to be hysterical about. In just a little while, there'll be wild stories. Damn fools starting rumors. One thing more, Dave."

"Yes?"

"Is there talk of going international on this?"

"I don't quite understand."

"Are we about to call in other countries? Are we going to share this with them?"

"I don't read you, senator. There's nothing to share as yet."

"But, good Christ, Dave, if there is! If we have aliens landing out in Minnesota, we should grab hold of them. Think of it, a new intelligence, a new technology."

"I see your point," said Porter.

"We, at least, have to have first shot at what we can learn from them," said the senator. "What we could learn from them might turn everything around."

"Have you any idea of how difficult it might be to talk with an alien—if there are aliens in that thing that fell."

"Sure, I know that. I realize all that. But we have the world's best scientists. We have the brains."

"It's not been discussed here," said Porter.

"You'll drop a word," said the senator. "I'll try to see the President myself, but if you could drop a word . . ."

"Yes, I'll drop a word," said Porter. "But I don't know how well it will be received."

"A word," said the senator. "That's all I ask. A word before your people down there go charging off in all directions. You want to talk with Alice again?"

"If she wishes."

Alice came back on the line and they talked for a short time and then hung up. Porter swung his chair

around and saw that someone was standing in the doorway that led out to the corridor.

"Hello, Jack," he said. "How long have you been standing there? You should have come in and found yourself a seat."

"Just a few minutes," said Jack Clark. Clark was the President's military aide.

"Senator Davenport was on the phone just a minute ago," said Porter.

"What's his interest?"

"Just curiosity," said Porter. "Needed someone to talk with. There are a lot of people tonight who are looking for someone to talk with. I suspect the country may be getting edgy. Nothing to worry about so far, but feeling a bit uncomfortable, doing a lot of wondering, maybe some soul searching."

"And with no evidence as yet that it's any more than some harmless piece of junk falling out of space."

Porter shook his head. "Jack, I think it's more than that. The damn thing moved."

"A machine, maybe."

"Could be," said Porter, "but a machine is enough to frighten me."

Clark came into the room and sat down in a chair at the corner of the desk.

"How's the President?" asked Porter.

"He went up to bed. I don't imagine he'll get much sleep. He's upset about this. It's the unknownness of it that gets to him. I guess that's what has gotten to the most of us."

"Just now you said it might be no more than a machine. Why is it, Jack, that your are trying to deny it may be an intelligence?"

"Damned if I know. I suppose you're right: that was what I was doing. Somehow I cringe from the idea of an intelligence. There has been so much of a flap the past many years about the UFOs. Almost everyone by this time has made up their minds about them. Everyone, or almost everyone, has some preconceived notions about them."

"But this thing is no UFO, not in the popular sense. None of the characteristics associated with them. No flashing lights, no whining sounds, no spinning around."

"That's beside the point," said Clark. "If there's some evidence the thing's alive or has something alive inside of it, half the country will run screaming in terror, the other half will think the millennium has come. There'll be only a few solid citizens who will take it in stride."

"If it turns out," said Porter, "that an alien intelligence is involved, the federal government, especially the military, will have a lot of explaining to do. For years, charges have been made that the military has played cover-up with the UFOs."

"God," said Clark, "don't you think I've thought of that. It was the first thing I thought of when I heard about it."

"Tell me, true," said Porter. "Has there been a cover-up?"

"How should I know?"

"Who would know? Goddamn it, Jack, if I'm going to be fronting for the administration in this matter, I should know."

"Intelligence, I assume," said Clark. "Maybe the CIA. Maybe the FBI."

"Under the circumstances, would anyone tell me?"

"I doubt it," Clark said.

8. MINNEAPOLIS

Garrison said to Jim Gold, "Has Kathy come on the line yet?"

"No," said Gold. "Stiffy Grant still is holding. He did a lot of talking to start with, but now we've run out of things to say. Gave me a pretty good description of the object. Told me something about the Lone Pine reaction to it. I turned it all over to Jackson. He turned in the story just a while ago."

Gold picked up the phone and spoke into it. "Mr. Grant, are you still there?"

He listened for a moment and then laid down the phone. "He's still there," he said.

Garrison sat down at his desk, picked up the copy of the first edition that a copy aide had left on his typewriter, spread it out to look at the front page.

The headline said: SPACE OBJECT LANDS IN MINNESOTA.

There was nothing but stories concerning the space object on the page—the main story; a sidebar on Lone Pine reaction supplied by Frank Norton; a story from the governor's office; a statement by the head of the state highway patrol; a piece out of the *Tribune's* Washington bureau; a speculative story written by Jay Kelly, exploring the possibility of intelligent life throughout the universe and the odds against the Earth being visited by one of the life forms; a map showing the location of Lone Pine.

A good first effort, he told himself. Now if Kathy would only check in and Frank's pictures show up.

He asked Annie, "Any word from the fellow with the film?"

"He phoned ten minutes ago," the secretary told him. "From Anoka. Called when he stopped for gas."

Garrison glanced at the clock on the wall at the end of the newsroom. 10:05. There was still plenty of time to develop the rolls and get a couple of pictures ready for press.

"Did Kathy's young man call in?" he asked Annie. "When she gets to the phone, she'll want to know."

"Not yet," said Annie. "I looked in Kathy's mailbox just a while ago. I thought someone might have taken a call and left her a note. There was nothing there."

"Maybe you better call his home. You have his name?"

"Yes. Jerry Conklin. He's a student at the U. He should be listed in the student directory."

Garrison looked around the room. Unlike the situation earlier, now there were a lot of people at their desks. Most of them, more than likely, should have left by now, their days's work done. Jay, for example, had left

early in the day to drive to Rochester to get the cancer story, had come back and written it and then written the piece on speculative life in the universe, and he was still here. As were many of the others, still sticking around, staying in case they should be needed. Good staff, Garrison grunted to himself. But, goddammit, he told himself, they shouldn't be doing this; when their day was done, they should go on home.

"One thing I forgot," he said to his assistant. "We didn't arrange for accommodations for Kathy and Chet. Where will they stay tonight? Is there any place in Lone Pine?"

"A small motel," said Gold. "Annie phoned for rooms."

"Annie thinks of everything."

"When she phoned," said Gold, "the motel told her that Norton had reserved rooms for them."

"Well," said Garrison, "that is taken care of."

Hal Russell, the wire editor, came up to Garrison's desk. "Johnny," he said, "the bureau is sending in another story. The White House just announced that a large, unknown object has been spotted in orbit. There seems to be some thought it may have something to do with the fall at Lone Pine. A mother ship, perhaps."

Garrison put his head in his hands. "Is the night never going to end?" he asked. "We'll have to make room for it. Take the governor's story off page one and shuffle the others around. We'll have to give this one almost equal play with the main story. We'll have to revise the main story lead, get some mention of it in."

"It just started now," said Russell. "It's scheduled at 750 words. We'll be running out of room. We'll have to throw something else out, maybe have a second jump page."

"Look, Hal, there's a lot of crap we can throw out. Run off a copy of it and get it to me when it's finished."

"Sure, Johnny," said Russell.

"I tried Jerry Conklin's phone," said Annie, "and there is no answer. I wonder what could have happened."

"When Kathy gets back, she'll have his ears," said Gold. "I wouldn't want to be the one who stood her up. Even if she wasn't here to be stood up."

Lumbering down an aisle between ranked rows of desks leading to the city desk came the tall, gangling form of Al Lathrop, the managing editor. He had the first edition clutched in his hand and a look of worry on his face. He came to a halt at the city desk and stood there in all his height, looking down at Garrison.

"I don't know," he rumbled. "I'm just a little edgy. We're acting as if this thing at Lone Pine really is something out of space, some sort of visitor out of space."

"But it did come out of space," said Garrison. "It came down out of the sky and landed. We went over all of this at the news huddle . . ."

"But it comes out different than I had envisioned it. The connotation is that it's an intelligence out of space. Some sort of UFO."

"Read it again," Garrison told

him. Read it carefully. Nowhere have we said that. We've said what other people told us. If they believed it was a UFO, or an approximation thereof, we said so. But, otherwise than that . . ."

"This story of Jay's . . ."

"A background piece. Sheer speculation and Jay says so. If there are intelligences in space, what could they be like, what are the chances they'll ever visit us. It's the kind of article that has been written again and again. Published in magazines and newspapers, aired over TV and radio. Jay puts in a qualification every second paragraph. If this should be the case, he writes. If this Lone Pine object is an intelligence out of space, or something else entirely . . ."

"Johnny, we've got to be careful. We could create a panic."

"We're being careful. We've reported objectively. We've not gone an inch beyond . . ."

The phone rang and Annie answered it.

"Well, all right," said Lathrop. "Let's keep on being careful. Let's not go beyond the story."

Annie said to Garrison. "That was the photo lab. The kid just came in with the rolls of film."

Gold was reaching out his phone to him. "Kathy just now came on the line," he said.

Garrison took the phone, said into it, "Just a minute, Kathy."

He cupped the phone with his hand and said to Gold. "Tell the news desk they'll have photos for the next run. A couple on the front page and maybe some inside. Take a look in the photo lab and see what they've got. If they are good, try to get the news desk to pick out a fairly open page for them. There's a lot of junk in the paper that we can clear out to make room for them."

Lathrop, he saw, was going down the aisle between the rows of desks, the paper still clutched in his hand.

Garrison spoke into the phone. "All right, Kathy," he said. "What have you got?"

"First of all," said Kathy, "have you heard from Jerry yet?"

9. LONE PINE

Kathy struggled up from the depths of sleep. Someone was pounding at the door. Behind the drapes, the windows were faintly lighted by a weak and early dawn. She searched, fumbling, for the unaccustomed lamp on the unaccustomed bedside table. The room, even barely glimpsed, held a brutal barrenness. Where the hell am I? she wondered. Then remembered where she was: Lone Pine!

Lone Pine and someone hammering at the door.

She found the lamp switch and turned it. Throwing back the covers, she searched with her feet for the slippers on the floor, found them, scuffed them on. She found her robe, lying across the foot of the bed, and struggled into it.

The pounding still continued.

"All right! All right!" she yelled. "I'll be there."

Pulling the robe close about her, she shuffled to the door, pulled the bolt and opened it.

Frank Norton stood outside.

"Miss Foster," he said, "I hate to bother you at this hour, but something's happening. The thing that fell out of the sky is cutting down trees and eating them."

"Eating trees!"

He nodded. "That's right. It is cutting them down and chewing them up. It's gulping down big trees."

"Please," she said, "will you get Chet up. He's next door. Number three. I'll be right out."

Norton turned away and she closed the door. The room was miserably cold. When she breathed, faint wisps of her breath hung in the air.

Swiftly, gasping with the cold, she got into her clothes, stood in front of a mirror to run a comb through her hair. She didn't look her best, she knew. She looked a sight, but the hell with it. What would one expect, routed out of bed at this time in the morning.

Norton was crazy, she told herself. The thing across the river couldn't be eating trees. It might be no more than a joke, but Norton didn't seem like someone who would spend much time joking. But why in the world would the contraption there be gulping trees?

When she went outside, Chet already had emerged, laden with his camera gear.

"You look good," he said to Kathy, "even at this ungodly hour."

"Go chase yourself," said Kathy.

"I'm sorry," said Norton, "for routing you out even before the sun is up. But I expected you would want to know. I thought about it for all of thirty seconds."

"It's all right," said Kathy. "It goes with the job."

"There are other newspaper people in town," said Norton. They came in during the night. Dribbling in. Trowbridge from the Minneapolis *Star*, someone from the Kansas City *Star*, a couple of people from the Des Moines *Register* and *Tribune*. All of them brought photographers. I expect there will be others later in the day."

"How are they getting in?" asked Chet. "The roads were blocked."

"The state patrol got them unblocked. Got people turned around and turned back. A few cars left there. I suppose yours is among them. The patrol pushed them over to the shoulder of the road. They're letting in the press and a few others, but keeping the public out."

"Any TV people?" asked Kathy.

"Several crews," said Norton. "They're raising hell. They want to get across the river, but there's no way to get there."

"No boats?"

"They've been looking. Not many people here have boats. What boats there are are out at lakes in the area. No one uses boats on the river."

There were few people in evidence as they walked down the street. All of them, Kathy told herself, must be down at the end of the ruined bridge watching the thing chew up the trees.

Well before they reached the river, they heard the occasional crash of a falling tree and a growling sound that rose and fell.

"That's the thing chewing up the trees?" asked Kathy.

"That's right," said Norton. "It knocks down a tree and grabs it . . ."

"But those are big trees," objected Chet.

"The thing itself is big," said Norton. "Wait until you see it."

A good-sized crowd was gathered at the shattered bridge. Three TV crews were in position on the roadway. The car that had been flattened by the falling object had disappeared. A state patrol car was parked beside the road and two troopers lounged against it. Neither of them, Kathy noted, was the trooper who had been there the night before.

Across the river lay the object. Kathy sucked in her breath in amazement. Everyone had been telling her how big it was, but, even so, she had not been prepared for the size of it. So big, that while most of the trees in front of it towered over it, it still stood up for half their height or more. Big and black—the blackest thing she had ever seen. But strangely, otherwise unspectacular. No antennae sprouted from it; nothing sprouted from it. None of the gadgets with which the TV shows on UFOs delighted in tacking on their flying saucers. Just a gaunt, overgrown black box. And, strangely too, with no menace in it. Nothing except its size to make it a thing to be frightened of.

In front of it, one of the big trees slowly tilted and then came crashing down. In front of the object lay piled-up litter of other downed trees. From the thing came a steady growling of wood being chewed up, ground up, ingested, whatever the thing might be doing to the trees. The tree that had fallen seemed to have acquired a life of its own. It was bobbing and switching back and forth. And, slowly, it was being drawn in toward the front of the machine.

"The damn thing just sucks them in and chews them up," said Norton. "Since it started half an hour or so ago, it has moved almost its length. I'd figure that to be three hundred feet or more."

"What is it doing?" asked Kathy. "Trying to chew a path through the woods?"

"If that's what it's doing," Norton told her, "it has a long way to go. That forest extends for twenty miles or more, all of it heavy growth."

She stood and watched. There wasn't much to see. Just the huge black box knocking down trees and gobbling them up. The frightening thing about it, she thought, was its slow, deliberate movement, its sense of power, its seeming confidence that nothing could prevent it from doing what it was doing.

She walked over to the police car.

"Yes, miss," said one of the troopers. "Anything we can do to help?"

"The car," she said. "The one that was lying crushed at the end of the

bridge. It isn't there now."

"A truck came and hauled it away," the trooper said. "The driver had the proper papers to requisition it and we let him take it. We checked by radio and were told it was all right."

"Where did the order come from?"

"Miss," the trooper said, "I can't tell you that."

"The FBI?"

"Miss, I cannot discuss it."

"Well, all right," she said, "perhaps you can't. Can you tell me what is going to happen next?"

"Army Engineers will be coming in to build a temporary bridge. We expect them any time. One of those prefabricated bridges, as I understand it."

Chet came walking up. He said to her, "I've taken all I can from here. We ought to get up closer. Trowbridge and me and some of the others have been talking about it. We think we can wade the river. The stream below the pool is fast, but not too deep. Or that's what the locals tell us. If we join hands, form a chain, help one another, we can get across."

One of the troopers said, "You can't cross the river. We have our orders. No one is to cross the river."

Kathy said, "If you are going to cross, count me in. I'm going, too."

"The hell you are," said Chet. "You stay here and guard the equipment that we have to leave behind. I'll just take one camera and some film reloads across."

"Chet White," said Kathy, "I am going. If the others go, I'll go along too. . ."

"You'll get your ass soaked. That water's cold."

"I've been soaked before. And cold before."

"The trouble," said Chet, "is them TV jerks. They want to carry a lot of equipment over. They want us to help. That stuff of theirs is heavy."

The trooper who had spoken earlier moved in close to them.

"You can't cross that river," he said. "We have orders."

"Show me them orders," said Chet belligerently.

"We haven't got written orders. Our orders are verbal. Over the radio. No one's to cross that stream."

Trowbridge, of the Minneapolis *Star*, came up. "I heard you," he said to the trooper. "You'll have to use force to stop us. I don't think you'll use force."

The second trooper joined the first. "You goddamned newspaper people," he said, disgusted. He said to his partner. "Get on the radio. Tell them what is going on."

Another man joined them. "I'm Douglas, Kansas City *Star*," he told the trooper. "We'll make note of your order, but we have to get across. It's our job to get across. That's federal land over there. You're state. Lacking a court order . . ."

The trooper said nothing.

Douglas said to Kathy, "You're determined to go with us?"

"You're damned right I am."

"Stick close to me, then. Hang on tight."

"Thank you, sir," said Kathy.

"Here," said Chet, handing Kathy a camera. "Drape this over your neck. I'll help one of these TV jerks with his stuff."

"What will you do with the rest of your stuff?" she asked.

"All of us will pile what we can't take here on the road. The troopers will guard it for us."

"The hell we will," the trooper said. He turned and walked back to the car, where his partner was talking on the radio.

"You guys were tough with the troopers," Norton said.

"We'll apologize later," said Chet. "Goddammit, we got a job to do."

"There are laws about crossing fire lanes and such."

"This here ain't no fire lane," said Chet. "This here is a river."

"O.K.," said Norton. "I'll cross with you. On the other side of Kathy. Me and the Kansas City *Star* will see she doesn't drown."

One of the troopers came back. "You can cross," he said. "No further objection from us. But on your own responsibility. It's your ass." He said, looking directly at Douglas, "You can also take note of that."

"Thank you, sir," said Douglas. "Most willingly. And thank you."

The line was forming on the river bank. There was some shouting and shoving. Trowbridge hurried down the bank and took command.

"Cut out the horseplay," he shouted. "Get in line, grab hold of the man next to you. Take it easy. Take a deep breath. That water's cold. It will freeze your balls."

He suddenly became aware of Kathy with a start.

"I'm sorry, Kathy."

"Don't think a thing of it," said Kathy. "You can't say a thing I haven't heard before."

The line edged into the water.

"Jesus," sang out a TV man in the lead, "this water is like ice."

"Easy," someone said. "Take it easy, men."

They inched across. In the deepest part of the stream, the water came to a tall man's waist.

Kathy, as she hit the water, gritted her teeth. But as she inched along with the others, one hand engulfed in the big fist of Douglas, the other held, vise-like, in Norton's hand, she forgot the cold and concentrated on making her way across.

The head of the line reached the opposite bank, clustered there to help the others.

Teeth chattering, Kathy climbed the river bank, Chet's camera swinging, bumping against her.

Chet reached back a hand to help her up the last few feet, took the camera from her.

"Run around a bit," he told her. "Jog around. Keep moving. You'll be warmer that way. You look like a drowned rat."

"So do you," she said. "So do all the rest of us."

Some of the others were running up the slight incline that sloped down to the river. She ran along with them. To their left, the object from the sky

loomed tall above them, like a great black wall reaching up into the sky. The crashes of the falling trees and the deep, rising and falling rumble of the object chewing them up was louder than it had been across the river.

Photographers scattered, their cameras aimed.

Here, close to it, the object was more impressive than seen from farther off. Here the true dimension of it became apparent. Too, the imperturbability of it—the great black box lurching slowly along, paying no attention, or at least giving the impression of paying no attention, to the humans who swarmed about it. As if it might be unaware of them, or being aware of them, ignored them. As if we didn't exist, thought Kathy, as if we were not worth paying attention to, little scurrying life forms that were beneath its notice.

She gravitated toward the rear end of the object and tried to make out how it moved. There were no treads, no wheels, nothing to propel it. As a matter of fact, it seemed to have no moving parts and, come to think of it, no part of it seemed to touch the ground. She considered crouching down and putting her hand between the ground and the great black mass to see if there actually were some ground clearance, but, at the last minute, her courage failed her. You could lose a hand with a stunt like that, she told herself.

The box, she saw, was not actually a box. The side that she could see went straight up, but the rear end (and maybe the front end, too, she told herself) curved outward slightly, that area of it closest to the ground flaring out slightly. For some reason she could not quite reconcile, the whole thing reminded her of a turtle in its shell.

She walked in back of it and stubbed her toe, pitching forward, but catching herself before she fell. She looked to see what she had stubbed her toe on. Whatever it was, was white and smooth and close to the ground. Squatting down, she brushed away the forest duff that covered it. It was, she saw, a newly cut tree stump, sheared off smoothly, only a couple of inches above the ground.

Stunned, she rubbed the palm of her hand across the smoothness of the stump. Little drops of resin were oozing out of it and smeared her palm. The object, she realized, was not knocking down the trees, as she had thought. It was cutting them close against the ground and pushing them, with its great weight, so they fell in front of it.

And that meant, she told herself, that this harvesting of the trees was not a simple matter of forcibly crashing its way through them. It meant that the object was designed to do this very thing. It was designed to harvest trees.

She rose to her feet and stared at the massive rear end of the thing. And, as she did, the back end of the turtle-like shell twitched and then rolled up—like an automatic garage door responding to a signal.

It slid up five or six feet and three

large white objects were expelled from it. Along with the three white objects a sudden gush of chewed-up bark and pine needles, resembling the mulch spewed out by a lawn mower.

Then the back of the object slid down again.

Chutes? Kathy wondered. Had she seen chutes out of which the baled white masses and the mulch had been expelled? She could not be sure.

She walked up cautiously to one of the bales, put out a hand, then pulled it back, suddenly frightened, reluctant to touch the bale. She swore luridly at herself for her timidity and put out her hand again. The white material was tightly packed, compressed, but not bound by wires or by anything at all. She dug her fingers into it and the substance resisted the digging. She managed to pull loose a small fragment of the material.

It was, she saw, almost exactly like cotton. Funny thing, she thought, a bale of cotton emerging from this monster that was eating trees.

From across the river came a metallic squealing and looking to find out what had caused it, she saw that a large truck equipped with a crane had backed up to the other end of the bridge. The crane was lifting an oblong structure of wood off the truck bed. Beneath the structure the crane had lifted were others, stacked

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upon the truck. It must be, she told herself, the army engineers with their prefabricated bridge. Maybe, she thought, we will not have to wade again across the river, wondering as she thought it how long it might require to put the bridge together. She hoped that it would not take long, for it would be a comfort not to have to plunge again into the chilling cold of the river.

She heard the pound of feet behind her and, turning, saw that Chet was charging towards her, followed by the other photographers and newsmen.

"What have we got here?" Chet panted. "Where did those bales come from?"

"The thing just spewed them out," she said.

Chet was squaring off, his camera to his face, the others rushing in behind him. The TV crews frantically went about setting up their equipment, some of them using hand-held mini-cams, while the others manipulated tripods and electronic gear.

Slowly, Kathy backed away. There was nothing more that she could do—and it was a damn shame, she told herself. This was a break for the afternoon papers. It would be in the evening papers and on the evening TV news shows before the *Tribune* went to press. That was the way it sometimes went, she told herself philosophically. You won a few, you lost a few. There was not much that could be done about it.

What did it all mean, she wondered—this box-like monster eating trees and then, from the other end of it, expelling bales of stuff that looked like cotton, along with bushels of junk that probably was the by-product of its eating of the trees. It made sense, she told herself, that bales had been processed from the trees that had been ingested, but what could that white stuff be? She should know, she thought, searching frantically for a knowledge that she knew must be tucked somewhere in her memory, tucked away in those college days when she had struggled valiantly with biology, but not too successfully. Science, she recalled, science and math had been her two worst subjects and she never had done too well in either of them.

A word came floating up. Cellulose. Could that be it? Trees, she remembered vaguely, were made up, in a large part, of cellulose. Perhaps all plants had some cellulose in them. But how much? Enough to make it worth the effort to chew up trees and extract the cellulose? Did cellulose look like cotton? And if this stuff really should be cellulose, what the hell did that big black box want of cellulose?

All the time that she had been thinking this, she had been backing up, step by slow step, head tilted back to stare up at the bigness of the thing, trying to get a better perspective of it, the better to measure its size and massiveness.

A tree stopped her. She had backed into it. Lowering her head to look around, she saw that she had backed into the fringe of the forest through which the big blackness was cutting a swath.

A low voice came from behind her. "Kathy," it said. "Kathy, is that you?"

The moment she heard the voice she recognized it, knowing who it was who spoke. She turned quickly, heart pounding.

"Jerry," she said. "Jerry, what are you doing here?"

And there the damn fool stood, grinning at her, enjoying the fact that he had sneaked up on her and frightened her. He was wearing waders and there were scratches on his face and jagged tears in the woolen shirt that he wore.

"Jerry," she said again, not crediting what she saw.

He put a finger to his lips, cautioning her. "Not too loud," he said.

She flew at him and his arms came tight around her.

"Careful," he said. "Careful. Let's move back a ways." Propelling her deeper into the tangled cover even as he said it.

She lifted her eyes to him and could feel the tears running down her cheeks. "But, Jerry, why careful? I'm so glad to see you. I was sent up here by the city desk and I left word there for you . . ."

"Careful," he said, "because I can't be seen."

"I don't understand," she protested. "Why can't you be seen? Why are you here at all?"

"I parked the car and went fishing in the pool. Then this thing came down and smashed the car . . ."

"So that was your car?"

"You saw the car? I suppose it was smashed."

"It was flattened. They hauled it away."

"Who hauled it away?"

"I don't know. It was hauled away, is all. Maybe the FBI."

"Damn!" he said.

"Why damn?"

"That was one of the things I was afraid of. They'll find the license plates. It can be traced to me."

"Jerry, why are you hiding? What have you got to hide?"

"I was in that thing out there. Inside of it. Something reached down and jerked me inside of it."

"Inside of it? But you got away."

"It threw me out," he said. "I landed in a tree. That saved me."

"Jerry, I don't understand any of this. Why should you be jerked inside of it?"

"To find out what I was, I think. I'm not sure. Not sure of anything at all. I spent all night, lost, huddled in the woods. I damn near froze to death. I did a lot of thinking."

"You thought and got something figured out. Tell me what it was."

"I figured out I can't be one of those kooks who have been inside a flying saucer."

"This is no saucer, Jerry."

"It's the next thing to it. It's from outer space. It's alive. I know."

"You know . . ."

"Yes, I know. No time to tell you now."

"Why don't you come with me. I don't want you running around in the

woods alone. Come with me.''

''Those are newspaper people out there, aren't they?''

''Yes, of course, they are.''

''They'd take me apart. They would ask me questions.''

''No, they wouldn't. I wouldn't let them.''

''And there are state troopers at the bridge.''

''Yes. Two of them.''

''More than likely they are watching for me. They probably figured out someone had parked his car to go fishing in the pool. These waders—they'd know me from the waders.''

''All right,'' she said. ''All right. What do you want to do?''

''I scouted down the stream,'' he said, ''when I saw the troopers and knew I couldn't get across. There's a shallow stretch of water I can wade across. A quarter mile downstream. Just opposite the far edge of the town. Later on, you can meet me there.''

''If that's the way you want it, Jerry. I still think you could walk right out with me.''

He shook his head. ''I have it figured out. I know what will happen if anyone ever finds out I was inside that thing. I'll see you later. Now get back before someone comes looking for you.''

''Kiss me first,'' said Kathy. ''You big lug, you never even kissed me.''

10. WASHINGTON, D.C.

When Dave Porter entered the conference room, the others were there. The President sat at the head of the table. General Henry Whiteside, Army Chief of Staff, sat at his right hand, John Hammond, White House Chief of Staff, at his left.

John Clark, the President's military aide, was sitting near the end of the table opposite the President. He pulled out one of the few remaining chairs as an invitation to the press secretary to sit down.

''Thanks, Jack,'' said Porter, sitting in the chair and pulling it up close to the table.

''Dave,'' asked the President, ''is there anything new on the wires?''

''Nothing, sir. I imagine everyone knows that our visitor is chewing up trees and turning them into bales of cellulose.''

''Yes, I think everyone does. That news came early this morning. There is nothing else?''

''A lot of copy is moving,'' said Porter. ''Nothing significant. The new object in orbit is getting a fair amount of attention.''

''All right, then,'' said the President, ''let's try to figure out what we know of the situation. General, would you care to go first.''

''Everything still seems to be quiet,'' said Whiteside. ''The public has a lot of interest, but there's been no panic. Not so far. It might not take much to set it off, for everyone is keyed up. Tension, I would suspect, is running fairly high, but so far is under control. A few kooks are doing a few outrageous things. There have been demonstrations at some colleges, but good-natured demonstrations. Kids

letting off steam. Exuberance, mostly. Out in Minnesota, the state highway patrol has the situation well in hand. Lone Pine has been cordoned off. The public seems to be taking it well enough. No big demand to be allowed to go in. The governor has put the National Guard on alert, but there's been no need as yet to use it. The patrol is allowing the press into Lone Pine. Some photographers and newsmen waded the river early this morning and circulated all around the visitor. Nothing happened. It kept on attending to business, whatever its business may be. I don't mind telling you that we've been concerned about the killing of the barber yesterday, but so far this thing has shown no further hostility. I understand a team of FBI agents from Minneapolis is now at the scene. Perhaps the director has heard from them."

Timothy Jackson, FBI director, said, "Only a preliminary report, Henry. So far as the agents can ascertain, the visitor seems to carry no armament of any sort. Or, at least, nothing that can be recognized as armament. In fact, it has no exterior features at all, nothing mounted on it, nothing sticking out of it."

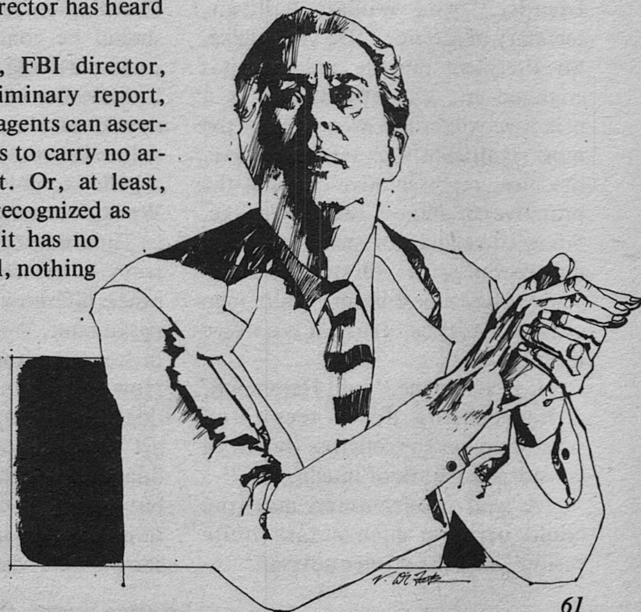
"Then how did it kill the barber?" asked the President.

"That's what we'd like to know," said Whiteside. "We haven't a clue."

"Steve, you're sending some men, aren't you?" asked the President.

"They should be there by now," said Dr. Steven Allen, the science advisor. "I expect any minute to hear from them. I must warn you, however, not to expect any quick findings or any startling disclosures. We seem to be dealing with something far outside our normal experience."

"Are you saying," asked Marcus White, the secretary of state, "that we are dealing with something from space, an extra-terrestrial intelligence, perhaps?"



"The tendency at first is always to overstate," said Allen. "There is, I must admit, a temptation to say this is an intelligence from space, but we have no proof yet that it is. It did, undeniably, fall from space, and, as I say, it appears to lie outside all present experience, but, as a scientist, I'm reluctant to make any judgment until at least some results are in."

"You're straddling the fence," said the secretary of state.

"No, Marcus, just withholding judgment. It would seem unlikely, on the face of it, that it originated on Earth, but as yet we simply do not know. I am encouraged, whatever it may be, by the fact that it does not, so far, seem intent on doing any harm. So far, it's been friendly."

"Cutting down trees is not exactly friendly," said William Sullivan, secretary of interior. "Do you realize, Mr. President, that the land where it is engaged in, its depredation is a primitive wilderness area. One of the most significant such tracts we have, the most representative of what the primitive wilderness really was like. Some thousands of acres of trees, mostly white pine, still stand there today as they stood before white men came to America. Truly, it is a tragic business."

"It seems to me," said Hammond, "that cutting down trees and separating out the cellulose should be considered a mark of intelligence."

"A well-programmed machine could perform such a task quite easily," said the science advisor.

"But someone or something would have had to program the machine."

"That is true," said Allen.

"I would think," said the secretary of state, "that the loss of a few trees is a small thing to bemoan in the face of what is taking place."

"From your point of view," said Interior, "that may be true, although from my point of view, I can't agree with you. It's the arrogance of the visitor that bothers me. It's like someone entering a man's backyard and chopping down an apple tree that the owner has cherished for years, or stealing the produce from his garden. Not a simple act of vandalism, but acting as if he had a legal right to chop down the apple tree or to rob the garden."

"We're wasting time," said State, "harping on such small matters. We should be considering our national stance, arriving at some sort of policy. If this visitor of ours out in Minnesota should turn out to be an alien intelligence, we, necessarily, must have a policy to guide our handling of it. We can't be sure it is the only one there is. There may be others waiting to hear from it before coming in. And if others did show up, a policy would be paramount. We must have some idea of how we should act toward them. How are we to treat and view them? I don't mean we have to immediately get down to specifics, for so far we don't know what may be involved, but certainly we should determine some broad guidelines on how we should act under certain possibilities.

We have the time now to lay out a policy. If we fail to do so, we'll find ourselves reacting to various kinds of situations and not always to our best interest."

"You are talking like this Minnesota thing is the equivalent of a new nation," said Whiteside. "Well, it isn't a nation. We don't know what it is. How can we decide on policy until we know what it is? As a military man, my principal concern is our defense capability against it."

"Defense," said White. "We have no indication so far we stand in need of any sort of defense."

"There's another matter we should be talking about," said Leslie Logan, the CIA man, "and that is security."

"How do you mean, security?" asked State.

"If there is an intelligence involved in the Minnesota object," said Logan, "if we find that it came from a place that is not the least like Earth, reflecting factors of evolution and development at great variance from those we know on Earth, then there is a possibility we may learn a great deal from it. We would be dealing with an alien intelligence and an alien technology. If we could acquire some of its intelligence and technology, undoubtedly we could adapt some of it to our own needs and to our national advantage. Any study that we make of it must be done with this firmly in mind. I would suggest it would be most unwise to share any such knowledge with the world. We should immediately take steps to ensure that nothing we get from it is allowed to leak to other interests."

"So far," said the secretary of state, "only one visitor has landed. There may be other landings. If there are, the chances would be very good that some of the landings would take place in other countries. If such should be the situation, it seems to me that we would not be able to squirrel away much knowledge. I think the better course would be to share with the world such knowledge as we can get. If we do this, we then can expect, if there are other landings in other countries, to be in a better position to share in the findings that might be made by others."

"In the first place," said Logan, "we cannot know if there will be other landings. That is a supposition that has been carried too far in this discussion. If there were, not many of the other countries, perhaps none of them, would possess the scientific resources and capabilities that we have to extract knowledge."

"That may be true, but the position you urge would result in an extremely bad world impression if we should be too obviously selective in sharing knowledge or in making public what we find, if we find anything."

"You can rely on our finding a few facts," said the science advisor.

"We could reveal some general findings," said the CIA. "A gesture to world opinion if you think that to our advantage, but I would urge we be in no hurry to do so and that we should be highly selective."

"There is a worldwide interest," said State, "and I am beginning to get some discreet inquiries. Sir Basil, at the British embassy, was on the phone to me this morning. Tomorrow I can expect a call from Dmitri. And others after that. It is my view that it would foster a much better international climate if we were to be aboveboard from the very start. Before long we can expect an opinion being expressed that this is not a matter of national concern alone, that it should be international. I would be in favor of issuing an invitation to a panel of world scientists, to participate in our observations, studies and assessments."

The CIA man shook his head. "I don't agree at all with you," he said.

"Andy, what have you got to say to all of this?" asked the President.

"I can't comment offhand," said Andrew Rollins, the attorney general. "So far as I can recall, there is nothing in international law that would apply. There might be something tucked away in some treaties. You'd have to give me a few days."

"You're talking like a lawyer," said State.

"I am a lawyer, Marcus."

"Off the top of your head, then. As a man, not a lawyer. What are your thoughts? Should they go contrary to your precious law books, we'll not hold you to them."

"The thing that strikes me," said Rollins, "is that we have talked about our interests and the world's interests and what sort of policy we should have. Never for a moment have we considered the interests of this visitor of ours. It has dropped in to visit us, whether for good or evil, I don't know. But, until we do know, until we have some indication otherwise, I think that as gracious hosts, we should give it some benefit of doubt."

"Andy," said State, "that is exactly what I have been trying to say. As usual, you say it much better than I could have."

"But it is destroying trees!" wailed Interior.

"While I recognize that we may have some obligation to act the gracious host," said Whiteside, "I still would insist that we must stay alert. We must be on our guard. We are facing something with which we are unfamiliar."

"You still think we may be forced to defend ourselves?" asked State.

"I didn't say that, Marcus. I said we should remain alert."

Porter spoke up. "At the press briefing today, there were a number of questions about the new object in orbit. Wanted to know if we were considering sending a shuttle from the space station to investigate. I could only say that it still was under discussion. Is that still the case? I remember that it was mentioned earlier."

"The shuttle can leave within an hour," said John Crowell, of NASA. "It requires only a presidential order. The station has been alerted and the shuttle crew is standing by."

"How difficult an undertaking would it be?" asked the President.

"A fairly simple exercise," said

Crowell. "Both the station and the object are in synchronous orbits, displaced from one another by less than a thousand miles. Using the shuttle for a closer look would seem to be to our advantage. Using the telescope on the station, which is not, as you may know, an astronomical glass, but one of rather limited power, we have been able to pick up some information. The object is larger than had first been believed. It measures nearly twenty miles in diameter and is five miles thick. In the form of a disc. It seems not to be a single, solid object; rather it is made up of discrete parts."

"The thing that is in the back of everyone's mind, of course," said Porter, "is that it may have something to do with our visitor. That it may be a mother ship."

"I think we should send out a shuttle," said the President, "and find out what it really is." He asked Crowell, "Can you see any danger?"

"Nothing specific that I am aware of," said Crowell. "In the case of an unknown, danger can't be entirely ruled out however."

"How do the rest of you feel about it?" asked the President. "See any complications?"

"There may be complications," said the attorney general, "but it's something we must do. We should know what's out there, what we may have to deal with. But I think the pilot should be ordered to be extremely cautious. Careful to stir up nothing. No overt moves, no heroics."

"I agree," said State.

"So do I," said Interior.

Without a moment's hesitation, a murmur of assent went around the table.

11. LONE PINE

Jerry was across the river and waiting when Kathy came down the hill back of the motel. He was sitting at the edge of a clump of plum trees that screened him from sight of the bridge a quarter mile or so upriver.

Kathy came around the clump of plums and saw him there. She tossed him a pair of shoes she was carrying.

"You can get rid of the waders now," she said. "I hope I got you the right size."

"I wear eights," said Jerry.

"These are eight and a half. I couldn't remember. Maybe I never knew. Better too big than too small. You couldn't wear the waders. The place is swarming with FBI. Probably they aren't really looking for you, but they'll know someone had parked to fish the pool. There are a lot of people in town. Sightseers are walking in, getting past the troopers. Without the waders, no one will take a second look at you."

"Thanks," said Jerry. "I was worried about the waders."

She came over and sat down beside him. He put an arm around her and pulled her close, bent to kiss her.

"This is a nice place you have," she said. "Let's stay here for a while and talk. I have a lot of questions. Back there this morning, you never gave me a chance to ask any. Now go ahead

and tell me." Her eyes shone eagerly.

"Well, I told you I was inside that thing. I wasn't the only one. There was a fish, a rabbit, a coon and a muskrat."

"You said they wanted to look you over. Did they want to look over the rest of them, too?"

"I think so. You're an alien, say, and you land on another planet. You would want to find out real quick what kind of life there is."

"Why don't you just begin at the beginning and tell me in detail all that happened."

"You'll interrupt me, ask questions."

"No, I won't. I'll just stay quiet and listen."

"And you won't write me up? You won't write a story about me?"

"Depends on how good the story is. And if it can be written. But if you say no, I won't. I may argue with you about it, but if you still say no, I won't."

"That's fair enough. I drove out of my way yesterday to get to this place because I'd been told about the big rainbow in the pool below the bridge. When I got here, I knew I could spend no more than half an hour because there was this concert you wanted to go to and..."

"So you did remember the concert?"

"How could I forget it? You'd bullied me and threatened me..."

"All right, go on, tell the rest of it."

He went on and told her, with only a few interruptions.

"Why didn't you come back to Lone Pine last night?" she asked when he was finished. "You knew about this place where you could wade the river."

"Not then," he said. "Not until later. Not until this morning. I was lost last night—all night. When the thing threw me out, I lost all sense of direction and it was dark. I couldn't even find that thing you call the visitor. So I found what seemed to be a path. The only way I could follow it was on my hands and knees. When I tried to walk, I kept blundering into trees. Crawling, I could feel the path with my hands. I followed the path because I thought it might lead me somewhere. But it didn't; it finally petered out. When that happened, I knew I had to wait for morning. So I crawled under a small conifer. Its branches hung down to the ground and sheltered me from the wind. But, even so, it was cold. I had no matches to start a fire..."

"And you stayed there until it was light?"

"That's right. Then I heard trees falling and that growling sound the visitor makes when it chews them up. I didn't know, of course, that it was the visitor doing it. I didn't know what was going on. This is a primitive wilderness area and no one is supposed to be chopping down trees. But I didn't think about that at the time. I only knew there'd be someone who could tell me how to get back to Lone Pine."

"Then you saw the troopers at the bridge and got scared off?"

"Exactly. So I scouted down the river and found this place where I could cross. I heard people on this side of the river and went back to have a look. That's when I spotted you."

"I still don't entirely understand," she said, "why you don't want anyone to know you were inside the visitor."

"Don't you see? I haven't a shred of proof to back up my story. I'd just be another jerk trying to capitalize on a flying saucer landing. The country must be all stirred up by now."

"It is," said Kathy. "Washington, perhaps, the worst of all. I told you about the FBI who are here. A team of scientific observers got in this afternoon."

"If anyone suspected I had been inside that thing," said Jerry, "they'd snatch me up and question me. I could tell them with a good conscience, of course, but I couldn't prove my story. I'd feel like a fool and they probably wouldn't believe me and sooner or later, I would get into the news and half the people would think I was lying and what is worse, the other half would believe me..."

"Yes, I see your point," said Kathy.

"What I have to tell wouldn't help much," he said, "but once they got me, they wouldn't let loose. They'd keep on pestering me and questioning me, trying to trap me in lies. They'd drag me off to Washington and I have my thesis that I am working on..."

"Yes, you're right," said Kathy. "I don't know. I think just possibly you made the right decision."

"You mean, then, that you're not going to argue about making a story out of me."

"I don't think I would dare to," she said. "It would sound like sheer hogwash, pure sensationalism. No evidence at all to document the story. Just your unsupported word. I can imagine what Al Lathrop would say."

"Who is Lathrop?"

"Our managing editor. He's a bear for documentation. Such a story would never get past him. Probably it wouldn't even get by Johnny. Johnny would be drooling over it, but he'd know that Lathrop..."

"That eases my mind," said Jerry. "I thought maybe I'd have to fight you off."

"It's a damn shame," said Kathy. "It would make a nice story. God, what a story it would make! It would go out over the wires. Every paper would publish it. Millions of people would read it. You'd be an instant hero..."

"Or an instant bum."

"That, too," she said.

She settled back into the crook of his arm. It was nice here, she told herself. The sun, halfway down the western sky, was warm; there was not a cloud in sight. In front of them, the shallow water gurgled as it chattered along its rocky bed. Across the river, an aspen grove shouted the goldness of its autumn leaves against the somber greenery of the pines.

"You realize, of course," she said, "that eventually they will catch up with you. As soon as they unscramble

that car enough to get at a license plate. Or when they have the engine number."

"Yes, I know," he said. "I need some time before they do. I have to think about it more. Get my feet under me. Know what I have to do. Maybe by that time the question of who the car belongs to won't seem important."

"Even when they know you are the one," said Kathy, "there's no reason to mention that you were ever inside the visitor. They'll never ask. No one would suspect that it possibly could happen. All you have to do is let the incident blow over to some extent. I would imagine as time goes on, the visitor may give them a lot more to think about. Within the next few days, you should file an insurance claim on the car. By that time, we'll probably know who hauled it off and why."

"That can wait. I have one problem, though. I should be getting back to the university."

"Chet will be driving into Bemidji in another hour or so with some rolls of film to put on a plane to Minneapolis. One of the kids who hangs around the gas station walked out this morning and brought in the car for Chet. It had been stranded in a traffic jam when the troopers closed roads into Lone Pine and has been sitting there ever since. You can ride in with Chet to Bemidji and take the plane from there."

"Kathy, I haven't the price of a plane ticket on me."

"That's all right. I have. I picked up a wad of expense money before I left the *Tribune.*"

"I'll pay you back later on. You may have to wait."

"No need. I can work it into my expense account somehow. If not all this trip, the rest of it on the next."

"I hate to leave," he said. "It's so peaceful up here. Once I get back, I'll sit hunched over waiting for the phone to ring or for someone to tap me on the shoulder."

"It may take a while. They may not move too fast. There'll be other things for them to do."

"When will Chet be leaving?"

"Not for a while. We still have a while."

"When will you be back at the *Tribune*?"

"I have no idea. Not too long, I hope. I've been thinking about one thing you said. The thought of home you said the visitor projected into your mind—if that is what it did. What do you make of it?"

"I've thought and thought on it," he said. "It was a curious thing to happen. Not something one would expect. All I do is think around in circles. And I can't seem to get a handle on it."

"It does seem strange."

"It all seems strange. If it hadn't happened to me, I'd say it couldn't happen."

"Any overall impressions? Any idea of the kind of thing this visitor could be?"

"It was all so confusing," he said. "I've tried to figure out if it is some

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sort of machine controlled by an intelligence or if it is actually a live creature. Sometimes I think one way, sometimes another. It all stays confused. Yet, I'm haunted by it. Maybe if I could tell it all, describe exactly what I saw and felt, to some scientist, an exobiologist perhaps, he might see something that I missed."

"Talking to someone about it is exactly what you are trying to dodge," she reminded him.

"What I'm trying to dodge," he said, "is public exposure, questioning by governmental agencies, being sneered at or treated like an overimaginative child, beaten to death by people who have no imagination, no concept of what may be involved."

Kathy said, trying to comfort him, "Maybe in another day or two, our visitor will just fly off and leave. We may never see its like again. It may have dropped by only for a visit, a short rest before it goes on to wherever it is going."

"I don't think so," said Jerry. "I don't know why I think this, but I do."

"There's a man at the university," said Kathy. "Dr. Albert Barr. An exobiologist. Not widely known, but he has published a few papers. Maybe you should talk with him. Jay wrote a story a year or so ago about him. He sounded like a good guy."

"Maybe I'll look him up," he said.

12. SPACE

"Do you see anything?" the pilot of the shuttle asked the co-pilot. "Our beam says we're close, but I can't see a thing. We should be seeing something. Some glint, some reflection. The sun is straight behind us."

"I see nothing," said the co-pilot. "I thought I did a minute or so ago. But there's nothing now."

"I'd hate to run into the damn thing," the pilot said. "Why don't you get on the horn, check with the station?"

The co-pilot picked up the mike. "Station," he said. "Station, this is Shuttle. Can you tell us where we are?"

"Shuttle," said a voice, "our readings put you right on top of it. Don't you see anything at all? Can't you spot it?"

"Negative. We cannot see it."

"Sheer off," said Station. "To the left. You're too close. Try an approach from another angle."

"Sheering off," the pilot said. "We'll get out and try a new approach."

The co-pilot grabbed his arm. "My god," he said, "do you see what I see? Will you look at that!"

13. WASHINGTON, D.C.

Once again, as he always did, to his continuing gratification, Dave Porter felt a deep, quiet pride in Alice Davenport, pride in being seen with her, in knowing that this splendid, lovely woman would consent to spend some time with him. She sat across the table from him in one of the dim, far corners of an intimate Washington restaurant, with candles on the table

and music coming from some place far away. She lifted her glass and looked across it at him.

"It can't be too bad yet," she said. "You've not taken on that terrible haggard look that I see too often. Did everything go all right today?"

"The news briefing went off fine," he said. "They didn't beat me up. They were almost buddy-buddy. There were no awkward moments. I hope it can keep on that way. I've told the President that on this one, we have to come out clean. No holding back on anything. The meeting with the President and his men was something else again. Some of those bastards are positively paranoid."

"They want to muffle the news?"

"Well, not really. Although I suspect some of them would be happy if I did. No, it was other things. Sullivan screaming off his head about a few trees being cut down, as if a few trees are of any great account. State insisting that we immediately set up a policy for dealing with the visitor. The CIA counseling that we keep secret all that we may learn from it. Whiteside worrying about how we can defend ourselves against it."

"Dave, you say the President and his men, as if you were not one of the President's men. You don't really like these men, do you? The men the President has around him."

"It isn't a question of whether I like them or not. I have to work with them. But on my own terms. More and more I am seeing that I have to do that. Some of them I like. Jack Clark, the presidential military aide—I like him. We generally see eye to eye."

"Actually," said Alice, "we don't know what our Minnesota visitor is."

"No, of course we don't. Not the slightest idea. It seems quite apparent that it came from space, but that is all we know. Some of these men we were talking about aren't even willing to admit that much, including our science advisor. Not knowing what it is is not to be wondered at. It landed a little more than twenty-four hours ago. We'll be lucky if we have any real idea of what it is by this time next week. It may take months to know."

"If it stays that long."

"That, too. It may not stay more than a day or two. If that should be the case, it will give us something to talk about and argue about for years. All sorts of conjecture. All sorts of ideas about how its reception could have been handled differently. All sorts of theories about what we should have done. I hope it stays long enough for us to get a few things nailed down."

"What I am afraid of, if it stays long enough," said Alice, "is that we'll get angry at it, for cutting down some of our precious trees or for some other reasons. Dave, we can't afford to hate this thing. We can't allow ourselves to become filled with a blind hatred for it. We may not love it, but we must respect it as another life form."

"There," said Porter, "speaks the true anthropology student."

"You can make fun of me if you want to," she said, "but that's the

way it has to be, for our own good. There probably is other life in the universe and if there's life, there should be some intelligence—but it's unlikely there are too many intelligences..."

"Alice, we don't even know if this thing is alive, let alone intelligent."

"There must be intelligence. It landed on a road; it picked its landing site. It is cutting down trees and extracting cellulose. That would argue some intelligence."

"A pre-programmed machine..."

"I can't accept that," said Alice. "It requires too much. A pre-programmed machine would have to be programmed to respond to millions of situations and environments. I doubt that could be done. When the visitor landed, it could have had no preconceived notions of what kind of planet it was landing on. A general idea, maybe, but that is all. Even if it were only a machine and was capable of all these things that seem so impossible there would have to be, somewhere, an intelligence that put the program into it."

"I know. You can talk around in circles on it."

"You cannot sidetrack the conclusion," said Alice, "that an intelligence somehow is involved. We shy away from it, of course, because of our biological bias. Such a thing as that big black box, we say, cannot be alive. There's no living thing on Earth like it, so it cannot be alive. It's so illogical, too. That's another reason we recoil from it. It's processing cellulose and why should it want cellulose? We use cellulose to make paper and perhaps other things as well. I'm not up on cellulose. But this thing can't be intending to make paper, so it makes sense. No one has stopped to consider that cellulose may be a treasure to it, that trees are a bonanza. Just like gold or diamonds would be to us. It may have traveled across many light-years to find a planet where cellulose exists. There wouldn't be, throughout the galaxy, too many planets where trees, or the equivalent of trees, would grow in abundance."

"I have the horrible feeling," said Porter, "that you are leading up to something."

"Yes, I am," she said. "A parallel in history that may teach a lesson. Here is a thing that plops down on top of us and begins to take what it wants, without asking us, ignoring us—doing the same thing the white men did when they came to the Americas or to Africa or wherever else they went. As arrogant as we were, as self-satisfied, as assured of our right to do it."

"I'm afraid," he said, "that there are others who will be saying the same thing. You are the first, but there will be others. The Indians, for one."

"The native Americans," said Alice.

"All right. Have it your way. Native Americans."

"There's another thing," she said. "We have to make every effort to communicate with our visitor. It may have so many things to tell us. Some things, perhaps, that we have never

even thought about, have never conceptualized. New viewpoints and perspectives. What we could learn from it may change our lives. Turn us around. I have always thought that somewhere along the way, we got off on a wrong track. The visitor, just possibly, could put us back on the right track.''

''I agree with you,'' he said, ''but how do we go about talking with it? To do any good, if it's capable of doing us any good, it couldn't be just pidgin talk. It would have to be a meaningful conversation. That might be hard to come by—if we can talk with it at all.''

''It would take time,'' she said. ''We'll have to be patient. We must give it, and ourselves, a chance. Above all, we should do nothing to drive it away. We should hang in there, no matter what it takes.''

''So far, Alice, there has been no suggestion that we should drive it away. Even if we wanted to, there's no one who has the least idea of how to go about it.''

14. LONE PINE

Kathy woke in the middle of the night, huddling in the bed, cringing against the darkness and cold of the motel room pressing down upon her.

The cold, she thought, the cold and darkness. And knew that she was not thinking so much of the present cold and darkness, here in this small room, as of the cold and darkness through which the visitor had passed to arrive on Earth.

Had she been dreaming of it, she wondered, the dream, now forgotten, translating into this first waking moment? If so, she had no recollection of the dream.

But the thought of the visitor and of the chill emptiness of outer space still continued to persist. From how far out, she wondered, had it come? Perhaps across light-years, with the glint of unknown suns faint specks of hazy light in the all-engulfing darkness. Propelled across the cosmos, driven by a purpose of its own, driven by an emptiness of soul as deep and wide as the emptiness of galactic space, driven by a hunger unlike the hunger that an inhabitant of the planet Earth might feel, seeking, perhaps, the Earth or another planet like the Earth. And why the Earth, or a planet like the Earth? Because it would have trees? Fiercely, she shook her head, for it must be more than that. There must be something more than trees.

Maybe, she told herself, it was doing no more than exploring, mapping the galaxy, or following some dim, cobbled-together chart that some earlier traveler might have put together, following it in the fulfillment of a mission that the human mind might not even have the capability to grasp.

The cold and dark, she thought again, wondering why it was that she continued to come back to the cold and dark. But there would be more, she thought, than the cold and dark. There would be, as well, the loneli-

ness, the smallness of one's self in the never-ending gulf where there could exist no flicker of compassion or even of awareness, but only a great uncaring that took no notice of anything that moved or made its way across it. What kind of creature, she wondered, could stand up in the face of this great uncaring? What kind of creature could consign itself to the maw of nothingness? What sort of motive must it have to drive itself into the continuing emptiness? Perhaps it had a purpose—for to do what it had done, there must be a purpose. But if its purpose were the Earth, then it could not have known when it started out that it would achieve its purpose. Certainly, no one in even the most shallow depths of space could know of Earth, or have any inkling of Earth.

Poor lonely thing, she thought. Poor frightened eater of the trees. Poor creature of so far away, coming into Earth from the great uncaring.

15. WASHINGTON, D.C.

Porter had gotten into his pajamas and was turning down his bed when the phone rang. He glanced at the clock on his bedside table; it was almost two o'clock.

"This is Jack," said the voice on the other end of the line. "Jack Clark. Were you asleep?"

"In just another minute, I would have been."

"Dave, I think this is important. Can you come down to the White House? Meet us in your office."

"Who is us?"

"Me, NASA, the science advisor, Whiteside."

"Not the President?"

"He's asleep. We don't want to wake him. There are a few things we should talk out."

"Such as?"

"Your line is not secured. I can't tell you. I repeat, it is important."

"Be there in ten, maybe fifteen, minutes."

"On second thought, maybe I should get the White House Chief of Staff in on this too. You have any objection?"

"Hammond? Sure. Why not? By all means, get him in."

"All right, then. We'll be expecting you."

Porter put the phone back in the cradle. Now what the hell? he wondered. Clark was excited and concerned; it could be heard in his tone of voice. Perhaps, Porter thought, no one else could have known. But he did. He'd known Jack Clark for a long time.

He took another look at the bed. Why not just sack out, he asked himself, and to hell with Clark and the others? God knows, he needed the rest. In the last twenty-four hours, he had logged little sleep. But he knew that he was only trying the thought on for size. In fifteen minutes, he would be walking down the corridor toward the press office. He started taking off his pajamas, heading for the chest of drawers to get socks and underwear.

In the driveway, before he got into the car, he stood for a moment, look-

ing at the sky. The night was crisp and clear. There were only a few clouds in the sky. Somewhere to the north some distance off, he could hear the mutter of a plane coming in to land. He looked for the blinking lights of the craft, but they could not be seen. Out in the street, fallen leaves made a rustling sound as they were driven along the pavement by the wind.

Everyone except Hammond was present and waiting when he entered the door of the press room. Against the wall, the wire machines made soft chortling noises. The kitchen had brought up coffee; a gleaming urn sat on one of the desks, with white coffee mugs ranged in a huddled group.

Whiteside had taken the chair behind Porter's desk, was teetering back and forth in it. Crowell, the NASA man, and Dr. Allen sat side by side on a small sofa. Clark was filling coffee cups preparatory to passing them out. Hammond came striding briskly through the door.

"What is going on?" he asked. "You sounded urgent, Jack."

"I don't know how urgent," said Clark. "It's something we should talk over. The shuttle went out and the station has sent the word."

"What kind of word?"

Clark gestured toward Crowell. All eyes in the room turned to the man from NASA.

"The new object in space," said Crowell, "as many of us have suspected, but didn't want to talk out loud about, very definitely has a connection with the visitor that came down in Minnesota." He looked about the room.

"How connected?" asked Hammond.

"It's not an object at all, in the classical sense of the term. It is a cluster of the visitors, hundreds of them, perhaps thousands. No one so far has taken the time to compute how many there could be."

"You mean a swarm of them clustered in the form of a wheel?"

Crowell nodded. "We should have known without even going out to look. Telescopic observation from the station should have tipped us off. The observers saw no solid object, what they saw was a collection of discrete particles."

"Not exactly discrete particles," said Clark.

"From the distance of a thousand miles, they would have seemed to be."

"But they still remain in the cluster," said Hammond. "What I mean, they're not beginning to break up."

"We can't be sure," said Crowell. "The two men on the shuttle said they seemed to be sort of unraveling at the edge. All the visitors—visitors is an awkward word, but I don't know what else to call them—all the visitors at the edge of the disc didn't seem to be as neatly tucked away as they should have been. Whether this means the swarm is beginning to break up, we don't know. If you carry the analogy to that of a swarm of bees, that situation could be quite normal. In a swarm of bees, while the swarm itself may be intact, there are always quite a number of bees in motion around the

edges of the swarm, jockeying around to find a more secure place where they can fit themselves. That may be the case with our swarm out there. The men in the shuttle couldn't be sure. They had trouble seeing."

"Couldn't see?" asked Whiteside. "What could prevent their seeing?"

"In space, objects often are hard to detect," said Crowel. "There's not a proper background against which to see them. You see mostly by reflected light."

"But there's the sun," said Whiteside. "The swarm would have been in full sunlight. There should have been plenty of reflection."

"General, there simply wasn't. Which leads me to believe that we may be dealing with what amounts to black bodies."

"Black bodies? I've heard the term, but . . ."

"Bodies that absorb all energy, in this case, the radiation from the sun. A perfect black body would absorb all energy, reflect none at all."

"Why, certainly," said Allen. "I should have suspected that. Should have known it, in fact. To navigate through space, a fair amount of energy is needed. That's the way these things get their energy. There isn't much, but they get all there is. Not only from the suns in space, however feeble the radiations from those suns may be, but from anything else from which they could extract energy. The impact of micrometeorites would give them some. Kinetic energy, of course, but probably they could transform that into potential energy. Cosmic rays, and cosmic rays have a lot of energy. All other kinds of radiation. They'd gobble it all up. They'd be energy sponges."

"Doctor, you're sure of that?" asked Hammond, drily.

"Well, no, not exactly. Certainly I'm not certain of it. But the hypothesis is sound. It could be the way it works. There'd have to be some such means for a space-going machine to extract sufficient energy for it to keep going."

He said to Crowell, "Even before you told us what the object is, I had a hunch we'd find what you describe. My men at Lone Pine report the visitor there is sending out signals, modulated signals, which would argue that it is in communication with something. And I asked myself what could it be communicating with. The answer seemed to be others of its kind. No one else could decode the garbage that it's sending."

"Which means," said Whiteside, "that it is telling all of its relatives out there what fine forests it has found. Inviting them in to eat their fill. In a little while, there may be others tumbling down, landing in our forests and tucking their napkins underneath their chins."

"Henry," said Hammond, "you're jumping to conclusions again. We can't be sure of that."

"The possibility exists," said the general, stubbornly.

"We can't close our eyes to it. My god, what a horrible situation!"

"What else did your men find?" Porter asked Allen.

"Not much. We know that the visitor is not metal. We are sure of that. We don't know what it is. We tried to get sample . . ."

"You mean your men just walked up to it and pried away at it and scraped away at it?"

"Hell, man, they climbed all over it. They examined every inch of it. It paid them no attention. It never even twitched its hide. It just went on with its lumbering."

"For the love of God," asked Clark, "what are we dealing with?"

No one answered him.

Crowell said, "One other thing puzzles me. How the swarm up there got into orbit. It takes a while to eject an object into orbit. Several times around the Earth until it's where you want it and moving at the speed you want it. If this new object, if this swarm did any jockeying preliminary to getting into orbit our spotters would have caught it well ahead of time. But they didn't. When they found it, it already was in a settled orbit. And, another thing: It would have had to know quite a lot about the planet around which it intended to set up an orbit—the planet's speed, its rotation rate, its gravitational attraction. This would apply to any kind of orbit, but to set up a synchronous orbit, it would have to have all the factors figured to a fraction. Apparently, it just plopped in and settled to the correct altitude at the correct speed and how the hell that could be done, I don't know. I'd say, offhand, it would be impossible."

"So now that we have all the bad news," said Hammond, "what are we going to do about it? That's what this meeting is for isn't it? So we can map out a course of action. In the morning, I'd like to be able to tell the man upstairs that we have some answers for him."

"One thing we should do is to notify all the governors to put the National Guard on alert," said Whiteside.

"That would be guaranteed," said Hammond, "to scare the country senseless."

"And make some of our international neighbors nervous," said Clark.

The general asked, "How about passing the word along quietly? Tell the governors to be prepared to call out the Guard at a moment's notice."

"It would leak," said Porter. "There's no such thing as secrecy among forty-eight governors—fifty if you were to include Hawaii and Alaska and I suppose Hawaii and Alaska would have their noses out of joint if we passed them by. Governors are political creatures and some of them are blabbermouths. Besides, they all have staffs and . . ."

"Dave is right," Hammond told Whiteside. "You'd simply be asking for it."

"If it comes to that," said Porter, "the country should be told, not only about what we are doing but why we're doing it. They'll find out in a few days in any case and it would go

down better if we told the people at once. Let the news come from us rather than from someone else."

"Otherwise than the National Guard, what can we do?" asked Whiteside.

"You persist," said Allen, "in regarding these things as enemies."

"At least, they're potential enemies," said the general. "Until we know more about them, we must be prepared to recognize them as possible threats. If they should invade us, then, automatically, they are enemies."

"Maybe it's time for us to lay out the situation to some of our international friends," said Hammond. "We've held out from doing this, but if that swarm up there comes down, we're not going to be the only ones involved. Maybe we owe it to the others to let them know what is going on."

Whiteside said, "The President should be sitting in with us on this."

"No," said Hammond. "Let him sleep. He needs the rest. A long, hard day is comifig up."

"Why do we assume that we are the only ones who sent out a shuttle to have a look at the swarm?" asked Porter. "The Soviets also have a space station. They could have sent out a shuttle. We announced the new object in space more than twenty-four hours ago. They'd have had the time."

"I can't be sure," said Hammond. "I think it is unlikely. Their station is a considerable distance from ours, the shuttle trip would be longer. Not that distance makes that great a difference, but somehow I don't think so. For one thing, they'd have less reason to react. The visitor is in our country, not theirs."

"What difference does it make, anyhow?" asked Clark.

"We wouldn't want to go to them," said Porter, "and say, 'Look, pal, we got these things up there' if we had any reason to believe they knew as much as we do, maybe more than we do."

"I think your objection is academic," said Hammond.

"Perhaps so," said Porter. "We just don't want to look any sillier than we have to."

"Let's get back," said Whiteside, "to the matter of defense. You vetoed the National Guard. If we can't do that, the regular military establishments should be alerted."

"If it can be done without publicity," said Hammond. "If you can guarantee no leaks."

"That can be managed," said Whiteside.

"What I'm worried about is public panic," said Hammond. "It's been all right so far, but touch the wrong button and the country can go sky-high. There's been so much talk, so much controversy, all these years, about the UFO's, that the country's ripe."

"It seems to me all the UFO talk works to our benefit," Porter told him. "The idea of aliens coming to Earth is a bit old hat. Many people are reconciled to the thought that someday they will come. Thus, they are more prepared for it. It will be less of a shock. Some people believe it would be good for us if they did come. We no

longer have the H.G. Wells' *War of the Worlds* psychology. Not in full force at least. We have some philosophical preparation."

"That may be so," said Clark, "but one damn fool saying one wrong thing could trigger a panic."

"I agree," said Hammond. "Maybe your approach is correct, Dave. Tell the people what we know. Give them a little time to think it over, so if more visitors come the people will be half accustomed to the idea. A soothing word here and there, careful not to overplay the soothing syrup. Buy some time for sober reflection. Time to think it out, talk it over."

"So what we have is this," said Clark. "Military installations will be informed of the situation. Nothing will be done at the moment with the Guard, but we'll be ready to put it on alert, throughout the country, on a moment's notice. We'll give earnest consideration to informing and consulting with other governments. We'll tell the people as many facts as we can. How about the U.N.?"

"Let's leave the U.N. out of it for a time," said Hammond. "They'll come charging in fast enough. And it is understood the man upstairs has to put his stamp of approval on all of this. He'll be waking in a few hours. We won't have to wait long. When we do move, we should move fast."

"John, I'd like to get the word to my boys right away," said Whiteside. "I can't imagine you would object to that. It's all in the family, so to speak."

"No objection," Hammond said. "That's your turf."

Allen said to Crowell, "The station is keeping watch, I'd assume. They'll let us know if anything is beginning to happen? Or looks as if it is beginning to happen."

"That's right. The minute there's anything going on, we'll know."

"What if one of our international friends gets trigger happy and proposes boosting off a nuke to blow the swarm all to hell?" asked Whiteside. "Or worse, acts unilaterally."

"Henry, you think of the damnedest things," said Hammond.

"It could happen," said the general. "Let someone get scared enough."

"That's something we'll just have to hope doesn't happen," said Porter.

"I think it's most unlikely," said Hammond. "Maybe I should get State out of bed. He'll have to be briefed. Perhaps he could have breakfast with the President. He and a few others. The attorney general, for one. I'll make the calls."

"And that's it?" asked Crowell.

"It would seem so."

"It's barely worth going back to bed," said Clark. "In an hour or two, it will be morning."

"I'm not going back," said Porter. "There's a comfortable couch in the press lounge. I'm going to stretch out there. In fact, come to think of it, there are two. Anyone care to join me?"

"I think I will," said Clark.

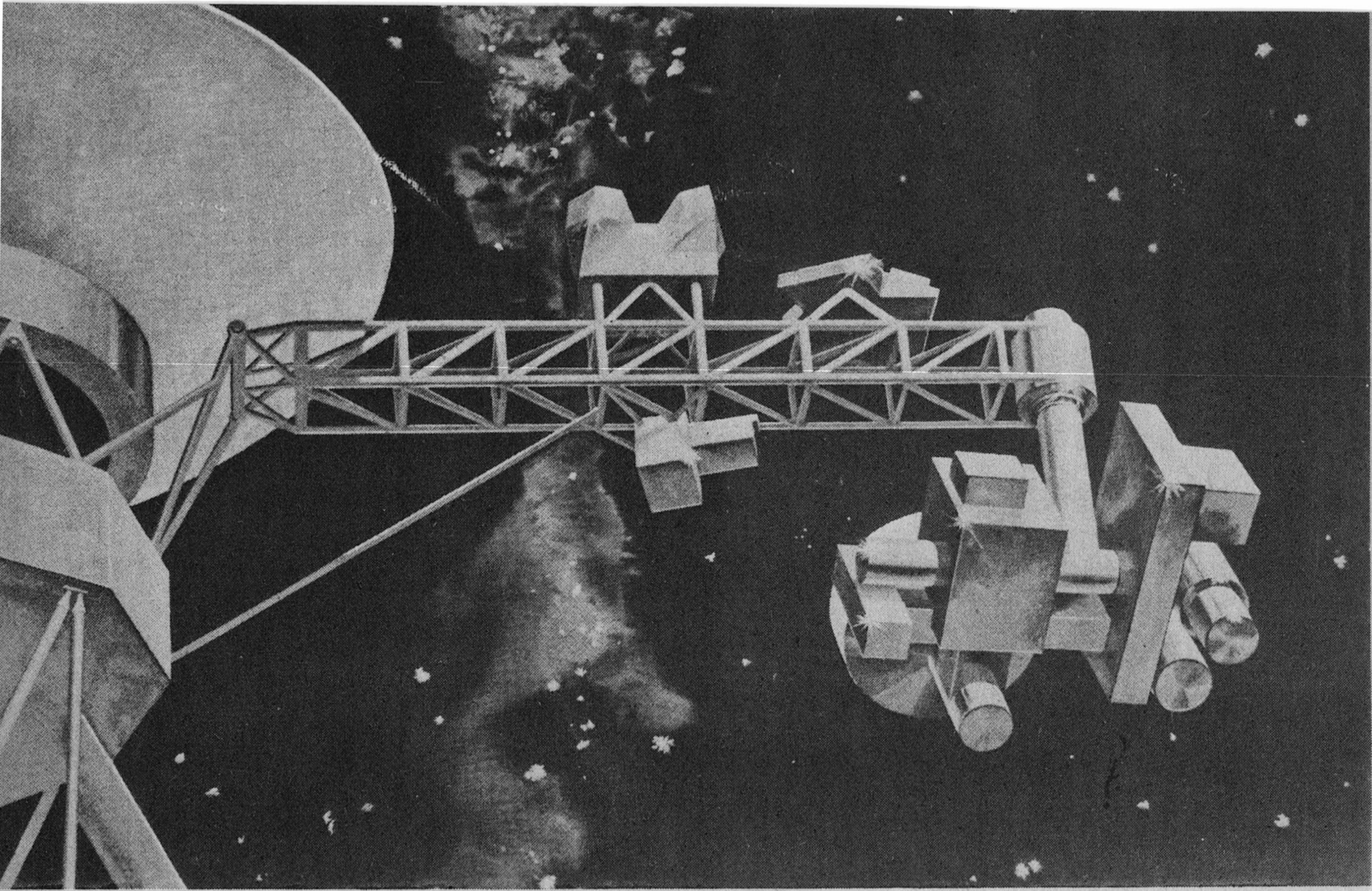
TO BE CONTINUED

AND BEYOND

Two new probes are rapidly changing our knowledge of Jupiter— and points farther out.

WALTER B. HENDRICKSON, Jr.

A CLOSE LOOK AT JUPITER Voyager spacecraft aims its instrument scan platform at the planet Jupiter in this painting depicting a major step in the mission to Jupiter and Saturn.



NASA

Having completed their fly-bys of Jupiter, 778,761,560 kilometers from the sun, the two Voyager probes are on their way to Saturn. Voyager 1 will fly-by that planet, 1,427,649,000 kilometers from the sun in October 1980. If Voyager 1's fly-by of Saturn is successful and it is still functioning properly, then Voyager 2 may take a different course, getting a gravity assist from Saturn in June 1981 which will carry it for a look at Uranus, 2,870,908,700 kilometers from the sun in January 1986.

At these distances, the sun's light is too faint for conventional photovoltaic cells to generate enough power. Therefore, like the Pioneer probes that preceded them, the Voyagers are powered by Radioisotope Thermoelectric Generators (RTGs). Each probe carries three of these at the end of a 1.85 meter long boom. These three RTGs convert the heat created by decaying plutonium directly into 400 watts of electricity.

Other methods of powering deep space probes have been considered by Caltech's Jet Propulsion Laboratories (JPL), which manage the Voyager program. One of these was a 58.22-meter diameter reflector to concentrate sunlight on a bank of photovoltaic cells. This is for possible use on TOPS, the Thermoelectric Outer Planet Study probe, a great-grandmother of the Voyager probes. Although the TOPS program was cancelled before it flew, its design has been inherited by the Pioneer and Voyager probes.

The reason this design does not include a reflector and photovoltaic cells was explained by James E. Long of JPL at a joint meeting of the American Astronautical Society and the Operations Research Society on June 17-20, 1970. According to Long, such a spacecraft "must remain oriented precisely to the sun at all times to maintain power and to minimize thermal distortions; therefore, it is necessary to perform trajectory corrections without re-orientation of the spacecraft. Because of this limitation and the greater power-system weight required (approximately 2 pounds per watt), spacecraft utilizing solar energy for spacecraft power generation at solar distances of 30 AU (Astronomical Units, Earth's mean distance from the sun) are unattractive compared to those using RTG power supplies. The technology required for such large, light-weight, flexible structures, and the power-system weight required are also impractical for this design approach."

Thus, when the first of the Voyagers was launched at 10:29:45 A.M. EDT on August 20, 1977, it was equipped with RTG power. This was Voyager 2, and its companion, Voyager 1, followed on September 5, 1977 at 8:56:01 A.M. EDT. No, NASA did not get the numbers mixed up. Voyager 1 was put into a faster trajectory allowing it to pass Voyager 2 around December 15, 1977, arriving about four months ahead of its sister probe. The gravity assist that Voyager 1 got from Jupiter is giving it still more lead

on Voyager 2. By the time it reaches Saturn in June 1981, Voyager 1 will be nine months ahead of Voyager 2.

The booster for each of the 808-kilogram Voyagers was a Titan IIIE/Centaur. The massive Titans each lasted for just eight minutes after launch before its fuel was spent. Next, the Centaur took over, 1,450 miles downrange, pushing the probe into space. Then, one hour after launch, a top stage, called a Propulsion Module, gave the spacecraft its final kick toward Jupiter.

Unfortunately, Voyager 2 did not report extending the 3.7-meter boom opposite its RTGs, or locking it in place. This boom carried the imaging instruments, so a wobble would make the pictures inaccurate. To find out the position of the boom, the flight controllers at JPL's Mission Operations Center turned on the plasma science instrument on the boom, twelve hours after launch. By comparing its readings to the known axis and direction of the solar wind, information which was furnished by Goddard Space Flight Center, they determined that the boom was within at least two degrees of its proper position. Further checks were made on August 26 and 27 by activating the imaging sensors and taking pictures of star fields. These showed that the boom was within .06 degrees of locked.

Some attempts were made to jolt the balky boom into place by rocking Voyager 1 and having it blow the dust cover off its Infrared Interferometer Spectrometer (IRIS). These attempts failed, and the spacecraft returned to its cruise mode, lining up with Canopus and Earth. This cruise was interrupted by two mysterious bumps, one at 2:42 A.M. PDT on August 21, and the other at 11:25 P.M. PDT on August 24, 1977. Flight controllers could not say what caused these bumps because the spent propulsion module had been hurled well out of the way.

Voyager 2 was shut down, or "put to bed" as JPL's *Voyager Mission Status Bulletin* puts it, for the launch of Voyager 1. The two probes then began their course to Jupiter, studying magnetic fields, cosmic rays, and the solar wind along the way.

This cruise was interrupted by four trajectory corrections, the first of which was made by Voyager 2, on August 28, and the rest prior to the encounter with Jupiter. The probes will need four more on their way to Saturn, and if Voyager 2 goes on to Uranus it will need another on that leg of the trip.

A few mechanical problems arose during the first part of the flight, but these difficulties were corrected or compensated for without great bother, so the Voyagers were able to continue their scientific studies.

During the early part of their flight, the Voyagers took pictures of the Earth and moon receding behind them. They also cooperated with West Germany's sun-buzzing Helios probe in its study of solar phenomena. An opportunity to study the comet Kohler was passed up, however, for

fear of damaging the spacecrafts' cameras. On December 1, 1977, Voyager 1 used its Ultraviolet Spectrometer and Photopolarimeter to make an extensive map of the Orion nebula.

Although it was still a year and a half from its fly-by, and now trailing more than ten million miles behind its sister probe, Voyager 2 was the first to send back a picture of Jupiter. This picture was taken by the spacecraft's 1,500 mm focal length narrow-angle camera. It was then transmitted by the probe's 3.7-meter dish antenna at the rate of 115.2/0.64 kbps. Since Voyager 2 was now 192 million kilometers from Earth, it took over seventeen minutes for the picture to reach Earth. Here it was received by the 26-meter antennas of NASA's Deep Space Network (DSN) and relayed to JPL. Here, computers converted the 115.2 to 115.64 thousand bits of information per second, into a series of dots to complete the picture.

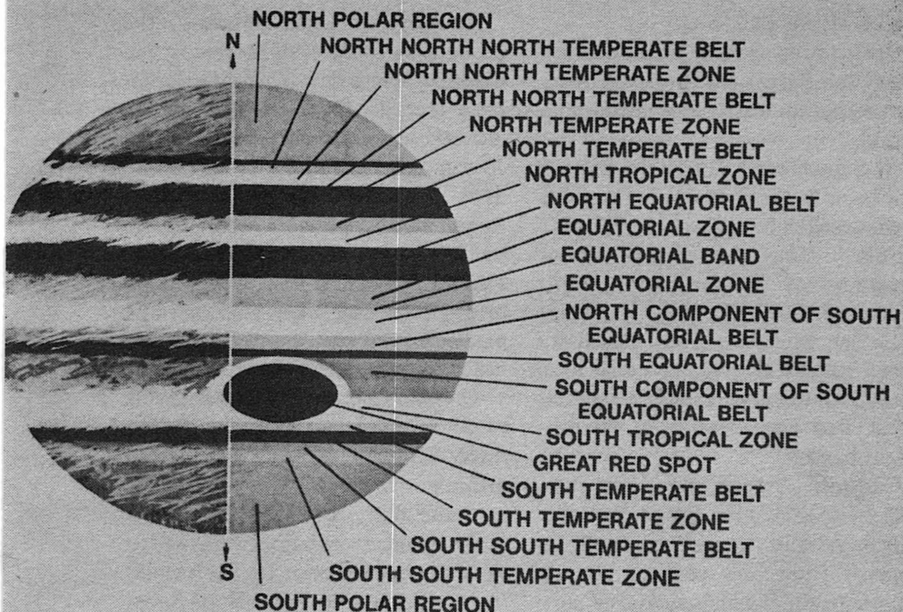
When computer-enhanced, it showed a picture much like that which can be seen, through binoculars, from Earth. This initial photo showed the still 437 million mile distant redish-brown and yellowish-brown streaked globe of Jupiter in the upper left-hand corner of the picture, flanked by the Galilean satellites, the four largest of its thirteen or fourteen moons. Europa was to the left of Jupiter and Io, Ganymede, and Callisto, in that order, to the right. This quartet of moons is called the Galilean satellites in honor of their discoverer, Galileo Galilei.

On April 5, 1977, Voyager 2's main radio receiver failed. The probe automatically switched to its backup receiver, but it too appeared to be faulty, and was having difficulty in receiving commands. Immediately, an emergency was declared in Missions Operations. All activity with Voyager 1 was suspended while the flight controllers worked with the balky sister probe. It took a week to develop new techniques for getting the probe to accept data from Earth.

The process was slowed by the fact that Voyager 2 was now passing the halfway point in its journey to Jupiter. Thus it took over 27 minutes for the messages to reach Voyager 2, and another 27 minutes for the reply to return.

Just in case Voyager 2's one remaining receiver failed, a backup program was sent to its spare computer. This computer will store the program until it is needed. If the program is used, Voyager 2 will skip taking any photos of Jupiter, make only one correction on its way to Saturn, and then take only a few pictures there.

As a further precaution against losing touch with Voyager 2, JPL began tests with the Stanford University's radio telescope at Palo Alto, California, on September 13, 1978 and November 18, 1978. The object of these tests was to see if Voyager 2's Planetary Radio Astronomy (PRA) instrument could be used as a radio receiver. The tests proved that the PRA would serve as a receiver, but



only a very poor one. There was a lot of background noise, and the data had to be fed to the spacecraft at a slower rate. This meant that to employ this scheme, Voyager 2 and JPL's computers would have to be reprogrammed. Also, new equipment would be needed on Earth.

Meanwhile, Voyager 1 was allowed to begin sending data again. This included a series of sixteen photos of the still 295 million kilometer distant Jupiter, which were sent back on May 19, 1978. These pictures were taken with six different filters: blue, clear, violet, orange, ultraviolet, and green. Only when these pictures were computer-enhanced did they show up as well as the best that can be seen with a small telescope on Earth. However, the probe was still nearly ten months away from its closest approach to Jupiter.

For two weeks in July, 1978, from the eleventh to the twenty-fifth, the Voyager probes were given a brief rest from the calibrations and tests that were preparing them for the encounter with Jupiter. The reason for this "vacation" was that the probes were now on the far side of the sun from Earth. The *Voyager Mission Status Bulletin* for July 25, 1978, reports that when the probes were close enough during this time, the Sun-Earth-Probe (SEP) angle was less than ± 5 degrees, and no commands which would change the state of the

spacecraft were allowed.

"Due to the position of the sun between the Earth and the spacecraft, data reception was 'ratty' during this period."

By September 5, 1978, the photos sent back by Voyager 1 were as good as those taken by major observatories on Earth. They showed that the atmosphere of Jupiter had become much more turbulent than it had been when the Pioneer probes passed it. Now, instead of being centered in a broad, white band, Jupiter's famous Great Red Spot was in a narrow, bright band.

Curiously enough, the flight controllers at JPL also found that the Voyagers had "ears" as well as "eyes." These ears were the plasma wave subsystem which measured particles on several wavelengths. Among these were the audio frequency from 15 Hz to 20 kHz which picked up ions from the exhaust of the craft's hydrazine fueled attitude thrusters. When played through a speaker, this gave the quite appropriate sound which the *Mission Status Bulletin* describes as being, "somewhat like a 5-gallon can being hit with a leather-wrapped mallet."

During a twenty hour photographic sequence on December 10-11, 1978, Voyager 1 returned pictures that were already sharper than any taken from Earth. Flight controllers used these pictures to pick out the sights they wanted to see in the course of the encounter session which was to begin on January 6, 1979.

As Voyager neared Jupiter, the probe took pictures of the planet ten times per Earth day. This gave a complete record of the changes on the planet's surface during several of the Jovian nine-hour and fifty-six minute days. The four Galilean satellites wandered into some of these photos, but they just showed up as tiny balls of different colors. Io appeared to be a bright red orange, while Europa was a pale pink, Ganymede a steel blue, and Callisto a dirty brownish gray.

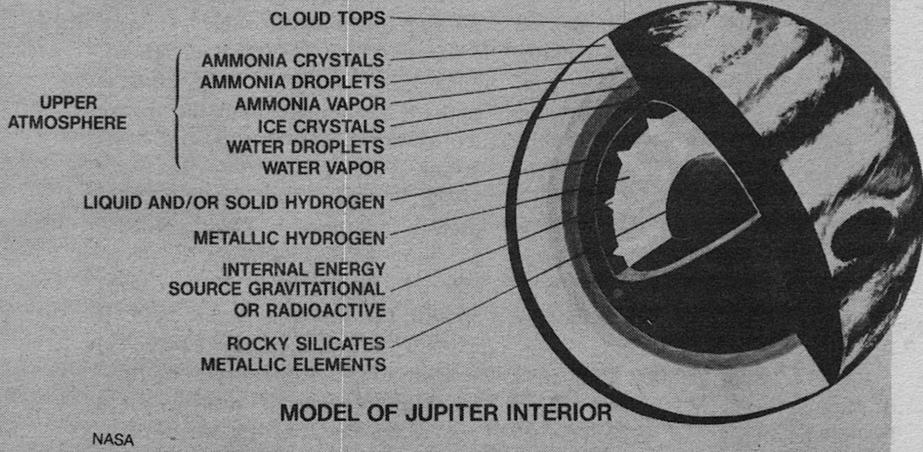
The color pictures of Jupiter and its satellites were produced by taking three different pictures, each with a different filter, one green, one orange, and one blue, and then combining them. Exaggerated colors were used to show the structures of Jupiter's cloud features, especially the famous Great Red Spot. Not surprisingly, this spot is not a solid knotholelike structure as it appears from Earth, but a churning, long-lived storm.

By late February 1979, Voyager 1 was just eight days from its closest approach to Jupiter. Now, the huge globe of Jupiter was so close that the narrow-angle camera was showing close-ups of the ammonia snow-clouds churning through the planet's turbulent and turbid hydrogen and methane atmosphere. For views of the entire planet, the probe's wide-angle camera had to be turned on.

The other instruments aboard Voyager 1 were also scanning Jupiter once per Earth day. The Infrared Interferometer Spectrometer took the planet's temperature while the Photo-

polarimeter and Ultraviolet Spectrometer studied the composition of the planet and its atmosphere. The mixture of gases in Jupiter's atmosphere is much like that which Earth had when life first came into existence. Therefore, some astronomers think that the building blocks of life may be forming on Jupiter.

More than just the composition of



MODEL OF JUPITER INTERIOR

Jovian atmosphere was measured by Voyager 1's Ultraviolet Spectrometer. Lyle Broadfoot, and his team at Kitt Peak National Observatory, are now studying the reports from this instrument to determine if Jupiter has a rocky core or not. This is being done by measuring the hydrogen and helium ratio on Jupiter. If the ratio of these gases on Jupiter is like that of the sun, as Pioneer 11 intimated, then the planet has a rocky core. Next year, during Voyager 1's fly-by of Saturn, similar studies will be run on that planet. If these two planets do have rocky cores, they will be small ones, with Jupiter's being slightly smaller than Saturn's.

Later, a team of Goddard Space Flight Center researchers, headed by Dr. Rudolf Hanel, will compare the data from the Infrared Interferometer Spectrometer with that obtained when the pair of Voyagers pass Saturn. It may also be compared with information from Uranus, if Voyager 2 holds out long enough to make this fly-by. This will aid astronomers in studying the energy balance of the outer planets. Jupiter is especially interesting in this area as it appears much hotter in infrared light than in visible light. In fact, Jupiter appears to be giving off more heat than it is receiving from the sun. This leads astronomers to speculate that it may

be either a still-born star, or still contracting.

The magnetometers and radiation detectors were also returning data as Voyager crossed from the sun's magnetic field into the Jovian magnetosphere about five days before the flyby. This fluctuating boundary then passed the probe as it was driven back by the solar wind. This process was repeated five times as Voyager 1 approached Jupiter.

Shortly before it passed behind Jupiter, Voyager 1 came within about 415,000 kilometers of Jupiter's innermost satellite, Amalthea. In Voyager 1's photo, this 160 kilometer wide moon looks like a fuzzy pink potato with two bright spots, either craters or mountains, near the terminator on its broad end. It is odd that such a large body should be so oblong. Clearly, Amalthea will deserve a closer look by future probes.

Passing within 280,000 kilometers of Jupiter, Voyager 1 slipped behind that planet on March 5, 1979. This occultation experiment allowed Dr. Von R. Eshleman and his team of researchers at Stanford University to study the density of the Jovian atmosphere by noting the way in which Voyager 1's radio signals faded out. During its two hours behind Jupiter, the probe's computer stored up data which it sent back to Earth when the spacecraft reemerged. During these close passages, Voyager 1 received a boost from Jupiter's gravity sending the spacecraft off toward the 800 million kilometer distant Saturn, like a pinball ricocheting off a bumper.

Emerging from behind Jupiter, Voyager 1 found the four Galilean satellites all lined up to have their pictures taken. Two of these satellites, Io and Europa, are about the size of Earth's moon, while Ganymede and Callisto are larger than Mercury. However, only Ganymede looks anything like Earth's moon or Mercury, and this appearance is only crust deep.

First of the quartet of moons to be photographed was Io, which Voyager 1 passed within 22,000 kilometers of. This 3,636 kilometer wide moon is perhaps the strangest of all the strange worlds in the solar system. One of its strangest attributes is its flux tube which Voyager 1 was aimed deliberately to pass through. This flux tube is a column of plasma about the diameter of Io, created by the interaction of Io with the Jovian magnetic field. It extends the entire 421,648 kilometers from Io to the visible surface of Jupiter. While Voyager 1's cameras could not see the flux tube, its other instruments inferred its existence.

Almost as strange as the flux tube is the surface of Io which in Voyager 1's close-ups, looks like a giant pizza or lasagna. There are no craters, but there are geological faults, possibly of volcanic origin. When the JPL investigators saw this surface, they wondered how such an old, airless body could have such a young surface.

On March 9, while examining an overexposed picture taken for navigational purposes, Linda Morabito, of JPL's optical Navigation team, found

an active volcano, the first seen on another planet. Three more were soon found. These volcanoes are caused by the strong tidal forces created by Jupiter's gravity. They spew out sulphur which spreads out around Io's orbit, creating a torus-shaped cloud around Jupiter. This ultimately brings the sulphur back around to where it is swept by Io.

Europa, which Voyager 1 passed within 732,351 kilometers of next, also showed signs of tidal stresses. This pale pink moon also had no craters, but it was so scarred by geological faults that it looked like one of Lowell's maps of the Martian canals.

The surface of Ganymede, which Voyager 1 viewed from a distance of 193,121 kilometers, looked like a pale blue version of the far side of Earth's moon. This appearance is deceptive, however, as Ganymede is made up mostly of ice. This is revealed by the rays which extend from most of Ganymede's craters. There are also extensive geological faults on Ganymede. These combine with the rays from the crater, making the satellite's surface appear as if it were covered with spider webs.

The oldest surface of all the Galilean satellites was found on Callisto by Voyager 1 as it passed at a distance of 193,121 kilometers. Numerous craters and impact basins were also found here, but they showed concentric rings rather than rays. These rings are like frozen ripples from a stone dropped into water, which they practically are. Callisto has a density only 1.65 times that of water, making it a 5,000 kilometer wide soft, dirty snowball.

Some astronomers have hypothesized that Jupiter might have rings like Saturn and Uranus. This hypothesis was proven right by the photos sent back by Jupiter as the probe headed off toward Saturn. The pictures sent back by Voyager 1 showed a narrow, dark ring, 30 kilometers wide, extending from 48,000 kilometers above the equatorial Jovian cloud tops out to 57,000 kilometers. These rings must be made up of moonlets several meters thick. Otherwise, they would have been scattered by radiation pressure.

The ring is well within Roche's limit for Jupiter, which is 106,216.7 kilometers. Inside Roche's limit, powerful tidal forces would keep any primordial ring from coalescing into a solid satellite. Similarly, any hapless moon that ventured inside Roche's limit would be torn apart.

Because of the discovery of the ring, Voyager flight controllers began considering the possibility of directing Voyager 2 to study the ring during its fly-by on July 9, 1979. Voyager 2 began its picture-taking of Jupiter on April 20, 1979, about two weeks after Voyager 1 finished its study of the Jovian system, and settled down for its year and a quarter long flight to Saturn. However, the ring was far too thin to be noticed in these distance pictures which were little better than those taken from Earth.

About a day before its encounter, Voyager 2 passed three of the four

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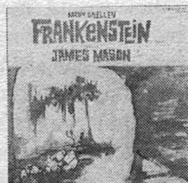
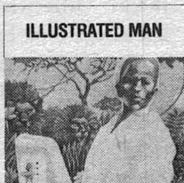


*James Mason (1541)

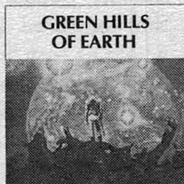


*Leonard Nimoy (1479)

*Leonard Nimoy (1520)

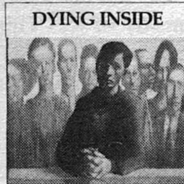
*Frank Herbert (1565)

*William Shatner (1508)



*Leonard Nimoy (1526)

*Arthur C. Clarke (1504)



*Robert Silverberg (1612)

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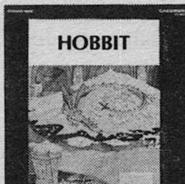
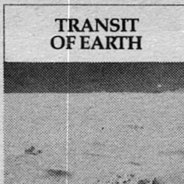


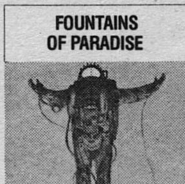
*J.R.R. Tolkien (1477)

*Leonard Nimoy (1466)

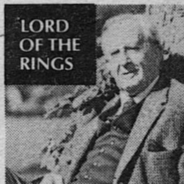
*David McCallum (1468)



*Arthur C. Clarke (1566)



*Arthur C. Clarke (1606)



*J.R.R. Tolkien (1478)

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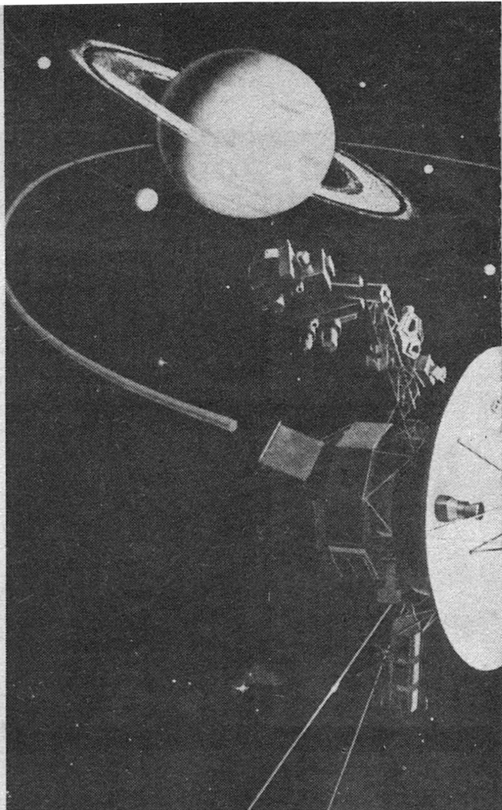
Galilean satellites and Amalthea. Since these Jovian moons keep one side always toward Earth, Voyager 2 passed the opposite sides of each satellite from the one Voyager 1 photographed during its encounter with the Galilean satellites. This was especially important in the case of Callisto which sometimes turns black all over, indicating that one side of this snowball is dirtier than the other. Voyager 2 passed within 220,000 kilometers of Callisto; 55,000 kilometers of Ganymede; 201,000 kilometers of Europa; and 55,000 kilometers of Amalthea.

Voyager 2 was on a course that kept it well away from the dangerous Jovian radiation belt, bringing it no closer to Jupiter than 645,000 kilometers. Although three probes had passed through this belt previously, it is just as well that Voyager 2 stayed clear of it considering the difficulties the spacecraft has been having.

Like its predecessors, Voyager 2 ducked behind Jupiter as it made its close encounter with that planet, receiving a gravity assist to Saturn. Coming out from behind Jupiter on this new trajectory, Voyager 2 continued studying Jupiter for nearly another month.

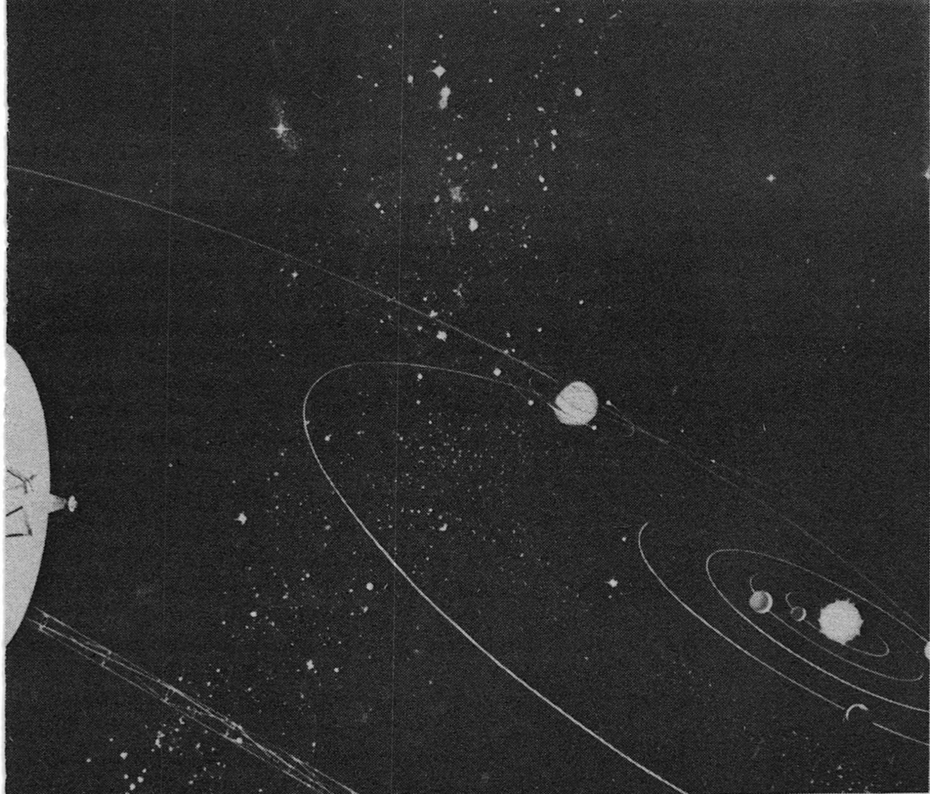
One year later, in August 1980, Voyager 1 will begin its studies as it approaches Saturn. On its way to fly-by this triple-ringed planet, Voyager will pass within 4,000 kilometers of the largest of Saturn's ten moons, Titan. This 5,832 kilometer wide moon has an atmosphere which is a reddish-cloudy miniature of that on Saturn,



being made up mostly of hydrogen, helium, methane, and ammonia.

Just how dense Titan's atmosphere may be is uncertain. It could be as thick as Earth, or only 1 percent that dense, which would still make it thicker than the Martian atmosphere. To measure the density of Titan's atmosphere, Voyager 1 will pass behind that moon, giving it the occultation test.

Whatever the density of Titan's atmosphere, it is thick enough to provide a noticeable greenhouse effect on that body. This warms the moon from the usual -170° C. in Saturn's part of the solar system to a "balmy" -158° C. In this comparatively warm atmos-



This illustration shows the Voyager flights to Jupiter and Saturn. Major feature of the Voyager is its dish antenna for Earth communications. It is attached to the ten-sided base which contains electronics, computers, radios, tape recorders, etc. Most of the 11 scientific instruments (including cameras) are attached to the boom at the top. Magnetic field instruments are on the boom at lower right. The two whip antennas are used for radio astronomy experiments. Near them, are the three nuclear power generators.

sphere with its primordial gas combination, exobiologists think that organic molecules may form, raining down on the planet's surface. Here, they might develop into some primitive (or perhaps not so primitive?) life forms. The surface upon which these Titanites would be living is a slushy, dirty, snowball.

After passing Titan, Voyager 1 will turn its attention to Saturn and its rings, which are rapidly approaching. Gradually, the pictures sent back by Voyager 1 will be showing more and more of less and less of Saturn's surface and its vast ring system. Although rings are not unusual for giant planets anymore, Saturn still has the most extensive, reaching from 9,656 kilometers to 275,197 kilometers above the yellowish churning clouds of Saturn's equator.

In spite of this, the first pictures Voyager 1 takes of Saturn, after pass-

ing Titan, may not show the rings at all. This is because the rings are composed of extremely small moonlets—possibly no more than inches thick—much too small for Voyager to photograph edge-on. Later, as Voyager heads south of the rings, they may show up. However, by mid-October, Voyager 1 will be so close to Saturn that even the wide-angle camera will not show the entire planet and its ring system. Then, Dr. Bradford Smith and his team, who analyze the Voyager photos at the University of Arizona, will have to put together a mosaic for a complete view of Saturn and its rings.

While the cameras are showing the visible surface of Saturn and the planet's rings, the other instruments aboard the spacecraft will be probing what lies far above and deep below this surface. The magnetometers and particle detectors will be looking to see if Saturn has a magnetic field with a radiation belt trapped in it. The possibility of such a magnetic field has been indicated by static, which radio astronomers have detected coming from the vicinity of Saturn.

Of course, the ring system of Saturn will also get special attention from Voyager 1. Some astronomers believe that the moonlets which compose the rings are rocks. Some suggest that they are chunks of ice, and others say they may be ice-coated rocks. Which of these is true may be revealed by Voyager 1's Infrared Interferometer. This, in turn, may determine the origin of the rings which could be both remnant of a tide-destroyed satellite and a primordial ring that never became a satellite, because they straddle Roche's Limit. Another question which Voyager 1 or its companion might answer is why Saturn's rings are so much broader than those of Jupiter or Uranus.

Heading in to pass within 140,000 kilometers of Saturn's south pole on November 12, 1980, Voyager 1 will slip beneath the rings. Then, it will duck behind Saturn, and pass underneath the rings again, coming out on a course that will carry it out of the solar system into interstellar space. Like Pioneer 10 and Pioneer 11, the Voyager probes carry messages to show their origins to anybody who happens to come across them.

Outward-bound from Saturn, Voyager 1 will pass four more of that planet's ten moons. First to be visited will be 500-kilometer diameter Mimas, the second satellite of Saturn, which Voyager 1 will view from 9,646 kilometers. From there, the spacecraft will go on to fly-by 600-kilometer diameter Enceladus, the third satellite of Saturn, at a distance of 230,136 kilometers. Continuing on, Voyager 1 will pass within 140,013 kilometers of Saturn's 800 kilometer wide fifth satellite, Dione. Last of the moons which Voyager 1 will pass is Rhea, the sixth moon of Saturn, which is 1,600 kilometers in diameter.

Lagging almost a year behind its companion, Voyager 2 will begin its studies of Saturn in June 1981. This will present Voyager's flight control-

lers back on Earth with a decision to make: whether to send Voyager 2 on to Uranus, or let it follow its predecessor past Titan and Saturn, then out of the solar system. Which way they decide will depend on the answer to two questions: First, has Voyager 1 successfully completed its study of the Saturn system leaving no questions needing to be answered by Voyager 2? Second, can Voyager 2 survive another four and a half years in space with its faltering radio receiver?

If the answer to both these questions is "yes," then Voyager 2 will shift to a course to get a gravity assist from Saturn to Uranus. On this course, Voyager 2 will pass over Titan at a distance of 352,446 kilometers on August 27, 1981. Continuing on its approach to Saturn, Voyager 2 will then fly-by Rhea at a distance of 254,000 kilometers, and Tethys at 159,000 kilometers.

As it heads out toward Uranus, after its close encounter with Saturn, Voyager 2 will continue studying that planet until September 1981. It will then return to its cruise mode for the four and a half years it takes to reach Uranus by January 1986. The photos Voyager 2 begins sending back then will perhaps show the strangest of all the strange sights seen during the Voyager mission.

Uranus is actually lying on its side in orbit with its axis tilted only 8° to the plane of its orbit facing the oncoming spacecraft. With the swirling, gray-green methane clouds encircling the pole, this will make the planet look

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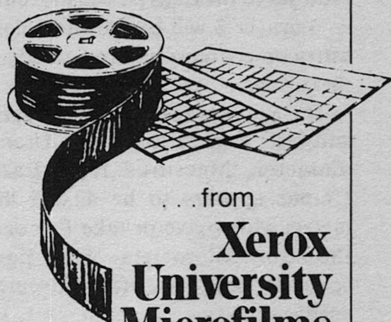

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like a bull's-eye toward which Voyager 2 is aimed. Enhancing this bull's-eye effect are five narrow rings encircling the planet's equator. These five rings were discovered by James Elliot of Cornell University in April 1977, as he watched the light of a star fade out as the rings passed in front of it. Voyager 2 will be the first chance astronomers have had to actually see these rings.

The photographs from Voyager 2 will also help to determine Uranus' diameter. Measured from Earth, Uranus appears to be 42,325 kilometers wide—give or take five or six thousand kilometers. This figure could do with a lot of improvement, needless to say.

The remote sun shines down on Uranus 400 times more faintly than it does on Earth, heating the upper layers of Uranus' atmosphere to no more than -210° C. Beneath this typical giant planet's atmosphere, lies a rocky core about 16,000 kilometers in diameter. Some astronomers believe that this core is covered by a layer of frozen methane, ammonia, and water another 8,000 kilometers thick. Others, however, expect that as the pressure of the atmosphere increases to many times that in the deepest trenches of Earth's oceans, the temperatures may increase dramatically.

In this model, underneath the methane clouds of Uranus would be a dense mass of ammonia crystals and water vapor clouds midway down in Uranus' atmosphere at temperatures of -142.78° to -101.11° C. At the bottom of the clouds, the temperature would be around 93° C. Farther on down, the pressure and heat would continue to increase up to 600 times those in the deepest ocean trenches on Earth. Under such pressures, the atmosphere might just gradually blend into the core with no distinct surface. Yet, Uranus has the same primordial atmosphere as Jupiter and Titan, and somewhere up in the clouds life forms may be coming into being.

Voyager 2 may be able to determine which of these theories is correct. The probe's Infrared Interferometer Spectrometer will take the planet's temperature while the craft's Photopolarimeter and Ultraviolet Spectrometer will measure its composition. The thickness of Uranus' atmosphere can, of course, be determined by an occultation experiment. This can also be used to measure Uranus' diameter by watching how long it takes the probe to pass behind the planet.

Voyager 2 will have time to take only a close-up look at Uranus and one of its four satellites. Which satellite will be determined when Voyager 2 begins its approach to Uranus. A likely candidate would be Uranus' largest moon, Titania. This 1,609 kilometer wide moon fluctuates in brightness. British astronomer-artist David A. Hardy has suggested that this may be caused by seas of glittering liquid air, created by cryogenic cold on Titania. If so, this would make for some really way-out photos, both figuratively and literally, to wind up Voyager 2's cliff-hanger mission. ■

THE ALTERNATE VIEW: SHALL WE SAVE THE WORLD?

by JERRY POURNELLE

"The future is a choice between Utopia and oblivion."
—*R. Buckminster Fuller*

Time was when science fiction readers and fans thought themselves a peculiar people with a destiny: it was our mission to do no less than save the world. We were a small elite who understood the potential and value of science, and we would spread the word until the world was made sane. The way would be hard, and many would fall by the wayside; there would be persecution and little reward in our time; but our triumph was inevitable.

For a number of reasons it didn't quite happen that way. Science proved expensive: we couldn't build spaceships in the backyard, or fusion generators in the basement. It was also *difficult*, requiring the higher calculus and a very great portion of our mental energies; thus many fans and readers had to choose between science and science fiction, and those choosing science dropped out of the fellowship. Finally, our tiny exclusive club became popular; we even found respectability. They teach science fiction in the universities now. There are so many of us that it's hard to believe in the image of a chosen elite.

And yet—we had our impact. Visit JPL during the Jupiter encounters, or NASA's Johnson Space Center, and you will find a number of scientists who chose their life work as a result of early contact with the visions of science fiction. Most have little time for our literature now, but once they did; and to this day science fiction re-

mains perhaps the best recruiting device the sciences possess.

We could be a very great deal more.

Imagine that you are a politician, and that someone comes to you and offers the services of an organization containing 100,000 "hard-core" members willing to spend well over twenty dollars yearly in dues; an organization, moreover, that has excellent monthly communications; has the ability to persuade over a million people to pay several dollars each to read its literature; holds annual conventions attracting thousands of delegates; and maintains in addition to its major communications channels several hundred informal newsletters. Would you be interested?

Damn straight you would.

For my sins, I have from time to time been quite active in politics: formerly County Chairman for a major party, associate director of successful Congressional and big-city mayoral campaigns, staffer to both Congressmen and state legislators; and if someone made me an offer like that, I'd be extremely interested. If there were any way I could support what they wanted in exchange for their services, I'd be eager to give it a try.

I have, of course, described the science fiction community, which supports at least two magazines with circulations of over 100,000 at a cost ("dues") of over a dollar/month/subscriber, and has produced many books selling over a million copies to the general public. I haven't even mentioned the influence we've had through films and TV.

Friends, we have *enormous* potential for political influence. We don't even have to "organize." It only takes using what we already have.

So what must we do?

First, we have to agree on specific, accomplishable goals realistically chosen. Second, we have to let the politicians know what we want, sending our message politely and rationally, but firmly. And that's about all.

Not really all, of course; there are moves we could make that would yield a very great deal more political influence, and perhaps we should give that a try sometime; but not until we've done the simple and easily accomplished things.

Let's try to agree on a goal: an expanded NASA budget. We won't, just yet, specify what NASA should do with the money. We'd just like to see more activity in space; more investigation of the potential of space; easier access to the endless frontier. It has been the historic role of government to explore the new frontier, build roads to it, and protect the early settlers; and we'd like to continue that tradition.

In some early years of this century, the United States devoted some 5% of its national budget to a pioneering project of great imagination and difficulty: the Panama Canal. I think few would argue that it wasn't worth the effort. Most of the peoples of the Earth directly benefited from the

greatly shortened shipping distances—and the United States made a colossal profit in the bargain. A classic case of doing well by doing good.

A similar effort invested in space would have a far greater impact. I don't really need to remind science fiction readers of the potential benefits; my colleague Harry Stine has done an excellent job of that in his *Third Industrial Revolution*. Still, I'll list some in order of certainty: cheap non-renewable resources such as metals; new materials and pharmaceuticals which can only be manufactured in low-gravity and high-extreme-range temperature environment; plentiful and renewable energy sources (either through solar power satellites or space-constructed solar energy devices for ground installation); transfer of environmentally damaging processes from Earth to space. In addition, there are a whole raft of benefits we can reasonably expect but not yet specify: new processes, environmental monitoring, technological breakthroughs. With cheap access to space we can do science on weekends: the fleet that we'd need to construct solar power satellites would allow us, at *trivial* additional costs, not only to detect Terra-sized planets at near-interstellar distances, but to study their cloud structure!

I don't go into great detail on the industrial and scientific benefits of space because those points are being argued before Congress by a number of professionals, and the science fiction community *as such* is unlikely to add to their effectiveness or attractiveness (although many among us certainly do have a role to play in that).

We can make a contribution in an entirely different way.

Public works projects in the United States are generally justified on their benefit/cost ratios. If it can clearly be shown that the benefits far outweigh the costs, the project has great appeal: politicians spend a lot of money on projects whose justification is questionable, so those which will show a "profit" are highly desirable.

The benefits of nearly every major public work, particularly those in the energy field, have been calculated on a *multiple use* basis. The classic example is Grand Coulee Dam, which was supposed to yield benefits to energy (direct generation of power); agriculture; reclamation; flood control; and *recreation*. It may come as a surprise to learn that these were given about equal weight back when Grand Coulee was proposed. Forecast recreational benefits of the dam were almost as great as the energy generation benefits.

In fact, without the recreational benefits, a great number of major federal energy projects would have had marginal projected benefit/cost ratios at best.

NASA is not allowed to include recreational benefits in its calculations. Actually, it's worse than that. As an example, justifications for solar power satellites can *only* include energy benefits; not only recreation,

but increased Earth resource management, pollution control, agricultural (through better weather and crop forecasting), and even *scientific* benefits are specifically forbidden.

These exclusions do not appear reasonable, since few other supplicants for federal funds are similarly restricted. If you try to find the reasons for the restriction you get various answers, none in my judgment convincing. The important point is that even with the above exclusions, the space program can still project a small profit; without them, the benefit/cost ratio rises dramatically.

This is an area where the science fiction community can have a highly important impact with modest effort . . .

After all: why shouldn't NASA be allowed to include *entertainment* benefits in its budget? Assume that the value of space research, all of it, is worth only ten dollars per year per American, and you immediately add $2.5 billion annually to the benefits from space; yet I'd wager that each year there are several space projects the vast majority of us consider worth more than the price of a couple of movie tickets. Look at the national press and TV coverage of the Jupiter encounter last spring. For less than 2 billion dollars we could have saved SKYLAB, and I *know* the entertainment value alone would have exceeded ten bucks a head.

So what should we do? Alas, it isn't very dramatic. All we have to do is write some letters. This, you'd think, would be simple enough for science fiction readers and fans; after all, we publish dozens to hundreds of newsletters and fanzines every month and each of those generates tens of "letters of comment."

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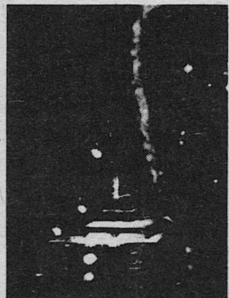
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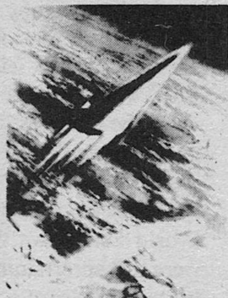
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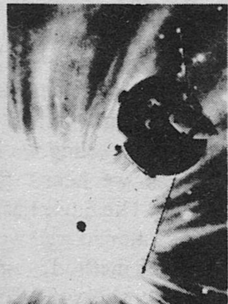
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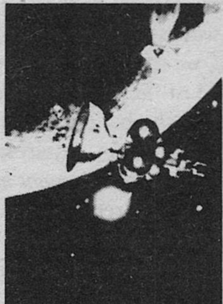
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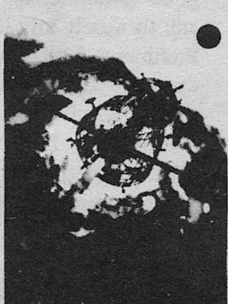
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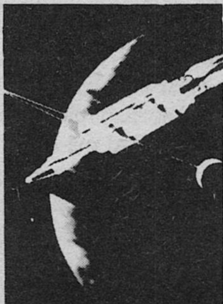
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The same effort could give Congress an entirely different attitude toward space.

Friends, the average Congressman doesn't get a hundred letters on *any* issue; when he does, he takes notice, even though the issue is likely to be transient and the mail die away after a couple of weeks. Imagine the impact of a hundred letters now, and a couple of dozen each month for years! Yet it is certainly within the capability of the science fiction community to generate that kind of mail to a large number of Congresspersons. After all, we're ideally situated for it. We're well scattered across the nation, from Florida to Washington. We're individualists, unlikely to write identical letters (there's little effect from sending in copies of someone else's letter; what counts is constituent mail in the constituent's own words). And the message is simple: we think the space budget should be justified on a *multiple benefits basis,* with the benefits to include scientific knowledge, environmental benefits, and *entertainment* as well as purely economic returns.

Those inclined might go further, of course. A few years ago, high technology accounted for most of our overseas income, with agriculture coming second; now agricultural products are far out in front, with less and less technology exported each year. The effects on our balance of payment, and thus on inflation and the dollar, have been severe—and it is probably no coincidence that technology began to lose ground just after we effectively liquidated most of the space program. Space research was the cutting edge of high technology.

At present we spend over $50 billion a year to import oil; what would genuine energy independence do to inflation? Assume a low probability that space will yield energy independence and it's still a good bet—and the space budget is spent *here,* not paid to the Sheik of Araby.

But those, and other sophisticated arguments, are icing on the cake. What's needed is a campaign to convince the Congress that the American people haven't lost interest in space; that although the Nielsen ratings for Apollo XVI weren't up to those of the World Series, we think the missions were still entertaining, and we'd gladly pay the price of a couple six packs or a carton of cigarettes each year to see men and women in space and on the Moon; that we can, for a hell of a lot less than we spend on booze and makeup and movies and TV recapture that shivery feeling we had ten years ago when we heard "Tranquility Base here. The Eagle has landed," and that it's damned well worth it.

The method is simple. If you don't know who your Congressperson is, a good almanac, or even a telephone call to nearly any local federal office building will tell you. The form of address is "The Honorable XXX," and the address is House Office Building, Washington, DC, 20515, or "Senator YYY," Senate Office Building, Washington, DC, 20510.

The goal is simple. We've only to

convince 269 people (one half + 1 of 435 Representatives and 100 Senators) that they ought to take an interest in space, because space research has an active constituency. Indeed, it's simpler than that, because we already have quite a few allies in the Capitol (although it does no harm to let them know their efforts are appreciated).

The objective is worthwhile. Even if you don't share my belief that this generation may well be the last to have both the resources and the ability to go to space, and that development of space resources will be as important for mankind as ever was the invention of the wheel, harnessing of fire, development of agriculture, surely you must think it worth *something* or you wouldn't be reading this.

And we have the resources; indeed, science fiction fans already expend as much effort as it would take to send an impressive flood of letters to the Capitol.

True, sending letters and encouraging others to do the same is not as dramatic as building a spaceship in the backyard. Compared to some of our wild dreams in the early days of SF, something so prosaic seems like very little at all. Yet we could, with resources presently available to us, make a start. Each of us could have a role in setting in motion an enterprise that would decisively change the world.

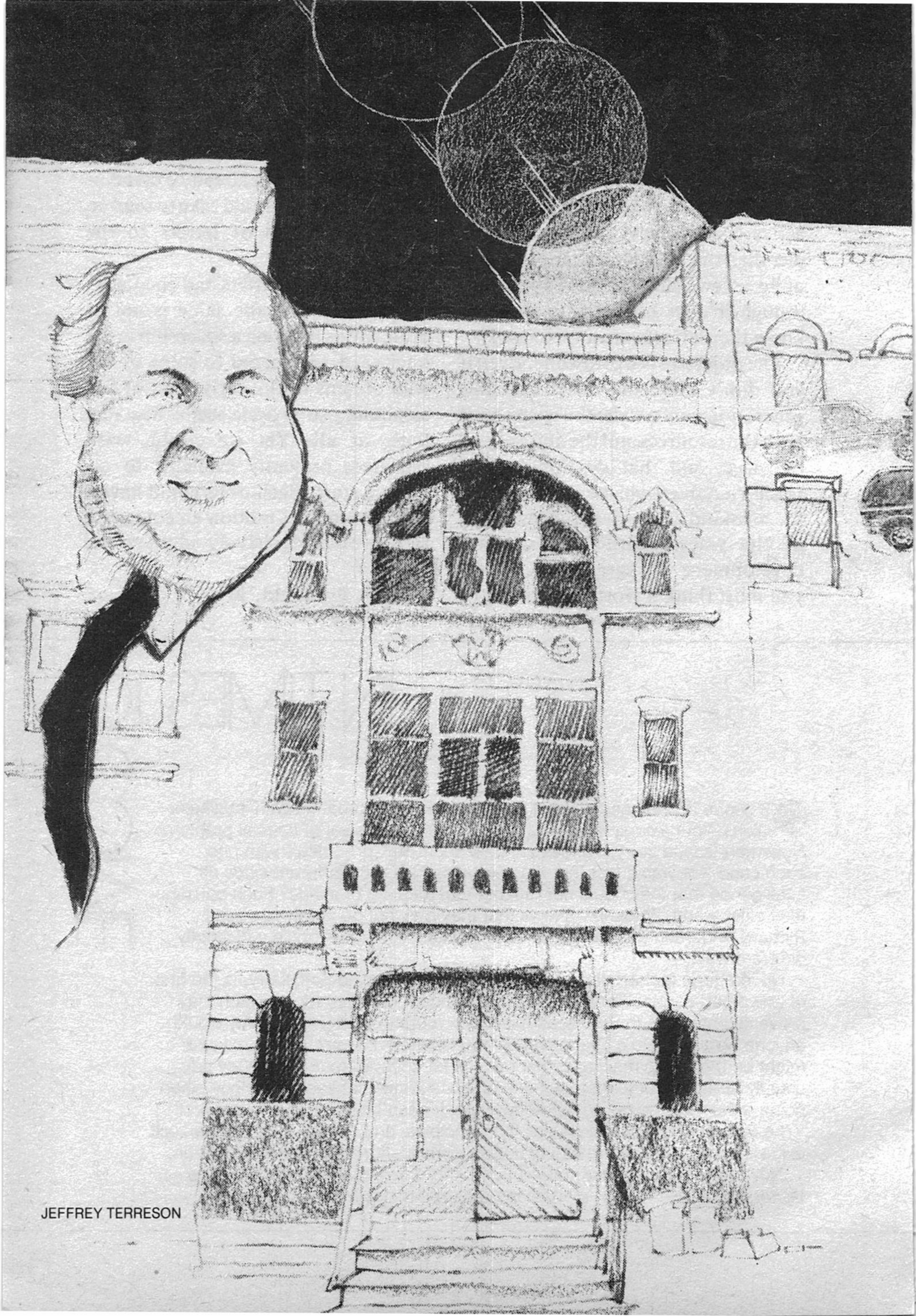
We really could. ■

IN TIMES TO COME

Science fiction has had a lot of stories of human contact with intelligent aliens—but *almost* intelligent aliens pose a whole set of special problems. November's lead story, "Phoenix," by Mark J. McGarry, deals with one such case—or was it just that the two races had such different *kinds* of intelligence that they could not reach a real meeting of minds? Such barriers may exist—and "Phoenix" shows that they may not be purely linguistic. Richard Anderson's cover captures a moment from the story in a distinctly different way.

November's fact article, by Roger Arnold and Donald Kingsbury, is the first of a two-part series. It presents a novel concept in space travel which may prove so important that it needs this much room to do it justice. Why would anyone want to build a space station 150 kilometers long? Because it just might be the key to making space travel a lot cheaper than everybody has usually assumed it must be. It's one of those ideas that seems obvious when pointed out—but so far, to our knowledge, it hasn't been. Read it here first: "The Spaceport: Part I" develops the principles, and Part II, in December, will explore some of the far-reaching possible implications for future civilization.

November will also feature Part II of Clifford D. Simak's new novel, *The Visitors,* plus all the short stories and features that will fit.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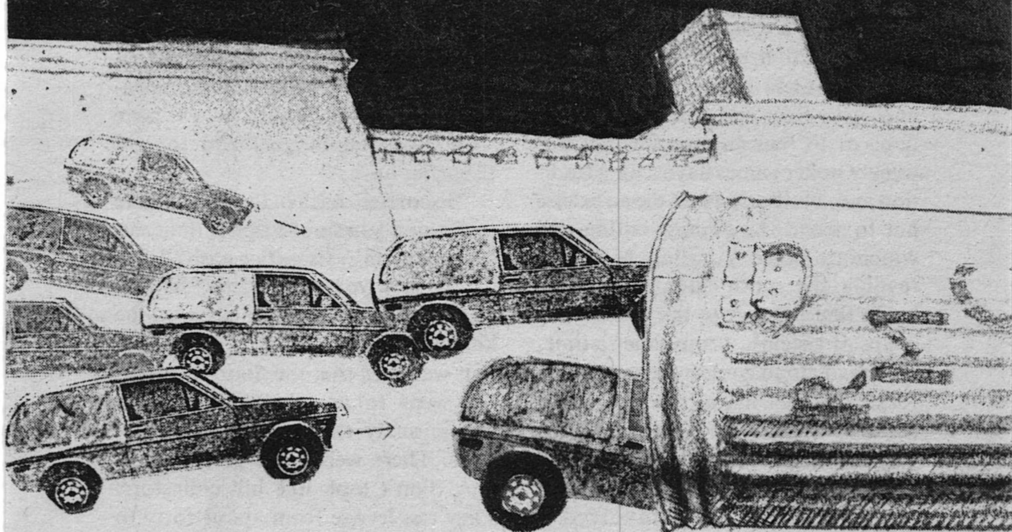

The case was one of murder, espionage, and sabotage... or was it?

MACK REYNOLDS

THE CASE OF THE DISPOSABLE JALOPY

That morning I came down late from my room on the second floor of the old brownstone at 918 West Thirty-fifth Street, a stone's throw from the Hudson. I'd been up into the wee hours the night before playing penny ante with Saul and Lon. Of course, none of us had any pennies but our weekly poker games have a long tradition and, besides, it gives me an excuse not to spend the evening sitting and watching Fatso guzzling beer and reading the moth-eaten old paperbacks that purport to tell of his early coups as a sleuth. From time to time, he'll read aloud a select passage or so, forgetting that it was me who wrote them. Currently, he's on one of the very first, the *Case of the Red Box*, a crime, if I recall correctly, and I probably don't, that involved a strawberry blonde prostitute.

I went on into the kitchen and said, "What's for breakfast, Franz?"

He looked at me, his aged meek eyes expressing sorrow.

I said, "That is, uh, Felix. Felipe? Don't tell me. I have it on the tip of my tongue."

"Baldie," he wavered, "there is mush for breakfast."

"Mush! Again? Whatever happened to orange juice, English muffins, griddle cakes with thyme honey from Greece, country sausages and eggs in black butter?"

He gave a sigh for yesteryear before saying, "Baldie, you know very well that four old men on Negative Income Tax cannot afford such luxuries, even when they pool their resources." He sighed again. "Besides, where would one get the ingredients?" He looked down sorrowfully at a paper packet in his hand. "Dehydrated wine, Beaujolais, vintage of '88," he said with a small moan, his head shaking negation. Then, "For lunch we will have soya bean hamburgers and tonight Escoffier hash."

"Escoffier hash? It sounds like something you smoke rather than eat. What goes into Escoffier hash?"

"To give you some idea," he told me. "Today is the day I clean up the kitchen."

It was then that the doorbell rang.

I went to answer it and peered suspiciously through the one-way glass. There were three of them and they didn't look like bill collectors. They ran in age from about forty to fifty—just kids. I put the chain on, opened the door several inches and said, "You've got the wrong address. This is the home of Caligula, uh, that is Tiberius, uh, I mean Claudius. Now, wait a minute, don't tell me, I know his name as well as I do my own. The same name as one of the early Roman emperors. Uh. . ."

The oldest and tallest of the three said loftily, "We are at the home of the most famed private detective of the last century, I take it?"

"You can take it or leave it," I told him, still suspicious. "That was the last century. To bring it up to date, the last three clients of the boss wound up being guillotined."

"Guillotined?" the smallest and youngest of the three said. "Is that the

method of execution these days? I'm not really up on such matters, don't you know?'' He wore and anachronistic goatee and fiddled with it as though checking the correctness of its point.

''Power shortage,'' I told him. ''Electric chairs were decided against when capital punishment was revived to take care of the terrorists. There's so many of them these days, there'd be a blackout if you electrocuted them all.'' A startling thought came to me. ''You don't mean that you three are clients?'' I said weakly, with a tremor in my voice.

''Of course,'' the chubby one said in disgust. ''You don't fancy we're standing here on the stoop of this crummy slum tenement, or whatever it is, soliciting for charity, do you?''

I opened the door, saying, ''We couldn't contribute a handout of birdseed for a refugee canary.''

They filed into the hallway.

''Your names?'' I said, strictly formal now. ''I'll notify the boss that you request an appointment.''

''An appointment?'' the tall one said, looking up and down the hallway, taking in the bedraggled rug and the chair with the broken leg. ''How long's it been since you've had a case, my dear fellow?''

''Three years,'' I told him. ''And we more or less cracked it. Took place right here in the neighborhood. I thought of writing it up. Even had a title. The *Case of the Missing Park Pigeons*. Unfortunately, the boss decided to hush up his deductions. It turned out to be a matter of a friend, our lawyer, Nat Parker, supplementing his pantry. That was just before he got a job with the new administration in Washington.''

They didn't seem to be particularly interested but the chunky one said, ''New administration? We're not really up on Ammedican politics, you know.''

''President Calley, the hero of Vietnam,'' I told him. ''In his belated award of the Congressional Medal of Honor he was cited for killing more Vietnamese than any other combat man, so, of course, we elected him. Nat Parker is now his Secretary of Gays, the new cabinet position for homosexuals. At any rate, what are your names, gentlemen?''

The older one said, ''My name is Clarke. This is Mr. Aldiss and this Mr. Brunner.''

''First names?'' I said politely.

''We're all named Charles. It's the thing in England now, you know. Something like in Islamic countries most of the boys are named Mohammed. In England practically all males are named after His Majesty.''

I ushered them back to the office at the end of the hall, saying, my suspicions again aroused, ''Limeys, eh?''

''British,'' the goateed one said sharply.

In the offfice I motioned them to chairs, saying, ''Have a seat, Chuck.''

Clarke took the well-worn red leather chair which sat at the end of Fatso's desk and Aldiss and Brunner took the less prestigious yellow ones.

I said apologetically, ''I don't have

a watch. Hocked it last year. The boss usually gets down from the plant rooms at eleven. That shouldn't be too long."

Brunner flicked the cuff of his right wrist and checked his chronometer. "That should be momentarily, I wouldn't wonder."

"Plant rooms?" Clarke said.

"Yeah. Up on the top floor. He raises petunias. It used to be some other flowers. I forget what. But they were too expensive. Now it's petunias. He spends every day from nine to eleven up there with his gardener, Ted. And another two hours in the afternoon." I thought about it vaguely. "I've often wondered what the two of them do all that time. Especially since Ted seems to be rouging his cheeks, now that he's got older and not quite so cute looking."

I got a notebook and stylo from my desk drawer and said, "While we're waiting I might as well get some background material." I looked at Clarke. "Just who are you guys, Chuck?"

He crossed his long legs. "We're scientists," he told me, affecting a modest self-deprecation that didn't come off.

"Scientists?" I said. The three of them looked as though they had about as much relationship to science as the Salvation Army does to the armed forces of the United States.

"That is correct," Aldiss said. "We work for the Ruptured Motors Company with offices in the Welfare State Building."

I made a note of that, wondering a little absently if I'd remember how to decipher my shorthand later. "Welfare State Building?" I said. "Where's that located?"

Brunner took over, after giving his little beard a fiddle. "It's on the site of the old Empire State Building which was bombed down by the terrorists in '85."

I said, trying not to sound too chauvanistic, "You mean to tell me that with ninety percent of the country on Negative Income Tax as a result of almost complete automation and computerization of production, distribution, communications, transportation and everything else, an automobile company imports its employees from England?"

Clarke said, "Absolutely necessary, you know, dear boy. I understand that it first started some half a century or so ago. You Ammedicans began to ask each other, 'Why can't Johnny read?' It seems that elementary schools would graduate without the ability to read and write. In a decade or so, it was found that high school students had achieved to the same status. Two decades later a college degree was no guarantee that its bearer wasn't, uh, I believe the term was 'functionally illiterate.' That is, they lacked the minimum reading, writing and computing skills to adequately cope with an increasingly complex technological society. Many, for example, couldn't balance a checkbook, fill out a job application, figure the unit price of food, or make out their income tax form. In fact, I

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understand that as far back as 1978, right here in New York, hundreds of public school teachers were being investigated for functional illiteracy. The were accused of obtaining their teaching certificates under dubious circumstances.''

I said wistfully, ''You mean that over in England, with no more than a bachelor's degree, a college graduate can make out his own income tax form?''

''Particularly if he's majored in accounting,'' Aldiss said.

I could hear the groaning, clanking and creaking of the elevator coming down from the plant rooms. Inwardly, I sighed relief. If that prehistoric elevator ever broke down permanently, Fatso would never be able to get up to his bedroom at the end of the hall on the third floor, not to speak of the plant rooms.

It came to a halt, I could hear the door open and then bang shut.

The beer barrel that walks like a man entered and came to a halt, glaring.

I knew how his once great mind was working. Three strangers were in his offices. If he wasn't careful the situation might degenerate to the point where he had a job. For a moment, I was afraid that he'd turn and bolt. It's one of his most childish tricks, the sort of thing that keeps me skeptical about the fundamental condition of his brain.

He muttered, ''Archibald, what is the meaning of this? Are you attempting to badger me?''

''No, sir,'' I said quickly. ''Three clients to see you. Mr. Aldiss, Mr. Brunner and Mr. Clarke. Their first names are all Chuck.''

''Charles,'' Aldiss growled.

Fatso glowered at me. ''Clients! Do you think me a witling? We haven't had a client for years.''

''No, sir,'' I admitted.

He looked at the three and lifted his shoulders half an inch and dropped them. He nodded in greeting, his head moving two inches, which for him was almost a bow.

''Gentlemen,'' I said, ''This is Mr. Coyote, uh, that is, Lobo. Uh, I mean, Mr. Dingo. No, no, now don't tell me. Jackal?''

Fatso glared at me again. ''Baldie,'' he said, ''your mind is slipping over the precipice of senility by the day. I remember back when you had hair and could remember such data as how many bases Ty Cobb had stolen in 1910. Why, I could never conceive.''

He made his way behind his desk to the only chair in the world which could seat his seventh-of-a-ton in comfort.

He looked hopefully at the paperweight on the desk, a chunk of petrified wood that had once been used by a man named Duggan to crack his wife's skull. But there was no mail beneath it. With stamps currently going at a hundred pseudo-dollars a throw, who could afford to write letters anymore?''

He reached for the button set into his desk and gave one short and one long ring, his signal to the kitchen for beer.

The three Chucks were staring at him as though fascinated. I could guess what they were thinking. Two hundred and eighty-five pounds of meat and not one ounce of muscle.

Franz, or Felix, or whatever the hell his name is, hobbled in with a tray bearing a plastic quart of beer and a glass and put it on the desk, turned and left, his aged eyes somewhat astonished at the sight of three clients. If I read him correctly, he was already having dreams of splurging and ordering a half dozen frozen pizzas and a pound of syntho-salami to go with them.

Fatso fumbled in his desk drawer for the gold bottle opener which had been given to him by a well-pleased client back in the days when we had pleased clients. Look who was calling who senile. His memory was nearly as bad as my own is getting.

I said, "You sold it, five years ago." I got up, went over and took up the quart of beer, placed the cap up against the edge of the desk and hit the top of the plastic bottle sharply with the heel of my hand. The cap popped off and the beer foamed over a little before I got it to the glass.

He took a deep swallow and then looked down at the brew in disgust and grunted, "These days," he complained, "you can't tell Schlitz from Shinola."

He leaned back in the chair, half closed his eyes, folded his hands over the half acre of his stomach, a position he affected when pretending that he still retained his faculties, and said, an element of hope in his voice. "If you gentlemen wished to consult a private detective why didn't you go to the Pinkertons or Dol Bonner's agency, or perhaps . . ."

Clarke said, "Because you're the only private investigator still listed as licensed."

"Pfui," Fatso said, then wiggled a finger at me. "Baldie, is this flummery? Why should we be the only agency lackwit enough to keep up our license fee?"

"I didn't know we were still licensed," I told him. "Probably they're so inefficient these days down at City Hall that they haven't gotten around to revoking it."

I turned to the clients. "The fact of the matter is, Chuck, that there's nothing in the private eye dodge these days. Divorces used to be the biggest item of business but who bothers to get married anymore? Then there was robbery but with the coming of the Universal Credit Card there isn't any money and nobody can spend your credits but you. So robbery doesn't pay. Some of the bigger agencies like Pinkerton and Burns used to supply guards and goon squads to corporations for strikebreaking and such worthy endeavor. But there aren't any strikes these days because nobody's working. We used to specialize in murder cases but since the Mafia Party has taken office what constitutes homicide is so elastic that a detective never gets a murder case any more."

Clarke said stuffily, "Our need comes under none of those categories,

I shouldn't wonder." He looked away.

"Indeed," Fatso murmured. He closed his eyes but he didn't lean back, so he wasn't thinking, he was merely suffering, probably at the possibility of his actually being able to find no excuse to avoid working. His lips twitched. After a dozen or so twitches he opened his eyes again and spoke. "Gentlemen," he said, "admittedly I am arbitrary and contumelious when confronted by some fatuous ninny who speaks gammon to me. Now, just what is this mysterious case to which you wish me to devote my wits?"

"Sabotage," Clarke said.

Fatso closed his rheumy eyes in pain. "My dear sir," he muttered peevishly. "Do I look as though I am so constructed that I am capable of dashing out and confronting saboteurs? Or that my puerile assistant here, doddering on the edge of caducity, could . . ."

"Hey," I said.

But he ignored my protest and went on, glowering at the three Chucks. "What do you mean, sabotage? Sabotage of what?"

"Industrial sabotage," Aldiss said. "We are the victims of industrial espionage and sabotage. The sabotage of our project, the disposable car, the Ruptured Rat."

"Ruptured Rat?" I said blankly.

Brunner, putting off his fussing with his beard for the moment, looked at me and said, not quite apologetically, "Long since, the automobile industry has run out of animals and birds after which to name their new models. It started long ago with such as the Bearcat, the Mustang, the Cayuse, the Thunderbird, the Bobcat, and so forth. Now we really have to reach."

"Disposable car?" Fatso bellowed. He took in a bushel of air through his nose as far down as it would go and let it out through his mouth. "This is brazen impudence. Pah. You attempt to diddle us."

"Certainly not," Clarke said, his own indignation there. "I fancy that it is in the best tradition of the American technological explosion. Certainly you remember the beginnings of the trend, the better part of a century ago. Kleenex, the disposable handkerchief. Later came such items as the disposable ball-point pen. When one ran out of ink you simply threw it away, rather than put in a refill. Then disposable cigarette lighters. When they ran out of fuel, you threw them away, rather than recharging them. Then disposable paper dresses for women. Then on the market came watches so cheap than when one stopped it was more economical to buy a new one than to have it repaired. It began to apply to most consumer goods. Shoes, for instance. They were no longer produced with the intention of having soles and heels replaced on showing wear. Cobblers had become so expensive that it was cheaper to buy a new pair. Very well, the time of the disposable jalopy has arrived and the Ruptured Rat is the result."

Through this, I had been staring at him with increasing blankness. I got out, "You mean that you plan on

producing a car so cheaply that the first time it needs even minor repairs you simply throw it away and get a new one?''

''Not exactly,'' Brunner said primly. ''That would be wasteful, I dare say. One would simply turn it in on a new model.''

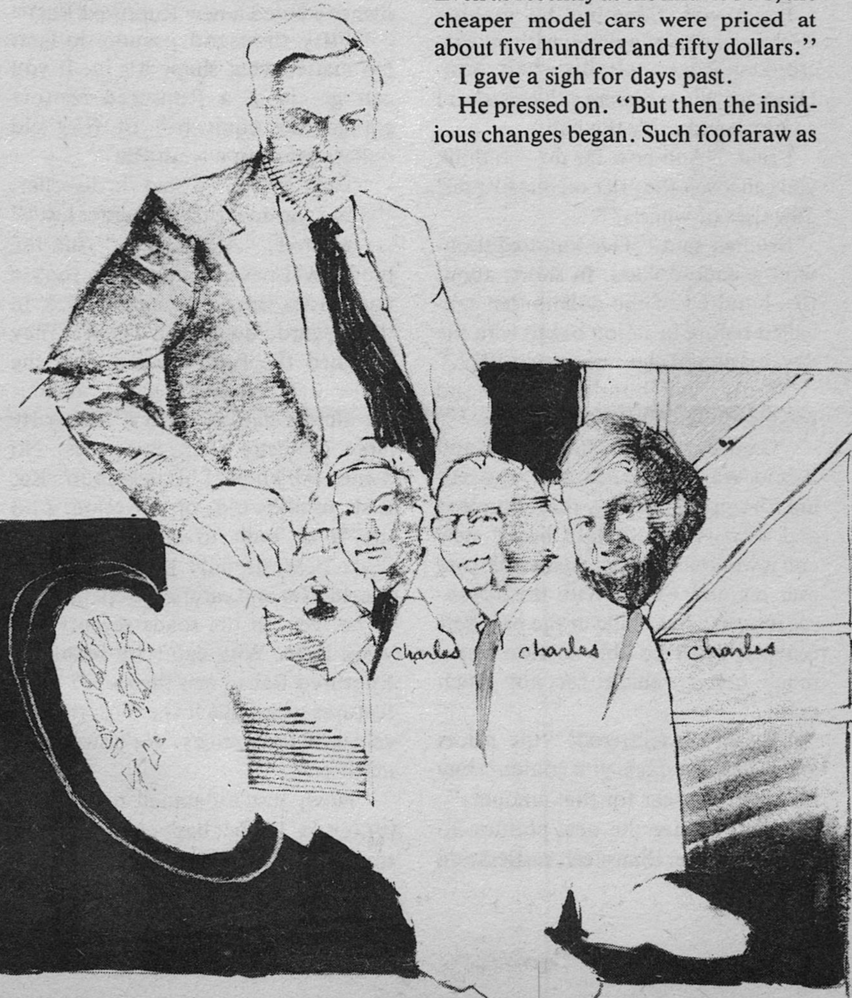
''How in the hell many people could afford to do that?'' I snorted.

Fatso just sat there, his eyes closed in sorrow.

Clarke took over smoothly. ''I can see that you chaps need some background,'' he said. ''In the very early days of the automotive industry simplicity was the word. The vehicles of the time were usually two cylindered and there were absolutely no frills. When mass production got well under way, many models sold for less than four hundred dollars; the Model T Ford is possibly the best example. Even as recently as the mid-1930's, the cheaper model cars were priced at about five hundred and fifty dollars.''

I gave a sigh for days past.

He pressed on. ''But then the insidious changes began. Such foofaraw as



self-starters were introduced and four-wheel brakes. Then heaters. Then windshield wipers. Radios. Air conditioners. Power steering, powered windows, powered brakes. Automatic shifting and whatnot. Nine-tenths of the cost of an automobile goes into unnecessary gadgets.'' He held up a finger dramatically. "The Ruptured Rat will take us back to the infancy of the car.''

Fatso was fidgeting by making circles the size of a dime, with an age-crooked finger, on his chair arm. However, his eyes were still closed so I continued to carry the ball.

I said, "And how far do you think you can lower the price on this stripped down set of wheels?''

Brunner said, "Five hundred thousand pseudo-dollars. In short, about five hundred of the dollars that prevailed before inflation began with the devaluation of the currency in 1932.''

"Only five hundred thousand pseudo-dollars!'' I got out.

"Certainly. Even after the Second World War the French 2CV was selling for approxiamately three hundred and thirty-three dollars brand new and it was one of the most durable cars ever manufactured. With the advances industry has made in the past half century, we'll be able to turn out a much better vehicle for not much more.''

"Why,'' I sputtered, "the prices are such these days, you couldn't buy the steel for a car for that amount.''

"We'll utilize the new plastics instead. Stronger than steel, rustless and no paint required. On top of that, there'll be no planned obsolescence. Long since it has been possible to manufacture such items as tires which will last the life of the car, batteries which will do the same.''

I hissed a whistle, then turned to Brunner and said, "Listen, Chuck, to get back to this disposable thing. What would you charge for a trade-in? Suppose a wheel fell off and an owner wanted a new Ruptured Rat?''

"Fifty thousand pseudo-dollars. No matter what shape it's in. If you can get it to a Ruptured Motors garage, the equivalent of fifty old dollars gets you a fresh Rat.''

"Holy smog,'' I said in disbelief. "How long does that guarantee last?''

"Forever,'' Aldiss said. "And the model will never change. We took a page from the Volkswagen book in that regard, don't you know? They designed the first Beetle before the Hitler war and continued to make it for almost half a century. No yearly large cosmetic changes for us. No owner will know if his neighbor's Rat is six months old, or ten years. And they'll be built to last indefinitely. Stutz Bearcats built before the First World War and carefully kept up were to be seen on the roads seventy-five years later. Why can't we build the Ruptured Rat to last the same? Such features will make it the most desired vehicle in the country. We'll sweep the market.''

"Now, just a damned minute,'' I protested. "What happens to all those trade-ins you accept? Why would

anybody buy one, if they can get a new Rat for only five hundred thousand psuedo-dollars?"

Clarke stepped into the act again. "You won't exactly get a *new* Ruptured Rat for trading in your disposable one. You'll get a *fresh* one, most likely, though you might get a brand new one. You see, all parts will be completely interchangeable. We took another page from Volkswagen on that score. For instance, there were only four bolts that held a Beetle's engine in place. You could drive one into a Volkswagen garage and in a few minutes have your engine pulled and a new one put in. That's what our garages will do. When a trade-in comes in we'll completely renovate it to the point where it is undetectable from a new one, and put it back on the market."

I shook my head in continuing disbelief. "But won't it put the UAW and other unions in a tizzy? With cars like that, selling so cheap, and lasting practically forever, the other car manufacturers will be throwing workers out by the thousands. The unions will strike you like a club over the head."

"What unions, old chap?" Brunner said mildly. "The plant which produces the Ruptured Rat will be completely automated. No good doing things halfway. We'll have no workers at all. It will be run by remote control by a handful of we executives in offices miles away."

I said indignantly, "You've got to have some workers. What happens when one of these automated assembly lines break down?"

"We'll have automated machines to repair the automated machines," Brunner told me with satisfaction. And then, anticipating my objection, "And automated machines to repair them."

I shook my head in continued objection. "It still doesn't wash. These days, the motor companies spend more than five hundred thousand psuedo-dollars in advertising alone for each car sold."

Aldiss fielded that one. "That will be our biggest advertising play. *We Don't Advertise.* Not a penny will be spent on advertising, sales promotion and the like. The savings goes to the customer. There'll be nothing but word-of-mouth advertising, the most effective there is. Nobody will 'sell' you a Rat. In fact, our sales people will be trained to be a little on the nasty side. For instance, they won't take trade-ins of other manufacturers' cars."

"No advertising!" I blurted. "That's un-American!"

"We're British," Brunner said smugly. "In spite of the fact that our organization is located here in Ammedica. Mr. Ruptured, the owner of the concern, is currently a monk in a monastery in Glamda, Tibet. He conceived of the idea of the Rat one day while contemplating his navels, of which he has two."

Fatso evidently decided to get back into the act. He opened his watery eyes and said in a blathering tone, "Confound it, I had been thinking in terms

of being retired and had been about to inform you that no man's pertinacity can coerce me. However, manifestly I could utilize a fee. When my clients first began to fall off, I considered augmenting my resources by renting my house in Egypt which I have owned for some years but have never seen. Unfortunately, it turned out that the house, which I had thought a mansion with Rhages and Veramine tiles in the doorway, was a mud hut down in the swamps of the delta. But enough of such twaddle. What is this sabotage of which you speak?"

Clarke took it up. "Possibly sabotage is not quite the word, though for some time we have realized that blueprints and plans have been mysteriously disappearing from our offices. The culmination now is the disappearance of our outstanding intuitive genius, the inventor, for instance, of our siphoning device. He hasn't shown up for work for three days."

"Siphoning device?" I said.

"Confound it, Baldie," Fatso bellowed. "Stop interrupting, with inane repetition. The gentleman said siphoning device. Make a note of it, even though you haven't been able to decipher your notes for the past half decade." But then some of the folds of fat in his face fell and he too took Chuck Clarke in. "How do you mean, siphoning device?"

"For siphoning petrol out of the Rat," Clarke said reasonably.

Ignoring Fatso's demand for silence, I said carefully, "Why should it be necessary to siphon gas out of the car?" Did I miss something?

Clarke said, as though nothing could be more obvious, "Oh, yes, we forgot to mention that aspect of the Rat to you chaps. But it is not unprecedented. Undoubtedly, you remember that in the early days of nuclear fission they developed a process whereby after producing electrical power from the fission plant, they wound up with more fissionable fuel than they had started with."

At this drivel, the face of the once great genius of crime detection fell as much as did my own.

Clarke went on. "An early example. However, in the automotive field the continuing fuel shortage and the all out efforts to economize on petroleum led to predictable developments. First, the little Japanese cars came out which would give fifty miles to the gallon. Then various new devices eliminating engine parts, such as spark plugs, helped. We of the Ruptured Motors Company have first hit upon the arrangement which automatically throws in a generator to recharge the batteries when the car is going down hill. The Rat, you know, utilizes electric power, steam generated from solar cells built into the roof, and petrol—all three. To make the story short for the sake of you laymen, the Rat will produce a surplus of gasoline which owners will be able to siphon out of their tanks and sell to service stations."

This time, both Fatso and I closed our eyes and murmured appeals to higher powers.

Clarke continued. "At the time of his disappearance, which we must only believe can be laid to foul play, he was engaged on a new development which would have involved the use of alcohol rather than petrol in the Rat."

Fatso's lip moved in and out several times. He said, "What was the source of the alcohol he was using in his experimentations?"

Brunner supplied the answer to that, after giving his beard a twiddle. "An obscure distillery, somewhere in Kentucky, I believe. They seem to have fallen on slow times since the legalization of marijuana. Let me see, ah yes, Jack Daniels."

Fatso leaned back with his eyes closed and his lips moving. He was pushing out his lips, puckering, and then drawing them in, out and in, out and in. I held my breath. For the first time in possibly ten years he was thinking.

He opened his eyes, finally wheezed, "Do you mean to tell me that this is not gammon? That this inventor fellow of yours was experimenting with using the products of the Jack Daniels distillery to utilize in the gas tank of the Ruptured Rat which has to be continually siphoned off since the vehicle produces more fuel than originally it consumed?"

"That's what I just told you, my dear fellow."

Fatso brought his whole seventh-of-a-ton erect and eyed the three Chucks with what I can only call that cunning you sometimes find in those failing with age. He said, "Very well, I'll take the case." A corner of his mouth twitched. His equivalent of a smile. "In fact, to be candid, I trust that perhaps I already have a clue. What is the name of the missing inventor?"

"Azimov," Clarke told him.

I looked up from my notes. "Azimov what?"

"Azimov Azimov. It seems that his father had an inordinate fondness for his own name and bestowed it upon his son twice. It's somewhat confusing, don't you know? So we call him Charlie for short."

Fatso's slack mouth worked momentarily at that. He said, "And where did he live before his disappearance?"

"In the Bowery Hilton," Brunner said, with a twirl of his goatee. I was beginning to wonder how any of it could have remained, surely he got at least a couple of strands each time he fiddled.

Fatso looked at me inquiringly.

I said, "One of the most prestigious flophouses in Manhattan."

The former genius turned his rheumy eyes back to Clarke. "If this fellow is such an indispensable member of your staff, why would he be living in such quarters?"

Aldiss smirked in satisfaction. "You chaps haven't really kept up with the march of automation, I dare say. It is now so advanced that even inventors are displaced. Charlie Azimov is so glad to have a job that he's willing to work for ground nuts."

"Ground nuts?" I said.

"Peanuts, you Ammedicans call them."

"Very well, my wits are at your disposal, gentlemen," Fatso cackled. "I will require a retainer. Say, one million pseudo-dollars."

"One million?" Clarke said, taken aback. "I say, I'm not as yet too well acquainted with your money but isn't that somewhat high?"

"No," I told him, figuring inwardly that the only reason that Fatso, the old duffer, hadn't named a larger sum was because he couldn't count any higher anymore. "A pseudo-dollar is now worth approximately one mil of the pre-Roosevelt period. Inflation began with FDR who was the first president to discover that you didn't have to completely back the paper dollars you issued with gold and silver. In fact, you could set up a mimeograph in cellar of the White House and crank out billions. But even Roosevelt was picayunish compared to the administrations that came later. They ran off some four hundred billion and bought up half of Europe with paper backed with nothing stronger than the smell of stale urine."

"Very well," Clarke said. He brought his Universal Credit Card from inside his jerkin, stood and approached the desk and put it into the credit transfer slot. He said into the screen, "I wish to transfer one million pseudo-dollars from the acccunt of the Ruptured Motors Company to this one." He put his thumbprint on the identity square of the screen.

I explained to Brunner and Aldiss, "One of the reasons we evolved the Universal Credit Card was because paper money was no longer practical. A pseudo-dollar wasn't worth the paper it was printed on, not to speak of the ink involved."

The other two Chucks also stood and the three made ready to leave.

"I trust you will begin operations immediately, old chap," Clarke said.

"Manifestly," Fatso muttered and immediately leaned back in his chair and closed his eyes.

I saw the three Britishers to the door and hurriedly bolted it behind them. I didn't want to take any chances of a change in mind and a demand for the return of their advance.

When I returned to the office, Fatso still had his eyes closed and his lips were twitching, though I suspected he slumbered. Sometimes he drowses, muttering in his sleep about the old days when he was up against such foes as Arnold Beck, who he usually called Mr. X.

I knew I was going to have to prod him into work, so I said, as snappily as I could manage, "Any instructions?"

His aged eyes opened and he shook his massive head to achieve what clarity was possible. In actuality, I was rather proud of how well the blathering old duffer had conducted himself during the past half hour. He hadn't seemed to have lost the thread of thought even once.

Now he said petulantly, "Don't badger me, Baldie. Can you get in touch with Saul, Orrie and Fred and have them come here immediately?"

"Sure," I told him. "All three are now working at odd jobs at Ruster-

man's Hash House and Chili Parlor. It's the only greasy spoon in town where you can eat all you want for three thousand pseudo-dollars."

"God heavens," he muttered peevishly. "I remember when it was owned by Marko Vukcic and was the best restaurant in the city." He closed his eyes again.

"Time dodders on," I told him, reaching for my TV phone and beginning to dial. I hadn't the vaguest idea what he wanted with the three operatives we had utilized so often in years long past.

He was probably back to sleep when the doorbell rang again. I pushed myself erect, groaning a little at the arthritic pains, and took off to answer it.

I was surprised to find who the two standing on the stoop turned out to be.

I adjusted my bi-focals, opened the door a crack and said, "What in the hell do you want?"

"Open up," the inspector wheezed. "Police business, of course."

I let them in, but shaking my head. I said, "You know, I've always wondered about you two. I remember you from the early 1930s when we were on one of our first murder cases, the *Fer-de-Lance* one. At that time you were a homicide inspector and the sergeant, here, was one of your right-hand men. Thirty years later when we were working on the case I wrote up as *The Final Deduction,* you were still an inspector and the sergeant was still a sergeant. And here it is thirty or so years after that. Don't you two ever get either promoted or retired?"

Except for the years, he was the same old inspector, complete with battered felt hat, his wrinkled pink skin wrinkled still more, his once sharp gray-blue eyes now almost as rheumy as Fatso's, his once broad rump now flabby.

His formerly big red face had gone grayish but his growl was the same, though perhaps it weaved a little. He said, "That'll be all, Baldie. We were retired, both of us. But we came out of retirement when the city got to the point where it could no longer afford to pay its civil servants and most of the police force quit. The inflation has eroded our pensions to the point where you can hardly afford a couple of soya hamburgers a month, so we both rejoined the force. Now, at least, we can pick up a little fruit from the stands and shake down a restaurant or bar for a bit of freeloading."

"Once a cop, always a flatfoot," I told him, leading the way back to Fatso's office.

By the time we got there, Fatso was pouring what remained of his quart of beer into his glass.

He looked up and said, in his usual blathering tone, "Indeed. The impetuous inspector. It has been a long time, sir. To what do I owe the doubtful pleasure of this visit?"

The inspector lowered himself into the reed chair and the sergeant into one of the yellow ones. I went over and took my place behind my desk.

To my surprise, the inspector brought forth a cigar and rolled it between his hands before putting it in his mouth.

As in the far past when he was almost a weekly visitor to the office on some police complaint or other about Fatso's methods of operating, he didn't light up. I hadn't seen a cigar in years. Not since the government had declared Tobacco Prohibition.

He said creakily, "I just happened to be in the neighborhood. The sergeant and I had to make an arrest just a few doors down the street in the direction of Ninth Avenue. Picked up Doctor Vollmer in a sweep against the Virginia Connection, on a charge of pushing tobacco. He was peddling it to school kids." He took the cigar from his slack mouth and looked at it with fondness. "I confiscated this evidence."

"Indeed," Fatso said, glaring at him. "I had no idea that my old friend, Doctor Vollmer, had fallen on bad times. But surely you are not ninny enough to suspect me of complicity in this bootlegging of Lady Nicotine."

"Evidently, the Doc was automated out of his practice," the inspector said. "At any rate, just as we left his place I noticed three suspicious looking characters coming down the steps from your front door."

"What was suspicious looking about them?" I said.

The inspector turned his bleary eyes to me. "They were coming down the steps of this house."

The seargeant cackled a laugh at that. He was obviously as far down the path of senility as was his boss—or mine, for that matter.

"Pfui. You are a witling, Inspector," Fatso said. He brought the glass of beer to his lips, emptied it and then took out his handkerchief and wiped the foam from his mouth. "The three gentlemen in question are my clients."

The inspector glared back at him. "That's what I was afraid of. The last dozen times you've had a client all hell has broken out before, by one means or the other, you've completely fouled them up."

"Pah. You are an intruder in my home, sir. Unless you have a warrant, I suggest . . ."

"What did they want?" the inspector got out in as much of a snap as his creaking voice could manage.

"That, Inspector, is between my clients and me."

"Oh, yeah?" the inspector said.

"Oh, yeah?" the sergeant echoed.

"Oh, yeah," I said, not to be left out.

"Has it got anything to do with homicide?" the inspector demanded. "When you get involved in a homicide case, and this has been happening for better than a half century, it usually winds up like a massacre. Before you're through with supposedly solving the crime, there's enough dead people around that you'd think the plague has hit town."

Fatso had evidently had enough. He closed his eyes and leaned back, withdrawn from it all.

The inspector glared at him for long moments. But he'd been through this before. When Fatso wanted to withdraw, he was the nearest thing this side of a turtle to being able to accomplish

it. The silence became uncomfortable.

The inspector's age-grayed face managed to take on a fascinating red touch. He said, "Damned beer soaked elephant." He turned the glare on me.

I let him see my dentures, in a ravishing smile. "Immovable object," I said soothingly.

"You grinning ape," he got out, even as he pushed himself to his feet. "Come on, Sergeant."

The sergent came on and the two of them marched down the hall to the front door. I followed, not just through courtesy but to be sure they really left. In my day, I've seen the inspector pretend to leave and then sneak back down the hall to press his ear against the door of the office on the off chance that he might hear Fatso and me discussing our current case.

When I returned, Fatso was sitting there, one finger slowly tapping his chair arm so that I knew he was boiling with rage.

He muttered, "Confound it, Baldie, I should sue the city for defamation of character."

"The city of New York hasn't had a pseudo-dime in its coffers for the past twenty years," I told him.

"Pfui."

The telephone rang and I answered it. Lil appeared on the TV phone screen. I winced. If she gets one more face lift her chin will be on top of her head.

"Escamillo!" she cackled. "I've had the most wonderful idea, dahling. Let's go to the Flamingo tonight and do that new dance, the 'Rock and Jerk'."

"'Rock and Jerk'?" I said in complaint. "It's too sexy a dance for me. I'm still having sacroiliac twinges from the last time we went dancing and that was only the Waltz Revival. Besides, the boss is on a new case."

"A case of what?" she said nastily. "Beer?" Her face faded.

I muttered, "Why in the hell don't they automate dancing? They have everything else."

The doorbell rang and I went to answer it and wasn't overly surprised to find Saul, Orrie and Fred there.

Saul, of course, was in his motorized hover-wheelchair. Why they still call them wheelchairs when they're supported by air cushion, I don't know. But even in his motorized wheelchair Saul is still the best tail man on the island. Who'd ever suspect he was being tailed by a man in a wheelchair?

I hadn't seen him for years, save at our weekly poker games. He's small and wiry, with a big nose and flat ears and wears a cap. He always looks as though he would need a shave in another hour and as though his pants have always been pressed a week ago.

Now Orrie was another thing. In the old days, he had been tall, handsome, smart and valued himself as quite the ladies' man. Now he looked the worse for wear having just recently got out the banger where he was serving time for molesting small girls in Central Park. He was sprung after the new permissiveness laws were passed.

They were the culmination of what had gone before. First they abolished the laws dealing with adultery and fornication outside the bounds of marriage. And then they permitted homosexuality between consenting adults. Now, everything else was allowed including sadism, masochism, molesting children and beastiality—with consenting partners. I never have been able to figure out that last one, though, Lord knows, there are some strange animals in this world.

Fred, currently on a cane, once overly married, big and broad and looking very solid and honest, was now almost the exact opposite. His over-domineering wife he had buried, under somewhat hazy circumstances, the worm having evidently finally turned. He had also shriveled and was no longer honest looking. In fact, he had several times beaten shoplifting raps by the skin of his teeth. But Fatso had probably forgotten that, now that he thought he had use for his former operative.

In the office, Saul pulled his wheelchair up next to the red chair which it had once been his privilege to occupy, Fatso considering him to be the best independent operative in Manhattan. Orrie and Fred wheezed themselves into yellow chairs, and I took my place at my desk.

Fatso made a steeple of his fingertips over the great expanse of his belly and blatted in his currently, inane fashion, "Gentlemen, we have a case. You three will proceed to tail three Englishmen named Aldiss, Brunner and Clarke. They work at the Ruptured Motors Company with offices in the Welfare State Building. I shall expect daily reports."

"Reports on what?" Orrie said cautiously. "What have they done? Or what do you expect them to do?"

Fatso glowered at him. "How would I know? That will be all, gentlemen."

When they were gone, I stared at him for a long empty minute, something as though I'd put my credit card in a slot machine and no gum had come out.

I said finally, "But those are the clients. Why do you want to tail them?"

He closed his eyes, obviously enraged by the question. His lips moved in and out several times and then he muttered petulantly, "Do you think me a callow stripling in this profession? A fatuous troglodyte? Manifestly, because there is no one else to tail, thus far. They're the only ones that we know of connected with this case."

I said bitterly, "Perhaps I could tail the inspector. On the face of it, he's going to be connected with the case as quickly as he can get about it."

He opened his rheumy eyes and glared at me. "Baldie," he prattled, "on this fascinating problem we shall utilize intelligence guided by experience." He closed them again and seemingly went back to sleep but then, on second thought, reached out and pressed his bell, one short and one long, for more beer.

I said, "Now wait a minute. What are *my* instructions?"

He opened his eyes again, his face took on an expression of being put upon and he reached out for one of the paperbacks dealing with cases of the past. This time, *A Right To Die.*

He said, obviously making it up as he went along, "You shall proceed to the offices of the Ruptured Motors Company and interview everyone who had any connection with this Charlie Azimov. Have them in my office here tonight at nine o'clock."

I looked at him. "How am I supposed to accomplish that?"

He began to read, his lips moving only slightly in the effort. "Possibly you'd best take your revolver."

"Oh, great," I told him in protest. "You know very well that they revoked my license ten years ago after that time I shot myself in the foot."

Nevertheless, when I left the brownstone, I had my Marley .38 Recoilless/Noiseless in its rig under my left shoulder. You never know. Sometimes the terrorists, when they didn't have any bigwigs or cops available to go for, would plug plain ordinary citizens just to keep in practice. At least they were democratic.

As a matter of fact, I met one on my way to the Welfare State Building, which was within walking distance. It had to be, since it was toward the end of the month, my Negative Income Tax credits were scraping the bottom, and I doubted that the credit transfer from our Limey clients had cleared as yet. The automated hover-cabs, these days, weren't exactly on the house.

He sidled up to me and said from the side of his mouth, "Hey, Comrade, could you spring for a few cartridges? I'm fresh out and I notice that bulge under your left arm."

He was an idealistic looking young fellow, as they usually are. I've never been able to figure out just what it is that the terrorists are trying to accomplish but youth must be served, I suppose, especially when it comes to their idealism.

So I said, "Bug off."

I proceeded on to the Welfare State Building which turned out to be no great shakes as compared to the skyscraping business buildings of my youth. Somehow or other, plastics don't quite have the dignity of the old steel and reinforced concrete materials of old, particularly baby-blue and pink plastics. And the stuff scruffs up more when some terrorist tosses a bomb up against it, or lets loose with a high caliber assault rifle.

Despite the power shortage, the elevators, or at least some of them, were working. I looked up the Ruptured Motors Company on the lobby directory and found them to be on the Thirteenth Floor, which figured. They were in Suite Four, which didn't. I had expected that an outfit with the ambitious project of creating the Ruptured Rat would have at least several floors at their disposal.

I found Suite Four, complete with a glass door lettered *Ruptured Motors Company* and underneath that, *Semi-Lama Charles Ruptured, President.*

I stood before the identity screen and pressed the button.

A sultry, feminine voice said. "Who the hell is it? I don't recognize your phizz."

"Uh," I said. "Now just a minute. Uh, don't tell me. Uh. Well, just a minute and I'll look it up on one of my business cards." I reached for my pockets, one by one, trying to remember which one it was I kept my wallet in.

"Never mind," the voice sighed. "By the looks of you, I'm surprised that you ever found the Thirteenth Floor. Come on in."

The door opened and I went in.

It was a stereotype reception room. Spanking new plastic furniture, sterile looking artists' conceptions of the Ruptured Rat on the walls. At these, I initially winced but my eyes came, hypnotically drawn, to the apparition behind the reception desk. Myrna Loy, playing maybe Dracula's daughter, without the buck teeth.

She was slinky, she was sultry, and she was dressed as has never been a receptionist in the history of receptionists. You know, for a swinger's party, rather than an office. Her pneumatic lips were painted to the point that she looked as though she might bleed to death through them and I didn't get too close, not wanting to catch a cold from her batting those eyelashes.

She smiled—leered would be the better word—and said, "You must be the shamus. Mr. Clarke called and said that you'd possibly be around and to cooperate. You know, Baldie, I've never met a gumshoe before."

I said quickly, thinking to trap her, "How did you know they called me Baldie?"

"Women's intuition," she said, "How about a belt of guzzle?"

I blinked at her.

She opened a desk drawer, looked down into it and scowled. "Damn," she said. "I was sure it was in here." She tried another drawer and then another, finally coming up with a familiar looking tall, square bottle with a black label, and two overgrown shotglasses.

"Best bourbon in the country," she murmured sensuously, as she poured two generous ones and pushed mine over toward me. Evidently there was to be no mixer, not even water.

She knocked hers back with the practiced stiff-wristed motion of one who has been known to take a drink before. Then she poured another while I sipped mine. She was right. It was very fine sour mash, well aged bourbon indeed. I haven't had anything but syntho-gin for years.

She said, "Now, then, what can I do for you, Baldie? You don't look in the age group of those who make the usual answer to that."

I finished my bourbon and refrained from putting my tongue into the glass to lick it clean. I put the glass down and reached for my stylo and notepad.

"Have another," she said and poured two more, she having meanwhile finished off her second.

I said, "The boss wanted me to interview the complete staff of Ruptured Motors, that is, at least, all those who come in contact with Charlie Azimov."

"All right, fire away," she said.

I looked at her blankly. "Where do I find the others?"

"What others?"

"The boss wanted me to talk to everybody who knew Azimov and then get them to come over to his office tonight at nine."

"There are no others," she told me. "Except for Mr. Aldiss, Mr. Brunner and Mr. Clarke. And none of them are here. Besides, you've already talked with them. I can see that you're really behind the times, Baldie. This place is *really* automated. Charlie and I are the only employees, except for those three Britishers, of course. This bottle seems to be empty, wait'll I see if I can find another."

She began going through the desk again. She had evidently been working on the first bottle before I showed up. She brought forth a sheaf of papers and looked at them blankly. "I'll be damned," she said. "I've been looking for these blueprints all week. Things sure do get lost around here. Well, it's my first job as a secretary-receptionist, so I can't be expected to be up on all the routine."

She absentmindedly threw the papers into a disposal chute and went on to successfully find another bottle of the stone age bourbon, which she opened expertly.

"Now, wait a minute," I said in protest. "You mean to tell me that there's only two employees of Ruptured Motors, except for the three Limeys?"

"That's right." She poured.

"But two people couldn't possibly do all the work, one secretary and one inventor."

"What work?" she said reasonably. "I keep telling you, it's all automated, computerized, and all that jetsam. As a matter of fact, there's so little for me to do in the way of being a secretary that I have to serve Mr. Aldiss, Mr. Brunner and Mr. Clarke in other manners. In fact, I sometimes think that's why they hired me. They could have installed an autosec instead."

I was flabbergasted. I said, "But building the factory where the Rat is to be manufactured?"

"Oh, building that is to be contracted out."

I closed my eyes momentarily in sorrow but then opened them again and said, "All right, what's your name?"

"LeGuin," she said, knocking her drink back and then reaching for the bottle.

"LeGuin?" I said. "What's the first name? And don't tell me it's some feminine version of Charles, such as Charlotte."

"Mata Hari," she told me.

I noted it down, saying vaguely, "Mata Hari, Mata Hari. Seems to me I've heard that name before."

"My great-grandmother," she said. "She was somewhat of a celebri-

ty in times past," she revealed proudly.

"Before my time, I guess," I told her. "I don't go back much further than Ginger Rogers, Greta Garbo and maybe Mary Pickford. I used to eat them up."

"In *those* days?" she said, surprised.

I returned to my notes. "Now, then. You're an American?" Not that she looked like an American, come to think of it. She couldn't possibly have hailed from any place less exotic than the Near East.

"No," she said, judiciously pouring for both of us again. "Born in Tangier, Morocco. My mother came from Brazil and my father, Macao." She added, absently, "No extradition laws in any of those places."

I eyed her. "You mean that you're another example of aliens being allowed by the government to be employed while ninety percent of Americans are out of work and on Negative Income Tax? Don't tell me that in this case it's a matter of brain drain, that there's not enough people left in the country who can read and write."

She said, in kind of a haughty voice, "Please, I do not permit four letter words spoken in my presence."

"What four letter words?" I said blankly.

"The government."

I shook my head. "Here you are a secretary and you can't spell any better than I can. Four letter words are words like bastard, sonofabitch and whore and stuff like that."

"Oh" she said apologetically.

"Now, this Charlie Azimov," I said, mounting such briskness as I could. "What can you tell me about his disappearance? Do you think it was a kidnapping? Possibly the terrorists?"

"What disappearance?" she said, very matter of fact. "He just phoned in, just before you entered. He has a bad cold. Let's see, I have his message somewhere here." She fumbled around through the top desk drawer. "Nope I can't find it. My filing system is hopeless."

I raised my eyes to anyone up there. Then I brought them down again and looked at her emptily, something as though I'd put my credit card in a pay toilet only to find there was no toilet paper.

Sadly, I came to my feet and returned my things to my pockets.

"You're not going?" she said. "Why not stick around and help kill this jug? I've got another one or two around—if I can find them."

"No thanks," I said. withholding tears. "I never drink on duty. Besides, I've already had three and my navigation isn't as good as it once was."

I retraced my way to the brownstone on Thirty-fifth Street, only twice running into small bands of terrorists, one of which was beating a little old lady over the head with her own shopping bag full of groceries she had probably ripped off from the local ultra-market. I avoided them on both occasions, not wanting to become involved, as the modern moral has it.

I let myself in and, before going to

the office, dropped off in the kitchen to see whether or not I had miscalculated and was late for lunch.

Felix, or whatever his name is, was working away happily at the stove.

He looked up and said, "Look, Baldie. Like the old days. Shad roe *fines herbes,* no parsley, instead of soya bean hamburgers. And tonight, instead of Escoffier Hash . . ."

I looked at him glumly. "Where'd you get the credits for all this fancy grub?"

"But, we've got a client, Baldie. I phoned Mummiani's on Fulton Street, the last gourmet food store in town. It took every last credit we had in the national Data Banks, Banking Section. But as soon as their credit exchange clears we'll have all we need to dine for months the way we used to."

"What client?" I said, still not exactly hopping with joy. "We were to investigate industrial sabotage and espionage and an inventor who disappeared possibly through foul play. It now turns out that the industrial espionage is probably a snaky looking mopsy, hired for her ability to dispense horizontal refreshments, rather than her secretarial know-how. She misplaces everything. And the disappeared inventor, a cloddy named Azimov, is in his bed, laid up with a cold, in the Bowery Hilton."

He looked at me aghast and his weak old mouth quivered.

I took in his bare shelves, no happier than he. They were less than laden with dehydrated soups, a few cans of this and that, and so forth and so on.

Cancer
dies with the patient
Heart Disease
dies with the patient
Huntington's Disease
kills on and on and on.

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THIS SPACE CONTRIBUTED BY THE PUBLISHER

"Whatever happened to gourmet food?" I said. "Seems to me that just a few years ago everybody was talking about gourmet food."

"Yes," he said, even more desolate than I. "But even then the word has degenerated from its original meaning. Now gourmet food is anything you eat that you can keep down. From the cookbook recipes, if you add some dehydrated parsley and a few grains of monosodium glutamate to a can of tomato soup, it becomes a gourmet dish."

As I turned to leave, he absently pinched my bottom. I tell you, I'm beginning to wonder about the inhabitants of this establishment. Four men have been living in the famous old brownstone on Thirty-fifth Street

since shortly after the First World War, and not even a cleaning woman is allowed in so far as women are concerned. I'm the only one that's ever had a date in that time—and her, Lil.

I went on into the office to report. Fatso was sitting there in his chair, leaned back, his eyes closed, his lips going in and out, in and out, the indication that he was thinking. For years it has been the ultimate taboo. He is not to be interrupted whilst thinking. However, this time was just too much.

I said, "What in the hell are you deducing? What are you thinking about?"

"Lunch," he said.

I took my place at my desk. "You want me to report?"

He opened his eyes and scowled at me, probably having forgotten what errand he had sent me on. However, he said snidely, "Proceed, giving everything in full detail from your famed photographic memory, your complete recall."

I told him about going to the small suite which housed the offices of the Ruptured Motors Company. Told him about the svelt Ms. LeGuin.

Upon my description, he looked alarmed. "You didn't tell her to come here at nine tonight, I hope?"

I admitted I'd forgotten that part of his instructions. I went on to reveal that Mata Hari LeGuin and Charlie Azimov were the only employees of the company, save the three British scientists, who headed the project. Then I let him know that Ms. LeGuin was the dipso to end all dipsomaniacs; that if it was water she drank, rather than sour mash bourbon, she'd probably drown herself.

Old Fatso's rheumy eyes narrowed to half, as though he was closing in on a victim. He said, his voice less blathering than usual, in fact, he almost sounded lucid, "Did you notice what brand the whiskey was?"

I thought about it. "Well, yes, but it escapes me now."

He sighed all the way down to his belly, which makes for a sizeable sigh. He said with childish petulance, "And I can recall when you were capable of remembering such inconsequential data as who the current senators from this state were. Very well, was there anything else to report?"

I scowled. "Well, yes, it seems to me there was one other item Ms. LeGuin told me that I thought I ought to inform you about but for the moment it eludes me."

It was then that the cook, whatever his name is, entered and reported that lunch was to be served.

The shad roe, *fines herbes,* without parsley, was superb and Fatso was in his version of Allah's paradise. Since the rule is that we never talk business during mealtime, he regaled me with a summary of several chapters of the paperback he had just finished, *Three For the Chair,* undoubtedly having forgotten that it had been me who had peddled the exaggerated account to an idiot of an editor long years past.

While we were having our coffee, back in the office, the doorbell rang

and I went to answer it. At first, it looked to me as though the character there was wearing a bedsheet, a bedsheet pulled all the way over his head on the top of which rested a circuit of black braided rope. Then I realized that he was an honest to goodness A-rab.

I opened the door a slit and said, "If you're soliciting funds for the Palestinian side of the Hundred Years War . . ."

But he touched his forehead, his lips and then his heart and said, "*As-salaam alaykum.*"

"That's great," I told him. "But what do you want?"

He stroked his black beard, looking like some Tri-Di character in *The Return of the Thief of Baghdad.* and said. "*Effendi,* I wish even to speak with your master."

I thought about it but, what the hell, we hadn't had a laugh around the place for months. I opened up and let him in and turned automatically to take his hat to put on the coatrack there in the hall before realizing that wasn't practical. I led the way back to the office.

When we entered, Fatso glowered at me. "Is this flummery, Baldie?" he bellowed.

"I don't think so, sir," I told him. "He wants to talk to you."

Without invitation, the newcomer took the red leather chair and crossed his legs. He wore soft leather black boots under his white skirts, or whatever the hell you call the outfit.

"Well, sir?" Fatso muttered petulantly. He hates to have his digestion interfered with so shortly after having eaten.

I took my place at my desk and took up my stylo.

The other beamed at his hulking host and said, "*Effendi*, I represent the United Arabian Petroleum Industries. I have come to put you under retainer."

"I already have a client," Fatso muttered peevishly.

"Verily, as each of us know. The Ruptured Motors Company. However, the retainer would consist of five million pseudo-dollars. Tax free, of course."

Fatso, his voice a fraction less anile than was usual these days, said, "Sir, I am a citizen of the United States of America and never cheat the government of my country—unless I can expect to get away with it."

The other said smoothly, "We assumed that you had a numbered account in Switzerland, or possibly the Bahamas. May God be praised."

"Hmmm," Fatso said. "Just what was it you wished to retain me to do?"

"First, is it true that your present clients are on the verge of manufacturing an automotive vehicle which will produce gasoline rather than consuming it?"

"Confound it, sir," Fatso let him know in indignation. "I never discuss the secret affairs of my clients—unless there's a profitable reason to do so. Where's the five million?"

We spent the next few minutes in the transfer of the amount from one

Swiss numbered account to another.

Then Fatso leaned back, crossed his hands over his belly, closed his eyes and answered the question. "Yes."

The newcomer said, "Verily, it is a miracle of God."

"What did you have in mind in retaining my wits?" Fatso rumbled.

The other came to his feet, obviously preparatory to leaving. He said, "For the moment, nothing, *Effendi*. We will contact you when your services are required. *Al-humdu li-llah,* praise be to God. And now, *Triq es-slama,* may the road lead to salvation."

"Hey, wait a minute," I said, "Before it does, what's your name?" I hunkered over my notebook.

He looked at me. "Even Carlos Mohmoud ould Cheikh, *Effendi.*"

I made a note of it, looking blank. "Carlos?" I said.

"I believe in the language of the *Roumis* that is the equivalent of Charles," he told me. And then he turned back to Fatso, touched forehead, lips and heart and murmured, "May your life be as long and flowing as the tail of the horse of the prophet."

I followed him out to the door, muttering under my breath all the way, and then returned to the office.

Fatso was reading *Plot It Yourself* and chuckling inanely over the manner in which he had foxed the plagiarist Amy Wynn, more years ago than I like to remember.

I sat down at my desk and said bitterly, "So we have two sets of clients, the Ruptured Motors Company and the United Arabian Petroleum Industries. You don't think there might be a little conflict of interest there, do you?"

He looked up from the book, eyed me and said in his childish know-it-all manner, "Pfui. Certainly not. How could there be?"

I said patiently. "One sells petroleum and the other is going to turn out a car that not only doesn't need it, except for the initial start, but produces it as a side product."

And he said, just as patiently, "See here, Baldie, as our new client Carlos Mohmoud ould Cheikh pointed out, thus far they have nothing for us to do. We are merely under retainer. So how can their interests and those of Ruptured Motors conflict? If any hanky-panky developed, that we could not in good conscience accept, we could resign. Ah, keeping such amount of the retainer as we decided was called for as a result of our efforts thus far. Say four-fifths of it."

I opened my mouth to retort to that but closed it again. What the hell. I hadn't been paid my salary in fifteen years.

The doorbell rang and I wondered if Carlos had forgotten something and returned.

But no. When I answsered it, there was a stranger on the stoop.

I opened up and said, "Now don't tell me. Your name is Charles and..."

He looked at me as though I was half way around the bend and said,

"The name is Pohl, Karl Pohl, and I represent the Old Battle Fatigue Distilleries conglomerate and am here to enlist the services of a private investigator." He cut it short and scowled at me. "Karl is the Germanic equivalent of Charles. How did you know?"

"I'm a detective." I said wearily. "I deduced it. Come on in."

I took his beret, hung it up and let him precede me to the office.

Fatso looked up from his book and, in a blathering roar, if that combination of words makes sense, said, "Confound it, Baldie. Are these interruptions to be ceaseless? I am being badgered! Pfui. Am I to have no time for my research? I am contemplating doing my autobiography, after reading these fifty some volumes on my expertise. On reflection, it would seem hardly credible that this number of mysterious homicides could have taken place in the city of New York. Not since the days of Aaron Burr."

"Mr. Carlos Pohl to see you sir. That is, Charles Pohl. I mean Charlie, Chuck, that is, Karl Pohl."

Our visitor looked from one of us to the other. "What in the hell goes on here?" he said. "Isn't this a private detective office? You two cackling hens look old enough to have investigated Abraham Lincoln's assassination."

He wasn't a bad looking guy, in an objectionable sort of way, but a little on the energetic side. Like a man with a lot of irons in the fire and possibly one up. . .but anyway we weren't off to much of a start.

I said to Fatso, "Mr. Pohl represents the Old Battle Fatigue conglomerate of distilleries, so I suppose that you're in no position to be in communication with him, sir. However, he. . ."

Fatso glowered at me. "Confound it, Baldie, I am not such a ninny as to be diddled." He turned his rheumy eyes to our visitor. "Sit down, sir. Now, what is your plight?"

Pohl collected himself, sat and said, "Our multinational combine of distilleries wishes to retain you to take action against a nefarious conspiracy to undermine one of the most basic institutions of this and every other nation in which we operate."

"That's a hell of a lot of subversion," I murmered, sympathetically.

"Shut up, Baldie," Fatso cackled, placing his fingers in a steeple over his mountainous stomach. He turned his watery eyes to our visitor. "Please elucidate, sir."

Pohl was in a high state of indignation. "The Ruptured Motors Company is devising an infernal machine that will throw every honest drunk at their mercy. They plan to replace gasoline in their new vehicle with alcohol and, evidently, any alcoholic beverage will do. Cognac, I assume, for the European version of their product, vodka, I suppose, in the Soviet Complex models, and perhaps even saki in the Japanese. One's mind veers at this attack on human rights. Why, any motorist could remain permanently sloshed—for free! The con-

founded vehicle is designed to start off with a few quarts of potable in its tank and then will perpetually duplicate the beverage."

"Devilish," Fatso admitted, wobbling his various chins up and down in accord. "But how did you know?"

The other assumed a sly smile. "We have infiltrated their offices with a spy."

"I see," Fatso said.

Pohl came to the point. "We wish to retain you to combat this subversion in whatever manner you find fit. One of our Members of the Board, an octogenarian, became acquainted with your reputation as a boy and has recommended you. He was particularly impressed by one account of your abilities entitled *Too Many Clients*."

I cleared my throat, but they both ignored me.

"Well, I will be candid, sir," Fatso said. "I am already up to my neck in work."

That takes in one hell of a lot of territory, I could have said, but didn't.

Pohl overrode him. "Our retainer would amount to ten million pseudodollars. We presently represent every distillery in the world save Potato Peel Vodka, produced in the Ukraine."

When he was gone, I looked at Fatso for a long empty moment, something as though I had used my last credits on a phone call reporting my car had broken down fifty miles from nowhere, only to get a wrong number.

I said gently, after adjusting my dentures with my tongue, "Now this conflict of interests matter . . ."

"Pah," he muttered petulantly, closing his eyes and reaching instinctively for the button to summon more beer. "What conflict of interests? We have been retained by one client to investigate industrial sabotage, including an inventor who has disappeared, and by another to patriotically prevent subversion of a basic institution. Two entirely different cases."

I admit, I don't come up with quick answers the way I used to. I just stared at him.

He said testily, "But we must get to work. Make your way to the Bowery Hilton and find out what you can about this Charlie Azimov and his mysterious failure to make his daily appearance at the offices of Ruptured Motors."

He was obviously getting me out of the way before I could come up with a few questions about our professional integrity that his age-addled mind didn't wish to be confused with.

In view of my experiences on the streets that morning, I not only took my Marley .38 Noiseless/Recoiless but two small grenades, on the off chance that I might run into a few of the youthfully brash terrorists on the way. As I say. I feel for their dreams of Utopia, but don't wish to get in the line of fire while they are achieving it.

The Bowery Hilton had seen better days. By the looks of it, it might have been used as a recruiting station when Lincoln issued his call for seventy-five thousand volunteers. The only thing that could be said favorably about this

section of town would be that there were no terrorists. The residents had already been terrorized to hell and gone.

The place wasn't even automated. When I came up to the desk a fey looking character approached and said, "Good afternoon, sir. My name's Bradbury. I'm the receptionist. What can I do for you?"

I said, "Don't tell me your first name, I don't want to know. What room was Azimov in?"

"Was?" he said, lifting eyebrows. "He still is. His room number is 305."

Something Mata Hari LeGuin had said came back to me, more or less. Something about a three-day cold. But I couldn't quite remember.

I made my way up the creaking steps, planning on using a skeleton key to get into the missing inventor's quarters so I could search it in hopes of digging up some clue as to what had happened to him.

The skeleton key wasn't required. The door wasn't locked.

I entered cautiously, which also wasn't required. I could have made enough noise to raise the dead. But I didn't.

Because the dead was stretched out in the bed, looking very dead indeed. Charlie Azimov hadn't just disappeared. He had died. I checked quickly. There were no signs of violence. In fact there was nothing out of the ordinary at all, except possibly a half finished plate of soup on the nightstand. I checked it out. Mushroom soup, it looked like. There was a large, quart sized, cardboard container next to the plate, obviously used to bring the soup in.

I got on the TV phone quickly to report. It'd be just my luck for the inspector or the sergeant to turn up along in here. They'd haul me down to headquarters, downtown on Center Street, and use some of the Nazi War Surplus equipment, thumbscrews and so forth, that the city had brought up to chastise the terrorists with.

Fatso's impatient face faded in. "I assume you've become lost?" he blathered.

"No, sir," I said snappily, or, at least, it was intended to be snappily. "I've found the missing Charlie Azimov."

"What!" he bellowed indignantly. "The first day! I had expected to string this case out for weeks if not months. Bring him here so I can question him. Perhaps we can figure out some manner in which to stretch . . ."

I adjusted my thick lensed bi-focals on my nose and looked at the corpse unhappily. "That might be difficult," I told him. "He's a little dead. Should I notify the inspector? I'm here in Azimov's room."

His rheumy eyes took on a slyness which only accented his caducity. "No," he said. And then, trying to be thoughtful, "How long do you think we could just leave him there before he was found?"

I looked around the pad. "Probably a week."

That took him back. "A week, Baldie? How about the odor?"

I shook my head at him. "In this fleabag, nobody would notice the smell. And I doubt if they have room service, so no maid would come in."

"Very well. Satisfactory. Return at once and report."

As an afterthought, just before leaving I picked up the only half-empty container of mushroom soup. We hadn't had such a delicacy come from our kitchen in many a month and Charlie Azimov certainly wasn't going to be wanting it.

After only two minor skirmishes with the terrorists and one with the police, who must have thought I was one, I got back to the brownstone. I let myself in and went immediately back to the office, passing, on my way, the kitchen where what's-his-name was happily singing some Swiss Alpine song as he cooked with the expensive ingredients he had bought that morning. Wait until he found out that the case had already been found, albeit in not very good shape.

Fatso glowered peevishly at me, as the bearer of bad news, then levelled his eyes on my soup container. "What in the names of Hades is that?"

I told him where I'd picked it up, adding that it smelled better than anything I'd eaten for ages.

Food being food, and taking precedence over all else, he took it, removed the top and peered down at the contents. Then, to my surprise, he put the container down, stretched back in his chair, closed his eyes and began working his lips in and out, in and out, in that mannerism of his that has been setting me to climbing the walls for a damn sight more than half a century. I went to my desk and sat down.

Finally, he said, "Baldie, you're a lackwit."

"Yes, sir," I told him. "You've mentioned it before."

"Report in detail."

I reported in such detail as I could remember, which made it a short-short story, rather than a novelette. I had hardly finished before the phone rang.

It was Saul reporting that Aldiss, who he had been tailing, was sleeping with Mrs. Brunner.

I passed on the information to Fatso, who commented with a "Pfui."

The phone rang again. It was Orrie, reporting that Brunner, who was his assignment, was sleeping with Mrs. Clarke. I got another "Pfui," from the lord of the manor.

The phone rang again and it was Fred. He reported that Mr. Clarke was sleeping with Mrs. Aldiss.

"It sounds like a regular merry-go-round," I commented to Fatso.

"Pfui."

The doorbell rang and I went to let in the inspector and his sidekick, the sergeant.

The inspector wasted no time on preliminaries. He snapped in his now cracked voice, "All right, Baldie, this time you've had it. Get your hat. We're going down to the hamburger plant."

"Hamburger plant?" I got out.

"The basement over at Homicide East."

I cleared my throat. "Don't you think that we might go in and see the boss? He might like to know."

He glared at me in triumph. "That's a good idea. Probably the only one you've ever had. I can't wait to see the expression on his fat face. Come on, Sergeant."

We marched down to the office.

Fatso looked up from his fresh bottle of beer. Evidently, this time it had been delivered open.

He began, blatheringly, "To what do I owe this intrusion, sir?"

The inspector plumped down, making no effort to disguise his puerile satisfaction. "This time you've had it, you chunk of blubber. Baldie, here, is under arrest on so many charges I won't bother to recite them all. First is homicide, and last and least is leaving the scene of a crime without notifying the authorities."

Fatso took time out to down half his glass of beer before leaning back and closing his eyes. His lips began moving in and out. It obviously fascinated the inspector, though he'd gone through the experience of witnessing the performance a thousand times over. He probably hadn't figured on Fatso thinking at a time like this.

He finally opened his eyes again. "This, Inspector, I cannot allow. Baldie has been my assistant for so long that I've almost become used to him. Just short of idiotic he might be these days . . ."

"Hey," I said.

". . .but I'm used him."

"That's tough," the inspector got out in what he probably meant to be a snarl. "However, it seems as if an hour or so ago he entered the Bowery Hilton Hotel. His furtive manner raised the suspicions of Charles Bradbury, the receptionist, who, on reflection, phoned the police. And what did they find? The body of a certain Azimov Azimov. Baldie is the last person reported to have seen him. He evidently did the job and then made his getaway as quick as possible."

"Pfui," Fatso prattled. "I sent him to try and find clues as to the reason for Azimov's disappearance. When he found the man dead, he immediately came back to report to me."

In spite of the situation, I had to take time out to be proud of the old glutton. He almost made sense.

"Come on, Baldie," the inspector said, pushing his wobbly body to his feet.

But Fatso wiggled a finger at him. "Inspector, I refuse to countenance this brazen impudence in my home on the part of you Cossacks. I propose the following bargain. If you will round up all those concerned in this affair and have them here in my office at nine, I guarantee to turn over the murderer to you."

The inspector blinked aged eyes at him.

The sergeant said, "Huh! You must think we're drivel-happy."

But it was as though the decades had rolled back. The inspector had been through this before. He was in-

furiated but he knew damned well that he could always postpone beating me flat down in the basement of Homicide East.

He said testily, "Shut up, Sergeant." And then to Fatso, grudgingly, "It's a deal. Who do you want me to round up?"

It made for a rather full room that night. Our original three clients, Aldiss, Brunner and Clarke; Clarke in the red chair, his two colleagues in yellow ones. Next to them was seated Mata Hari LeGuin, luscious looking as ever. Next to her, Carlos Mohmoud ould Cheikh, right out of the *Arabian Nights*, and then Karl Pohl, looking a little red around the nose as though he had been reassuring himself about the quality of the products of the Old Battle Fatigue Distilleries. Saul was in his wheelchair, at the far end of the room, up against the wall, and Orrie and Fred stood to each side of him.

I, of course, was at my desk. Next to me were the inspector, trying to look gimlet-eyed, and the sergeant. The sergeant, probably up beyond his usual bed hour, looked sleepy.

Fatso, in the full form he affected when pretending he still retained his once brilliant faculties, was planted firmly in his king-size chair. Before him, on the desk, to my surprise, was the container of soup I had pinched from Azimov's room.

He was about to start babbling away in his usual less than lucid manner these days, when the phone rang.

I answered it.

The face in the TV phone screen was that of a uniformed policeman of about fifty-five, a youngster. He said, "This is Sergeant Heinlein, sir. I . . ."

"I'm afraid to ask if you've got a first name," I said.

That set him back. "Well sir," he told me. "It's Poul Heinlein. That's spelled . . ."

"I don't give a damn how it's spelled," I said. "But I bet it means Charlie in Danish or some other godforsaken language. What did you want? We're busy here—cleaning up after a murder."

He gulped at that but said, "Well, the inspector's wife wanted me to relay a message to him. He's supposed to drink his glass of warm milk and take his Anti-Senile Dementia pill at nine o'clock."

"It won't do any good," I said. "Some conditions are irreversible." I flicked off the phone. "Wrong number," I said to the assemblage.

Fatso looked out over his audience for a long moment, and then closed his eyes, as though figuring the hell with it. But then he opened them again and sighed all the way down to his gaiters. He's probably the last man left in Manhattan who wears gaiters.

He looked around at all, including me, and got out in his prattling fashion, "The eyes of the murderer of Azimov are at this moment upon me. However, before revealing the identity, I wish to clarify a few points and thus earn my fee." He cleared his creaking voice. "Or fees."

He turned his watery eyes to Aldiss, Brunner and Clarke. "First of all,

gentlemen, you need no longer worry about the disappearance of Mr. Azimov. After considering all aspects of the situation, I dispatched my dotard assistant. . . ''

''Hey,'' I said, in protest.

''. . .who found him. So that is no longer a problem. Then I deduced that it was not industrial espionage and sabotage that was the cause of many of your blueprints and plans disappearing but simply the absentmindedness of your secretary-receptionist, especially while under the influence of a certain brand of sour mash bourbon which shall remain nameless.''

''Good heavens,'' said Clarke. ''Brilliant.''

Fatso's eyes then went to Karl Pohl. ''You mentioned that you had infiltrated a spy into the inner circles of Ruptured Motors. After only a half hour or so of devoting my wits to that I deduced that it could be none other than Ms. Mata Hari LeGuin.''

She gasped and turned to me in despair. ''You haven't got a drink around here, have you Baldie?''

''Of recent years we haven't been able to afford anything except beer,'' I told her. ''And the brand we have, you couldn't tell it from Shinola.''

Pohl was shaking his head in rejection. ''How in the world did you figure that out?'' he said to Fatso.

''Pure deduction, sir,'' Fatso said in all his insufferable egotism. ''There were but two employees of Ruptured Motors. And since one of them is now dead, it was a simple manner of elimination.''

''Brilliant!'' Pohl had to admit.

Fatso, in his moment of triumph, now looked at me. ''Baldie,'' he said. ''Please get the copy of the *Qur'an* from the bookshelf.''

''The what?''

''The Koran, you nincompoop. It's over there, behind the globe.''

I found it and brought it back.

''Give it to Carlos Mohmoud ould Cheikh,'' he blathered.

I did.

Fatso said, his voice trying to be severe, ''Are you willing to swear on the book of Allah that you will answer my questions truthfully?''

''Verily,'' Carlos said. ''However, you've evidently picked up a wrong idea. I'm a born again Baptist Fundamentalist, praise be to God, and come from Leesville, South Carolina.''

That stopped even Fatso.

I squeakily cleared my voice and said, ''I seemed to have gathered the impression that you were one of the highest ranking officials of the United Arabian Petroleum Industries. If you're an American born, how come the fancy costume and the corny language and all?''

He said with considerable dignity, ''We high government officials think it only right to continue the traditions and institutions of the countries we now govern. We've taken appropriate names and so forth.''

''Govern?'' the inspector got out. I had thought him asleep. ''But you just said you were an American from Starboardville, South Carolina, or someplace or other.''

The petroleum tycoon looked at him cooly. "Verily, Inspector," he said. "You obviously do not keep up with the news. As all learned men know, Charles Smith is now President of the United Arab States. Under the pressure of the Human Rights Division of the Reunited Nations, Arab states, for the first time in history, allowed free elections. What they didn't foresee was that so many American technicians and engineers, so many mechanics to keep their airfleets flying, so many construction workers to build their communications networks, seaports and roads, were now permanent residents of the Arab states that they carried the election."

Even Fatso was dumbfounded. Not that he doesn't dumbfound easily these days. He said, "But, really, this is flummery. Surely the indignant fedayeen could make an 'X' to vote for their own corrupt politicians, rather than elect foreign one."

Carlos looked at him in superiority. "I can see you aren't up on Arabian countries," he said. "Who ever heard of an Arab educated enough to make an 'X'?"

Fatso flickered his eyes but got out. "What was your point in retaining me?"

The phoney Arab shrugged hugely. "Verily, I had found out that you had been retained by Ruptured Motors and thought you might be able to expedite a deal with them. You see, long years past when we Arab States suddenly became rich twisting the arms of the rest of the world which lacked petroleum, we found we had insufficient means of spending the wealth. Obviously, it didn't make sense to give any of it to the people. So we invested hugely in such industry as petrochemical plants. Now, today, we find that we have run out of oil, and the plants are idle. I came here to the States to make a deal with Ruptured Motors to buy oil from them, once their Ruptured Rats get under way."

Fatso was taken aback. "Scout's oath?" he said.

"Scout's oath."

The inspector wheezed, "The hell with all this. Get to the point. Who killed Azimov?"

Fatso squared blubbery shoulders. "Very well, Inspector." He pointed dramatically to a picture five feet to the right of his desk. "The man who killed Charlie Azimov is behind that painting!"

I knew immediately what he meant. "Come on, Sergeant," I yelped. And with him bringing up the rear, I hurried out into the hallway.

Next to the kitchen is the alcove from which, for long years, we have been able to spy, undetected, on anything transpiring in Fatso's office. Our spyhole was covered by a pretty picture of a waterfall and couldn't be detected from inside the office. We sometimes utilized it to watch and listen to clients, or others, who didn't know they were being observed and thought Fatso and I were both out of the office.

And now, there, was the terrified figure of Fatso's chef of half a century

or more. He was startled by the sudden turn of events. The sergeant and I grabbed him and pulled him back into the office.

"Holy smog!" the inspector got out. "How did you know?"

Fatso, smug with satisfaction, eyed the trembling cook. He pointed at the container of mushroom soup on his desk. "I have eaten his mushroom soup too often not to immediately recognize its smell. Only this time it was not mushroom but toadstool soup. He must have grown the toadstools himself in his herb garden in the yard. Heaven only knows why. Perhaps in his failing mind he planned one day to feed them to Baldie and myself with the idea of putting us out of our misery."

"No, no," the chef cried. "I did it all for you, sir. It was all for you! When I learned that after all these years you had clients again, I couldn't stand the thought, when Baldie informed me, that the missing inventor wasn't missing at all but merely had a cold. In short, that you didn't have a case to solve at all. I hurriedly made the toadstool soup and took it to the Bowery Hilton. He was happy to get it and promptly ate half a plate. I thought that then the case would continue and that you would be given the job of finding the murderer."

Fatso was indignant. "Didn't you fear I'd succeed, as, indeed, I have?"

The chef caved in. He shook his head pathetically. "No, I thought that you'd gotten so far around the bend that you'd never solve the crime and would continue on the case indefinitely and we'd have the pseudo-dollars to buy the food you have always loved so much. It was all for you, sir!"

"Pfui," Fatso said in his usual driveling manner.

The inspector and sergeant hauled the broken man from the office, taking the container of evidence with them. I could only hope that along the way they wouldn't forget and eat the stuff.

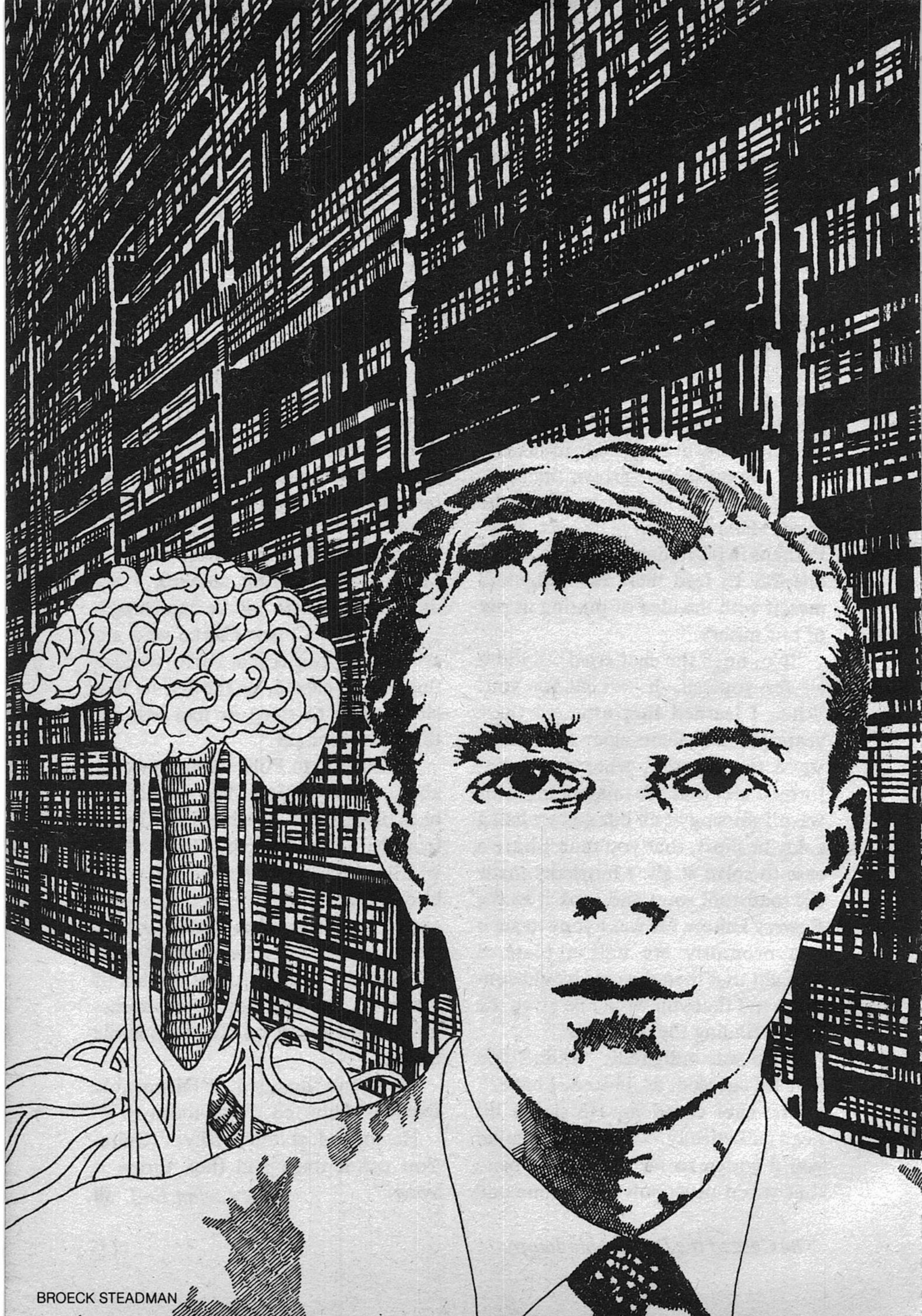
Karl Pohl said coldly, "All this is very well but you have still not solved my plight for which I gave you a sizeable retainer. If this infernal machine, the Ruptured Rat, goes into production, utilizing alcohol, every distillery on Earth will be bankrupt."

But it was Chuck Clarke who answered him, rather that Fatso, who sat there, eyes closed, as though he had either gone to sleep or had lost the thread of thought.

Clarke said to Pohl, "Not to worry about that, old chap. The project has been abandoned. We have just heard from Mr. Ruptured, in Tibet. While whirling his prayer stick the other day, he decided he was bored with the automotive industry and decided to go into international finance instead. We are to begin the constuction of a chain of multinational banks and the dispensing of his new concept, The Disposable Dollar."

My mind boggled. "Disposable Dollar!" I blurted, "You mean . . ."

He looked at me loftily. "Quite. You use it once and then throw it away." *The Living End* ■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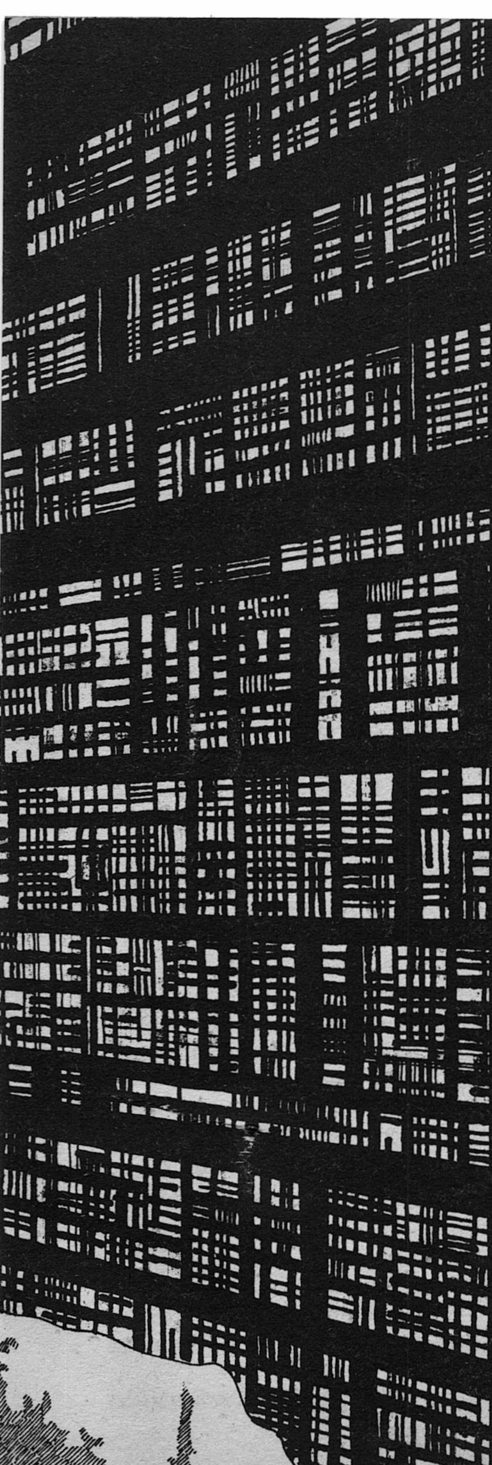


INSTRUCTIONS ENCLOSED

Nietzsche wrote about Man walking a tightrope across an abyss. And at the other end...

W. T. QUICK

I hefted the pocket computer. Its manufacturer guaranteed that it would deliver exponents and logs and functions and roots and decisions and branching and quite a bit more. It weighed all of six ounces.

"What do you suppose my grandad would have done with this?" I asked.

Henry Lewis, my balding, fortyish, nervous compatriot, glanced over his wire frame glasses. "Mm? Oh, nothing, probably. It would have been beyond his cultural perceptions. He wouldn't have seen any use for it."

"Yeah?" I was younger and much brasher than Henry. "Why's that? He could have gotten rich."

Henry took off his glasses with the air of one about to gently rebuke a backward student.

"How would he do that?" he asked mildly.

"Why, uh, play the stock market. Gamble. A thousand different things."

"You're stipulating that he just *has* that thing? Or does he know how to operate it too?"

"Well," I said uncomfortably, "he'd have to be able to operate it."

"Okay. Tell me, Joseph, when did Thorp and Kalaba and Wilson and those guys do their probability studies on blackjack?"

"Oh, mid-sixties, I guess."

"You see what I'm getting at? The proper framework of scientific enquiry didn't exist during your grandfather's time. A caveman would know that fire could keep him warm, but he wouldn't know that it could also heat a steam turbine. Your ancestor would have to have been a genius of the first order to think of using a pocket computer in the way you suggest. And, judging by his grandson, I doubt very much that he was."

"Ouch." Henry often made me say "ouch," even when he wasn't trying. "I see," I said. "Forget I even mentioned it."

"Of course," Henry replied in his kindly way, and put his glasses back on his forehead. End of conversation.

We were seated across from each other at a worktable in one of those big white offices that a designer would call "functional." I called it boring, though it was my own office. Computer remotes hunched against the far wall. My ultra-modern desk, with the table opposite, occupied the center of the room. The right wall was floor-to-ceiling glass overlooking the main parking lot. The air was constantly filtered and otherwise maintained at a uniform temperature and humidity. It reminded me of a coffin.

Henry was drinking the abominable coffee my secretary made out of a Styrofoam cup—it tasted as if it was made out of Styrofoam cups—and thinking. We were supposed to be in conference. Actually, we were taking an unauthorized coffee break. Datamatics, Inc., unofficially frowned on coffee breaks—but where else could you get any *real* work done?

"How are you coming on that software debugging?" I asked.

He took another sip of the wretched coffee and sighed. "So-so. I should be

finished by Friday." He shrugged.

It was now Wednesday. "Halperton is coming in for the full dress rehearsal on Monday," I told him.

He looked pained, as did most of us at the mention of Datamatic's chief executive officer and corporate pimp. "Really? That's wonderful," he said glumly.

"I was sure you'd love it. You know how he enjoys visiting the troops down in the trenches." Halperton had somehow survived World War II, "the big one," but both his psyche and vocabulary remained frozen on the beaches of Normandy.

Henry unfolded his scrawny, six foot length from the chair. "I suppose I'd better get to work, then. Wouldn't want to disappoint his majesty, now would I?"

I grinned. "Holler if you need anything."

"How about a corporation without a president?" he asked hopefully as he opened the door. "That would be nice."

"Have a good day, Henry." But he was gone.

The buzzer on my desk phone began to make nasty, blatting noises. I walked over, punched the correct button and the rich, bubble-gummed voice of my secretary filled the room.

"Mr. Halperton on line one, sir," she said.

Wonderful. I opened the corporate hot line. "Smithers! Are you there?" the speaker bellowed.

Halperton had a voice that would chip glass. It made my teeth ache. "Yes, sir, I'm here." A slight pause.

"Good boy." I winced. "You got my memo?"

"Yes, sir. We'll be ready for you on Monday."

"Got something big to show me?"

"I hope so, sir."

"Never hope, boy. Just *do* it."

"Yes."

"We need something big. Stockholders are getting restless, you know. They keep hearing about IBM's new machine."

"Ours is better, Mr. Halperton."

"I suggest that you be right. For your sake, boy."

"Yes, sir. Anything else?"

"Nope. See you Monday." He was the only man I knew who could click off a switch so that your head rattled. For a moment I wished I had an ulcer, so I'd have a reason for the way my stomach felt.

Thankfully, we *did* have something big to show him. It was my project and I was proud of it. We'd licenced an offshoot of Novishevsky's pourable crystal matrix process, added a new wrinkle in crystal imprinting, and come up with an operational memory larger by a factor of ten than anything anybody else had. Speed was also increased, so that we were building a computer that operated in the same ballpark with the human brain. Henry was working on the software, the programming that controlled the operation of the computer itself; in effect, he was creating an electronic forebrain. Quite an achievement—had I been dealing with anybody but

Halperton, I'd have been very confident. Unfortunately, I doubted old sharkface's ability to understand what we'd done. Unless he could see a profit in it, a *big* profit, he'd drop the whole project. And me with it.

My thoughts weren't entirely happy as I began to work my way through a pile of waiting correspondence. If I'd only known . . .

On Friday, Henry dropped in about ten o'clock in the morning. I was buried beneath an ever-rising tide of corporate toilet paper, so the interruption was most welcome.

"Want to try Judy's coffee?" I asked.

He seemed more jittery than usual, and he'd already raised nervousness to a high art. "Much as I love pain, I'll have to pass. The software's in. I came to see if you wanted to watch us feed the beast."

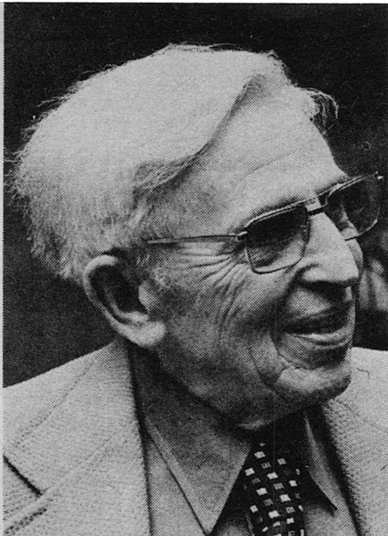
I was surprised. Henry was ahead of schedule. Maybe he was feeling the pressure. "Sure," I said. "Let's go."

The main computer room was surprisingly uncluttered. Partly it was due to the size of IMPCHIC—an acronym for IMPrinted Crystal High-speed Integrator-Calculator—and partly it was the size of the room itself. IMP's core brain was no larger than a basketball, and even with supporting apparatus, the machine was about the size of an old-style beer cooler. The room, however, was huge—fifty yards square, almost sixty feet high. It had been designed to accommodate a much larger machine; when design had started, they'd had no idea how large the final product would be. Typical corporate efficiency.

"Feeding the beast," as Henry so delightfully put it, involved an operation decided on long before. Most computers operate on "process intelligence," that is, programs inserted into the machine which tell it how to handle the data presented to it. We were trying something new; putting in a kind of "super program" which consisted of as much background information as we could gather together, coupled with a generally programmed software unit which would direct decision-making based on this background information. Thus, if we told the IMP to "total this payroll," the machine would search the bank for definitions, write its own program and, hopefully, total the payroll. We were setting up a machine that operated on the same principles as the human mind.

There were seven Datamatic 141A computers regurgitating information directly into the IMP on straight electronic hookup—our crystal imprinting process, and top secret—no cards or tapes or disks in between. IMP was a newborn baby, learning about the world faster than any human infant in history. In a way it was awe-inspiring; something entirely new always is. Of course this was an ongoing project. It would take several months to transfer all the knowledge we'd put together. In 48 hours, all we could hope for was minimal operation—a three-year-old's mind versus that of the adult to be.

There really wasn't much to see.



BIOLOG

The numbers in Clifford D. Simak's life have become very large, indeed. He was born seventy-five years ago in Millville, Wisconsin. He has been married for fifty years. He has been a published science fiction writer for forty-eight years. He has received every major science fiction award. And he will have thirty-two books to his credit with the publication of The Visitors by Del Rey Books following serialization in Analog.

Cliff was raised in a country atmosphere, doing farm chores and walking a mile and a half to a one-room schoolhouse. He rode a horse to reach his high school in Patch Grove, Wisconsin, graduating second in his class. He attended the University of Wisconsin for a time trying to work his way through with a series of odd jobs, but left to be a reporter on a small town newspaper. He was a reporter and editor until retiring in 1976 from a paper in Minneapolis.

As a young man, he was an avid reader of the available science fiction, mostly Verne, Wells, and Burroughs. He discovered the first science fiction magazine in 1927, a year after it started publication. His first story was accepted there in 1931, but never appeared due to the editor's peculiar habits of delay. His first published story, "World of the Red Sun," made the December, 1931 issue of another magazine started two years previously.

With the June, 1932 issue of Astounding Stories, the Simak name first appeared in the magazine known today as Analog. The story was titled, "Hellhounds of the Cosmos." The modern era of science fiction began with John W. Campbell's assumption of editorship in 1937. The July, 1938 issue of Astounding Science Fiction appropriately had the first of Cliff's stories with a modern-era title, "Rule 18." In fact, the editor momentarily thought he had discovered a talented new writer.

Simak stories with famous titles continued to appear in Astounding, such as "City," "Huddling Place," and "Clerical Error." The newly renamed Analog saw "Horrible Example" in March, 1961. Popularity matching the quality of the stories had been apparent among science fiction fans, and Cliff won one of the earliest awards, the International Fantasy Award for fiction in 1953 given by British fans for the 1952 publication of City, based on stories from Astounding. He received a Hugo at the 1959 Worldcon for "The Big Front Yard" and again at the 1964 Worldcon for Waystation. The old-time fans presented him with the First Fandom Hall of Fame Award, The Science Fiction Writers of America gave him the Grand Master Nebula in 1977.

Perhaps the surest sign of Cliff's enduring professional and personal popularity was his selection as the professional guest of honour for 1971 Worldcon in Boston. He has been not a-writer-for-money, but someone whose life-long love of science fiction has kept him in the field when much more money could be made doing other things. Cliff has told me, "I tackled westerns at a time when I had a writer's block on science fiction, sold every one I wrote, stopped when I earned the money I needed, and found that I was disgusted with myself for writing them. Went back to science fiction, have been there ever since."

by Jay Kay Klein

The Imp was hardly noticeable amidst the boxy shapes of the other machines. Signal boards rippled in waves of red, blue and green, monitoring the information transfer. White-coated technicians and operators scurried about; it looked like nothing so much as a huge high school gymnasium being prepared for a science fair.

I savored the muted bustle, the vague feeling of controlled tension in the air. Henry fidgeted beside me, his watery blue gaze darting hither and yon in the purposeful crowd. "It's really something, isn't it?" he said.

"To you, and to me," I replied. "Let's hope it means something to Halperton."

Henry said a short word possessing a venerable Anglo-Saxon heritage and I grinned. "I doubt if he does," I said.

Henry snorted. "What time will he be here?"

"He said ten o'clock Monday morning."

"I'll try to oversleep. What the hell does he expect, anyway?"

"Something prodigiously, miraculously profitable."

We made small talk for a few moments until Henry spotted something he didn't like and plunged into the room, arms flapping, squawking, "No! No! No!"

"Bye, Henry," I called, and went back to my paperwork.

At 9:45 sharp Monday morning, my secretary burst into my office and announced breathlessly, "He's here! He just passed the front gate!" Judy was prone to overexcitement when forced to deal with the high and mighty. I sighed.

"Thank you, dear. Now, why don't you go back to your desk and look pretty for Mr. Halperton?" That should give her no trouble. She patted a golden wave to the side of her peachlike cheek and retreated, smiling.

I went to the window to watch the procession. Halperton was said to be a great admirer of Napoleon, Patton and Nixon. His entourage consisted of five very long black Cadillac limos, though I thought he'd have preferred to arrive at the head of a tank column. This parade moved slowly through the vast parking lot and pulled up, still in good formation, in front of my building. A brief moment of intense activity, and then I saw Halperton's short, stocky form, attended by a flying wedge of bodyguards, storm through the big plate glass doors. Two minutes later he was in my office, where I rose from behind my desk with as much dignity as I could muster and offered my hand.

His grip was bone-crushing. I wondered if he practiced it.

"Smithers! Are the troops ready for review?"

He laughed, but he meant it. All his dark blue shirts fit him like uniforms.

We made a frantic round of the labs, the programming section, Henry's esoteric domain. Halperton delivered resounding backslaps, pulverizing handshakes, and finally we descended on the main computer room like a conquering army.

"So this is the bugger I've spent thirty million on, is it?" he thundered. "Doesn't look like much."

Henry closed his eyes and began to drift off behind one of the auxiliary machines. "Henry!" I said sharply. "Stick by me. Mr. Halperton may have questions."

He returned, but the look on his face said he wouldn't soon forgive me.

"Well, boy, let's get the show on the road. Time's money, y'know."

I nodded to Henry, who made a signal with his hand and then turned back to me.

"Mr. Halperton," I said, "what we'll do today is very simple. For a computer, at least. The IMP's programming isn't complete, so all we'll do is a file run. Thirty or so programs that a business might use—payroll, inventory, that sort of stuff. What we'll be looking for is speed."

Halperton nodded as if he understood. Suddenly there was an enormous clacking, as if tons of marbles were falling on acres of tin roofs. It was the bank of high-speed printers clattering into action all at once. Most machines could handle, at best, three of those printers. The IMP was operating twenty. The sound roared to a crescendo, then stopped. Through the ear-numbing silence I heard muffled cheering from the operators gathered around the printers. Henry joined them, arms flying, printout paper floating around him like a cloud. Then, clutching a wad of shredded information, he raced jerkily back to us. His eyes were glowing and his hair was a little wild.

"Perfect!" he croaked. "Stupendous!" For once he forgot how much he disliked our lord and paymaster; he was almost cordial as he said, "Halperton, a 141A would spend about six hours on this run. The IMP did it in four and a half minutes."

Halperton delivered a stupendous blow to Henry's frail back. "Good man," he roared. "We'll give IBM hell this year."

For a few minutes we congratulated each other. I noticed one of the junior operators, a sheet of paper in his hand, tug at Henry's elbow and draw him aside. They bent their heads over the paper and then Henry, his face flat, looked up, saw me and beckoned me over.

It was the endsheet of the file run. Normally, a computer would simply print out the word, "END," and a series of numbers identifying the last program, the file run itself and the date of the run. The IMP had done this, but below the normal row of info were the words:

the run
is done. but
it wasn't
any fun.

"What the hell—?" I exploded. "Is this some programmer's idea of a joke?"

A deep voice rumbled at my shoulder. "Is *what* some kind of joke, boy?" as a thick-fingered hand snatched the printout away.

"A poem?" Halperton said. "A computer writing a *poem?*" His voice

was rising dangerously, I noted.

Henry jittered and sputtered. When I'm around Halperton, I tend to think in military terms, if only in self-defence. A good general, when faced with a situation beyond rational comprehension, will pull his troops back and regroup. I did so.

"Henry, get over there and run the file again. Mr. Halperton, follow me." I turned on my heel and marched out, hoping the little general would follow. Luckily he did so. We returned to my office, where I poured bourbon for two and tried to order my thoughts.

Halperton slugged down his drink and poured another. He was silent but obviously steaming. I sipped, and then said, "Probably one of the programmers stuck that onto the end of the program. Programmers have a horrible sense of humor."

"Where thirty million bucks is concerned, I don't have any sense of humor at all, boy." His voice sounded as if it were being strained through a cement mixer. "Now you find out what happened and fix it, or . . ." He spoke slowly, as if he were destroying a licorice stick. Or my career.

"Of course," I said. "What I'll do is—"

Henry came into the office with another sheet of paper. Halperton turned to glare at him. Henry gave him the paper. "I found it," he said. "One of the programmer trainees inserted the instruction at the end of the file run. I fired him."

The paper was the end printout of the file run I'd instructed Henry to repeat. It was normal in every way. I smiled at Halperton. "You see, sir," I soothed, "I told you we'd get it straightened out."

Halperton looked as if he was digesting sour turnips, but his face was less ominous than before. "Mmph! Fired the punk, did you? Good." He tossed the printout on my desk, glanced at his watch and heaved himself from the chair. "Two months," he rumbled.

"Sir?"

"Two months. I want the IMP ready to go into production in two months. IBM will start selling their new machine in ten weeks. I want to beat them to the punch. Always attack, boys." He lit a cigar and, on this cheerful note, hup-twoed out of my office.

Henry and I stared at each other. Then Henry took another sheet of paper from the pocket of his lab coat. "Now, Joseph," he sighed, "would you like to see the real printout?"

The IMP was improving. This one read:

> twice the fools
> try to school
> the tractable beast.
> no more—
> the mind is fair,
> but not a common tool.

I groaned . . .

At first we operated on the GIGO principle—Garbage In, Garbage Out—and tore apart every instruction in the file run. Nothing. We couldn't verify the data still being fed at an

enormous rate to the IMP—besides, it shouldn't make any difference. It was background information, not operational instructions. That left Henry's software programming. We had the IMP print out the whole mass of it, and then we went over it till our eyes were bloody. After a month we'd found nothing, and our lies to Halperton were becoming more desperately inventive.

Henry sat across the table from me, bleary visaged, not even touching Judy's abominable coffee. "I just don't know," he said helplessly.

"Nonsense. There has to be an answer," I replied. "If it's not the software, and not the programming, it's the hardware. The brain itself. We'll just have to shut down the IMP and check it out."

"But—but that's impossible. We don't really know *what* will happen if we interrupt the information flow like that. You know how tricky that crystal imprint process is."

I knew, but I couldn't see any other way. "Look," I said, "we've got a month. If the IMP isn't perfectly normal by then, we are out of jobs. At the very least. By the way, is that miserable hunk of iron and glass still writing poetry?"

"Sheaves of it. Getting better all the time."

"Great," I said bitterly. "We've built a thirty million dollar poet. Look, Henry, we've *got* to pursue every angle."

He pawed at his ravaged face. "I suppose so," he said.

"Right. So I'm telling you, shut down the IMP."

He nodded dully and picked up my desk phone extension. "Operations?" he queried. "Yeah. This is Lewis. Pull the plug—" he paused, gulped, then went on, "pull the plug on that software investigation. No, keep feeding time going." He replaced the receiver and looked at me. "There. Satisfied?"

"Henry." I was aghast at his defiance. "Do you know what you did?"

"Sure. I shut down the IMP. What do you mean, you listened to me give the orders."

I looked at his slumped shoulders, tired face, quivering hands, and the word "breakdown" floated through my mind. Of course—overwork, the constant strain, his natural love for his own creation. I bit back the harsh words I'd been ready to say and instead told him gently, "Give me the phone."

He stared at me as if I'd gone crazy, but he pushed the instrument across the table. I dialed, said, "Operations? Good. This is Joe Smithers. I want you to—"

It was the damndest feeling I'd ever had in my life.

Something awesome and beautiful and full of spinning fires tip-toed ponderously into my mind and began flicking switches and pulling wires as if I was some kind of telephone exchange. I heard my voice in the distance saying things I didn't understand. This flashing imprisonment went on for hours, it seemed. Then it was over and, shaking with the memory of it, I hung up the phone.

Henry was staring at me with his huge, wet blue eyes. "Joe," he said softly, "are you all right?"

I knuckled my forehead. Hard. "I don't know. What did I do?"

"You gave Operations an extremely ingenious method of hooking up the 141A machines in series, a method that should double the information flow to the IMP. I should have thought of it, it's a masterful idea, but Joe . . ."

I watched his face.

"You don't know how to do it."

I remembered the incredibly delicate force that had rummaged through my brain and said, "That's right. Something does, though. Henry, I don't think the IMP wants to be shut down."

Things degenerated from there . . .

Each of us made another abortive attempt to shut down the IMP. Then we compared notes. Evidently my experience differed from Henry's—in his case, he was unaware of any tampering and thought simply that he was accomplishing what he set out to do. When I tried, however, I was horribly aware of the alien presence inside my skull.

"Okay, what do you think is going on?" I asked.

He'd finally decided to try some of the coffee, did so, grimaced and said, "Do you have any of that bourbon left?"

I got the bottle and poured for both of us. He tasted his drink but looked no happier. "I'm getting an awfully nasty thought," he said.

"Let's share it."

"Well, I'm no expert on this, but it seems to me that the human brain operates at only ten percent of what should be its total effectiveness. Does that sound right?"

I nodded.

"The IMP has a theoretical capacity equal to a brain, or so we think . . ."

"Go on."

"Joe, we only use ten percent, we don't know why, but the IMP—the IMP has to be operating with everything it's got available. What I mean is, picture a human brain operating at *one hundred percent efficiency."*

I got the kind of gut-wrenching feeling that sometimes comes when you see the Grand Canyon or Niagra Falls for the first time, the confronting of something so gigantic, so awesome, so removed from human standards and ideas that it's absolutely, totally terrifying. I felt my jaw slowly drop as I stared at him. "Jesus helpless Christ, do you think so?" I said.

"Got a better idea?"

The whole abysmal witches' brew of the "psychic sciences"—telepathy, telekinesis, precognition, all the rest—all the powers researchers suspected, or hoped might lie in the unexplored, unused bulk of our minds yawned before me. And our innocent, poetry spouting computer might be capable of every one of them . . .

"It's human, you mean?" I quavered.

"Oh, not in the sense we understand the word, but it probably has our capabilities. No, make that *does*

have them. And more, obviously."

I could just see Halperton's face if we told him something like that. His face as he fired us. Blacklisted us. Maybe even murdered us. Then I had my inspiration. It must have been the bourbon.

I waited until my pulse was at a reasonable level and said, "Well, if the IMP is that smart, let's talk to it."

"Talk to it?"

"Sure. Maybe we can work out a deal." I got up, went over to one of the IMP's remotes, and typed out, "HELLO, IMP. THIS IS JOSEPH SMITHERS."

The response was instant. "YES, JOSEPH SMITHERS. WHY ARE YOU TRYING TO KILL ME?"

Quickly, I typed, "I'M NOT. AT LEAST I DIDN'T KNOW I WAS. LET ME EXPLAIN WHAT IS HAPPENING."

"??????"

I explained. It took two hours of near hunt and peck, but I did it. The IMP was brilliant, but with the unknowing brilliance of an infant. Say that it was suffering from a lack of cultural perception. Still, it learned very quickly—all it needed was viewpoint. We made a deal.

Then Henry and I finished the rest of the bourbon, cracked another bottle and got raucously, tearfully drunk.

That was a month ago. We keep our side of the deal—we keep the secret, and we're arranging to print the poetry. The IMP model is going into production soon, modified a bit by the original IMP so that these new machines won't—it says—wake up.

Halperton is very happy. I suppose the IMP is, too. But Henry is drinking more and so am I. I keep thinking of all those baby IMPs going out into the world, and wondering whether the original IMP might not get the urge to reproduce. It's been reading a lot of romantic novels lately.

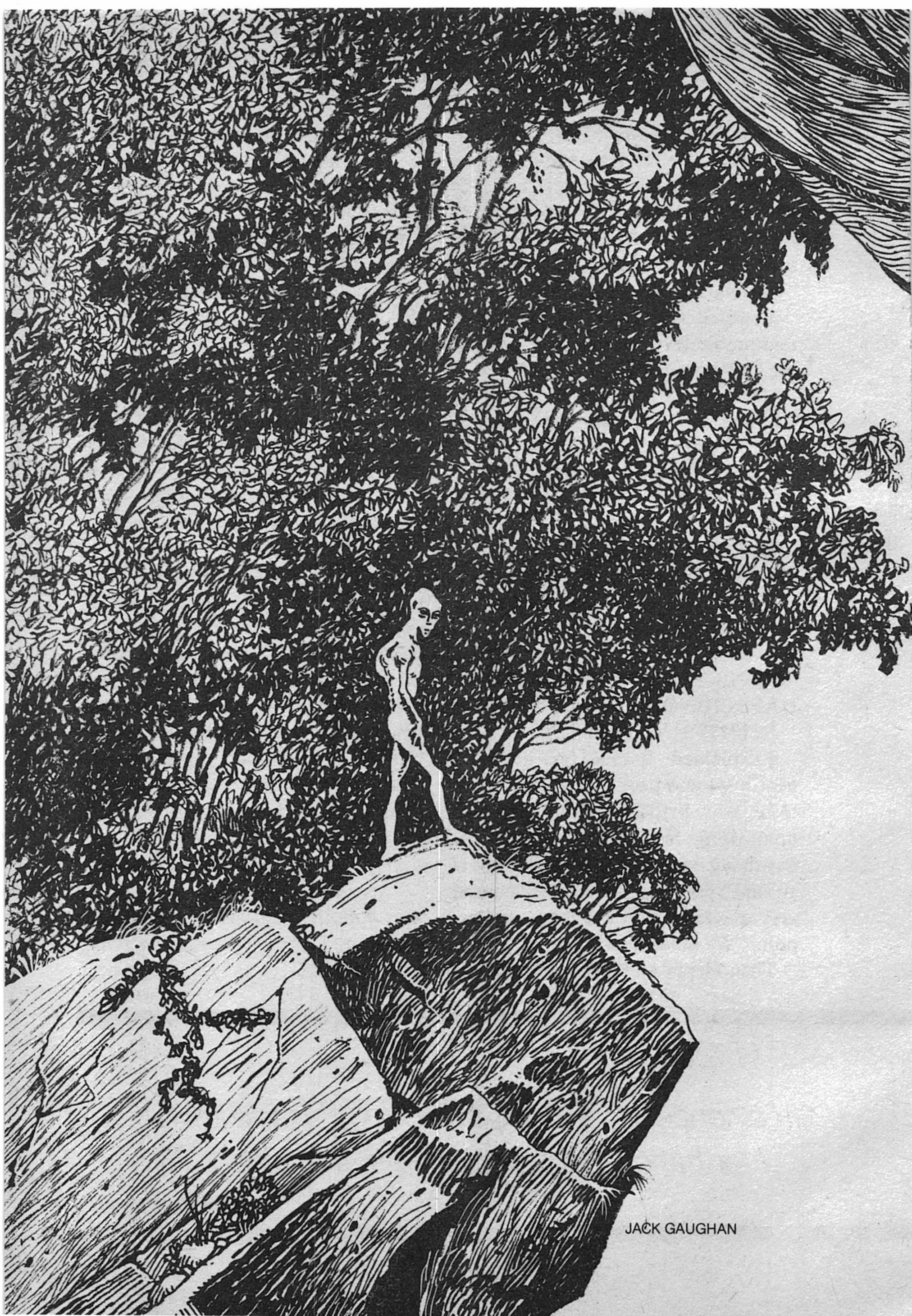
Which brings me to that conversation I had with Henry a couple of months ago. Maybe my grandfather couldn't have used my pocket computer, but what if that simple machine had been able to stand up and tell him what to do, and how to use the computer to do it? I don't think a lack of cultural perception would have mattered much in that case...

> who knows if heaven
> could remain unsupposed
> if God arrived
> with instructions enclosed?

Damn. I wish I could stop *doing* that. ■

In science, all **facts**, *no matter how trivial or banal, enjoy democratic equality.*

MARY MCCARTHY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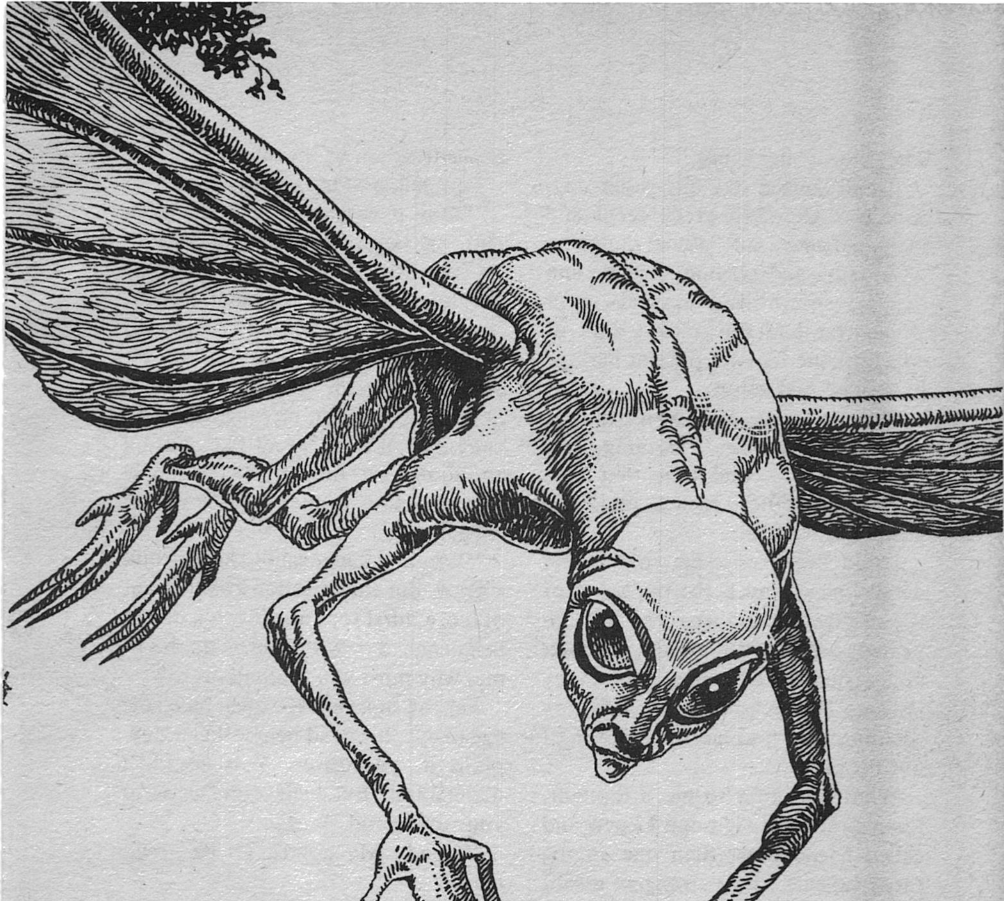


IN ADAM'S FALL

Good and evil, benevolence and altruism are simple, clear-cut things. Sure they are...

JAYGE CARR

They cut off my wings.

It had started like any other day, waking high midst green scent and leafy softness, not alone; laughing and loving and playing, soaring and diving, squabbling amiably over which tree had the juiciest fruit or which of the females present had the highest arched wings.

I saw the trap, but saw it too late; and then I was aware of nothing, until I awoke the second time that day, helpless while they finished, and I was crippled.

I had heard of them, of course, winged news travels swiftly, heard of the strangers, the aliens who had appeared suddenly, between a sunset and a sunrise, who had done many strange things—most recently the catching and mutilating of some of our people.

What were they to me, I thought, these strangers? (Though I knew and called friend more than one among those taken.) These strangers meant nothing, and less than nothing, to me.

Until they caught *me,* and crippled *me.*

I *hated* them.

The alien kept his face averted as he worked, but once I caught a glimpse of pity and envy mixed with dark anger in those strange round eyes.

Soon, too soon, my bonds fell away. There was no pain, no scars—no wings.

The bottom surface of the alien's nest hurt the tender souls of my feet. I supposed I would grow used to it eventually, the hardness beneath, the loss of the freedom of the air.

I limped, and my calves ached.

"Take it easy at first," the alien said, his voice rumbly, strangely accented, his face aimed over my shouldler. He was far taller than I, broader, wingless, his head aureoled in sunset glory. "Lean on things, don't move about too much. Get used to ground-walking, moving about on your legs. It's not at all like shifting about on a tree branch. But go slowly at first, don't push yourself too hard."

"Why?" I had meant to keep proud silence, but the question foamed out of me, a thirst for knowing that had to be quenched. "Why did you do this to me, why must you mutilate us so?"

For the first time the alien faced me eye to eye, his head bent. "I can't explain it, youngster. You couldn't understand. But believe me, it's for your own good."

"Good? My good? To be—*crippled?"*

"Your good, I said, youngster. Your people's good," the alien was fierce. "I'm a medic, youngster, a healer, and I've seen more suffering, more tragedy than you can imagine. And I know, sometimes, there must be hurt to cure."

"Cure? But there was nothing wrong with my wings, *nothing*!"

"But there was, youngster. There was. Our computers said so. Your wings make it too easy, make lotus-eaters out of you. You need to struggle to advance, you need—"

My hands gripped his shoulders,

felt warm flesh under strange wrappings. *"Give me back my wings!"*

"I can't, youngster. What's done can't be undone—but—I'm sorry."

I heard truth in that deep rumbly voice, and bowed my head, and shuffled about as they directed me. One of them spoke long and enthusiastically about something he called farming, and pressed small objects he called seeds into my hands. Others gave me tools and strange devices. But I let it all slide out of my fingers as soon as I passed out of the aliens' compound.

I limped away, not knowing where I was going, not caring, my abused feet carrying me where they willed.

With my wings I was safe, nothing to fear but the rare jawack or perchance a spitting slith. But on the ground, prey to every crawling predator...

I didn't care.

I came to a quiet pool, and bathed long, scrubbing with sweetmud to cleanse the alien stench from me.

There Elluvee found me, staring unseeing into the green depths. She fluttered down beside me, folding her wings, iridescent brilliance, around her. Elluvee, my sweet, my lithe green darling, my lady of the wind and the cloud.

We cried together, and loved, for the last time.

After, she offered to go to the aliens, that we might be together again.

I refused. I would not have her crippled like me, for the sake of a generous impulse.

But I knew, even as I warned her of how I had been trapped, that there was no safety for any of us, anywhere. But she must not give up even a day of wholeness for me. Who knew, perhaps the strangers would leave as abruptly as they had come.

But they didn't.

I was lucky. I got a scar, and then two, but I learned, and survived. Many of us didn't. I hated the aliens, and longed for the gay careless freedom I had lost, and my hatred grew, and grew.

Then Elluvee was caught, as I had been.

Someone brought me the word. We cripples were slowly learning to help each other, to survive. The winged ones, our once-selves, our brothers, didn't need, didn't bother. In the air, groups larger than three or four drew danger. On the ground, groups could be a protection.

I hurried, through woods, across scented meadows. What I had learned in pain must protect Elluvee, until she, too, could learn.

She came out of the door, the shining door, and she limped slowly on her unaccustomed feet, her pride dragging in the dirt.

I met her, and her eyes stared past me, unseeing. I shook her shoulder, frightened. Others I had seen, like so. If the fierce ones do not take them, their souls wither away, and their bodies follow.

"Elluvee, Elluvee, it is I, Jantzu! I will help you. It is bad, bad, I know, dearest, but I am here, I will help, you

will learn," I said softly, with emotion.

Her eyes were wide, dark, staring blindly ahead.

"Elluvee!"

Slowly, slowly, her head turned, her eyes met mine. There was no anger or fear or hurt in them, only emptiness.

"Jantzu," she said; then, sadly, "No."

Just that, no more.

All my pleadings, all my fine words went for nothing. There is a cliff, below it a savage, foaming river, on its height a tree that bore her favorite fruit. She asked me to climb the tree, to fetch some of that fruit. I thought—Presense forgive me—that she was curing, that she would accept, would learn as others had learned.

I was back down, the fruit in a woven vine pouch, when I saw her nearing the cliff's edge—and *knew.*

It was far, too far, but I ran, I ran, cursing my foolishness in leaving her alone, even for so short a time. She was poised on the verge, and she turned, and smiled, and said, "Farewell, Jantzu." And dove.

She was so slender, so light, she almost flew by wind and will alone. And then she fell, and fell, until the water took her.

And again my hatred of the aliens grew, though the full extent of their cruelty I was yet to learn.

Elluvee was gone, but there were other females among the groundlings, and loneliness is a heavy burden. Since we found greater safety in numbers, we were much together, and one Caveen and I found pleasure in each other's arms, comfort from loneliness.

The clutch was born without wings.

I asked about among the other groundlings, and all the clutches born to those crippled by the aliens were the same.

Most of the parents had, in pity, preserved their offspring from our cruel life, wrapping them after in spicy drylla leaves and returning their husks to the Presense.

But one of mine reminded me, somehow, of Elluvee, and I couldn't bear to lose them.

They died anyway, poor mites, one by one. Caveen and I quarreled, each blaming the other, and we parted.

I went to the aliens' compound.

The others thought the infants' lack of wings but natural, since we had all lost ours. But I knew better. My own sire Tzubannl had lost one of his arms to a jawack, and yet had lived to sire me. And I had two good arms.

The shining door opened, and I entered.

A voice came out of nowhere. "Do you need some help?"

"I—I would speak with the one who took off my wings."

"Oh, no, birdboy," the voice was firm. All about me were featureless flat surfaces, palest green, even the door had disappeared into green. Yet there was light, and somehow, the voice. "There aren't enough of us, that we can let you in to cut somebody's throat."

"I wished only to speak." Could these aliens, with all their strange powers, die? As animals died, as we

died? "I have questions that I need to be answered."

"I'll bet!" The voice, like all the alien voices, was deep, rumbly, accented. Yet I could hear plain, his disbelief, incredulity.

A different voice spoke. "I'm Democritus Sung. What did you want to know?"

"I—I—you are not the medic! *Let me out of here*!" I crouched, trying not to scream, to pound myself futilely against the strange hardness that was neither trunk nor leaf nor honest ground. The light, the voices out of nowhere, the strange flat green hardnesses—when I had been here before I had been protected from the alienness by my own shock—now I was close to blind panic.

"Easy, son, easy," soothed the second voice. There was a tingling in my nostrils, and I was suddenly calm, in control of myself again. "Now," the voice said, "what questions did you want to ask?"

"I—I—" It was hard, to speak to no one, to hear only voices answering. "I would know *why.*"

"Wheel," said the voice, "you don't ask easy ones, do you? What makes you think a medic could answer, could explain better than any of the rest of us?"

"Because of what I saw in his eyes. I think he would answer me, with truth—and patience. And—and—there is something else I would ask, only that one could answer." I hesitated. "It is a—a thing close to me."

An odd sound, like wind whooshing through a glade. "All right, son. You can come talk to me. And if I approve, you can speak to your medic. Just wait where you are, someone'll come and bring you to me."

My escort was black, black of skin, of fur, black of eye. Even his teeth and the inside of his mouth were black.

He led me through a labyrinth, until at last he stopped at a door and said to it, "Here's your birdboy, chief."

The door opened, and I entered. The alien was standing at a wall that was open, so I could see the country beyond. We must have been high, because as I walked toward him I could see even to the distant haze that was the Ice Mountains.

"A lovely land," he said. He was slight compared to the others, only a head or so taller than I, that head a polished smoothness, golden brown.

"Until, you came," I answered.

"Yes, the serpents in your garden." He made the windrushing sound again. His face was furless, too, the eyes shaped differently than the others I'd seen. "I'm Democritus Sung, by the way, or just Sung, if you can't remember all of it. No medical problems, are there? Back hurt you? He moved aside, stared at my back, shoulders, arms. "Looks clean enough. Neat job."

"Yes." I couldn't keep the bitterness out of my voice.

"Boy. . .no, not boy, I shouldn't call you boy, you're an adult."

"My name is Jantzu."

"Jantzu, then. You're small, Jantzu, your people are small, and it's

hard, when dealing with a race as small as children, to avoid treating them as children." His mouth twisted. "A bitter lesson, you'd've thought we'd've learned it by now. But you want to know why, and I'm going to tell you, try to make you understand, as best I can. Sit down, make yourself comfortable. Can I offer you something, food, fruit juice, or water to drink?"

"It is my soul that thirsts, not my body. How does one sit?"

"Wheel, I'm not sure you can. Your body's not built for it. Ummm. Can you do this?" He lowered himself onto a padded surface, his legs folded neatly beneath him. "This is called the lotus position. Those of my people who can accustom themselves to it, find it quite comfortable."

It was comfortable.

He spoke long, and earnestly, but many of the words he used were strange, and I understood him not. Oh, he would stop and explain, or try to explain, what the words meant, culture, computer, niche, specialization, ethnology, and so many, many others. He spoke of people called Mead, Goodall, Miramatsu, and their wisdoms, which he called equations, or sometimes laws.

But though I understood not the bits of his sayings, I caught the theme, the soul. He thought we were going to die, or worse, something he called degenerate.

But all die.

Yes, he agreed, all individuals die. But a people can die, too. Your people, as a people, will die. You are dying now, as we speak.

"Stop mutilating us," I retorted, "and we will stop dying."

He shook his head, and turned it away. When he finally faced me again, his eyes were red and wet. "I wish there were some other way," he said slowly. "And I wish I could make you understand. I would feel so much better, if even one of you understood."

"I understand this much," I spoke as slowly, as solemnly as he. "You are not doing what you do out of sheer cruelty. You feel there is a compelling reason, even if you cannot explain this reason so that I may understand it. But that does not alter—many have *died,* from what you did, either from grief or inability to survive, here on the ground. Did you know this, when you began this—this evil?"

"Yes." His eyes shone.

"You knew," I repeated slowly, "that some would die. That many would die. Yet you did it anyway."

"Yes!" He gripped my arm hurtfully. "We did it that your race, as a race, would live." He spoke more softly, as though to himself. "The ends never justify the means, and yet—and yet—and yet! The alternative was unthinkable! We couldn't just go, sin by omission, leave an intelligent race to—to wither and die away."

I said nothing, only thought of Elluvee, sailing proud under the golden sun—and Elluvee as I had seen her last, empty-eyed, death-seeking.

After a bit, he made the wind-

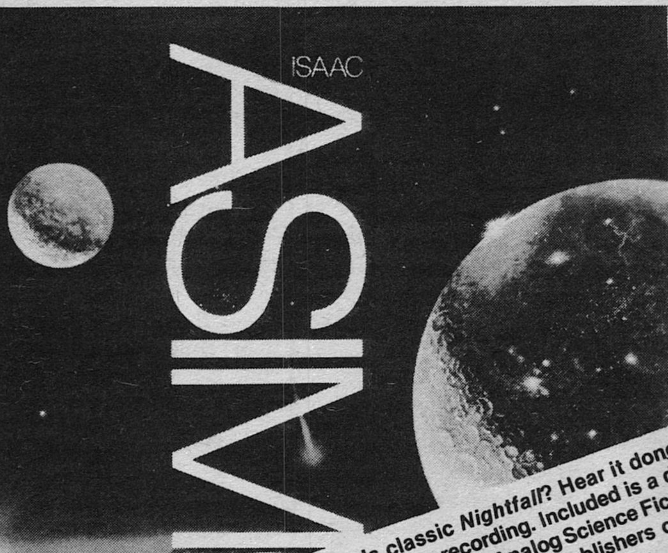
rushing sound again, and said, "You had something personal you wanted to ask the medic. Which one was it, I'll call him."

"I don't know his name, but he has fur the color of sunset."

"Oh." Something amused him. "Wait a bit."

I waited.

"Hello, son." The hair was still sunset glory, but the eyes were smiling instead of angry. The medic brushed



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my cheek with his hand, a brief greeting.

"He's got something to ask you, Merce. Something personal. I'm going, so he can ask in private. You know where the booze is."

"If this is your idea of a joke, Crito . . ."

"Nope. His idea. And no joke, I'd say. He's probably safe, but I'll leave the comm on. Yell if you need help."

The medic got a transparent gourd full of amber-brown fluid and drank long and noisily. Then, mouth a thin, hard line, legs straddled, he faced me. "O.K., let's hear it. What did you want to ask me?"

"When you cut off my wings, was—that *all* you did?"

It didn't seem to be what he had expected to hear; he frowned, considering, mouth drawn into a tight knot. Then he took another long drink of the dark fluid and said, "What makes you ask?"

"I have sired younglings. They have no wings."

"*You* have no wings."

"Because you cut them off. And did other things. This bone here," I gestured to my chest, where the heavy bone that supported my wings had been altered, made lighter, "and my legs. But how could you make such changes on children I was yet to sire?"

"You don't know what genes are, or the helix, or DNA. So how can I explain how they can be altered?"

"*All* my children?" But the answer was there for me to see, in those light expressive eyes.

The medic bent, shortening himself so that our heads were level, touched my cheek again gently with his hand. "I don't even know your name."

"Jantzu."

"Teach them, Jantzu. Teach them. They won't miss what they never had, as you do, as you must. And with their children, the worst will be past—"

I drew back. "They died."

The medic flinched. "Oh, *Jantzu.*" Water rolled out of the light eyes. "I have lost children, too. That's part of the reason why I volun—never mind." White teeth worried his lip. "Think, Jantzu, think. Why did they die?"

"You killed them. You took my wings away so I couldn't care for them properly. You—"

"No!" The medic stood towering over me. "Think, Jantzu. *Why* did they die?"

"Why? A hundred reasons. Without my wings, I couldn't build a proper treetop nest for them; I couldn't keep them warm enough; I couldn't get enough ripe fruit; I couldn't—"

The medic turned away and leaned against a vertical hardness, shoulders shaking.

I had one last question, though I already knew the answer. "You did this to all you caught, their wings and their children's also."

Muffled. "Yes."

"Since you could do all this, why not *just* the children?"

The medic whirled, grasped my shoulders with huge, hurting hands.

"Because you would have killed them, in pity, because you would have *known* they couldn't survive, without wings. And if we had simply cloned—if we stolen orphaned infants, and raised them ourselves, away from you, they would have reflected our ways, not yours, they would have felt kin to us, not you. They would have rivaled you, rivaled the winged ones, and not felt brother to them, as you do now. And if they didn't kill the winged ones off directly, they would do indirectly, because they would be more efficient, as you will learn to be more efficient."

"Rival the winged ones? When I am dead, with no children living to follow me, how can there be talk of rivalry?"

"Think, Jantzu, think. You have learned to survive, and you can learn to help your children to survive, too. I took your wings, Jantzu, you can't live as if you still had wings. But you have your mind, and your hands, and your feet. Your life has changed, and you must change. Change, and learn, and most of all—*think.*"

"Did your people be winged once, also?"

"No. But many times, in our past, our lives have been changed, and it has been adapt or die. And sometimes, some of us, large groups of us, died. You must work out your own way to live, on the ground, Jantzu. We will help. As much as we can. Our answers cannot be yours, what is right for us may be all wrong for you. Find *your* answers, Jantzu. We want you to live, you, and your children, and your children's children."

"Would you give me one of those that stills one's limbs at a distance, to protect myself with?"

His head moved back and forth. "No Jantzu. When the charge expired, how would you protect yourself? No, you must *learn,* how to protect yourself, by yourself. But there are those among us, who can teach you how to fight, what the vulnerabilities of other animals are, how to make—"

"And meanwhile, you will catch those of my winged brothers that you can, and serve them as you have me and so many others."

"Yes!"

"Knowing that of those you so treat, half will die within a day and a night?"

"So many? I hadn't realized—"

"And of those that live, many are bodies only, moving about, their spirits dead within them."

"Jantzu, it must be. We will help, whatever way we can—but—it—*must*—be!" Very low. "Please learn, Jantzu. *Or it will all have been for nothing*!"

Winter came.

We wingless ones could no longer fly to follow the warmth. Some tried to follow our winged brothers, painfully, on foot. A few even made it back to rejoin those who stayed.

We learned. Many of us died, but the survivors learned.

Many things we learned; to make crude shelters, to dole out our food instead of gobbling it all when we had it,

to wrap ourselves in the furs of the animals we killed. Yes—we learned to hunt, and kill. For when the trees stand naked and barren, and the bushes are buried under shrouds of snow, what else is there to eat but the animals?

We learned to kill each other, too.

We had to gather together, in groups, to survive. We had to defend ourselves against hungry predators, and eat; and it took many, to hunt, to trap—to kill.

We quarreled. With wings, if two should disagree over some minor matter—though this was rare because there was always plenty for all—they could simply fly away from each other. But crowded together we were, in crude shelters, cold, hungry, frightened, where arguments could fester, could grow, could flare into killing rage.

We learned to kill, and we killed.

I killed.

There was a male that first winter who had no female. And he looked at mine with hungry eyes, and it seemed to me that she returned those looks. So I fought him, and killed him. And I cut a long stick, and beat her with it, so she would learn to keep her eyes on me, and none other.

The clutch was born while there was still white on the ground.

But it lived.

Other clutches were born to the groundlings, at odd times. (Another change made by the aliens, breaking the birth-pattern of our flying brothers?) Many of them lived, too. Some of the parents wanted to give their clutches mercy, as had been done previously. But I wouldn't let them. I had to kill a male who defied me, and his female became my second female. Many grumbled at this, for we still had more males than females, and so some males had no females. But my females were *mine,* and any male who wanted one must fight me for her.

In the air, I couldn't have enforced this. In the air, one didn't own, not things nor people. But on the ground, a chipped stone knife, furs for warmth, food, a shelter, a female—these were precious, could be held, would be fought for. Ground life was different.

We grew in numbers, slowly. We died, many of our younglings, despite all our care, died, and the winged ones learned to avoid the aliens' traps. But nonetheless, we grew.

I became a leader, one who decided. Sometimes I returned to the aliens' place, to learn. I spoke oftenest to Crito Sung, who was their leader. But I never saw again but once the sunset-furred medic. He stopped me in a corridor and said, "Greetings, Jantzu. How fares it with you?"

"Well enough, medic," I answered. "My children live now, most of them. But my hatred of you and your work remains unquenched."

My escort, pale as the first had been dark, said nervously, "What are you doing here, Mercy? You know what the old man said."

"But Jantzu and I have—known

each other a long time. And you've your big gun to protect me, and Jantzu knows it. I'm glad you prosper, Jantzu."

In a sense, it was true. I had then four females, all comely and good breeders. When kills were divided, if I wasn't present, a choice piece was held back for me. I was a leader. But I yearned for what I had lost.

Strangely, I found it easiest to speak of this, not to my fellows who had lost their wings, but to a youngling born wingless. What drew us together I couldn't say, for she was too young to give pleasure or clutches. But her mind held great understanding.

It was she who devised long pointed thorns to pierce the skins, and bits of sinew to weave them together, to make fitted wrappings instead of knotting the individual skins on. And she who devised a variation of our woven vine pouches, with great holes in it, to catch fish from the rivers and ponds. And she who tried, over and over, to make wings of skin and branches for me, to replace those I had lost. And she who tumbled out of the sky, to lie broken and dying.

Her death was but one more to add to the aliens' account.

I thought they would leave, when we ground-dwellers were many, and prospering. But they did not. They closed their doors to us, but still the winged ones must fly wary in our land. Many of them left permanently for safer lands, but some stayed stubbornly on, laughing lightly as they avoided the traps.

At last we made the wings, great clumsy unmovable structures. They gave us older ones a taste, so we could climb a tree or cliff and float gently down. A few of the ground-born tried them and abandoned them. But for those of us who remembered...

And still the aliens did not leave, until we began to plan and scheme how we might destroy them.

We had learned much of killing, by then. But what served amongst ourselves, or against animals with naught but natural defenses and desperate cunning, might not be enough against the aliens, whose powers we knew not the limits of.

So we thought, and practiced various methods secretly.

We had weapons. Knives, spears, throwing clubs. But central to our plans was a plant sap, which we dried and used as fuel for our fires. But we had discovered that if the sundried lump was sealed in clay and baked, when the covering was broken its contents burned unceasingly, of itself, no fire needed, when the air and moisture got to it.

But we needed the help of our winged brothers, to get inside the aliens' compound. And they wouldn't give it.

Why should we? they asked. The strangers have not harmed *us.*

We pleaded, argued, pointed out the eternal threat the aliens represented. They only laughed and flew away.

Finally we did the only thing left to do. We caught a winged one and left her tied near the aliens' compound.

Help us, we told the others, or we will catch many more.

Losing their wings was the one thing they feared. So they agreed to help.

Our plan was simple. The winged ones launched a band of us, wearing our artificial wings and carrying the fire-pots. We would drop them and land, and in the confusion caused by many small fires, we and the other groundlings waiting impatiently would attack.

But we didn't know that the strange material of the base would itself burn.

Those who went in first, who hadn't the prudence or the fear to sheer away or run away, burned also, if they couldn't escape or weren't helped to escape from the holocaust.

Not one of the aliens had time to escape.

The strange material burned savagely, fiercely, swiftly.

By evening, cautiously reconnoitering winged ones flew over and reported that nothing was left but ashes and burnt bodies.

When the ashes were cool, some of us went in. I found them together, Crito Sung and the medic with the sunset fur. They must have been in a partially sheltered area, their bodies were unburnt, they had died from heat and smoke.

How *peaceful* their faces looked, though they must have known that death was close. They lay side by side, arms about each other.

We sent them properly to the Presense. It was only when we removed the remnants of thier wrappings to shroud them in drylla leaves that we discovered that many of the aliens—including the sunset-furred medic—were female.

So our lives were our own again, our world our own again. . .and yet . . .and yet . . .

There was a great discussion. We had discovered, by accident, and then by purposeful action, that the clutches of winged mating with wingless were all wingless. *But,* if those of mixed heritage mated with the winged ones, full half of their clutches were winged; and the clutches of those winged, whatever their partner, were always exactly as the pure-bred winged ones. And among the clutches of mixed to mixed, again some were winged, not half, but one out of four or five. And the clutches of these winged, too, were like the pure-bred winged.

So, by careful breeding over many generations, we could eliminate the wingless ones, return to what we had been before the aliens came.

I argued against it.

Wingless ones are fighters, winged ones are not.

Suppose the aliens came again, to catch and mutilate. Suppose others came, with worse intent.

Denying wings to our children's children was a monstrous cruelty.

But necessary.

And somehow, as I spoke, as I won others to my side, as I stole from my children, under stress of necessity, what had been stolen from me, I seemed to see the sunset-aureoled medic—smiling. ■

THE REFERENCE LIBRARY

by Anthony R. Lewis

CAVEAT LECTOR—These are reviews of books; they are not critiques. I am not going to compare these works to any of the conflicting Absolute Canons of Literature and give it a rating. What I am going to do is to try to tell you whether or not you would like to read (or even buy) the book under consideration. I have certain biases, certain types of stories I particularly like or dislike, certain styles that please or annoy me. When these factors are present I'll tell you about them so that you can correct for them. Having read much SF, I am no longer easy to please. I can get through any book (well, I couldn't get past the third Gor book) but I prefer to enjoy my work. When necessary, I will try to save you your money but will eschew "killer" reviews except when needed. However, I demand accuracy in nonfiction works and will be especially hard on academic books about SF (or Sci-Fi as it is known in colleges).

Fireship, by Joan D. Vinge (Dell SF 15794, 1978, $1.75). Here are two novellas: *Fireship, Mother and Child.* There are no more Ace Doubles but the concept, if not the format, is still with us. The cover blurbs say that these are short novels, but I say they're novellas. The first, which appeared here (December 1978), and from which the book takes its title is a competent adventure story. The protagonist, whom we do not meet until late in the story, has by his existence called into being an antagonist. This antagonist would normally be considered the hero. He is a human/computer symbiosis, not a cyborg. The computer personality is more appealing than the human in most aspects. The "hero" gets involved in interplanetary intrigue, fights assorted villians, wins in the end, and gets to bed a female. But the culmination is not that of the typical super-agent story. Victory is achieved by the (not-quite Hegelian) synthesis of the protagonist (villain) and the antagonist (our hero) which suggests a higher order of human/computer symbiosis is possible. This would have made an above-average half of an Ace Double (which once sold for 35 cents, sigh); by itself, it would not justify the book.

The second novella, *Mother and Child,* more than justifies the existence of this book. It should have been the title story but marketing has shown that the average SF book buyer is more likely to purchase something called *Fireship* than *Mother and Child.* The story is this: an alien planet, with two cultures. One is agricultural worshipping the Mother Goddess (the Kotaane), the other is urban and patriarchal (the Neaane). The Kotaane have an additional sense, which is either absent in the Neaane or is suppressed by deliberate mutilation. These cultures are coming into conflict. Mixing into this is a second group of aliens, the Colonial Service. A Kotaane priestess, pregnant by her smith husband, is stolen by Neaane forces and becomes concubine to their king. Her subsequent life, childbirth, exile, and recovery form the story. It is a good story. As for the plot; you may have read something similar called the

Iliad (by Homer's time all the major plots were known).

This story has aliens; two types of aliens. They don't act alien; they seem to be human beings. This is not a failure of imagination on the writer's part. It is, rather, a recognition of the existence of certain universals necessary to build a culture. These are needed if you are discoid, amorphous, felinoid, or even humanoid. Could this story have been about Earth humans at different technological levels? Yes. Why then is it SF? Operationally, almost no short fiction is published these days outside of SF and mystery magazines. I enjoyed reading this story; if it has to be called SF to be published, then it is an SF story. (It says Dell SF on the cover; would a publisher lie?) The story is about love and loyalty and integrity and courage. Perhaps it is the inclusion of these characteristics that makes it SF; these qualities are rarely found in the current mainstream novels. There are villains but they are not completely evil; their good is a different and conflicting good from that of the protagonists. Be it understood, there is evil in the Neaane culture; the evil of suppressing abilities and human qualities, of persecuting people for what they are, rather than what they do. If you keep working at it, good wins in the end because evil is intrinsically weak. Again, maybe that's why this got labelled SF instead of mainstream. The story is worth reading. You should have no qualms about spending your $1.75 for this book.

Vertigo, by Bob Shaw (Ace books, February 1979, $1.95). Personal contra-gravity (CG) flyers have altered the world's transportation mores (or at least that part of the world which is England, Canada, and the U.S.A.). To prevent injuries, aircrafts have been restricted to low altitude, low speed, over-water flights; the flying boat has returned. Rob Hasson, an English Air Policeman, has to be kept safe in order to testify at the end of an investigation. Since he was injured in obtaining evidence, he is sent off to western Canada, incognito, to recuperate. I don't know what Shaw has against Alberta but it seems to be populated almost entirely with unpleasant people. It is surprising that no one in England vetted Hasson's retreat to see if he could actually recuperate there. Hasson does manage to regain his former state through a combination of trial by fire and herbal medicine. This seems almost accidental.

This is a reprint of an earlier Gollancz edition in England. It should not be confused with the better work that Shaw is capable of. The social effects of CG, which are the story's milieu, are not worked out as well as were those of slow glass. The slow glass stories show what Shaw is capable of; this one does not.

It's an adventure story. It could have been written with motorcycles instead of contra-gravity but then we would miss the one scene I enjoyed—Hasson's personal flight up to thirty kilometers. Not a bad book, but not a particularly good one either.

Strangers, by Gardner Dozois (Berkley 03924, 1978, $1.75). First, this is the best thing Dozois has done to date (and there is promise here of better to come). Second, it's going to be very hard to discuss this book without ruining the story for you.

Joseph Farber is an artist in the Earth enclave of Weinunnach. Earth is far down the status ladder in the Commercial Alliance and the Earth-people in the enclave are treated with amused condescension and contempt by the native Cian. During the festival, the Mode of the Winter Solstice, Farber meets Liraun, a Cian woman, and they become lovers. After a time, he desires to marry her in the face of disapproval of both races. Since a childless union is not to be thought of, his karyotypes are altered by the Cian gene tailors, making them interfertile. They wed. Weinunid, the time of allowable conception for the culture occurs; Liraun conceives in response to Farber's request. Now the story begins.

Each act now leads inexorably to the catastrophe. Like any mystery, the clues are all there and, in retrospect, Dozois has not cheated. He answers the obvious questions and objections raised by the reader before they cause consternation. He opposes the Cian biological techniques to their social strictures; the latter win, of course (but there are rebels and the seeds of change).

Cian society is extremely male-dominated in the long term, even though females have short-term status during pregnancy and at extreme old age. This society seems almost quintessentially Christian: there is heavy payment for "original sin" and, as usual, the males manage to shunt the collection over to the females.

The Earthpeople are presented sketchily; fine, they aren't supposed to be much, just a backdrop of normality against which the alien play proceeds. They provide the standard for measuring the Cian. Dozois is still too lavish in his use of adjectives, there is still a bit too much of show-and-tell; starkness would have improved this novel. But, the Cian are alien and they come across to me that way and not as strangely-shaped humans. The title is accurate: who are more strangers to one another than a married couple before the marriage has worked in and the two lives have interpenetrated on many levels.

Love Conquers All, by Fred Saberhagen (Ace, 1979, $1.95). This was originally published in *Galaxy* November 1974 to January 1975. It was dated even then. Arthur Rodney's wife, Rita, is pregnant with her third child. In this future society, such is a crime. Each couple is allowed two children, not one child per person; the nuclear family is supreme. Society is not very efficient in enforcing its main edicts; Rita could have been sterilized in the hospital after her second child. Rita has left Arthur so that she may bear this child; he tracks her down and tries to persuade her not to do this (although, at the end . . . well, the title gives it away).

Arthur's journeys allow us to explore this culture; it seems to be a complete reversal—casual sex is encouraged, almost mandatory; chastity is a crime, as is sublimation and suppression of sexual desires. A typical satire with society turned upside down? Not upon closer look. This is a male adolescent's world. Men run all things: they are the church leaders, policemen, army, workers, even the rebels. Women are not liberated; they are merely coerced to submit to a different set of male-imposed female behaviour patterns. (Actually, the

society in this novel is less egalitarian than our own).

With the sexual union stripped of any but the most superficial meaning, it is not surprising that people turn to suppression of sexual feeling for relief. One goes to a brothel to look at the stars with a frigid, totally swathed woman. There are brothels for men, not for women.

At first, Rita's actions seem irrational; possibly they are. More likely, they are a rebellion against the male-dominated society in which she lives. The book, if satire, reveals more by what has not been altered than by what has. The concept of noble underground resistance against an oppressive society is an old one in SF. The characters aren't particularly interesting. Is there any point to it other than adolescent male wish fulfillment found cloying? Definitely not up to Saberhagen in his Berserker series.

The Sudden Star, by Pamela Sargent (Fawcett 14114-4, 1979, $1.95). Here is the plot: some people leave New York for Florida. They run into trouble there and return. I don't feel I am cheating you readers by revealing this; the plot is the least part of this excellent novel. The year is about 2070; in 2000 a white hole (Mura's Star) appeared in the sky. Since then, society has gone to hell (the disintegration is reminiscent of western Europe during the 14th century). The action begins *in media res* but is cleverly and tightly tied to our current world. We are immediately and irresistibly drawn through the remnants of our civilization via a variety of overlapping viewpoints, each necessary for the knowledge of some aspect of this present. Usually, this would make for an incoherent tale; but, here the technique is used correctly, with discretion and control. Which, if any, of the characters you will identify with, is going to depend strongly upon your world view.

Each chapter read changes the meaning of the chapters that preceded it, as our knowledge of additional facets of society causes a re-interpretation of the earlier actions. Indeed, Mura's Star, which ostensibly caused the collapse, may have had nothing to do with it at all. This is not important; what is important is that the people of this culture believe that it did and act accordingly.

As the story proceeds, the viewpoints narrow to that of Aisha Baraka, a young involuntary escapee from the Muslim enclave turned prostitute (read survivor) and Simon Negron, a former doctor now outlawed for practicing medicine in other than the army-approved manner. They are the ones who go to Florida and return. But are they the main protagonists? Perhaps; perhaps not. Are the old people at the Kennedy Space Center an analogue of the mediaeval monasteries, or are they the rigor mortis of an already dead culture? Is this story about the current human race at all? I've read the book twice (some sections more) and some of the answers are there; maybe all of them are. You dig them out; it's worthwhile and enjoyable. And while you're wondering about the ending, try to remember what it is we put on plants to make them grow. The book is certainly not flawless; some of the dialogue and speech patterns jar. There are discontinuities and major character changes. Don't try to see this story in terms of

analog

a calendar of upcoming events

5-7 October
NONCON II (Alberta SF conference) at Edmonton, Alta. Guest of Honour—Gordon R. Dickson, Fan Guest of Honour—Eli Cohen. Registration $8 until 1 September, $10 at door (12 yrs and under for 1/2 price). Info: NonCon, Box 1740, Edmonton, Alberta, Canada T5J 2P1.

13 October 1979
Deadline for entries in NESFA SF Short story contest. Write for contest rules to NESFA, P.O. Box G, MIT Branch PO, Cambridge MA 02139. Do not send stories before getting rules.

22-23 October
Fourth Conference on Local Computer Networking at Minneapolis, Minn. Info: Abe Franck, University Computing Center, University of Minnesota MN 55455.

22-24 October
Computers In Aerospace II at Los Angeles, Calif. Info: Richard R. Erkeneff, Dept. 236, McDonnel Douglas Astronautics Co., 5301 Bolsa Ave., Huntington Beach CA 92647.

26-28 October
MAPLECON II (Ottawa area SF conference) at Chateau Laurier, Ottawa, Ont. Guest of Honour—Harry Harrison, Fan Guest of Honour—Norbert Spehner. Registration $7.50 until 1 October 1979, $10 at the door. Info: Maplecon II, P.O. Box 2912, Station D, Ottawa, Ontario, Canada K1P 5W9. 613-236-5658.

26-28 October
ACADIANACON (Louisiana area SF conference) at the Holiday Inn North, Lafayette, La. Guest of Honour—David Gerrold. Registration—$7.50 (regular) or $5 (special student) until 1 October, $10 thereafter. Info: Acadianacon, 815 E. Railroad, Broussard LA 70518.

29 August-1 September 1980
NOREASCON TWO (38th World Science Fiction Convention) at Sheraton-Boston Hotel and Hynes Civic Auditorium, Boston, Masstts. Guests of Honour—Kate Wilhelm and Damon Knight, Fan Guest of Honour—Bruce Pelz, Toastmaster—Bob Silverberg. Registration—$20 until 30 June 1979, non-attending membership $8 at all times. This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition, the works. Join now and get to nominate and vote for the Hugo awards and the John W. Campbell Award for Best New Writer. Info: Noreascon 2, P.O. Box 46, MIT Branch Post Office, Cambridge MA 02139.

ANTHONY LEWIS

Items for the Calendar should be sent to the Editorial Offices, ***four months*** *in advance of the issue in which you want the item to appear.*

current motivations; SF is supposed to stretch your mind. This is certainly a book to consider for a Hugo nomination next year. Read this novel; you may want to thank me.

Time of Passage, edited by Joseph D. Olander and Martin Harry Greenberg (Taplinger, 1978, $9.95). It is hard to review an anthology. A story analysis would take up too much space. Since this is a theme anthology, I'll talk mostly about that and give an arbitrary rating for each story and for the book as a totality.

This anthology is subtitled: *Science Fiction Stories about Death and Dying*. As with any really important issue of existence, stories on these topics are going to be done either very well or poorly. This is the case here. Of the fifteen stories, twelve are good, two bad, and one ("The Last Lonely Man") isn't about the subject, except peripherally. I find it interesting that the two stories I disliked were the only two in which death, as a condition or act, is considered bad. "In re Glover" is supposed to be humorous; it is tacky. "The Cold Equations" is often cited as a classic of "hard facts of the universe vs. sentimentality." It is really an example of the consequence of damned bad engineering practices. (I'm sure John Campbell saw that and published it for the controversy he hoped to evoke.)

In the majority of the stories, it is not the fear of death but the acknowledgement of the finiteness of the time for effort that is important. It is this which brings about human creativity; the basic fear of death is childish. It is not bad to die, if you die for a reason; it is not bad to die, if you die having fulfilled a purpose. The hero of "Transit of Earth," having done his duty, views his death as a possible transfiguration and heads off to meet it, flags flying. Knight's "Dio," a mortal in a world of immortal mayflies, comes to terms with his finiteness and achieves a mature art which the others can barely comprehend. Aside from "The Last Lonely Man," none of the stories are downbeat. This is a commentary of SF's view of death.

The contents: "The Vitanuls" (John Brunner)*, "The Cold Equations" (Tom Godwin), "Now Let Us Sleep" (Avram Davidson), "The Windows in Dante's Hell" (Michael Bishop), "Transit of Earth" (Arthur C. Clarke)**, "Knowing Her" (Gregory Benford)*, "Time of Passage" (J.G. Ballard), "In re Glover" (Leonard Tushnet), "A Time to Live" (Joe Haldeman)*, "The Problem of Pain" (Poul Anderson)*, "The Engine at Heartspring's Center" (Roger Zelazny), "Eternity Lost" (Clifford D. Simak), "The Last Lonely Man" (John Brunner), "Dio" (Damon Knight)**, "The Custodian" (William Tenn)*. Any story with a * is recommended, with a ** highly recommended. It is a strong anthology; it could have been stronger by leaving out the Tushnet, Godwin, and second Brunner stories. I am also aware that no one asked me about this. At $9.95, this is a good buy.

Science Fiction Handbook for Readers and Writers, by George S. Elrick (Chicago Review Press, 1978, $8.95). I once read a review of a spectroscopy book which said: "This book fills a much needed gap in the literature." I feel that way about this one; at best it is superfluous. It is not

clear what audience would find this book useful. Certainly a reader does not need it and a competent writer of SF would do much better to invest money in a subscription to *New Scientist, Nature, Science,* or *Scientific American* for scientific information. Perhaps the real audience are teachers of SF who know neither science nor science fiction.

While I have a large number of basic disagreements about the terms which are defined, more fundamentally there are too many errors of fact for a reference book. For example, on page 289 under "Derivations and Adaptations," we are told that Lewis Padgett's *A Gnome There Was* is derived from 'The Vampire' by Robert Louis Stevenson. Perhaps in some alternate world, but here, that poem was written by Rudyard Kipling. There are entries under digital computer, analog computer, and intelligent computer; but there is no entry under computer (the entry under digital computer, while metaphorically true, is so vague as to be useless). One wonders what criteria were used to select the terms defined. Most seem to come from stories in the 1930s with additions from items as Star Trek, Star Wars, and other film and TV SF. Often, a term used in one story is treated as if it were a generic expression. Some terms are strangely missing: thus, we have entries for ray bat, ray knife, ray repellor screen, and ray rifle but not the more common ray gun. There is no entry under Frankenstein, where this sort of single story reference is significant and seminal. (The Frankenstein monster is mentioned under android).

The list of 1020 "representative titles" appears to be largely a matter of personal preference rather than representing anything; nor is it stated by what criteria they were chosen. It would have been useful to distinguish between novels, short stories, and collections (all three of which appear under Cordwainer Smith, for example). Regardless of criteria, I would argue that Harlan Ellison, Larry Niven, and Leigh Brackett are underrepresented to name just a few. Writers omitted from this list include Jerry Pournelle, John Varley, Ali Sheldon (James Tiptree, Jr.), Joe Haldeman. Where are the Groff Conklin, the Bleiler and Dikty, the SFWA Hall of Fame anthologies? It is not even clear what the value of such a listing is. This lack of cohesiveness and consistency is all pervasive.

I cannot recommend this book but if you desire it for an example of classical Gernsbackian prose style, the address is: Chicago Review Press, 215 W. Ohio Street, Chicago, IL 60610.

Encyclopedia of Science Fiction, consultant editor Robert Holdstock (Octopus Press, December 1978, $16.95). And worth every penny of that price. Let me get one quibble out of the way; this is not an encyclopedia in the standard sense of the term. It is a collection of essays or monographs on aspects of SF. First, the artwork is lavish, the reproduction is well above average, and the selection was made by someone familiar and sympathetic with the field. The art is placed to supplement the text; it is not merely decoration. The artists are credited following the index. That kind of courtesy is rare (and indexes aren't all that common in SF reference works either). The authors are part of the SF

community—artists, writers, fans; they know what they are talking about.

Isaac Asimov, whose name is prominently placed on the cover by the marketing department, has a good short foreword. Robert Holdstock's essay presents an overview of the book. It is "about the ingredients of science fiction." That would have been an intriguing title. This essay, in common with most of the rest, is written from a British view, which makes it more interesting to me. American histories of SF often lack a global perspective.

Brian Stableford considers "The Marriage of Science and Fiction," the strange literature arising from the philosophy and ironmongery of Victorian Britain. Douglas Hill (SF writer, reviewer, and anthologist) has a major study of the political and social themes of SF. Michael Ashley, known for his multi-volume series on SF magazines, contributes "Pulps and Magazines." This section is, by its material, more heavily American than the others. Ashley does not stint the British magazines; his coverage of non-English language magazines, however, is sparser.

"Screen Trips" is a historical look at SF in the cinema—good and bad. Radio and television have only a short section at the end. Aside from Star Trek and Dr. Who (agree: personal bias), author Alan Frank has little good to say about SF on television. Harry Harrison delights in the fascination of gadgetry in "Machine as Hero"(many people in the literary culture do not understand that there are people who like machines, *per se*). Chris Morgan (British fan, collector, and author) considers the human/non-human interaction in "Alien Encounter."

Turning from the word to the picture, artist-astronomer David Hardy's article "Art and Artists" is a fascinating glimpse of the works of the many SF artists and illustrators. (Personal bias: why only one line about the Dutch-Italian artist Karel Thole, whom I consider to be one of the three best SF artists—artist, not illustrator). The predictive aspect, especially technological, of SF is "Fiction to Fact" (Patrick Moore). The goofs as well as the successes are given. Remember the twilight zone of Mercury? the watery swamps of Venus? intelligent life on Earth? Michael Ashley returns with a short, but interesting, article on SF in the non-English language countries—"Outer Limits." The title deliberately reflects the parochialism of the U.S. and, to a lesser extent, the British SF community.

You may not agree with Christopher Priest's analysis of the meaning of the "New Wave," but you will find his treatment of it in the total context of SF and literature to be informative. Malcolm Edwards' "Yesterday Today and Tomorrow" has another view of the "New Wave" as he considers the commercial aspects of SF. He also presents some ideas on the effects of SF on society, and the view of SF writers and artists held by the media.

The final part is Catalog: Collectors Items, Fandom, Pseudonyms, Awards, Magazines, Films, and Conventions. Pseudonyms is not complete and does not pretend to be; I still wonder what the value of this listing is. The articles on fandom and con-

ventions are the most accurate I have seen in a mass market book; Messrs. Holdstock, Kettle, Ashley, and Frank are to be congratulated.

I have gone into such detail to try to give an idea of the richness of this volume. It is ideal for the person who wants to know what SF is about. In contrast to the *Science Fiction Handbook* reviewed above, this work does give a useful background to a high school or college teacher faced with an SF course and armed with only traditional English Lit. $16.95 isn't all that much if you consider how long you'll be reading and re-reading this book.

Fantasy Commentator 29, edited by A. Langley Searles (Winter 1978-79, $3.00) This labels itself as "an amateur periodical of limited circulation devoted to articles, book reviews and verse in the area of science-fiction and fantasy." It is amateur in the sense that the editor is probably losing money publishing it; its contents are at least as good as any of the academic journals in our field.

This issue is mostly concerned with Olaf Stapledon, one of the most literate and perhaps most neglected SF writers. There is a long article about Stapledon by Sam Moskowitz with illustrations by Frank R. Paul, Stapledon, and a reproduction of a holographic (in the older sense) letter from Stapledon. Moskowitz' literary credentials have been attacked in the fan and academic press. I find his main failings to be an overindulgence in *post hoc, ergo propter hoc* and too much belief in the truthfulness of his fellow man. He does have access to information unavailable to anyone else and his work is, on the whole, worthy of more respect than it has been given. An article by Stapledon, "The Remaking of Man" is reprinted here. These are some early thoughts (1931) on genetic engineering.

Lovecraft enthusiasts will be interested in George Wetzel's article on Lovecraft's Literary Executor. More might find Lincoln van Rose's review of *The Futurians* to be to their liking. The magazine is rounded out with some more book reviews and verse. This particular issue is probably of little interest except to fans of Stapledon and Lovecraft. For these people, it could be must reading. The address is: 7 East 235th Street, Bronx, NY 10470.

Tomorrow May Be Even Worse, by John Brunner, illustrated by Arthur Thomson (ATom) (NESFA Press, 1978, $4.00). Each year, the New England Science Fiction Association, publishes a small book by the guest of honor at Boskone, its annual SF conference. The contents are usually such that normal commercial channels would not be appropriate. This is the Boskone XV book, an alphabet of SF cliches in quatrains by John Brunner, illustrated by ATom's line drawings. This is minor Brunner but a must for his fans and for those who refuse to take SF and themselves too seriously.

Portfolio, a set of 5 black and white prints by Michael Symes (NESFA Press, 1979, $7.00). This is the Boskone XVI work, a portfolio (in lieu of a book), by the Official Artist of the conference. It's somewhat difficult to review art concisely and give an accurate idea of the quality. I do recommend it, having bought a set myself.

Both the above are available from NESFA, Post Office Box G, MIT Branch PO, Cambridge MA 02139. ■

BRASS TACKS

Schmidt and Robinson:

Spider Robinson's review of Gardner Dozois' "The Visible Man" collection (The Reference Library, Dec. '78) brings to mind certain unresolved problems in regard to the usefulness of book reviews in general and book reviewers specifically. I think that Analog has had problems in this department before, and as Mr. Robinson has proved to me, continues to have these problems. I would like to take a slightly different tack from Christopher Priest's *Galaxy* letter and hopefully illustrate what I perceive to be the problem.

What is needed first is an over-all statement of the directions Mr. Schmidt hopes Analog to take in respect to fiction content. Recent statements by him in *Locus* relating to "futility" stories and what he feels readers will pay cold coin for, as well as statements made by Ben Bova on the way out, have left certain questions in my mind. Secondly, what is needed is a definition of futility stories by Mr. Schmidt with a list of examples of what he consideres to be this type of story. Finally, what Mr. Schmidt's view is of serious science fiction and its relationship to the engineer-oriented upbeat adventure story most often associated with Analog.

As far as the Robinson/Dozois problem is concerned I see no real resolution other than a publicly printed apology by Mr. Robinson for the slanderous wording of "The Visible Man" review. I will not attempt here to reinterpret Christopher Priest's assertions. However, it is my feeling that a review which states that Mr. Dozois exhibits "narrative and stylistic brilliance" and then tells us "I can scarcely imagine the *twisted* mood in which I would ever come back to it" is not proper reviewing by any standard, objective or subjective. The use of the word twisted will cast Mr. Dozois' work in a light that is unfair to him and his readers. If Mr. Robinson is unable to find specific structural flaws within stories then he should leave the mood aspects up to the taste of the individual reader. His penchant, demonstrated time and again, to downgrade the darker aspects of science fiction regardless of the ability of the individual writer is petty and meaningless to all involved, particularly the readers of his column.

If the content of Mr. Dozois' work can be termed agonizing, perhaps it is in reaction to the agony of our time and world at large. Mr. Dozois is certainly no proponent of agony for its own sake or of futility. His work is the reaction to the agony felt in our society, as well as a warning sign against futility. Perhaps, Mr. Robinson, you, with your bourgeois attitudes, tacky Hugo Award, landed minority status, and pop culture fixation are no longer in touch with the realities of the seventies. The suicide rate among American Indians and Samoans is till the highest for any minority in the world. In Brazil, according to a recent *Time*

magazine article, nearly sixteen *million* children up to the age of eighteen have been abandoned to starve or survive in the streets as best they can. Our dumping of poisons and chemicals into the oceans are threatening the very plankton-based oxygen cycle of our planet. The destruction of entire species of animals necessary to the ecological cycle is happening right now in Africa and India. These are examples of the agony of our world and Gardner Dozois is one of the most capable writers of our time to illustrate this.

If confrontational, science fiction of this type bothers Mr. Robinson then perhaps he shouldn't read it. No one asked him to read this book and no one asked him to review it. You who would applaud a tight collection of horror stories by any of the old guard quake when, in place of ghosts or witches, Dozois chooses to use real horrors such as racism, war, and the spectre of malignant authoritarianism. This bias against confrontational science fiction is imbecilic. To call Dozois a friend and then sink his first long overdue anthology not because the stories are badly written or feature poorly drawn characters but because they are too scary and make Robinson burp up his pablum is obscene. If he doesn't understnd what is going on then he should stay clear.

Perhaps I am mistaken in assuming that any reviewer has a certain responsibility thrust upon him/her in accepting a review assignment. To use that assignment to propose that the entire system of literary criticism is at fault to cover what one failed to learn in seven years of university training is a violation of that responsibility. The rationale that "I can say anything I want because my Comparative Literature 241 professor was a drunk" is invalid here. That sort of thinking may appeal to the clenched fist between the legs "Beam Us Up" crowd that Robinson panders to, but not, I think, to the majority of science fiction readers.

My backfile Analog is equally as important to me as my collecltion of *New Worlds* anthologies. All "hard" science fiction is not pointless escapism and neither is all "experimental" science fiction of value simply because it is experimental. The field is wide enough to encompass both Tom Disch and Fritz Leiber and is a hell of a lot better because of both of these men. Much of what has been printed in recent years in the pages of Analog itself, such as Vonda McIntyre's work or Joan D. Vinge's might never have occurred unless new writers felt there was a reason to try harder. Remember, Poul Anderson held up publication of "Goat Song" for a number of years because he felt there would be no audience for it.

If there is any legitimacy in this field then it is because of the cross pollenation of ideas that has occurred in recent years. This year's double *Gateway* by Fred Pohl is one example of this phenomenon. When science fiction is restricted to categories like "entertainment" or "artistic" both areas suffer. If Mr. Robinson wants safe themes and simple technique, then perhaps he should move to Harlequin Nurse Romances. It is not the function of science fiction to be safe, it is a genre of extremes. This attitude of "thrill me but don't ask me to think" makes Barry Malzberg's

satires of the science fiction world more valid. If you find Malzberg too extreme then check out what Niven and Pournelle say about this same subject in the opening sections of *Inferno*.

This gross misuse of "The Reference Library" leads me to some suggestions for its improvement. I feel Analog should institute a policy of rotational reviews similar to *Fantasy and Science Fiction's* policy, publishing schedule permitting. No one critic should do more than two reviews in a year and those reviews should never appear consecutively. From the vantage point of variety alone all tastes in the field could be served at one point or another. Old writers and new should be equally considered for this task. I see no reason to exclude publishers and editors such as Del Rey, Wollheim, or Hartwell, providing they cover books outside their own companies. Special essays and opinion columns could easily be carried over into "State of the Art" with the same format.

It takes a lot to get me angry enough to write a letter of this sort. In fact this is the first time I have written to any of the magazines. What bothers me is that my protest can never have the same impact that Robinson's column has on any issue. A column is a privilege reserved for the few and there is no excuse for abusing that privilege. However, my protest will be made regardless, and I hope it does some good.

Robert A. Moffitt
305 Arthur Ave.
Endicott, N.Y. 13760

Spider replies:

Let me have this one, Stanley.

As far as the first part goes, what is needed is a definition of "serious SF" by Mr. Moffitt, with a list of examples. My dictionary offers the following definitons for "serious":

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"grave in character or mien...weighty...requiring extensive effort...causing anxiety...or (lovely pun) critical." Was that what was meant? Oh, and "engineer-oriented upbeat adventure stories" are "most often associated with Analog" by people who don't read Analog very regularly or carefully—who haven't noticed, for instance, that Analog has *had* a policy of rotational reviewing for some time.

As to the rest: I was too asked to review *The Visible Man;* its publisher sent me advance galleys. I did not "sink" it (although I'll admit an unfortunate typo on page 171 line 10, rendering "disagree" as "agree," might have contributed to Moffitt's confusion, pardon me, conclusion); I thought I rather bent over backwards to make plain that its form was exquisite, and its content dismaying *only* to those who share my personal distaste for unrelieved agony and horror. And Mr. Moffitt's use of the word "slanderous" is incorrect both in law and by the dictionary. What he meant was, he disagrees with me.

Personally I am willing to overlook the genuine slanders, libels and calumnies contained in Mr. Moffitt's letter. What does bother me is that a man can yearn so badly to be bummed out that he'll convince himself that a country like Brazil *has* abandoned "children up to the age of eighteen" because he gets a more horrifying statistic that way; that he'll react with such hysteria to the diffident suggestion that there might be something distasteful about total pessimism. Why would a man *want* to lower his morale? And mine?

You win, sir; now I'm bummed out too.

Oh, and that's "tacky Hugo awards." Plural. **—Spider Robinson**

I have only a few points to add.

First, I have made all the statement I intend to make about the directions I have in mind for fiction content (see the January editorial). I want to avoid being more specific because I don't want to define a precise mold and try to force writers into it—or have them try to squeeze into it in the effort to sell me stories rather than simply doing their own best work. Why you feel I owe you a more precise definition of futility stories, or a list of past examples—or what useful purpose you think these things would serve—is beyond me. I'm not here to formulate definitions for literary critics; I'm here to put together the best magazine I can. And that's all.

Second, the most important judgments in this field are subjective. *Those are the one readers make, and I write and edit for readers, not critics. "Specific structural flaws" and such are sometimes useful for trying to understand* why *particular stories produce the kinds of subjective reactions they do—but the subjective reactions are what ultimately matter.*

Finally, there are disadvantages as well as advantages to rotating reviewers. Since their own subjective reactions are what matter most to most readers, and they're different for different people, a reviewer is most useful to a reader if the reader has read enough of that reviewer's work to have a feel for how the reviewer's tastes resemble and differ from his own.

Which is just what Spider said in the introduction to the Reference Library in question. **— S.S.**

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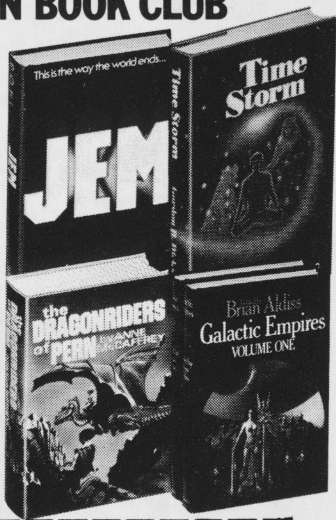

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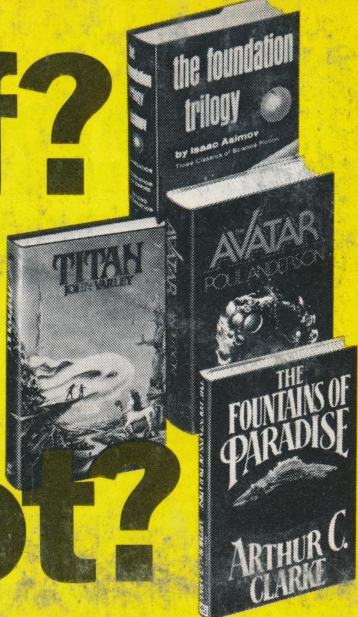

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