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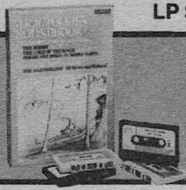

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editorial

remember vanguard?

Remember Vanguard? If the only real sin in this world is being poor, then the only real crime is believing your own propaganda.

Twenty years ago, as the whole world went through the shock of Sputnik, most Americans were dazed, scared, and angry. How come the Russians put up the first artificial satellite? Where was our own highly-touted Vanguard?

The world found out where Vanguard was in December 1957. After the Russians had orbited Sputnik I—which weighed about 200 pounds, compared to our satellite's 20 pounds—they calmly lofted the two-ton Sputnik II, which carried the world's first space traveler, the dog Laika, into orbit.

And then, amidst tremendous fanfare and worldwide live television coverage, the "first" Vanguard launch ended in dismal failure, with a spectacular explosion just a few feet above the launch stand.

Vanguard? Even John Campbell scoffed and called it "Rearguard."

I put quotation marks around that word *first* a few lines above for two reasons: the December 1957 Vanguard launch did not carry a full-scale

Vanguard satellite, but a two-pound "grapefruit" of a minisatellite. Moreover, the launching rocket had not been intended for an orbital mission; it was a test bird, and the first one in which all three engines of the three-stage booster system were nominally operational.

Twenty years downstream of those hectic, hysterical days, we can examine how Vanguard, the United States, and the whole western world got such a black eye. And maybe we can learn something from the examination.

Vanguard began as part of the US participation in the International Geophysical Year, an eighteen-month-long international scientific effort to study our planet and its relationship with the Sun. The idea was to place a few small satellites in orbit around our planet as an aid to the geophysical studies. The Russians announced that they, too, would put up satellites. Few in America (or Europe, for that matter) paid any attention to them.

The first mistake made was the Eisenhower Administration's naive insistence that Vanguard be kept a "peaceful" project. That is, no military hardware could be used to launch the satellites, and no rocket engines then under development for military boosters could be used, either.

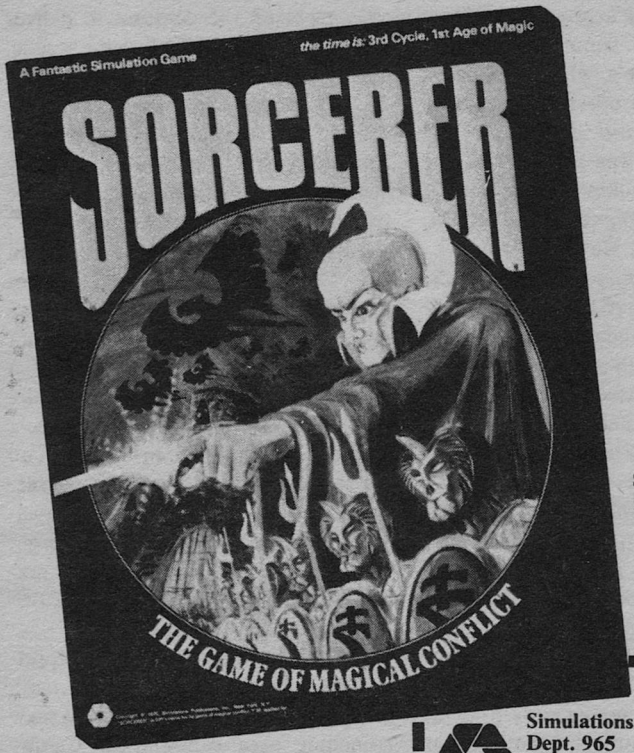
What few people realized, because then it was Top Secret, was that the US was desperately trying to develop effective military missiles: Intermediate Range and Intercontinental Ballistic Missiles. The Russians already had IRBM's—and Khrushcheff threatened to use them on any European nation that intervened in the Hungarian Rebellion in 1956. The Soviets were also testing ICBM's, weapons capable of delivering nuclear warheads on American cities.

So there was a considerable push in the US to develop long-range missiles. Vanguard, however, was kept entirely away from this new hardware. The "peacetime" satellite program had to develop its own hardware.

The Government committee in charge of the satellite program nevertheless asked each of the three Armed Services to make proposals for the satellite program. Peaceful program or not, there were no other Government agencies capable of handling a satellite launching operation.

The committee's ground rules were simple, but reflected an undue belief in the committee's own propaganda. The Army, Navy, and Air Force were each asked how they would launch the Vanguard satellite (which was being developed by the Naval Research Laboratory) *using existing rocket boosters.*

The late Wernher von Braun was then with the Army's Redstone Arsenal, in Huntsville. (NASA was still several years in the future.) His proposal was to modify an existing Redstone rocket by adding solid rocket motors as an upper stage. It was exactly this system—dubbed Jupiter C—which eventually did launch America's first satellite, Explorer I, early in 1958.



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But von Braun's proposal did not win favor with the committee. Neither did the Air Force's, which was based on using the Thor missile as a booster. The Thor was still under test and development; it was not an "off the shelf" rocket system. Worse yet, it was originally designed as an IRBM, a military rocket! No-no!

The Navy's proposal won. Their proposal was to take the Viking rocket (not the Mars lander of 1976, but a single stage, high-altitude sounding rocket manufactured by the Glenn L. Martin Co., that had been flown from White Sands at a rate of one launch per year) as the first stage of the Vanguard launching system. For the second stage, an Aerobee rocket from Aerojet-General. The third stage was to be a solid rocket motor, and two contractors were put to work competitively on it.

Everything "off the shelf." Well, almost. The Viking certainly existed, although it's existing engine was not powerful enough to do the Vanguard job. The Aerobee certainly existed, it was one of the most reliable little rockets ever engineered. And anybody could make a simple solid rocket motor, right?

Everyone fell so deeply in love with this propaganda that the Navy not only got the assignment, but promised to launch Vanguard satellites at a rate of one a month through most of the IGY.

Then the real work began.

Somehow, General Electric's fledgling rocket engine group in Schenectady received the contract to deliver the new, improved first-stage engine. Their X-405 was designed to produce 27,000 pounds of thrust—barely enough for the job. Every part of Vanguard had to be shaved of every possible gram of weight, because of that dinky, cantankerous engine.

Naturally, the engineers at Martin Co. (who got the over-all job of producing the complete launching rocket system) found that you can't simply put an Aerobee on top of a Viking, add a solid motor at the tip, and launch satellites into orbit once a month. They had to literally design an entirely new rocket booster—a three-stage system with different propellants, different guidance, different controls, even different structural materials. And they had just about two years to make it all work.

In the very beginning, all went pretty well. The old Viking launch team moved from White Sands to a new launching area called Cape Canaveral, in Florida, where there was little more than sand, shrubs, and bugs. The Air Force had been testing a few of its missiles there, including a pilotless jet bomber called the Snark. So many of them dunked into the ocean just off the Cape that newcomers to Canaveral were solemnly warned against swimming there because the waters were Snark-infested.

The first few Vanguard test launches went smoothly. Test Vehicle O was merely a leftover Viking rocket with some new electronics aboard. TV-1 was a Viking with a Vanguard-

type third-stage rocket bottle on its nose. TV-2 was the first Vanguard configuration, but only the first-stage engine was operational on it.

That GE engine caused much grief among the engineers. It kept malfunctioning. The Martin crew would send the engine back to Schenectady for rework, and the GE people would send a replacement engine back to Florida. It got to be quite a shell game.

Everyone on the project was aware that the Russians had much bigger boosters in operation, and would almost certainly get a satellite into orbit before we could. (When I saw "we" I include myself, since I was a junior—*very* junior—technical editor on the project.)

By late September we had TV-3 on the launch stand. It was the first bird in which everything was operational, including all three engines. The program plan called for a suborbital flight to check out the complete Vanguard system.

On October 4, 1957, Sputnik I shattered everything. I learned on that day the difference between knowing something in my head and feeling its truth in my guts. But after a short, stunned pause, everybody on Vanguard got back to work. The game was now to see how quickly we could match the Soviets.

The Navy, overseers of the project, did not seem too perturbed by Sputnik I. Nor even by Sputnik II, dog and all. After all, the Secretary of Defense called the Russian launches "stunts." The President was assuring us that no

Remember Vanguard?

matter how many rockets the Russians had, one B-52 could deliver more devastation than all the crossbow men of the Middle Ages.

But the public was hysterical and demanded Action. Von Braun disclosed that he was ready and able to put up an American satellite within thirty days.

The Navy panicked. Von Braun was *Army,* you see, and interservice rivalry hit the Navy people where they lived.

So suddenly there was no more testing program on Vanguard. NRL presented the launch crew with a two-pound grapefruit and orders to put it into orbit. Cantankerous engine and all, the Vanguard was prepared for launch.

It rose to about four feet off the launch stand when the first-stage engine burned through, the vehicle lost thrust, and it collapsed in a spectacular fireball explosion that destroyed world confidence in America's technical prowess for quite a while.

Twenty minutes after the explosion, the public relations office of GE in Schenectady released a statement that flatly said their engine was not responsible for the fiasco. It took the engineers a week to sift the debris and the data tapes to find out what actually happened, but the GE flaks hit the media inside of twenty minutes. *That's* how panicky a time it was.

Von Braun launched Explorer in January 1958. On St. Patrick's Day, 17 March 1958, the first Vanguard satellite went into orbit—with a St. Christopher's medal welded to the booster's guidance section. In all, Vanguard project achieved three successful orbits in a total of nine launches; not a bad batting average for the first nine launches of a brand new bird.

As the Space Race shaped up, and the Kennedy Administration put the full weight of American talent and drive behind our space program, we began to outstrip the Russians. Maybe somewhere in the Kremlin they had people who believed *their* propaganda, and started making bad decisions.

Today we are on the verge of starting a new era in space, with the Shuttle soon to become operational, space factories being planned, whole colonies envisioned. If Vanguard has any meaning to us today, it should be this: we must constantly check our assumptions, and never, never, *never* base our plans on the sanguine predictions coming out of our own propaganda.

Can the L5 enthusiasts honestly say that they can build launching rockets from "off the shelf" technology? Can they really predict that there will be no military uses of space colonies, or lunar supply bases? And have those politicians (and taxpayers!) who pooh-pooh space efforts as costly "moondoggles" really resigned themselves to allowing other nations to reap the wealth and power that is available in space?

THE EDITOR

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Freedom does not guarantee survival—any more than slavery does.

DEAN MCLAUGHLIN

"We'll prove it," he'd said. "Give us enough to get started and we'll go out there and live. We won't ask for anything more."

"All right," they'd said, and coldly gave him everything he asked for.

That was a kiloday past, more than twice this world's orbit around its star. Aarn stopped the groundbreaker at the field's edge, slipped the sweatband off his forehead, and looked back along the dusty swath he'd cut across the land. The warm wind gave his brow a cool touch. The fresh broken earth was a light tan band across a green carpet. Eastward the land lifted in a series of broad, layered platforms toward the mountains beyond. Westward lay the Edge, and beyond the Edge the sea of clouds. Brilliant white clouds they were, under the star's hard blaze, white with green tint in their folds. The wind puffed a dust plume skyward and bore it away to the southeast. Nearer, the bending stems of sward riffled in the breeze. A long way he'd come since that day. He swung the groundbreaker into position for another slash. The machine turned clumsily. The deep, mumbling hum of the motors was a vibrance that reached deep into his body, like something alive. It felt good under the hot star. The broad, brooding wings spurred their tools into the soil. It crawled across the land.

Halfway across, he waved to Semyon who passed going the other way. Semyon was driving the sprinkler rig,

Doug Beekman

wetting down the strip Aarn had cut moments before. They'd finally got it moving. The big water tank, lofted by a strap-on negagrav, loomed above the rig like a black moon in close orbit. Water gushed from the rig's spouts, turning the dun earth to brown. Following a hundred meters back, came Helma on the seeding machine. The air was suddenly full of the scent of moist soil.

He felt fine. A thousand days now, since they'd stood among haphazard piles of boxed supplies and watched the grav cars disappear in the sky. A kiloday from their rough camp of bubbletents on the platform above these fields, where now the longhouse stood. It had been hard work, making this bleak country a place where they could live; but now it was theirs.

They'd quarried stone to build the longhouse, the livestock shelters, the irrigation reservoir. They'd planted crops, and almost starved before the fourth seeding, finally, produced a meager harvest. They'd learned from that.

And the livestock. There'd been the storm that killed almost all the pooket moose and half the furrybirds because they lacked the instinct to seek shelter. And the Weinbaums, who broke out of their pasture and, following their instinct to seek warmth, had found a way down beyond the Edge where of course they died. And the donalducks were even now a disappointing puzzle; normally prolific, they had not produced so much as one fertile egg.

Forty-nine young men and women they'd been, coming out from Dome Haven. Thirteen, their enthusiasm daunted by the bleak land and the rigors of living Outside, had gone back. Ford had died under a mudslide that unexpectedly slurped down Irrigation Creek Canyon. More prosaically, Tennenkarst had died when his appendix burst and the navigation guides aboard the grav car that was flying him to Dome Haven failed; the craft lost its way above the pathless clouds.

But now all that was in the past. Already the irrigation reservoir was halfway up to the lip of its dam. Already a runnel of water trickled down the canal that clung to the descending canyon walls, streamed down the cascades like a thin glaze, and made a place beside this field where the sward grew lush and thick and unbelievably green.

And now this day. This day, which would see—was seeing!—the beginning of the freehold's true independence from Dome Haven: the seeding of the freehold's first barter crop. After megadays of only yeasts and offworld preserves, Dome Haven would be eager for fresh-grown foods. The people of Dome Haven would trade repair parts, whole machines, fertilizers, livestock, terraforming bioagents—all the essentials that made it possible to live Outside.

The groundbreaker's slow crawl had taken it almost all the way across the field when something glimpsed made Aarn turn his head. Out there

beyond the Edge, a bright spark floated in the clear air above the clouds. Star's light on a grav car. Aarn watched it for a moment before giving his attention again to the groundbreaker's path. When he came to the end of the cut, he stopped his machine and watched the grav car's approach.

It came with a swiftness that seemed to accelerate as it came near, but then it slowed. Drifting as if moved only by the wind, it floated above the longhouse close beside the length-of-pipe flagpole. The flag whipped in the breeze, a soaring bat-bird and a crescent new moon against a field of green; untethered life and a dawning world.

The grav car turned, then, and came down toward the fields. Aarn shielded his eyes from the star and watched. He wondered who it was and what they wanted. Well, he'd know soon enough.

It landed on the sward a few meters off. The tiny singing of its negagrav wound down through the octaves to a growl and finally silence, leaving only the whish of the wind. Aarn quenched the groundbreaker's fusion unit and climbed down. The sward crunched under his hardsole shoes. The tall man who emerged from the grav car wore an open-throated blouse, short trousers, soft shoes; knees and elbows were bare. A breathing mask covered his face below a tuft of silvery hair.

They met. The tall man gestured an invitation toward the open hatch behind him. Aarn shook his head.

"I can breathe out here. So can you," he said.

The tall man hesitated. It was, Aarn knew, a habit hard to break. In Dome Haven, they still thought the air Outside was death to breathe. Everywhere else it was true, but not here above the Edge. Through his breather mask's faceplate, the man from Dome Haven studied Aarn with gray, measuring eyes. "I've breathed this air for a thousand days," Aarn said.

For a micro more, the gray eyes watched. Then, with a gesture that said it was not important, the man from Dome Haven gave it up. Closing his mask's airmix valves, he pulled it down to hang loose against his throat.

Aarn drew himself up, now that he knew the man. "Biron," he acknowledged formally, touching his temple.

"Have you been well, Aarn?" Biron asked, equally stiff.

"Quite well," Aarn said. He cast a glance over his shoulder at the new field. "You can see how well. What do you want?"

Biron gave no reply. He strode across the sward to the edge of the fresh-broken ground. Kneeling, he thrust a hand into the loose soil, withdrew it, rubbed a few crumbs of earth between thumb and finger. "It would be better if this land was left in sward," he said. "It's clay and sand. Only a trace of organics."

"If you had your way, we'd wait a hundred kilodays," Aarn said. "All our lives!"

"Even a megaday would be short in the life of a world, Aarn," Biron said.

"You didn't come to tell me that," Aarn said. "Why did you?"

Biron rose to his feet. "No, that I did not," he said. His gaze went out across the land, to the Edge and beyond the Edge, to where the mounded clouds crowded together into an unbroken ocean of green-tinted cloud. "A storm is coming."

Aarn had to look up to meet his eyes. "We know that."

Biron admitted it with a dismissing gesture. "I don't think you've understood it, though."

"We've had storms before."

"Not such as this storm," Biron said. "This storm will be the grandfather of all storms."

The cloud mass, down there beyond the Edge, looked no different now than any other day. But no human eyes could see beyond the curve of the world. "We have watched it on the satellite scans for six days," Biron said. "Gathering force. At first we thought it would pass south of you—that only a margin would touch you. But it has drifted steadily north. Nothing in the weather pattern now can divert it. The cloud tops," he added, "rise to seven thousand meters."

The Edge was almost two kilometers up from basepoint. The mountains crested at six and a half. Aarn stood unswayed.

"We're ready for storms," he said. "We need storms. Without them, we'd have no rain. Our crops would die."

Biron give an unpersuaded nod. "There will be winds," he said. "Strong winds, and heavy rain. More rain than such a land as this, that has so little cover, can absorb. And your air! You are at a place where the Edge is cut by a narrowing notch. It will have the effect—"

"That's why we chose this place," Aarn said.

"The storm will drive its air mass against the Edge. It will force itself into the notch. As it narrows, the notch will cause the carbon dioxide layer to rise. The carbon dioxide will surge up over the Edge. You'll have nothing you can breathe. That, more than the other dangers, is what I've come to warn you. Do you understand?"

"All right," Aarn said. "You've warned us."

"And we offer to evacuate you—all your people, all your livestock—to Dome Haven. For your safety. Will you come?"

"Thank you," Aarn said. "No."

Biron lowered his head. "I would suggest that you discuss it with your people."

"It's not necessary." Aarn set hands on hips. "Admit it; your real reason—you want us back in Dome Haven. You'd say it proved we couldn't make it. You wouldn't let us out again."

"For your safety," Biron said again.

"Would you bring us back out here

after the storm?" Aarn demanded. "Would you?"

Biron hesitated only a moment. It was enough. "We think not much will be left, out here. Nothing for you to come back to."

It confirmed Aarn's keenest suspicion. "A thousand days ago, I told you," he said. "I said we'd come out here and we'd make our way without help from Dome Haven. We chose this place because we knew the notch would bring us storms. We want the storms. We built our longhouse to stand against them, and it has stood the worst that fifteen—twenty storms could send. We thank you for the warning. It is useful to know a storm is coming. But we're ready for it. It is not a danger."

"And the carbon dioxide?" Biron asked. "Are you ready for that?"

"We know what to do," Aarn said. "We're ready."

"For your sake, I hope you speak truth." Biron said. Ironic doubt colored his tone. "Ten days from now, we'll know." With a bow, he backed off a step, turned, and strode to the grav car. The hatch thunked into its heavy seal. After a moment, the nega-grav began its thin whine. Aarn watched him go.

Semyon had stopped the sprinkler rig behind the groundbreaker. He swung down as Aarn came back. "What did he want?"

Aarn paused with one foot on the rung. "He wants us back in Dome Haven."

Semyon snorted. "They've wanted that for a kiloday. He came all the way to say that?"

"He's got a new argument." Aarn put his foot back on the ground. "That storm they told us on the comm last night. He says it's a powerful one."

It was almost a reflex, the way Semyon glanced westward. Rolling hills of cloud sprawled all the way to where the sky came down. "I looked at the satellite pictures," he said. "And I saw the readouts. He's telling it true."

"What they've been waiting for, a thousand days," Aarn said. "If we'd had it when we first came here, before we got the longhouse built, it would have wrecked us. Now—now we're ready for it. For them, it's only an excuse."

"Only?" Semyon cocked a brow.

"Mostly," Aarn said. He moved back half a step. He probed for solid footing in the soft earth. "They're accustomed to being under the dome, where the weather can't touch them. They think it's worse than it is. But all that is, it's justification for saying we shouldn't be out here. The truth is, as long as everybody stayed in Dome Haven, they owned everybody and they owned all this world. And when they decided it was time to come out, they'd still own everybody. And they'd still own the world."

Semyon shrugged. "I suppose. It's still going to be the old man and all his brothers."

"Nothing we're not ready for," Aarn said. "And it's two days off.

Right now, we've got a field to plant. All right?"

He didn't wait for an answer. He swung up into the groundbreaker's cockpit, sparked its fusion, and turned it for another cut across the land. Semyon tramped back to his own machine. He paused beside the boarding ladder and waved as Aarn growled past. There was something in his stance, though, that spoke of doubt; and his gaze was to westward.

That doubt gnawed at him all afternoon. It forced him to say, that evening, "All right, we'll talk about it."

That was after the meal had ended, and after they had drifted in knots of two or three from the tables near the kitchen out across the commons section. Lit by tinted glow panels, the commons had a warm, secure feel enhanced by the rust-stone arches that bore the vaulted ceiling's weight. This evening, more of the freehold's people than usual gathered in the alcove where the comm unit waited. When Dome Haven began transmitting, all talk died.

A new hundred-day report was ready. By freehold reckoning, it had been only eighty-seven since the last, but Dome Haven did not deeply feel the speed at which the world turned and went by standard reckoning. Of the ones who had gone back to Dome Haven, at least four had gone because their biorhythms failed to adjust to the world's natural day. (Jess? Aarn wondered for the billionth time. He put it out of his mind. Probably he would never know.)

The report was all hard data. It would be in the printout, but Dome Haven thought it important enough to be given also by voice, under the camera's eye. With anything that involved the Project, Dome Haven was inclined to think that way.

Atmospheric oxygen had increased three thousandths of a percent since the last report, the talker said. Carbon dioxide was down by five. Water vapor was unchanged, but that was thought to be because water vapor could not be measured with the same precision and was, moreover, subject to extreme local variations.

More statistics followed: mean global temperature; the star's radiation and the world's albedo factors, which yielded a figure for total net energy absorbed; mean elevation of cloudtops above basepoint; average atmospheric pressure adjusted to basepoint; lichen proliferation index; airborne algae count, both combined and by variety, with a new subentry on a mutant strain recently found in the clouds above the southern hemisphere's polar zone. Aarn half-listened to it all; it was information more of interest to the outposts, not here at the freehold.

Next came Project news. A new seeding sweep had been started in the Drury's Rift region, utilizing algae mutant 44-K; tests had shown 44-K to have a high CO^2 conversion factor and a hardiness index that offered hope of good results. Minerals Survey had found promising vanadium deposits within trail-building distance of

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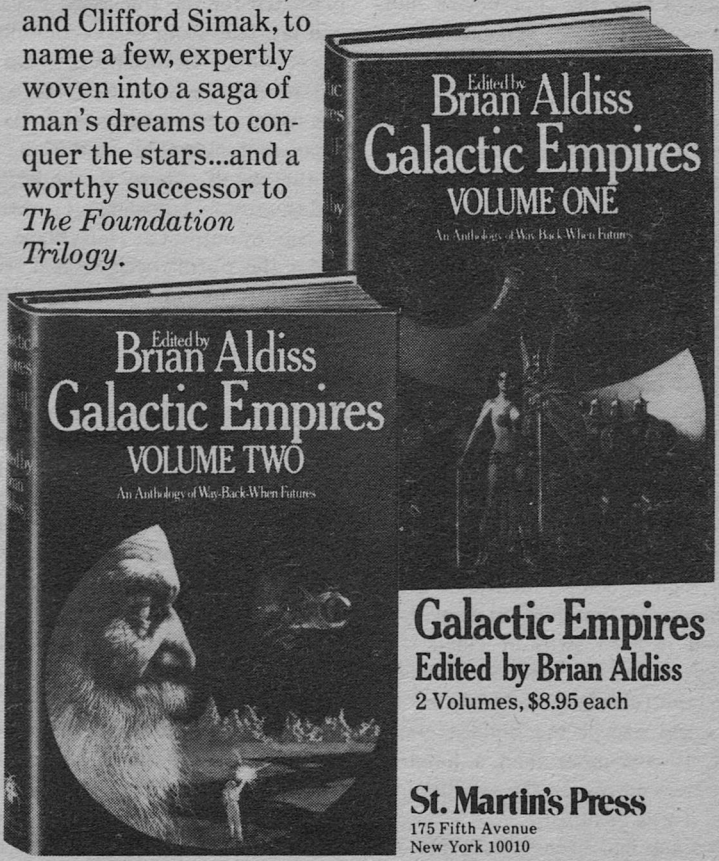

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Mannlicher Outpost. A grav car was missing between Dome Haven and Hellsgriddle; search operations had been started along its flight path.

Dome Haven even had some off-world news. A cargo ship, still several days out in slow deceleration orbit had beamed ahead a squirt of news. Aarn's attention wandered. The only item he noticed was the latest report on the Wingate evacuation. It was estimated that the supernova's radiation would reach the Wingate system in another six hundred seventy days. Already millions of people had been taken off, but it was doubtful that evacuation could be completed in time. Efforts were under way to deploy a dust cloud ahead of the radiation front, to screen the Wingate system from the worst of it, but there was almost no hope of more than marginal results. The only welcome part of the report was that Wingate was the only colonized world close enough to the supernova to receive a lethal radiation storm. No other worlds would have to be abandoned.

At last, then, the talker turned to the meteorological report. Briefly, he reviewed atmosphere conditions in other regions before, finally, he came to the storm. Satellite transmissions showed it as a swirl of cloud that bulged above the smaller, ordinary convection clouds that blanketed all the world except the highest elevations. It was more than a hundred kilometers across. In the satellite pictures, it was beautiful.

Its track had been traced. The air masses surrounding it had been surveyed. Its winds had been measured, and also the flow of air drifted it onward. The topography of the land over which it was about to pass had been examined. It would touch the Edge in slightly less than two days; a little more than a day and a half, Aarn thought, as the freehold measured time.

Winds of at least force eighty were predicted for the freehold's elevation and latitude. Rain would come like a river falling out of the sky. On the upland slopes east of the Edge, where the sward grew sparsely on the barren stone, nothing would stand in the way of the runoff. There would be flash floods, erosion, landslides. The Minerals Survey outpost at Hard Place, now under the storm's weight, had sealed its portals and had not responded to beam communications for almost two desidays. It was believed—hoped—the silence meant only that the outpost's antennas had been wrecked, but there was the memory of a storm almost fifty kilodays before, and an outpost of which not a trace was found afterward—only a rubble field where it had been. Most of Hard Place Outpost's people had flown out ahead of the storm. Grav cars were being held available to do the same for Independence Freehold.

All the time the talker spoke, the printout had been feeding quietly into its hopper. Now the last fold whispered into place. Then, after half a milliday's pause, a handful of personals rolled out of the slot. Aarn took

them out and handed them around. None was for him, so he went back to the comm unit and punched buttons for a replay of the weather forecast. He sat on the hard flagstone floor, watching the screen while others tore off wrappers and unrolled their letters. He watched the isobars drift slowly toward the bold, bent-and-indented line that was the Edge—saw the isobars bend and reshape against that barrier, flow over it while the numbers in the data tabulations winked and changed, winked and changed.

The sequence ended. He stood up, touched a button to blank the screen, and turned to his people. "All right. We'll talk about it."

For a moment, no one spoke. They looked at each other. "I think it makes sense," Inah said. "I mean, it's a bad storm and they're warning us. And they're giving us a chance to get away from it. I think we should take it."

Aarn watched their faces. They were thoughtful, unsure. "Anyone else?" he asked.

Inah's consort was with her in the double chair: Tollifer. He hooked a leg over the chair's arm. "She's right, you know."

Aarn gave no sign that he heard. He let the silence stretch out.

"It's a bad one, that storm," McMurdo hunched forward on a settee.

"Bad enough this house can't stand up to it?" That from Marc. He'd planned the house. He'd supervised the building of it.

"I did not say that," McMurdo said. "I do not know. I know only this storm will be more than any storm before."

"We built this house," Marc said, "to stand against the strongest wind measured on this world. I've looked at all the data on this storm. It's a hard one. I don't deny that. But I say this house was built for it."

"Landslides?" Aarn didn't see who asked. Marc spread his hands. "Only way to protect against them is not be where they happen. We're not in the likeliest path, but there's high country behind us. Not likely, understand. We built in about the safest spot we could find. But they can happen anywhere."

"Could happen at Dome Haven," someone said.

"Won't though," someone else pointed out. "Storm's not going anywhere near Dome Haven."

Robben raised his voice. He was a big man, and his voice matched. "What bothers me," he said, and paused to let everyone else go silent. "What bothers me is the carbon dioxide. That storm will drive a surge in the carbon dioxide layer against the Edge like slosh in a basin. It'll pour up over the Edge. It will rise until it covers us. The terraforming algae, perhaps, can breathe that stuff, but I—I do not know about the rest of you, but I, for one, cannot."

Aarn gave Hillery a nod.

"We knew that could happen the day we came here," Hillery said. "And it's happened. Several times.

We'll do what we did the other times."

"And hope the bottled air holds out?" Robben asked. "Hope the walls don't crack under the extra pressure?"

"We have air enough for five days," Hillery said. "Twice as much as we have ever needed. Cracks in the wall, assuming they happen, would make no difference."

"If the cracks are so bad we can't patch," Marc said, "we can seal off those sections. We'll want to seal off some sections, anyway."

"Five days," Robben repeated, undeterred. "Planetary days? Or standard?"

"Standard," Hillery admitted.

"Does that include the livestock?" Kara asked.

"We'd have to slaughter most of the animals," Hillery admitted. He made an apologetic gesture. "I repeat. Five days is more than twice what we have ever needed."

"This is no ordinary storm," Robben said. "The carbon dioxide will come up ahead of it, and it will stay long after the storm has passed."

"You're asking how long this storm will be on top of us?" Hillery asked.

Robben folded his arms. "I'm asking."

It was one for Keeve. He needed no prompting. "The Edge and then the mountains will be a wall across its path. They will hold it here until it spends its force. Only its tatters will pass over the crest."

"How long?" By the look of their faces, half of those present wanted to know. Robben asked.

"Four days," Keeve said. His offhand gesture said it was a guess. "Five."

"Standard days?"

Keeve hesitated almost a whole micro, then shook his head. "Real ones."

Stillness was absolute, then, until Robben spoke. "That cuts it very close," he said. "Very."

Aarn let the talk go on. He watched who spoke, and how they spoke. He watched who stayed silent, and he counted in his mind who was for staying, who was for seeking safety in Dome Haven, and who wavered from one choice to the other. He waited and he thought how clever they had been in Dome Haven, to put into the comm transmission the news of Wingate with its almost subliminal suggestion that it was only reasonable to seek refuge from forces of nature too powerful to resist. It was a seductive argument; even wary of it, he felt its persuasion.

Only once did he speak: that was after Sheela lost her temper in the midst of an exchange.

"You'll see." The words burst from her. "Once they've got us back, they'll never let us out again. Never!"

She was right, but it wasn't a way to win arguments. "I think you're right, Sheela," Aarn said. "Some of us, though, are less sure."

It had the effect he wanted. Calm returned. "They let us out," he went on, "only because they thought our

freehold would fail. Now they know—we've shown them—unless they trick us or force us back to Dome Haven, it shall be we instead of them, who shall be owners of this world. Because we have the courage to live on it—breathe its air—instead of huddling under a dome's shell like something in an egg afraid to be born."

"Trouble with that—," Bodeen was rubbing his jaw, "—with a storm like this one, maybe they're right."

"All we know is what they've told us," a voice from the back said. "Maybe they're improving on the facts."

With that, the argument was off again. Aarn watched and listened. He kept his silence and let them talk it out.

Then Semyon stood up, "We've talked enough. I say, let's vote on it. We stay, or we don't stay. Majority rules."

"Yeah, let's." Several voices. "Vote!"

"No," Aarn said. He paused then, to let the force of that one word take full effect. Then he went on.

"It involves the possibility of risk," he said. "We should not say, because some of us will accept that risk, all must accept it. Nor should we say, because some believe that risk is too great, all must give up everything they have worked for. No. Instead, we shall say each must choose for himself. Each of you, if you decide to stay, you shall stay. If you decide to take safety in Dome Haven, it is not for others to say you cannot go. Nor shall we say you cannot come back when the storm has gone. But I should warn, we cannot guarantee Dome Haven will let you come back. Our freehold contains the future of this world. Dome Haven knows that, and they fear us."

He scanned their faces one more time, reading their mood. They were startled, slightly puzzled, but not of a mind to disagree. Wordlessly, he gestured for adjournment and, without waiting to see how they took it, left them.

The corridor was empty all the way to his quarters. His footsteps whispered off the walls. A littered desk, a chair and lamp, his sleeping mat and rack of clothes. It wasn't a place he spent much time; not since Jess had

gone back to Dome Haven—"Just for a visit," she'd said—and never returned.

She'd been one of the first to quit the freehold. What hurt was that she'd sent no word, no explanation, not even an apology. Others who went to Dome Haven, though subjected to persuasion, had not been kept against their will. One of them said she'd seen Jess; she said Jess told her she didn't want to talk of it and would say nothing more.

From the clothes rack he took a heavy overshirt and, sealing the front against the night's cold, walked the further few steps of the corridor to the portal at its end.

On the step he paused. The sky was black as only a moonless world's night can be black. But stars pricked its darkness like a scatter of hard, bright stones, and the galaxy's great star-cloud was a broad stroke of silver dust across the eastern sky, slanting down to touch the ragged crest of the mountains. High in the west shone the wispy, translucent glow of a nebula only a few parsecs distant. All combined, the stars did not give enough light for a man's eyes, nor did the dim luminescence of the cloud deck out there beyond the Edge. But Aarn's feet knew both the steps and the gravel path that crunched under his softsole shoes. The cold, thin air breathed crisply on his face. He touched his overshirt's throat seal. Only his footfalls made sound.

Where the path branched, he took the way toward the livestock pens. A donalduck squawked its nocturnal mating cry. The furrybirds sensed him and scurried forth, chittering to be fed. When the silhouette of the shelter in the yardbeasts' enclosure lifted against the cloud deck's glow, his groping hand found the stone wall. He hitched himself up, swung his legs over, and sat there facing westward. The storm would come from out there. He looked down at the luminous clouds. He looked up at the stars. He pressed his hands between his knees to shield them from the cold.

"Aarn?"

He hadn't heard her come; hadn't known she was there until she spoke. "Over here, Lora."

She got up on the wall beside him, close enough that he sensed warmth. "You did a very good thing, Aarn."

"Oh?" It wasn't an honor he felt entitled to claim. Under the shed, a yardbeast softly yawned and rustled its bedding, then went silent again.

"Letting them go," Lora said. "Everyone that wants to. Don't you think it is?"

He didn't answer at once. Her elbow touched his arm. A meteor sketched a quick, bright mark across the sky. A touch of wind, too slight to be felt against his face, filtered chill through his overshirt's weave.

"Everything we know about the storm comes from them," he said. "From Dome Haven."

"Do you really think they exaggerated?"

There was no way to answer that. "Even if they did, the storm will be a

hard storm." He spoke slowly, reluctantly. But out here, now, with only Lora to hear him, he could be objective and honest. "It could be as bad as they tell us. I don't know. Nobody does."

"Maybe it won't be," she said.

That was possible, too. He'd worked his thoughts through all the possibilities. All the possibilities and all the choices. Some were more possible than others.

"If being safe was all of it," he said, "they'd be right. We'd be safe in Dome Haven. The storm won't touch there. But then . . . then . . ."

She moved closer to him, as if seeking his warmth. His arm circled her. "We've made a start here. We could lose it all."

"We won't lose it," she said. Her hand covered the hand at her waist. Warm. "If nobody else stays, I'll stay."

"No," he said. His own voice surprised him. "Lora, I want you safe."

"Maybe I'd rather not be safe."

"And," he went on, pretending he hadn't heard, "I want someone among those who go to Dome Haven who will hold them together. And, when the storm has gone, who will bring them back to us. Will you do that for me, Lora?"

"They'd think I was afraid," she said. "I'm not. We've made it through a lot of other storms."

"Everyone who stays," Aarn said, "I will tell them I asked you to go. And why I asked you. We know—all of us know—the people of Dome Haven will try to change your minds. They will know I had to send someone who wanted to stay."

"You're sure?" Her voice was acute. She could see straight through him. "Is that why you decided like you did? So you could persuade me?"

"No, Lora. No," he said. She was right to be suspicious, but now he was on firm ground. "I had a choice. I could let them vote, or I could tell them what I told them. I think, if I had let them vote, we would have lost."

"Aarn! No!"

"I watched them, Lora. Had they voted, we would all be going to Dome Haven. Now some of us will stay."

She was quiet, then. Neither movement nor words. Until, "In Dome Haven, would you like for me to look for Jess? Talk to her?"

Once, he would have asked her to. Not now. "No, Lora. Not for me."

"What if I see her?"

"Say that I think of her," he said. "Only that."

They talked, then, of other things. They watched the stars. He forgot the air's chill and the passage of time; forgot, almost, the coming storm. There was only the night, and Lora, and the occasional scuffling sound of a restless yardbeast. Only much later, when his gaze touched the nebula's white patch and he realized how far it had gone down the western sky, did he know how long they had been there. "It's late," he said. "We should go in."

"It would be warmer," she said. And, "But my room gets awfully cold sometimes. I don't know why, but sometimes when the wind's blowing . . ."

He slipped down off the wall and turned, reaching up to help her down. A loose stone clacked. When her feet were on the ground he held her for a moment longer. They stood close while, silently, he weighed his choices.

"It's not blowing hard tonight," he said.

"Sometimes it's cold without the wind blowing," she said.

"Yes," he said. "Well . . ." And let it go at that. He groped in the darkness, found her hand, and led her back along the path toward the longhouse. His feet seemed to know the way.

Over breakfast, the day's work was planned. All the normal routines were set aside. Only one task stood to be done: prepare for the storm.

Those who had opted to go to Dome Haven worked beside those who would stay; they would return, they said, when the danger was past. "If there's anything to come back to," one of them said.

"We'll be here," Aarn said.

Tough plastic sheets were spread over the newly broken croplands, pegged down with cords and weighted under a scatter of cobblestones. It might have been better, Aarn admitted to himself, to have left the soil undisturbed until after the storm; coarse though it was, the sward might have given more resistance to erosion. The fields already sprouted got the same except where the crops grew on stiff stalks; those would have to risk the worst the storm could do. Only the pagoda bushes stood much chance, Aarn admitted to himself. On those fields the plastic was laid between the rows, overlapping from one row to the next between the stalks. At least the soil could be saved.

Drainage channels were cut and flash-fused to harden their walls. A hurried, crude levee was raised beside the creek from where it emerged from its gorge to where it dropped through its notch in the Edge. There, too, the burn machine's blaze changed the earthen slopes to a crust of glass.

Kara had been in charge of the livestock. Now she examined every animal, made tests on their body fluids, studied her records. She talked to the people who worked with them. Finally she chose three breeding pairs of each type—three trios in the case of the furrybirds. The rest were slaughtered.

It wasn't the best way to do things. The carcasses had to be cleaned. The freezing machines groaned under the load and fell behind, nor was there space enough in the cryo boxes. Half a megagram of good meat was wasted.

Late in the morning, Kara found Aarn helping string the cords from one stake to another. His back ached. His hands were beginning to blister. "What about the donalducks?" she asked.

He stood up straight, flexed his

shoulders. He took off a glove and looked at his hand. "What about them?" He worked his fingers.

His abruptness put her off. "I can't justify keeping them. I mean, what's the point of keeping breeders if they're not going to breed? I can't justify keeping them. I thing we ought to kill them all."

"Yes," he said. Weariness was a weight on him. "Only . . ." He made a fist, and had there been something solid he'd have struck it. "No," he said then. "Cage them. All of them. Tomorrow when Britt goes to Dome Haven, let her take them with her. Let them be studied at the Project school. Someone may find out what was wrong."

She frowned. "That's something I suggested a hundred . . . almost two hundred days ago. You didn't want to, then."

It had been a matter of pride, before. "We wanted no help from Dome Haven. Even now, we want no help. But now, now . . ." He scrubbed an itch on his brow with the heel of his hand. "At the school, they will be interested to know."

"I'd sort of like to know, myself," Kara said, and stalked off. Aarn looked again at the sores on his hand, grimaced, and pulled on his gloves.

In the afternoon, he made a round of the monitor cameras. "We'll need to know what's happening outside," he'd said when they were setting the task priorities. Nobody argued.

It was painstaking work to test the scan equipment with the backpack test kit, and wearying to trudge from one watchpost to another with the weight of it behind his shoulders. But the powered vehicles were needed more for other work. The star blazed on his bare arms while he talked on the plug-in to Fern at the monitor desk in the longhouse, tuning the picture transmission and checking antenna alignments, knowing all the time that the blasts of wind and the torrents of rain could instantly destroy the careful perfection of his work.

He left for last the two monitors that watched the irrigation canal and the one that overlooked the dam and reservoir. As if saving until last would make the climb less steep, the way less long. The canal was almost dry; a weak trickle among the rockfall stones that littered the channel's floor. Tramping along the narrow track between the channel's void and the canyon's steep side, the clinker-hard burn crust underfoot, he went slowly and breathed all the way from the bottom of his lungs. Even so he had to pause, several times, to rest aching legs and catch his breath. It was the thin air, he told himself.

Resting, he could look back the way he'd come; the in-and-out twist of the canal as it followed the canyon's course and, where the canyon opened out, a glimpse of the platform where the longhouse stood; farther out and down, the broader platform of the fields, a patchwork of green, gray, and orange growth, and plowed ground under the plastic; and beyond that, the

Edge, and then the sea of clouds. The storm would come from out there, but now it looked the same as always: white, rolling hills of cloud that glowed with an inner green. The star's blaze dazzled.

The cameras were perched on pediments high on the slopes above the canal. One was no trouble to get to, but the other occupied a jut of rock on the canyon's far side. A rudimentary track had been cut down into the canyon's cleft and up to the base of the mount. The way was steep, giving scant foothold to his heels as he went down, even less to his toes when he began to climb. He barked his knees on the big rocks that crowded the stream bed. When he began to adjust the relay antenna, he discovered his fingers were skinned and bloody. He couldn't think how it had happened.

It was as hard going back across, and then another toilsome climb to the dam. The spillway was dry. Behind the dam, several meters below its top, dark water—the same dark blue as the sky—washed against the black basalt walls that plunged down on either side.

He checked the dam. On the downstream side, the heat-glazed face glistened in the star's light. He looked closely for cracks, but found none. The cobblestones paving the spillway lay firmly emplaced, their thin interspaces caulked with duroplast. On the reservoir side, the impounded water sloshed against the granite facing stones. No erosion.

The camera stood on the shoulder of a towering volcanic spire where it could watch the dam, the reservoir, and the steep canyon walls that closed it in. The broken stubs of giant basalt columns made a stairway up to it; an easy climb, but the thin air took the breath from him. A few small clumps of sward and desertfrill had taken root in cracks, giving patches of green and blue to a landscape that was otherwise volcanic yellows and obsidian.

The camera's pivot-bearing wasn't right. As it turned, the camera stuck, came loose, stuck again and again. He pumped lubricant into the housing. Still the camera would not turn smoothly. Grumbling—he'd hoped it wouldn't be necessary—he got out his tools. One by one, he laid the bearing's parts on a chamois cloth. Kneeling on the hard stone, he cleaned each until, when he held them in the star's light, they shone like jewels. He studied each part through a loup, but found no flaw. When he put the bearing back together, it turned smoothly. Some windborne chip of grit, too small to see, must have been the trouble. How it had got inside the seal he couldn't guess.

The camera's optics, sensors, and transmitter tested out. The pressure and humidity meters needed only small recalibrations. The antenna's shield had come loose at one corner. He welded it back. Aligning the beam should have been easy—a mere matter of sighting through the pinhole toward the relay link's dish and turning the screws until the sight was zeroed on it. But Fern, back in the

longhouse, said the picture was still not right. He tried again, and failed again. He tried resetting it blindly, talking with Fern each time he'd twisted a screw a quarter turn. It did no good.

"Leave it," Fern said finally. "It's good enough, and there's no time to make it better now. I think it must be the dish is warped. Let it go."

He hated to leave a thing undone, but she was right and he knew it. Still on his knees beside the pedestal, he gathered and stowed his tools. As he got to his feet, slinging the pack up on his back, his glance for an instant turned skyward.

Floating high in the dark blue sky—high to westward—a ghost thin, wispy shred of cloud hung motionless. He'd never before seen a cloud that high. He watched it for a long time. It seemed not to move. As if some nameless force held it there.

The grav cars came in the morning. Six of them. Biron came in one, but except for him there were only the pilots. The pilots stood in a group close to their craft, thumbs hooked in the elastic gather straps at the waists of their one-piece overgarments. They wore breathing masks. Biron came across the yard.

"There's space enough for all of you," he said. "If you have changed your minds."

"Thank you," Aarn said, keeping any suggestion of gratitude out of his tone. "Some of us will stay."

Loading up went quickly. The pilots helped, though the bottles on their backs made them clumsy. Tolliver and Inah were taking almost everything they owned; their bundles almost filled one grav car's dunnage space. The donalducks in their cages more than filled another. They whicked and burbled fretfully.

Most of the passengers, though, took very little. Lora's bundle fitted under her arm. It couldn't have been more than a change of lightweights and a toilet kit. Aarn hung back from the work, but watched.

When the loading was done, Biron came to him again.

"Your last chance, Aarn," he said.

"We know that," Aarn said. "You don't own us, out here."

"We never did," Biron said. Then, "It's for your safety."

"We'll be all right. Would you say that if you had us under your dome?"

"I would say it's for your safety," the old man said. His voice was stiff; so was his bearing. "We have told you from the beginning, this venture is premature. This storm will show you."

"Too soon for you, is what you mean," Aarn said. "For your plans."

"For the Project," Biron said. "This world is not yet ready." With a curt gesture, he swung around and strode toward the grav cars. Aarn shrugged and turned away.

Lora had been standing behind him. He hadn't noticed. "I'm coming back, Aarn. If there's nothing left, I'm still coming back."

"We'll be here," he promised. He hoped he spoke the truth. He looked down into her eyes. "I'll be here." Not sure, now, exactly what he meant, but meaning it.

Her fingertips touched his arm. "Wait for me," she said. Then she was going across the yard to the grav cars, and he saw her climb through the hatch of one of them, and saw the hatch snap shut. One by one, singing their snarly tuneless song, the grav cars lifted. In a strung-out line they lofted westward beyond the Edge. After a while, silent specks catching an occasional flash of the star's light, they found the guidebeam and swung southward. The whole western sky wore a membranous veil of feathery cloud. Aarn watched the grav cars as long as he could, but soon, in that immensity of sky, he lost them.

The work went on. There was still slaughtering to be done, fields to be covered, and drainage courses to be cut and glassified. And the longhouse walls, though solid and strong enough to stand against any imaginable wind, had to be checked for cracks, defective door seals, and openings that might leak the carbon dioxide inward. Repairs had to be improvised; airfresh units could take care of some leakage, but not a large leak; nor was it wise to depend too much on a machine against the risks of its failure.

And through the day, the membrane of high cloud crept up the sky until it was over them. It moved on,

like the lid of a vast eye slowly closing, until its edge touched the crest of the mountains. It muted the fierce brightness of the westering star.

Still there was work to be done. The airbottle stock was checked. Breather masks were passed out, inspected, and practiced with until the drill became a long-known habit of hands and mouth and lungs. And, when the star was far westward, shining between bands of gold-limned cloud, there was time for one last tour of the empty animal pens, the equipment shelters, the fields and the drainage channels, seeing that everything that could be done had been done. Fingers of cloud probed inland from low places along the Edge, and through notches cut by erosion. All through the day, it had been rising.

"Has someone been watching it?" Aarn asked. In all their planning, it hadn't been thought of.

"Off and on," said Marc, who walked beside him. "Weren't going to let it sneak up on us."

"How fast has it been coming up?" Aarn asked. A touch of wind took hold of his hair. A strange scent infected the air.

"Haven't been watching it that close," Marc admitted. "Wasn't going to catch us, though."

Aarn nodded and turned to scan the curved sweep of a drainage course. It wasn't perfect; its bottom was rough, and for a short distance, there, it sloped uphill. There were places where its lip stood higher than the ground it was supposed to drain. It would serve, though. It would have to.

Marc was right: other things were more important than knowing how fast the cloud deck was rising. Somewhere not far below those cloud tops was the point where the carbon dioxide concentration became deadly, but the clouds themselves would give warning enough, soon enough. Some time in the night it would come. That was as much as he needed to know.

Back in the longhouse, before evening comm, he sat down with a memory readout unit on his knees. The touch of a few buttons called up a random-choice watch roster from the names of those who had stayed at the freehold. He studied the result for a while, touched one name with the scribe and, as it faded, called up another in its place. It would be simpler, of course, merely to seal the longhouse at dusk and let the carbon dioxide come up when it came; but that would waste the bottled air. So they'd stand watch, one and then another. When the carbon dioxide came, the one on watch would see that the longhouse was zippered tight. They'd be ready.

He scanned down the list of names one more time. It was chance-chosen; no one could complain it wasn't fair. But his own name wasn't on it. Touching it again with the scribe, he struck out the name assigned to the second desi after midnight. Touching buttons, he put in his own. It wasn't a task he wanted, but no one else would want it either. Later there would be

more than time enough for sleep.

He woke. His first awareness was the scuff of someone walking in the corridor, a voice, and then the mewling complaint of the furrybirds. There was another sound he couldn't recognize, a distant drumming sound that seemed to come from all around. Only when he knew those things did he realize he didn't know where he was.

Memory returned like the star's light at dawn. They'd sealed off both ends of the longhouse so only part of it had to be served by the airfresh units and the bottled air. His quarters had been made inaccessible; this was someone else's room. After a micro, he recognized it. Lora's. His shoulders still ached from the work of the last two days. His thighs and his hands were sore. He still couldn't think what that other sound was, that unending hash of featureless noise.

He washed in the cubicle and pulled on his clothes. Indoor clothes; singlet, calflengths, and softshoes. The air outside had been still good when his watch ended, but the clouds had come up over the Edge and buried the lower platform under their folds. Now, though he couldn't guess how long he'd slept, it would be over them.

The furrybirds crowded against the slats of their cage as Aarn stepped out into the corridor. He waved a hand as if casting a fistful of feed. They scattered to collect their reward. Aarn turned down toward the commons section. A honker grouched in his solitary pen. A yardbeast breeding pair nuzzled in theirs.

Hillery was in the monitor cubby. "Outside," Aarn said. "How is it? What's happening?"

Hillery slid out of the watchkeeper's chair. "See for yourself."

Aarn sat down. The screen looked out on the lower platform's fields, but beyond a few meters the view was blotted by rain. Water from the edge of a field poured into a drainage channel. It burst and surged. Rain lashed it into froth.

He touched a control. The camera slowly swung a complete circle. Farther down, the channel had overflowed; on its second circle, he stopped the camera and zoomed its lens. The flood sprawled out into the sward, vanishing into the gray-green blanket. No damage he could see. Something to worry about, though.

He touched selector squares. The screen winked. Another camera's view came on display. Another field. Another drainage channel. The same rain fell. Rows of quench and candelabra bent under the torrent. He changed views again. Again the rain.

More selector combinations. Very quickly the storm's progress came clear. On the lower platform and on the platform where the longhouse stood, rain fell hard. The wind was moderate, but steeply rising. One camera delivered no picture; the telltales didn't show why. The cameras in the canyon were also blind, but there the reason was obvious. Thick clouds rolled around them. Only the camera

at the reservoir stood above the clouds, and even that one could see only clouds below it, and around it only cloud tops, and above it only the incredible deep blue of the sky, the star's brightness, and—high up—shreds of wind-slashed cloud.

"It's only started," Hillery said. "This is just the edge." He punched keys to call up the latest satellite scan. "This came half a desi ago. We're someplace about there." His index finger stubbed a zone twenty or thirty kilometers across. Differentiated from other clouds by polarization filters, the storm was a gray swirl afloat in a white field. The mountains were a dark concave arc against the swirl's fringe, like a shockwave.

"And here's something else," Hillery said. Again he reached past Aarn to touch selector squares. The view flicked to one of the cameras on the lower platform, close to the foot of the cliff. A slope of broken stone lay against the cliff. Hillery touched the time lapse square. The heavy rain was replaced by bright star's light and the broken stones were gone. Then, as his touch released the square, the rain and the stones returned.

Aarn nodded. So the stones had fallen since the storm began. "We have to expect some of that," he said.

Hillery wouldn't let it go. "The point is, it's only just started."

Aarn couldn't argue it. "Yes. Well . . ." He got up, nodding Hillery back to the chair. "Watch it," he said, and went out.

A group of five were playing doubledeck redeye at one of the tables. Kimo laid down his cards and stood up. "Breakfast?"

"Anything you've got lots of," Aarn said.

"Plenty of food," Kimo said. "It's the air we're worried about."

"There's plenty of air," Aarn said. He sat down at one of the other tables. Kimo disappeared into the kitchen, returning a mill later with a plate of blackroot and curds, and a pot of grass tea. It wasn't Aarn's favorite meal by several orders of magnitude, but now was no time to ask special considerations. He watched the game while he ate.

He was on his second mug of tea when Marc took the chair across from him and plunked down a mug of his own. Kimo left the game long enough to bring another pot. He took Aarn's empty plate and fed it to the scrubber.

"You've eaten?" Aarn asked. It was a way to start.

"Long ago." Marc tried a taste of the tea. He made a face. "We thought to let you sleep. Nothing's happening."

"The storm's come," Aarn said. "Otherwise . . ." He nodded. ". . . not much." His glance went to the redeye game. "They need something to keep busy."

"They've got the game," Marc said.

"Not everyone's in it," Aarn said. "And it won't last forever."

"Only seems like it, while you're playing."

Aarn conceded the point with a gesture that dismissed it. "There's work they could be doing. Feed the animals. Clean the cages. Work the kitchen . . ."

"That's being done."

"They need something to keep them from thinking," Aarn said.

"I could use some of that myself," Marc said. "After you've listened to it out there for a trio of desi's . . ." He raised his mug, sipped, made a sour grimace.

"Exactly," Aarn said. "So what we'll do . . . we've still got a good stock of sealing plaster?"

"If nobody's fed it to the honkers by mistake. But we've already spread it all over the outside."

"Now we'll do the inside," Aarn said. "Put five or six on it. Might even find some leaks."

"You really think we've got any leaks, after the way we smeared it on?"

"I think we never did have any," Aarn said. "I'd rather be sure. Now, that will keep a few busy. What else can we have them do?"

Marc rubbed a brow. He didn't answer for a while. "One thing we could use," he said at last. "We've never done a checkout between what the printout says we have and what we've actually got in the stores. Enough work there for eight or twelve."

To Aarn it sounded fine. Exactly what he wanted. "Choose your people," he said. "Anyone who doesn't have an assignment and we don't need for something else."

"Got lots of those," Marc said.

Aarn nodded. "What about repairs? Any equipment that needs work?"

Marc thought a while. "Nothing I'd want taken apart while that storm's out there. Either that, or there's nobody here I'd trust to work on it."

"Fair enough," Aarn said. Reluctantly, another thought came. "We'll need to get those people back."

"That's to worry about later. Worry about 'em having something to come back to. That's the first thing."

"We'll be here, Marc," Aarn said. "We'll be here." Listening to the drumbeat of rain on the walls, he wished he could be sure.

Later, he went outside. Wearing a backpack bottle and a breather mask, he stepped from a leeward portal into a blast of water and air. Water poured in sheets down the longhouse walls. Gusts of wind peeled the water off, mingling it again with the rain. The raindrops struck hard, like pebbles. In an instant, his clothes were plastered to him.

"Expect to do anything out there?" Marc had asked. "You'll be lucky to stay on your feet. It's gusting up to sixty-five out there."

"I want to find out what I can do," Aarn said. "Or can't do. It might be something we need to know."

Marc looked at him. "You're serious."

"Yes," Aarn said, and opened the portal's inner door.

He stepped out into the wind's full force. Warm rain slashed at his hands, his arms, his brow. The sound of the wind was a high held scream, noticed, then lost in the flood of other perceptions. A sudden thrust of rain and wind, like something solid, hurled him to the ground. The ground splashed. A tangle of sodden sward trapped his hand. The weight of his backpack held him down.

He made it to his hands and knees. Rain pelted him. Wind threw him down. Again he struggled up, facing into the wind this time. Rain splattered on his faceplate, blinding him. He tried to rise further. Like a rough hand the wind caught him and spurned him again to the ground.

No good, trying to find his feet. It would only tumble him again and again, as many times as he tried. He lay on his side, letting the backpack take the worst of the rain. The sward was a soggy marshland, the storm a roaring torrent.

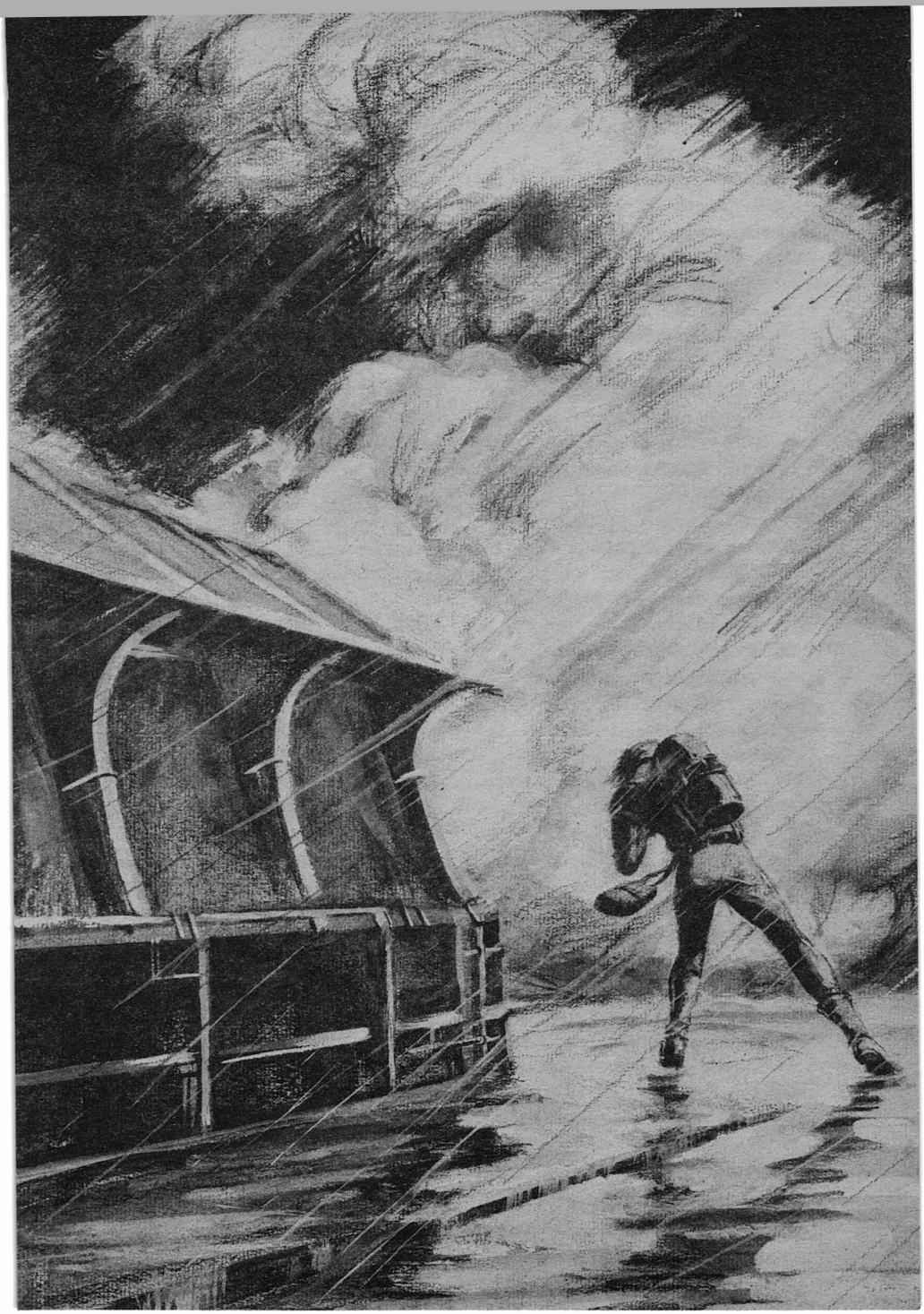
His plan had been to go out to the animal shelters, to see how they were taking the storm. Well, not any more. Keeping low, he hunched around, then got to hands and knees for one last try; tail to the wind, this time.

He found it could be done, though the wind pried at his breather mask. The straps cut sharp at the back of his head, but held. He tried crawling, hands and knees. That too could be done, but only if he went where the wind drove him. The best he could do otherwise was to scuttle sidewise—a very awkward business that took him as far downwind as it did to the side. And now the wind was between him and the longhouse.

Flat on his belly, scrabbling through tangles of sward that rasped his hands, he struggled back toward shelter. Without his breather mask, he would have drowned. Not until he was within arm's reach of the longhouse did the wind's strength slacken and the raindrops strike him without force.

Water poured down the wall into a pool at its base. The pool's surface was a tatter of splashes. Aarn reached out, touched the wall. Warm water flooded down his arm. The pool was deep—deeper than he'd expected. In spite of the warm water and warm wind, he felt suddenly cold. He crawled a few meters along the wall, probing the pool's depth as he went. A few places it wasn't as deep; other places it was even deeper.

He tried standing up. Here in the shelter of the longhouse, he could do it. For a micro he didn't move—only stood there, finding his balance, finding what strength he had left. The wind still clutched at him. Its roar droned endlessly. And though the longhouse partly sheltered him, the rain still struck his head and shoulders, still soaked through his clothes. Keeping a hand against the wall—partly for support, partly to guide himself—he sloshed and staggered to the portal. He fumbled the panel aside. When it sealed behind him, the



abrupt stillness was as if the world had ceased to exist.

And it was cool. Cool.

Other hands helped him unstrap the backpack and the mask. He stood dazed, dripping on the flagstones. Though musty and tainted by kitchen smells, after the backpack's bottled air what he breathed now was delicious. He breathed it deeply and passed a hand over his sopping hair.

"We have trouble," he said, and only then looked around him to see who would hear. Three pairs of eyes regarded him.

"Such as?" Marc prompted.

"Storm water is coming down the side of the longhouse," Aarn said. "The earth beside our foundations is being washed away."

"Damage?" Kennet asked.

Aarn shrugged. "I saw none," he admitted. He shrugged again. "It will happen."

"Can we stop it?" Marc again.

Aarn hadn't thought that far. Now, because they looked to him for answers, he had to. He shook his head, rubbed his face where the breathing mask had creased it. He needed time to think. "If we could . . ."

Then it came. "Yes. Tear up these stones." He pointed at the floor. "Lay them against the wall, so the water will strike them instead of the earth. If the workers stay close to the wall, the wind will not stop them from working."

"Those stones are heavy," Kennet said. "With bottles on their backs, it's hard work."

"Take volunteers," Aarn said. "It must be done."

Kennet made a grim face, nodded, and hurried off. "We have another problem," Marc said.

Aarn said nothing. Only looked at him.

"There's been a break in the wall," Marc said. "One of the sealed-off sections. We felt the pressure change, and went looking. Pell and Jamie are working on it. We think it was the wind."

"No more to be done?" Aarn asked.

Marc gave an expressive shrug. "If they do not fail," he said.

"Hope they do not," Aarn said.

He went to his room—Lora's room—and changed to dry clothes. The air had a heaviness in it, a damp smell. He returned to the commons section. Gaye sat on the floor in a corner with her fippleflute; the melody she played was very sweet and achingly sad. The redeye game was still going on, though some of the faces were new and others had dropped out. Aarn looked inside the kitchen doorway. "Tea?" he asked.

Kimo turned from the warming oven. "Cup, bowl, or liter?"

Aarn wasn't in a mood for humor. "Anything that's handy."

Kimo paused with a pot in his hand. "Sure thing, Aarn. Sorry. You all right?"

"Give me time. I will be," Aarn said. He took the pot and started out.

"And us?" Kimo asked. "Are *we*

going to be all right?"

Aarn paused, half in the doorway, half out. "A chance," he said. "A chance."

He got his mug from the rack and poured it full. He sat at a table with the mug and the pot in front of him. The only sounds were the click of cards from the redeye game, the soft music of Gaye's flute, and—made faint by thick walls—the growl of the storm. Only the flute's tune changed from phrase to phrase. Gradually, as his mind calmed, he became aware of the song.

It was an old song. He didn't know how old, and he knew only a few of the words. *Starfall.* It spoke of hope and the shortness of life and far, strange worlds. It spoke of love, and loss, and still a small, faint shred of hope like a single star in a starless sky when the flame of a falling star has sketched its blaze across the darkness.

Fairly commonplace for a song, but it touched chords. He wished it didn't. When Gaye came to the end, then began it again, he turned. "Can't you play something else?"

"It suits my mood," she said. But she found another melody; it, too, was sad, but if it had words he'd never known them. Aarn drank his tea in slow, meditative draughts, then filled his mug again.

Marc entered. He paused a moment under the massive arch, then spotted Aarn. He took a chair across the table from him.

Aarn tipped a thumb at the pot. "Tea?"

Marc shook his head. "Any more and I'll slosh." He leaned his forearms on the table. "They've patched the break. It may hold, may not. There's a crack five meters long leading off from it—runs all the way into the room next door. They left a monitor eye to watch it, but if it goes the first thing we'll probably notice is when our ears pop like they did before." He rubbed the bridge of his nose. "Those sections aren't sealed off as tight as I'd like."

Aarn rested his mug in the palm of his hand, feeling its heat. "All we can do," he said. "And outside?"

"Got seven people on it." He saw Aarn's startled glance and quickly went on. "Only four of 'em outside. The rest are inside, getting the stones took up and moving 'em to the portal."

"Any problems?"

"Not unless you call it a problem, deciding which people you want, out of the one's that're willing." He reached out and tapped Aarn's wrist. "This storm's got 'em worried."

"I'm worried, too," Aarn said.

For a long, numb silence, Marc's glance held him while the only sound was Gaye's sad song and, outside, the boom of the storm. "Guess that makes it unanimous," Marc said at last.

Aarn didn't know if he'd expected that reply, but he wasn't surprised. He gave a slight, acknowledging nod; his mind was already turning to other thoughts. "The strap-on negagrav units," he said. "Have we got them inside?"

"It was on our list of jobs," Marc said. But there was an edge of doubt in the way he said it. "We've got 'em under shelter—that much I'm sure of. But we were sort of rushed at the end."

Aarn was careful not to show annoyance. "We were tired," he said. "Well, if they're inside—even if they're not—I want a . . ." He didn't have the words; he improvised. "I want a skidding platform made. I want it big enough and strong enough to take all our air bottles. And I want it rigged with negagravs so it won't be too hard to drag."

Marc sat back, eyes half-closed. "A skidding platform? What's that?"

Aarn got up and went into the monitor cubby. Hillery turned from the screen. "We've had another rockfall. Camera twenty-six." He put a finger on the locator map. Camera twenty-six was on the lower platform, close to where the irrigation canal came down.

Aarn picked up a spare stylus and scratchboard. "Any damage?"

"Partly blocked the canal," Hillery said. "It's getting washed away, but it's probably doing damage to the channel."

It had happened before in a storm. It was hard to understand why deep holes were scooped from the channel bottoms downstream from a rockfall, but it happened. "Nothing to be done," Aarn said. It made him uncomfortable, saying that, but it was all he could think of to say.

He went back to the table. He sipped from his mug, then began to sketch on the scratchboard.

"What I want," he said, and drew a rectangular platform that rested on several parallel ribs. "Something that can carry a load," he said. "Something that can be dragged."

Marc studied the scratchboard, his frown growing. "Mind saying what it's for?"

"We might need it," Aarn said. "I hope we don't. But . . ." He still didn't want to speak the thought that preyed on his mind. He listened to a phrase of Gaye's music, and the drumming of the storm. He turned his tea mug one way, then the other. "If we need it, we'll need it. Up to now, we haven't thought farther than we've already come. We're zipped up inside the house hoping we can keep the storm out. Out there, well, I realized we need to think about what we'll do if the walls don't hold. It's something we need to be ready for."

"Seems to me you found out something else, outside," Marc said. "If these walls go down, we'll be as helpless as a dead man."

Aarn shook his head. "Almost right," he admitted. "But, with some luck, we'll still be alive. I think we should think about how to stay that way."

"And this . . . ?" Marc tapped a knuckle on the scratchboard. "That's what you want it for?"

No words were needed to reply. A small gesture—the turn of a wrist, an open hand—said all Aarn had to say. Marc looked at the hand for a long

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time. "How?" he asked finally.

"We'll have to find other shelter," Aarn said. "But we'll have to take our air with us. It's the only air we'll have."

Marc considered, then gave a reluctant nod. "That part's true enough. How do we drag it? All our ground crawl machines are out in the animal shelters. Couldn't get 'em in through the portals, remember? And I'm not sure we've still got the shelters, out there."

Aarn nodded. "And I don't know if a ground crawl machine would be much good with the ground soaked like it is. And the wind blowing."

"That doesn't leave much," Marc said. "Does it leave anything?"

"It leaves the negagravs," Aarn said. "With them, it won't be hard to drag. We'll crawl on the ground and pull it with ropes."

"Aarn . . . ?" Marc studied him through narrowed eyes. "You're serious?"

Aarn hunched his shoulders. "If we must, we'll have to try it."

"You think we'd have a chance?"

"We'd want to try," Aarn said. He met Marc's scowl with steady eyes.

Marc picked up the sketch. "You'll want this thing not so wide it won't get through a portal. Right?"

It was something Aarn hadn't thought about. "Yes. Good thought," he said. It left more contingencies.

"And a center of gravity low so it's not likely it'll tip over? It's not all level ground we'd be dragging it over."

Aarn nodded. Marc took the stylus and began adding notes and detail to the sketch. "And something to keep the bottles from getting dumped off," he went on, more to himself than to Aarn. "Maybe make it in sections so we can get it through the portal easy and put it together outside. And ropes. You said ropes for dragging it. How many? How do you want 'em fastened?"

"Lots," Aarn said. "It may take all of us to move it."

For just a moment, Marc looked up. "Hand grips too?"

"Might need them," Aarn said. Marc's thinking, now, had gone far beyond his own. "You know what's wanted. You've got a better idea how to build it than I do."

Marc was still pondering the sketch. "Materials?"

"Anything you can find." He knocked a knuckle on the table's edge. "You could start with this."

Marc's brow arched up. "I might," he said, wry and sly. "I just might." He leaned down to look at the table's underside. He made more marks on the scratchboard.

Aarn hefted the pot. There was still some tea left. "Sure you won't?" Marc declined with a gesture that didn't even interrupt his sketching. Aarn refilled his mug and cupped it between his hands, watching Marc through the rising steam.

Hillery appeared in the cubby's doorway. "Aarn? We just lost contact with forty-seven, -eight, and -nine." Those were the monitors in the can-

yon—the ones that watched the canal. "One right after the other."

Aarn's first impulse was to stand. He resisted it. "Any sign what caused it?" he asked, hoping his voice sounded calm.

"Only that it might've been something moving downhill. The one up at the reservoir went first."

Marc looked up from his sketching, his hand suspended. "The dam?"

"Can't say it wasn't," Hillery said. "But it was two and a half meters under the spillway, last time I looked."

"Could still be the dam," Marc said. "The reservoir doesn't have to be full for a dam to crack. Or it could of had a landslide into it."

"Landslide?" Hillery half-turned back toward the cubby, but stopped, his head cocked as if trying to hear. Aarn gestured Gaye's flute to silence.

It wasn't a loud sound, and so deep in tone it was felt by the body more clearly than heard: a heavy vibration that grew and grew and grew until Aarn's mug rattled on the table, skittered along the smooth surface. Behind him something fell. It smashed. Then, as it had grown, the thunder faded, lost strength, died.

"Quake?" Marc wondered. Hillery was nowhere in sight.

"Slide," Aarn said, pretending a calm he did not feel. "A close one."

Hillery appeared in the cubby's doorway. "Aarn—you'd better see this."

Aarn put his mug down. Something crunched underfoot. In the cubby, Hillery had the screen tuned to a camera that watched the animal pens. At least, it was number seven that burned on the display board. But all the camera saw was a sprawl of broken layerstone fronted by a steep, crumbling wall of the same material. Rain lashed it.

"Slide," Aarn said.

"Another hundred meters, we'd be under it," Hillery said.

In the back of his mind, Aarn had known that. "I hadn't thought one could come this close," he said. The cliffs were more than half a kilometer away.

Marc was behind him. "When something starts down, it doesn't stop. When it hits the flat, it splatters."

"Looks that way," Aarn admitted, still unnerved. Solid rock and soil shouldn't act that way. Then he remembered the men outside. "Marc, the men . . . ?"

"They're all right. First thing I checked," Marc said. "And the job's almost done. Wind's shifting, too. More nearly from the north, now."

"That fits to how it's moving," Hillery said. He punched keys bringing to the screen a satellite view. Another key and a time-lapse sequence traced the storm's advance. "Getting stronger as it comes," he said with an arched-brow glance to Marc.

"Hard to say about that," Marc said. "It's blowing so hard you don't notice when it gets any worse. You're the one that's got all the readouts."

Hillery shook his head. "Not that one. Instrument broke the top of the dial almost a desi ago. Best I can do is make a guess when something loose blows past a camera. And there's not much left loose out there now."

A grunt from Marc was the only sign he heard. A half-smile crimped a corner of his mouth as he turned to Aarn. "Better finish that tea. I'll be wanting that table top. Maybe the legs off it, too." He started out of the cubby, then stopped and turned again. "Any idea where Wade and Jamie went? I'm wanting them, too."

He got no answer. Shrugging, he started off again. "One thing's sure. They can't of gone far."

Aarn followed him out. His tea still waited on the table. Gaye was gone from where she'd been against the wall, but in his mind he still could hear her wistful songs.

The storm groaned on. One of the airfresh units broke down and, rather than let the remaining units carry the overload, another section of the longhouse was sealed off. Something massive struck the outer wall, making cracks as much as eight meters long. Some of the cracks leaked so badly that the force of leaking air was palpable to a hand held in front of them, and water dribbled through collecting in a pool on the floor. Wearing breather masks, the repair crew toiled for almost three desi's caulking the wall.

The worst of it, though, was waiting while the rain and wind raked the land outside and the walls creaked and dribbled grains of stone; while Hillery and, when Hillery's stint ended, Fern reported rockfalls, landslides, floodings and washouts, and—one by one—the failure of cameras.

For a while, the commons section was full of noise while Marc and his task squad worked on the sledge. The hard clatter of hammers, the snarl of drills, the sizzle and reek of hot-bond plastics. Then it was done.

Aarn watched them test it. A scavenger's grab of furniture—anything that was handy—was loaded on it to simulate the weight of the air bottles. The negagravs had been bolted to the underlying frame; two step-spectrum Nixies—one at each end—and the full spectrum Campbell midway along its spine. A clear space had been kept beside the Campbell where a man could lie and work the cable-linked control boxes of all three. Marc clambered over the load and hunched down. Five men fumbled with the unfamiliar straps and buckles of the tow rope shoulder harnesses. One by one, they untangled and gestured their readiness.

On their hands and knees, then, they tried dragging it, first with the negagravs silent, then keening. Either way, it handled clumsily, but it moved. Aarn watched for a few mills, then nodded with guarded satsifaction. "Now try it in the corridor where you took up the flagstones," he told Marc. It wouldn't be nearly so ragged as the terrain outside, but it would give a taste of what would be expected

of it. He saw one of the men inspect a hand and remembered how the sward outside had rasped his own. "Give them gloves," he added. "And something to pad their knees."

One of the men got out of his harness and went to find gloves. Fern came to the cubby's doorway. "Aarn?"

The tone of her voice told him it was nothing routine. He went over. She motioned him inside. "We've lost contact with the satellite," she said.

It changed nothing. "You mean it's gone out?"

She shook her head. "I doubt that. I think it's the antenna. At least, it makes the most sense."

Well, he could agree with that. It still changed nothing. "That's all to report?"

"Almost," she said. "One other thing." She sounded doubtful. She touched selector squares. The screen flicked to a view of the landslide's forward scarp. Seen through a curtain of rain, it might have been ten meters high, or fifteen, a shape dimly seen. Aarn leaned down, resting his weight on the console, trying to pick out what she had in mind.

"Watch," she said.

He slid into the chair. He watched. The view brightened, dimmed, and brightened again as the rain slackened and resumed. He could hear the wind through the walls. The scarp stood unchanged.

"I don't . . ." he began.

"Watch," Fern said. And a moment later, "There."

A section of the scarp's crest crumbled. It was over before either could say another word. Aarn studied the once more motionless wall. Nothing happened. "I don't understand," he said at last.

"It's been happening ever since I came on watch," Fern said. "Every time, it gets a little closer."

He grasped it then. "How fast?"

"It's hard to measure," she said. "And it varies. One desi it was only two or three meters. Once it was fifteen. Most of the time it's six or eight."

He hesitated to ask the next question. "And it's how far away?"

"Sixty—maybe seventy-five."

The arithmetic wasn't hard. "So we've got about a day."

"More or less," Fern said. "If it keeps on coming."

Aarn had started to think about that, too. "What's making it move? All the slides I remember, once they stopped they stayed where they were."

Fern reached past his shoulder. She punched a combination. "You'll see," she said. But the screen stayed gray.

"How many cameras have we lost?" he asked quietly.

"About half," Fern said, casually, as if it was only to be expected. She punched more squares. "That one was all right the last time I looked. At least you can see what I saw."

Another view through heavy rain, downward from a height. Through a gash between high rock shoulders a mud-brown torrent burst and spumed.

"It's soaking into the slide," Fern said. "It makes it more . . ." She wanted the right word. "More jelly-like. And it adds weight—besides which that creek's bringing down a lot of rocks and stuff from higher up, and that adds weight, too. What it all does, it makes the whole mass sort of surge outward."

Aarn watched the replay for a while. "So as long as all that water's coming down, it'll keep on coming at us."

"It could," Fern said. "But the slide mass is just about saturated. Then it'll find a way out. That'll relieve some of the pressure."

Aarn thought a moment. "What if it comes out where we're in its way?"

"I wish you hadn't thought of that," Fern said.

Aarn nodded. He wished the same thing. "Keep a watch on it," he said.

"I'm going to," she said.

He found Marc down in the corridor where they'd taken the flagstones. The sledge lumbered awkwardly over the uneven rubble. Marc saw him and yelled to the men on the ropes. The snarl of the negagravs almost drowned his voice, but the men stopped and sat where they were. They looked hard used. One stripped off his gloves to look at his hands. Aarn paused. The hands looked all right, but that wasn't a sign of how they felt from inside.

"Trouble?" Aarn asked.

"Nothing serious," the man said. "Out of practice walking on my hands, that's all." He flexed his fingers, watching them as if he expected them to bend in the wrong places.

Marc came clambering over the sledge's load.

"Trouble?"

"Make all the modifications you think it needs." Aarn said. "Don't waste any time. And move it as close as you can to the midsection portal. Load all our spare air bottles on it. I want it ready."

Marc glanced toward the men. They watched back. "We're going to need it?" he asked.

"More than likely," Aarn said. His foot nudged a loose chunk of rubble. "I hope not."

Marc made a grimace. "Me too. We're having trouble enough moving it here. Out there in that wind . . . One thing's sure: we won't be moving it far."

"If we have to, we'll have to," Aarn said. He looked down at the mass at his feet, made a helpless gesture, and walked away.

Again, then, came the waiting. Aarn prowled the corridor from the partition seal at one end to the one at the other. He watched the animals in their cages, and knew a part of how they felt. He envied them their ignorance.

He wandered through the commons section, the empty comm alcove, the kitchen full of activity and the good scents of food. Someone was making bread.

He drank tea. He tried to stay away from the monitor cubby. Once he napped in Lora's room, but the thunder of rain on the walls kept true sleep from him.

Once Kimo faced him across the serving counter. "You got us to come here," Kimo said. "You talked us into staying when we could have gone back. We'd be safe if we had."

There was truth in it. Aarn could only nod. "What do you want me to do?" He kept his voice level.

Kimo turned a hand one way, then the other. "How should I know? You're the one that's always had all the answers."

"No," Aarn said. "Never all the answers. There have been times I've thought I had them, but . . ." A helpless gesture. "Never all of them."

"Look. I want to get out of this," Kimo said.

"And I. And all the rest of us," Aarn said. "If it is possible, we shall. If not . . ." Again the helpless gesture. He found an excuse to drift away.

He inspected the sledge, modified and loaded and stationed close to the portal. It was in three sections, each with one of the negagravs at its center for easy movement. He tested a lashing with a fingertip. It twanged.

"We'll need food," he said. "Put on enough food for three—no, make that six days."

Marc scowled. "That's more food than we've got air," he said.

"I know that," Aarn said. "The worst may happen, or it may not."

Their eyes met. Marc shrugged, then nodded to his helpers. They trudged off in the direction of the storage rooms.

The wall was broached again. The repair party worked a desi and a half, but still a warm breath leaked through the long cracks that reopened as quickly as they were sealed. Almost pure carbon dioxide. As if a giant beast pressed its weight against the other side. Finally, they gave up and sealed off the affected rooms. One was Lora's.

What was needed, Aarn thought, was monitor cameras watching the longhouse from outside. When the storm was gone, they'd have to move some to vantage points. He tried to decide which ones were least needed where they were, but it was futile. He couldn't know how many would still be working after the storm. And, being honest about it, it would have helped but little to know what was happening on the other side of the wall; except, knowing, they might know enough to prevent the same happening when the next storm came.

Useless, though, to think about it now. That time might never come. This storm could be the end of it, the end of everything. It grumbled and pounded the walls. Sometime in the course of things, he noticed the longhouse had become very warm.

Fern was off duty now. He found her in the commons section, sitting on the floor with her back against the wall. All the tables were gone. She

had a large mug of tea in her hand. He scrunched down beside her.

"It's been going up ever since the storm got here," she said. "It's a convection cell—the whole storm is. So it gets hotter the closer you get to the center. These walls, they're some insulation, but outside it's getting hotter all the time. Some of it comes through."

He wondered how hot it would get.

"Enough to be uncomfortable," she told him, setting her mug down beside her. "It already is." She shrugged. "It's lots hotter outside."

Aarn decided not to ask how hot. "If I go outside again," he said, "would I need a coolsuit?"

Fern didn't look at him. "You're thinking about the skidding platform," she said. "You're thinking about if we all have to go outside."

"It must be thought about," Aarn said.

She reached for her mug. "The answer is sort of complicated." She sipped and put it down again. "It's hotter than body heat out there, which means that exposure more than a desi or two would make you feverish. If you still stayed out . . . yes, it could kill. But . . ." And now she looked at him. ". . . but on the other side of it, the rain's not as hot as the air—very warm, but it would have a cooling effect. So would the wind. I don't know if it would be enough. But there's no sense talking about it. You know as well as I do, we only have six coolsuits. There are twenty-three of us."

He nodded abstractedly. Yes, he'd known that. "And the slide mass? How far?"

"It was thirty-one meters away when I came off," she said. "Half a desi ago."

"And the water in it?" he asked. "No sign of . . . ?"

He stopped. He held his breath, eyes upward. His hand asked silence. "Listen."

She listened. A puzzled frown began to shape her brow. "I don't . . ." she started to say. Then, "Yes. The rain. It's stopped. And the wind."

He could still hear the wind, but it was a whisper instead of the howl it had been. "The storm's gone," he said.

Her hand touched his arm. "No, Aarn. It's the center of the storm, not the end of it."

He looked at her.

"I'm sorry," she said. "Right in the middle of the storm, there's a zone where the air is going upward instead of swirling around. Like the hub of a wheel. It's what makes the storm. And it's right on top of us now—that part of it."

He let the information settle in his mind. "Then we must expect as much as we've already had," he said.

Mute, she nodded.

He grimaced with pained distaste and rose from his crouch. He strode to the monitor cubby. Hillery was back at the watch; his darting fingers flashed the viewscreen from one camera to another. More times than not it was a blink from one blank frame to

another. At the scuff of Aarn's soft-boots, he turned.

Aarn gestured him aside, but did not wait for him to move. Reaching past Hillery's shoulder, he punched a combination on the keyboard. The viewscreen winked and flashed to life the scene outside the longhouse.

The slide mass loomed higher than before; perhaps it was an illusion of the shortened distance. Clearly he could see large, slabby boulders in the matrix of smaller, broken stones. As he watched, he saw one lift, as if from pressure underneath, lurch forward, and subside. The whole mass was a gelid mush of rock and water. Water pooled at its foot. Water streamed from a thousand vents, like thin blood from a mangled wound.

"How long before the rest of the storm comes?" he asked.

Hillery made a helpless gesture. "A desi. Maybe two. Who knows? We weren't even sure we'd have the center pass over us. It hasn't been following the projections too well."

Aarn was still watching the slide mass. A section of the wall slumped across the pool at its foot. Water gushed from the exposed face. Aarn made up his mind. There'd be no chances after this chance. None. Ever.

He went to the cubby's doorway. Fern was still where he'd left her. Six redeye players sat on the floor in a corner. "Find Marc," he barked. "Get him here."

They looked up. After a startled hesitation, they moved. Turning back to Hillery, he said, "Be ready to move out," and left him. Hillery called out a startled question. Aarn didn't pause to reply.

He came out into the commons section as Marc emerged from the corridor. "Something's happened?" Marc asked.

"I want two more units on the skidding platform," Aarn said. "While this storm center is still on top of us. And move it outside. Can you do it?"

Marc considered, looked around, and shrugged. "Shouldn't be a problem. But she's already got enough lift to make her float with a full load. What's the use of having more?"

"It's going to be a bigger load," Aarn said. "And we'll want it to float level. Remember that when you mount them."

Marc studied him closely. "You're thinking something," he decided.

Nodding, Aarn told him.

Marc's expression remained one of puzzlement, but its focus had changed. "You been breathin' the pure stuff?" he asked. "Aarn, you're out of phase. We wouldn't have a chance."

"Have we got a chance if we stay?" Aarn asked.

Marc held Aarn's eyes for a moment, then looked away. "Not much of a one."

"And not much time for talk," Aarn said.

Marc accepted that, too. "We'll start right now." He turned and would

have headed off, but Aarn's voice stopped him.

"How long?" Aarn asked.

Marc gestured helplessly. "As fast as we can," he said. Then he was gone.

Aarn went back to the monitor cubby. "Mask drill," he told Hillery.

Hillery twisted around. "Drill?" he asked. "Or the real thing?"

"Drill," Aarn said. "But . . . yes. That's next. Assembly in the commons. Marc's crew exempt."

Hillery turned and reached for the call system's button. As he stepped out into the commons, Aarn could hear Hillery's voice resounding down the corridors.

They gathered quietly, masks clasped over faces, half-desi bottles hanging in slings from their shoulders. Aarn had a memory unit in his hand, a roster list gleaming on its plate. As they came, in ones and twos and—once—a cluster of five, he touched buttons that changed the color of their names from red to green, but he said nothing until all the names but Marc's and four others had been changed. Then he took off his mask, made a sign that they could remove theirs, and talked to them.

They listened, and said very little in reply. Some sat on the floor, some leaned against the walls with folded arms. They held their masks in their hands, idly fingering the straps. Now and then, one looked at him, then looked away. It was a hard thing to accept, that the thick, strong walls of the longhouse could no longer protect them.

"I will admit," Aarn told them, "we shall be going into danger. A different danger than threatens us here, but no less a danger. Perhaps it is a greater one. What makes it worth the risk is that, by that course, I see hope of finding safety. If we stay here, I see none."

He saw pain flicker behind eyes. He took a breath and went on.

"I do not ask you to take this risk if you think it too great. Anyone who wants may stay. We'll leave enough air, and you'll have your masks. We'll leave the coolsuits, too. But once we have gone there will be no chance for you to change your minds. You must decide now."

"What about the animals?" Kara asked.

Aarn hadn't thought about the animals. They didn't need much thinking, though. "The same as for anyone else who stays. We shall leave them with air, and with water and food—enough for them to live until we come back, if we are able to come back, and if they have more luck than I think they will have. It is all we can do for them."

"They won't have a chance!" Kara protested.

"I know that," Aarn said. Well, it wasn't a pleasant truth. "Nothing more is possible. With more time, it could be different. But it has come to the place where hard choices must be made. I say this is one of them."

Her chin lifted and she might have

spoken, but Nelsie came in from the corridor. "It's outside," she said. "And it's all rigged. Ready any time."

Aarn felt eyes on him. "We're ready, too," he said. "Tell him we're coming."

Nelsie disappeared the way she'd come. Aarn turned back to his people. "I wish we had more time to decide, but we don't. Kara, see to the animals. Kennet and Gaye, help her. Those of you who will come, gather all that you want to save; remember, though, it must not be much—no more than you can carry in a sling bag. Go now and hurry."

They began to move. Aarn did not pause. "We shall meet at the midsection portal," he said. "Those who will stay—" (he looked for Kimo among those moving faces) "—I must ask you to tell me, so that we shall not delay, waiting for someone who does not plan to come."

But he was talking to an empty room.

Kara was among the first to arrive at the portal. "I gave them enough of everything for five days," she said. "I didn't see any reason for saving it."

Aarn nodded. "I'd have done the same." She knew how little hope there was that the animals would survive; and he knew that she knew.

"I wish we didn't have to leave them," she said.

Mutely, with a turning away of the eyes, Aarn admitted the same. Then the portal's inner door unsealed and Nelsie came through, saving Aarn the need to speak.

Nelsie tugged the breathing mask down from over her mouth and eyes. "Ready for the first portalful," she told Aarn. Greasy sweat shone on her forehead and bare arms. "Hot out there."

Aarn gave a glance at the group that was gathering in the corridor. Already there were more than enough to crowd the portal's chamber. "We'll start, then."

He still had the memory unit. He scanned the clustered faces. "Audrey," he said; he nodded to the door. "Kimo. Marlis . . ." As they moved past him, adjusting their masks, he touched buttons. The color of their names changed back from green to red again. He felt the terrible knowledge that, now, there would be no turning back.

When seven had passed, Nelsie put her head around the doorseal and gestured that the chamber would take no more. Her mask was on. Aarn acknowledged with a handsign of his own.

"Give them to Marc and come back," he said. "We can be moving another lot through while he's getting them settled. And—," an afterthought, "—check their masks."

Nelsie nodded, pulled back inside, and snicked the panel shut. After a long wait, Aarn saw it tighten against the seal.

Kara touched his arm. "Would it be all right . . . ?" she began. "Could I go and let them out of their cages? It

would give them . . . oh, a little better chance."

It was a small thing. It would improve their chances hardly enough to matter. But he couldn't turn her down. "Be fast," was all he said.

She started to go, then paused and turned back. "The honkers. They'd fight. Is it all right if I put them in rooms? With sealdoors?"

It would be all right. Aarn waved her on and watched her disappear down the long hall. There were so many things he hadn't thought of, so many things he'd learned this past day. He wished he'd known them before. He'd have done so many things differently.

He looked at the faces around him. Kennet was nervously fumbling with his mask. Aarn tapped his arm. "Not yet, Ken," he said. "Breathe longhouse air as long as you can. You'll want all you have in your bottle when you go outside."

Kennet looked at him blankly, as if he'd never thought of it.

Then the portal door opened and Nelsie leaned through. Aarn gave his attention to the roster again. He matched faces to names, spoke them, watched the faces file past. Nelsie held up her hand: enough. The door banged shut again. Aarn's gaze strayed down the corridor, looking for Kara. Everyone else was with him now. Kara had not yet returned.

She still hadn't come when he passed the next group through. Not enough remained, now, to fill the portal chamber one more time. Aarn watched for her all through the wait until Nelsie again opened the door. Still Kara had not come.

He made a sign to Nelsie. Nelsie came to him, stripping down her mask. "Outside," he said. "How is it?"

"Hot," Nelsie said with a gesture that declared the word inadequate. "Wet."

"The storm?"

"Holding off. Looking black to westward, though."

"How long, do you think?"

Again, Nelsie's hands were more expressive than her words. "A few mills. Maybe more, Maybe less."

Aarn had expected no more. "Take these," he said, nodding to the few who waited. "I must go find Kara. Tell Marc: wait for us. But if the wind begins, or rain falls this side of the Edge, or if the black clouds come overhead, go without us. Drop off two bottles of air, and go."

Nelsie looked up at him, unshaped words on her lips. After what seemed a long pause, she dropped her gaze. "Right," she said. "I will tell him." It was a moment for nothing but intractable realities.

"Tell him those are my orders," Aarn said, and, to break the awkwardness, began again to read from the roster. One by one under his touch, the names changed from green to red: from shelter out into hazard. It did not take long. When he was done, two names only still shone green: his own and Kara's. He stood alone in the corridor.

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The portal's door bumped shut. With a quick eye, Aarn checked the seal—it was tight—then hurried off the way Kara had gone.

He found her far down the corridor, beyond the commons section. The honker she was trying to herd through a doorway brushed past her leg and skittered off toward the corridor's far end. The egg sac at its throat jiggled. Kara made a grab for it, missed, and started after it at a walk. It was the right way to chase a honker—running would only excite it to greater speed—but there was a sense of weariness to the way her shoulders moved.

"Kara," Aarn called. "Leave it. Come."

She turned. "Help me."

"There's no time, Kara," Aarn said.

She stopped. He saw her stubborn look. "Help me," she said again.

It would waste less time than to argue. He helped her. Working together, it was quickly done; the honker couldn't dodge both of them at once. Trapped between them, it turned docile, as if its contrariness of a moment before had been a game it no longer cared to play. It stopped in an open doorway, looked inside, looked back at Aarn and Kara, then scuffled inside—turned again and watched them. Kara snicked the door shut before it could jump.

"Got him!" she crowed. "Got him!" She clapped her hands.

"Kara, we must hurry," Aarn said.

They ran down the corridor, scaring up a flutter of furrybirds that wildly flapped ahead of them, taking refuge, finally, in the alcoves of the commons section. Kara and Aarn dashed on. He let her go ahead of him. Their softboots made hardly a sound on the slab stone floor. She was faster than he was. His mask flopped against his throat. His air bottle thumped his ribs. She didn't have . . .

"Kara! Your mask. Your bottle."

She stopped, tried to turn and go back past him. "It got in my way. I took it off when I was chasing the honker."

He blocked her. "No time."

"But . . ."

They were already into a section that had been plundered for equipment; no breather masks handy. Maybe there'd be one at the portal, but it wasn't likely.

"No time," he repeated, and took off his own and held it out to her.

"What about you?" she objected.

"Might be one at the portal," he said. "If not . . ." He shrugged. "There are things that can be done." Firmly, he turned her around and adjusted the mask's straps to fit her. He slipped the air bottle's carrying strap over her shoulder. "We must not waste time," he told her and, with a gentle push, urged her forward. She didn't resist. In a moment, they were running again.

The locker breather-mask at the portal was empty. He'd expected that.

"Now what?" Kara asked.

He turned his glance to the portal

door. "We do what we can," he said, "and hope for luck."

A frown took shape on her face. "I don't . . ."

He moved the panel aside. "After you."

She looked at him, not understanding.

"Quickly," he said. "We must not waste time. It is all we have."

She turned her eyes away and stepped into the portal's chamber. He entered behind her and shut the panel. "I must fill my lungs," he told her. He nodded to the outer door. "When I sign to you, open it. Quickly."

She was adjusting the mask over her mouth and nose. Her only reply was a slight, mute movement of the head. But her hand found the door's handle. She watched him.

Deeply, he drew air into his lungs, breathed it out, and drew it in again. He repeated the process, and then again, and one more time, and then once more: again and again refilling and exhausting his lungs until his ears sang and bright sparks floated in front of his eyes. He felt his body sway, and did not know if it was fact or illusion. Still breathing, he put a hand against the door. Kara's eyes were large in her mask's window.

He took one final breath, held it, and in the same moment motioned the door aside. With his other hand he covered his mouth and pinched his nose shut between thumb and finger. Kara opened the door. A burst of air struck him, moist and warm. By then he was already moving.

He stepped outside. What he noticed first was the silence. He looked around quickly, spotted the sledge only a few meters away, strode toward it at a measured pace.

His lungs were beginning to ache with held breath. Only Marc was standing up on the sledge; everyone else crouched, huddled, or lay full length. They were crowded tightly together. Ropes bound them down.

Marc beckoned urgently. Aarn kept his deliberate stride. High over him the sky was white, brilliant cloud. Elsewhere, to the west and south, the clouds gloomed black and featureless and towered to heaven like cliffs of night. He stumbled; it was hard now to walk where he wanted to go, hard to balance. The humid, hot air closed around him. The sward squished underfoot. Off to his left, the wall of the slide mass oozed toward him.

Dimly, then, he was aware of hands grasping his arms. He looked and saw Marc's masked face close to his own. He looked again, and he saw Kara's brow and her hair above the ugly shape of the mask he'd given her. Then something blocked his stumbling feet. Hands helped him up over it, and he fell forward, and there were more hands, and bodies under him, and one hand on the wrist of the hand he still held clamped on his face, trying to pull it away. He fought, but the hand insisted. His chest blazed as if full of fire. Someone pressed something into his other hand—he didn't know what—and guided the hand to his face. Over him the sky was closing

in and down, black as darkness. He could hold his breath no longer. It came out in a long sigh that went on and on until it was all gone. The world tilted under him, swayed, and a shrill, thin cry drilled his ears. He was going out. He had to breathe, and all the air around him was worthless to his lungs, worse even than the stuff he'd expelled. But, out of old habit, he took breath in. He was spinning, spinning, spinning; and the hand of his wrist was guiding the hand that had something pressed into its palm—was guiding it to his mouth, and then another hand taking that something and working it between his teeth, and something breathed cool against his tongue.

Air! It was air! Cool, rich with oxygen, and tasting of the bottles it had waited in—waited many decadays for this moment. Air. The breath of life. Gray mist swirled around him and the universe was turning around and around, and many hands clutched him.

Then the platform, its negagravs snarling their tuneless song, burst through the cloud tops into the star's bright light, and all around, below them, sprawled the swirl of cloud that was the storm, spreading all the way to the horizon except toward the east, where stood the fanglike crags of the mountains, rocky islands in an insubstantial sea.

Six days passed before they returned to the ruin that had been the freehold. Two of those days were spent on a high ledge, huddled in what shelter they could build of frost-shattered stone and the wreckage of the platform. The peak's crest stood only a few meters over them. The star's blaze was pitiless. The air, though breathable, was thin and icy. Fitful winds clawed them. After dark, the cold closed around them like a frozen hand.

For two days they endured. On the third, the storm began to die. Centered now over high ground, it could no longer draw on the source of its power: the superheated air of the lowlands. Slowly, the clouds that crowded below their refuge, reaching plume and tendrils upward through the clefts and rockfall scars, began to withdraw. After half a day more, the clouds had fallen back far enough for them to follow.

The descent was hard. The sledge had been wrecked when it came to ground; wind-driven, once it had drifted out of the storm's center, unable to control its altitude more closely than half a kilometer, there had been little choice but to accept the risks of bringing it down at the first—perhaps only—chance where they could hope to have breathable air. In addition to smashing the sledge itself, there were two broken legs, a pelvis, several arms, and uncounted cracked ribs. No one was without at least one bruise or sprain.

But the negagrav units still worked. Without them the descent would not have been possible. Without them, they could not have made their way

down the cliffs that dropped from parapet to parapet, decameter after decameter, down into the clouds. With the negagravs, and with litters and slings improvised from the wreckage, they could let themselves down from one stage to the next, a few at a time. As the cloud deck fell back from the mountain wall, they followed. There were more sprained limbs, scraped skin, and rope burns.

Climbing down took four days. As they came to lower elevations, the scars of the storm were everywhere. Great chutes cut by rockslides gashed the slopes. Vast masses of shattered stone choked the narrow gorges, sprawled across the esplanades. Water gushed from clefts in the rock, cascaded in sheets down sheer stone walls. The nights were cold. By day the star warmed them, dazzled them, burned them, but when a promontory cast its shadow on them, the air turned instantly chill. The farther they descended, the more complete was the storm's devastation, until at last they came to the place where the freehold had been. Only ruin waited for them there.

Of the fields, nothing was left but gullied wasteland. The rockslide mass had engulfed the longhouse so completely that the place where it had stood could only be guessed at. Within the heaved and tumbled desert of crumbled stone they found a few stones that showed signs of having been worked by tools, but that was all.

By then it was late afternoon. The star stood low in the west, blazing its gold light across the level pale green of the clouds—the clouds that lay now as they had lain all the days before the storm's coming, as if the storm had not happened. And though the star's light was palpably warm on Aarn's cheek, the cold air bit sharply.

Marc was crouched down beside the Campbell negagrav, contriving a way to change the fusion unit's output into heat. They'd need it when the star went below the horizon. Aarn tramped the wasteland, now and then tipping up a stone with his foot; but there was nothing to salvage. Everything was gone.

Someone hailed him from the group that huddled near Marc, and when he turned one of them—then two, then three—were pointing into the southwest sky. After a micro's search, Aarn saw it too: the glint of the star's light on metal, a brilliant spark against the sky's deep blue.

They watched it come. The spark died and it became a fleck of substance in the featureless sky. They watched, and for a long time it seemed hardly to move. Aarn walked back to join the others. Though it meant rescue and survival, he could not feel eagerness at this coming. Too much had been lost.

Marc abandoned his task. "I had it almost done," he said. He scrubbed his hands on his overshirt. His skyward glance, the jut of his jaw, projected an edge of annoyance.

Aarn found a block of stone the right height and size to sit on. "How

long would our food have lasted?" he asked.

"Two days," Marc guessed. "Three." Again his eyes swung upward. "Can't wait to lord it over us."

Aarn looked down and said nothing. Events had gone beyond the point where pride meant something besides foolishness. But if grumbling let Marc accept reality with a greater ease, it would be cruel and pointless to deny him that comfort. Aarn envied him a little.

The sound of the grav car's nega-grav keened in the air. Aarn did not look up. The ground before his eyes was a midden of shattered stone, large bits mingled with small. The keening came stronger and stronger, steadied, then died.

Then, rising to his feet he did look up. He hardly noticed who stepped first from the machine, because the second person was Lora. She dodged around the tall man who was leaning back through the open door, speaking—it seemed—to someone inside. She came to Aarn, and Aarn went to meet her.

"You're all right?" she asked, as if she couldn't believe what stood before her.

"I'm fine, Lora," he said, unmindful of his skinned hands, his bruised ribs, his wrenched shoulder.

"They said the satellites didn't see anything left, and I . . ."

Her arms were around him. Her words were muffled against his overshirt. His side flashed with pain, as if a torch had touched him; it didn't matter. "I'm all right, Lora," he said.

Biron approached, paused, then came the rest of the way. Aarn hardly noticed. "You're sure?" Lora asked, still doubtful.

"Aarn," Biron said. He stood before them. His eyes met Aarn's with level gaze.

Aarn touched a temple. "Biron," he acknowledged.

The silence between them began to draw out. Biron nodded Aarn away from the others. "Aarn," he said, "we have a matter to discuss."

He led Aarn a few meters off. Lora started to follow, but his gesture stopped her. He turned his gaze again to Aarn. "We have a problem," he said.

Aarn had expected as much. "I know," he said. "There is not room for all of us in the grav car." He bent his head, accepting it. "We can endure another night. Take the people who are hurt. That is all I ask."

He saw, even as he spoke, Biron must have meant something else. There was that puzzled frown. "No, Aarn," the older man said. "That . . . yes. But, no. Our problem is another thing. Within one hundred days, we must have space for half a million people."

For Aarn, it was wild nonsense. "Half a million?"

"Later, more may come," Biron said. "From Wingate." He must have seen Aarn's incomprehension for he added, "The world the supernova has forced to evacuate."

"Here?" Aarn was still bewildered. "But . . ."

"We do not have a choice," Biron said. "They must have a place to go; they are being sent. Nor have we room for so many in Dome Haven, nor in all the outposts put together. A single thousand, perhaps, we could take in; not many more. So we must ask your help."

He was talking in riddles. Aarn shook his head. "But I . . ." He spread helpless hands. "We've lost everything. All but our lives. What help can we give?"

Biron cocked his head, peered slyly at Aarn. "Lost everything?" he echoed. A wave of his hand took in the devastation around them; a flick of his wrist dismissed it all as without meaning. "Material things, yes. I can see that. That is not what we need. Aarn, there is only one place those people can be settled: out here on this plateau, between the mountains and the Edge. You, Aarn, have the experience of having lived here. You and your people. You have the experience of having survived. You can help those people, advise them, teach them. We of Dome Haven do not have that experience. We could not."

To Aarn, it was like a discovery bursting in him. It filled him with wonder. "Do you mean it?"

Biron touched his right temple, above and forward of the ear. "On their behalf, I am asking your help. You and your people. We of Dome Haven will give what help we can, but you are the ones who can help them. Will you do it, Aarn?"

It was still a new idea, hard to encompass. "We almost did not survive," he said. "In the end, we took risks. We cast ourselves to a chance of the winds. It could as easily have fallen another way."

"But you did survive, Aarn. And you have learned. Would you do all things the same, now, starting over?"

Aarn bowed his head. Until now, it had seemed a closed path.

"No," he said. "We would . . ." His mind was a tumble of things. "We would do many things different. Very different."

"That is why we need you, Aarn. You would know what should be different, and why it should be different."

"That doesn't mean I'd be right," Aarn said. His thoughts were coming more clearly, now. With the toe of his ragged softboots he tipped up a block of stone, turned it over. Only more broken stone under it.

Biron reached out, touched Aarn's shoulder. "Aarn, no one is always right. Neither you nor I."

The tone of his voice made Aarn turn, look up at him carefully. He was yielding too much, and yielding it now, when he did not have to yield anything. "What do you want from us?" Aarn asked.

Still it was hard to read the thoughts behind those gray eyes, but a small frown tightened around them, a frown so slight it could be seen only by someone who had seen it on that face before.

"Only what I have already asked: that you help those people," Biron said. His steady gaze said he spoke truth. Then: "Aarn, believe this: there is no pleasure to be found in having power over other people's lives. We did not want that, ever. We believed your freehold was unwise. Premature. We did not think it would be safe. And you have seen . . ."

A negagrav-floated medic machine was being maneuvered out of the grav car's stowage. One of the men who'd come with Biron was kneeling beside Kimo's litter, unbinding the splints from his leg.

"I've seen," Aarn said. He wanted no lectures about it. "You were against us. I thought . . ."

"I know what you thought," Biron said. "You wanted to be your own master. You thought we would not let you. It was not that; we thought it was not yet time."

"All you talked about was the Project," Aarn said. "You said we had to wait; it had to be finished before—"

"We said it needed to go farther," Biron said. "There is a difference. If those people were not coming, we would say it still."

Their eyes locked. Aarn was first to look away. "You let what you believe control your judgment, Aarn."

Aarn turned back to him. "Didn't you? Doesn't everyone? I thought I was right." He kicked a mound of shattered stone. Pebbles clattered. "I thought I was right."

"I also, Aarn," Biron said. "Now . . ." An ironic smile touched his mouth. "Now you are prepared to help those people, and I can help them only by giving them into your care. So what is truth?"

Aarn frowned. "I don't understand."

"Nor I," Biron said. He chuckled. Turning then, he waved an expansive hand. It took in all the wasteland around them. "When the Project is done, there will be room for millions on this world. That, I think, is goal enough for one lifetime. Finding ways to live on it, I leave to you. Will you help them?"

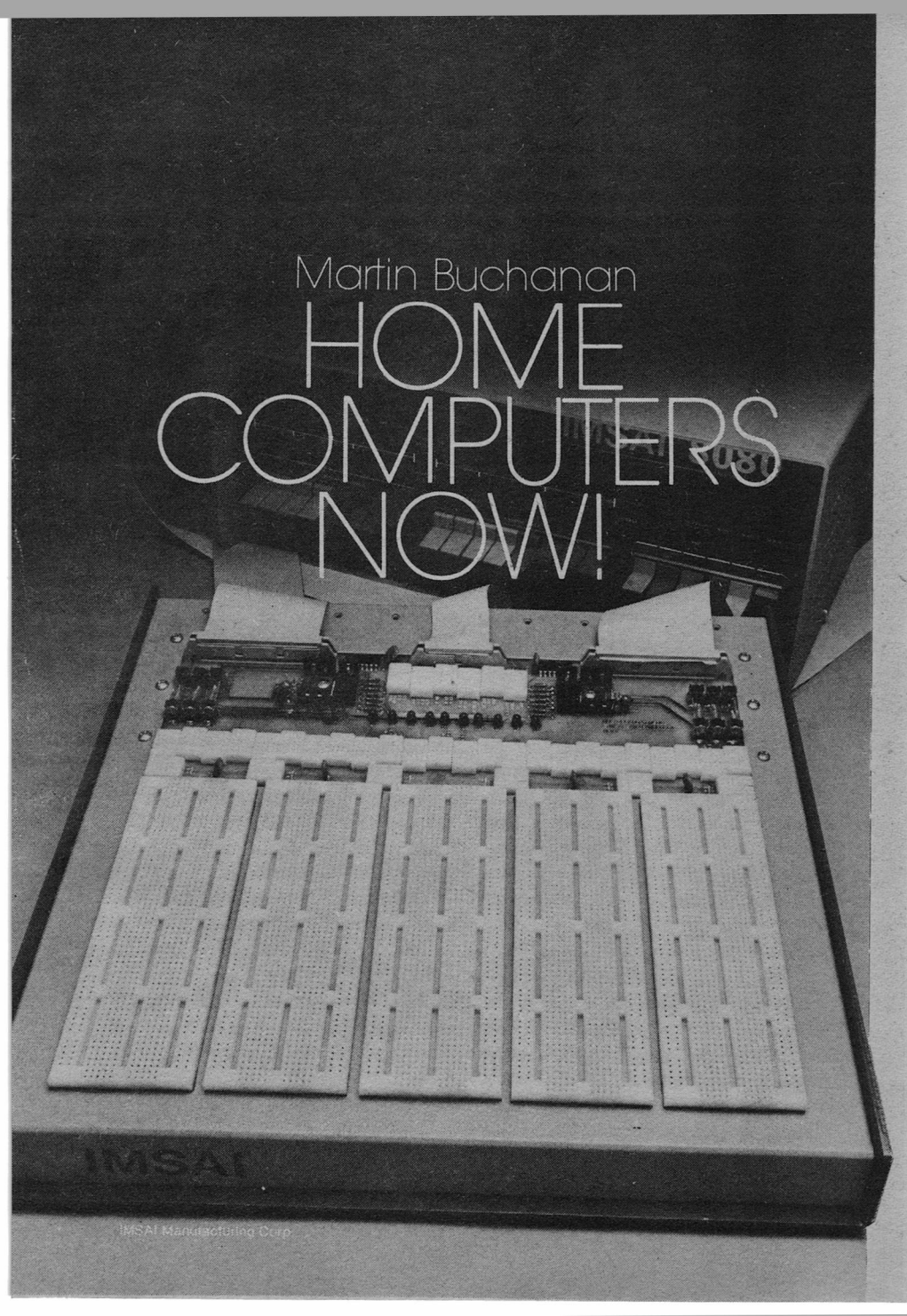
Aarn searched his face. He saw no mockery, no irony now. "I'll try.

Biron smiled. It was a proud smile. "Your mother was a stubborn person, Aarn."

"My father also," Aarn said, meeting his eyes. He put a touch to his temple, backed a step away, and turned to go back to his people.

The medics were still at work on Kimo's leg. All the others were clustered around a portable warming unit. All but Lora, who stood a little apart from them. She wasn't Jess, and never would be; but Jess would never be Lora, either. He walked slowly, eyes on the ground at his feet.

He wondered what words he would find—how he could tell them the storm had taken nothing worth counting; that instead, by a course for which neither he nor they—nor even Dome Haven—could claim credit, they had won the honor and the right to walk the open surface of this world, to freely breathe its open air. ■


Martin Buchanan
HOME COMPUTERS NOW!
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IMSAI Manufacturing Corp.

The voice wakes Frank Future at 6:30 AM:

"Time to get up, sir," insistently repeating and increasing in volume until Frank stumbles over to his computer and hits "return" on the keyboard. The computer shuts up. Later, while he is frying eggs for breakfast a 7 AM news show comes on automatically. Before leaving for work he stops at the keyboard to type "TO DO" and the computer responds:

"DENTIST 2 PM" (he winces), *"TUESDAY IS YOUR ANNIVERSARY."*

When Frank returns home that evening, his three children are sitting before the color monitor, each controlling a spaceship on the screen with a joystick and several buttons. All three ships orbit a central sun, their colors brightening or dimming as they approach or recede from the star. Numbers at the bottom of the screen indicate remaining fuel and torpedoes for each ship. His son's ship "wraps around" the display, hoping to surprise two other ships dogfighting in close orbit, only to encounter a long range salvo of missiles and disintegrate. The ship that fired blazes white and also disappears; the maneuver brought it too near the sun.[1]

"Have you done your lessons?"

"Yes, Dad." Frank smiles. He has used the computer to establish an internal economy. His children are credited by the system for interacting with simple programs to drill them in mathematics. They can use their credits to purchase game time. Programming is free to all though, and Frank doesn't know that his six-year-old daughter has accessed the file containing the children's credit records, cheerfully inflated it, and restored it to its place in memory!

After dinner, Frank uses his terminal to write an article for Analog. Using a powerful "texteditor" program, he types in lines which appear on his television screen. He can change any part of the text, insert or delete lines and characters, and even right-justify with the aid of a homemade program. When each page is complete, two commands save it on tape and print it on Frank's converted Selectric. With a copy on tape, he needs no photocopies or carbons.

Frank now loads BASIC, an interactive programming language. Its "desk calculator mode" allows immediate evaluation of mathematical expressions like a pocket computer, integrated with the power of an English-like language, a much larger memory, and access to many stored programs. In a few minutes, Frank is able to calculate masses, stresses, and radiation exposures for a proposed L5 colony configuration.

Yawning, Frank wonders at the time and calls a homemade program called BANK. The color screen blinks: 10:33 and 67°. Deciding to go to bed, he types LOG. The system says quietly in its Swedish accent, "Good night, sir. Sleep well," and turns its attention to the home's smoke detectors and burglar alarms.

The preceding system is not science

fiction; such a computer system can be assembled for less money than a new car, by anyone who can learn to build a Heathkit and program computers in BASIC or FORTRAN.

Below I review the basic characteristics of modern computers, describe the development of hobby computing, and explain the components, costs, and capabilities available for personal computers. I conclude with a technological and social forecast of personal computing.

A computer is a machine for calculation. An abacus is a computer, as is a sundial or a sextant. The first is a *digital* (discrete) computer. The latter two are *analog* (continuous) computers. Cash registers, adding machines, and cheap calculators are simple digital computers.

The first crucial concept in developing the modern computer was the "stored program concept" of John von Neumann. Imagine placing in the adding machine's memory, not just data, but also a code for the operations we want performed, like "Add the contents of register 1 to the contents of register 3 and store the result in register 2." This concept immediately required three things:

1. a numeric *op code* for the operation to be performed (addition) which is understood by the processor;
2. a way of designating or *addressing* the data in memory to be operated on (registers 1, 2, and 3);
3. A facility for conditionally changing the sequence of operations performed, duplicating the decision-making of a human operator. "Branches" transfer control to some instruction other than the following one, depending on a *flag* or *condition code*. This kind of instruction can also be used to repeat a program many times for repetitive work.

The second crucial development was the *transistor*, an electronic amplifier that can be made very fast, small, rugged, reliable, and cheap. Transistors have been the basic element of digital computers for eighteen years, and will remain so in the foreseeable future. *Integrated circuits* combine thousands of transistors in a single "chip" and have almost completely replaced individual transistors.

The computer's logic is two-state or binary. Any kind of information can be represented by a sequence of binary digits or *bits*, including:

logical truth or falsity;
numbers of all kinds, including negative, real, imaginary, "scientific," and rational numbers;
operation codes;
memory locations;
characters, like letters of the alphabet;
pictures;
abstract ideas like mathematical proofs, algebraic expressions, and sets or relations.

A group of eight bits is called a *byte*, and is usually used to store a single character in the computer

memory. Most of the personal computers mentioned will have one byte at each location in memory. "K" or "Kbyte" may mean 1000 or 1024 bytes.

The history of the binary stored-program digital computer is unique in two ways: its exponential character, and the phenomenon of computer "generations." For contrast, consider the automobile. Despite the hundreds of billions of dollars spent on cars, the basic unit of 1976 would be familiar to Henry Ford in price, performance, and architecture even after sixty years. This is enough time for ten computer generations. A computer of 2010 will compare to a computer of 1950 as the human brain compares to a single neuron. In each generation, according to a study by the Rand Corporation:

speed increased 10 times;
memory capacity increased 20 times;
reliability increased 10 times;
component costs fell by a factor of 10;
system cost fell by a factor of 2.5.[2]

Preceding generations and techno-

PERSONAL COMPUTER SYSTEM COMPONENTS

8080A microprocessor. $25
central processor card kit. . . . . .150 - 270
mainframe kit (includes cabinet, power supply, mother board (bus, processor card, and front panel) . . . . . .450 - 650
assembled KIM-1 microcomputer. 250
4K bytes static RAM memory card kit. . . . . .90 - 140
DEC LSI-11 with 8K bytes RAM, kit. . . . . .750 - 990
multiple port I/O board kit. . . . . .100 - 200
cassette interface board kit. . . . . .50 - 100
digital data recorder. 175
floppy disk drive and controller kit. . . . . .1000 - 1500
manual paper tape reader kit. 75
ASCII keyboard. 35
rebuilt ASR 33 Teletype ™. . . . . .700 - 750
40 column line printer kit. 250
used Dura Mach 10 Selectric. 300
graphics and/or textual display-kit for use with a TV set. . . . . .100 - 700
real time clock kit. 50
voice synthesizer kit. . . . . .400 - 750
32x32 color digital camera system kit. 400
8 bit resolution 7 channel ADA converter kit. 145
modem-acoustic-coupler kit. 110

logies are given below:

generation	*year*	*technology*
1	1946	relays
2	1952	vacuum tubes
3	1958	transistors
4	1964	small scale integration (SSI)
5	1970	medium scale integration (MSI)
6	1976	large scale integration (LSI) "computer on a chip" first bubble memories

In 1972, Intel began to sell a single chip eight-bit central processor, the 8008. The chip was costly ($40 to $80), slow (20 to 44 microseconds for each instruction), and clumsy. It had been designed for use in a "smart terminal," not as a general purpose computer. It required 20 to 70 smaller chips to support it, but for the electronics experimenter, it made possible a personal computer for less than $1000. One of the early experimenters was Carl Helmers, who wrote up his designs in a small newsletter, *Experimental Computer Systems,* the first home computing publication.

In January 1975, MITS Inc. of Albuquerque, New Mexico announced the world's first successful personal computer kit, for less than $500. Memory, interfaces, terminals, and software would raise the price of most systems to several thousand dollars, but MITS was buried by orders. The MITS Altair 8800 was a milestone because of its excellent system and software support, and because it is assembled like any other electronic kit.

In September 1975, *Byte* magazine[3], edited by Carl Helmers, was first published. Originally expected to be a twenty-four-page newsletter with a run of 1000 copies, prepublication response was so strong that the first issue was a ninety-six-page slick with a run of 50,000 copies, each now a collector's item. *Byte* remains the leading hobbyist publication.

Another milestone that fall was the founding of the Southern California Computer Society. SCCS now has more than 8000 members worldwide and chapters nationwide. SCCS provides a group-purchase plan, an inexpensive timesharing service, and a slick monthly magazine, all for $10/year. SCCS membership is doubling every sixty days and should include all of humanity in about three years.[4]

Hobbyist computing presently includes a dozen national periodicals, dozens of clubs, half a dozen planned conventions, and even several dozen retail stores selling computers to the general public.

Prices and quality for all parts of the personal computer have improved in the past year, with new capabilities like voice synthesis, color graphics, and Tint Basic (a small high-level programming language) for only five dollars, all previously unimagined. The new Zilog 80 microprocessor, a direct descendant of the 8008, has nearly 700 instruction variations, 22

internal registers, and is much easier to interface. It also runs at 4 million cycles per second, an order of magnitude improvement over the 8008.

I will now define and describe the components of a personal computer system. Any programmable calculator is a "stored program computer". By personal computer system, I mean a system where the user can interact with the computer in a high-level language like BASIC and maintain a sizable library of programs. Such a system has four parts:

1. the mainframe, including bus, processor, and memory;
2. secondary storage on tape or disc;
3. input-output devices;
4. software (programs).

I. The Mainframe:

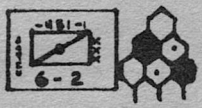
The *bus* is a trunkline of 20-200 digital circuits to which processor, memory, and interfaces all connect. The most common bus structure is that of the original Altair 8800 ("Altair-Imsai bus"), and there is a growing movement to consider this the "hobbyist standard bus".[5] This acceptance is based on the growing number of processors and interfaces marketed for this bus. The Intel 8080, Zilog 80, and M6800 processors are available for it, and an adapter will soon be available for the bus of the sixteen-bit LSI-11 microcomputer so it can use standard bus products.

The processor most widely used by hobbyists is the Intel 8080, with the Motorola 6800 a distant second. The Zilog 80 is the world's most powerful eight-bit processor and will execute all 8080 software, making it hard to surpass. Important because of their compatibility with commercial minicomputers are the Intersil IM6100 (PDP-8), DEC LSI-11 (PDP-11), and Data General Micronova (Nova). Important characteristics of the processor are speed, word size, instruction set, addressing modes, registers, interfacing requirements, and available software.

The most expensive, expandable, and attractive mainframe is a commercial style cabinet with a heavy duty power supply, room for lots of cards, and a front panel with many lamps and switches. Becoming more popular is the one or two card computer, with a processor, basic software in read-only-memory, some random-access-memory, and an input-output port or two. One such kit, the KIM-1, has a keypad and six digit display mounted on the card, superseding a front panel. KIM comes already assembled for $250. Also available are intelligent terminal systems with a microcomputer buried inside a CRT terminal, but nonstandard buses and limited expandability are disadvantages for these systems.

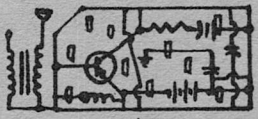
Solid state memory is random access, (RAM) or read-only (ROM). The first loses its contents whenever you lose power. Read-only memory retains its contents but is difficult or impossible to change. The first is good for data and most programs; the second is good for programs almost ev-

Until now there have been 3 dimensions in science fiction games:



war games

role playing games



computer games

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- "Highly ingenious" D.D., Hyannis, Ma.
- "Fantastic and Interesting. I had to use my head" A.S., Plainview, N.Y.
- "I like the variety and wide range of possibilities" J.F., N.Y., N.Y.
- "I like the poker strategy/risk with sudden changes and interactions" C.R.W., Ontario, Can.

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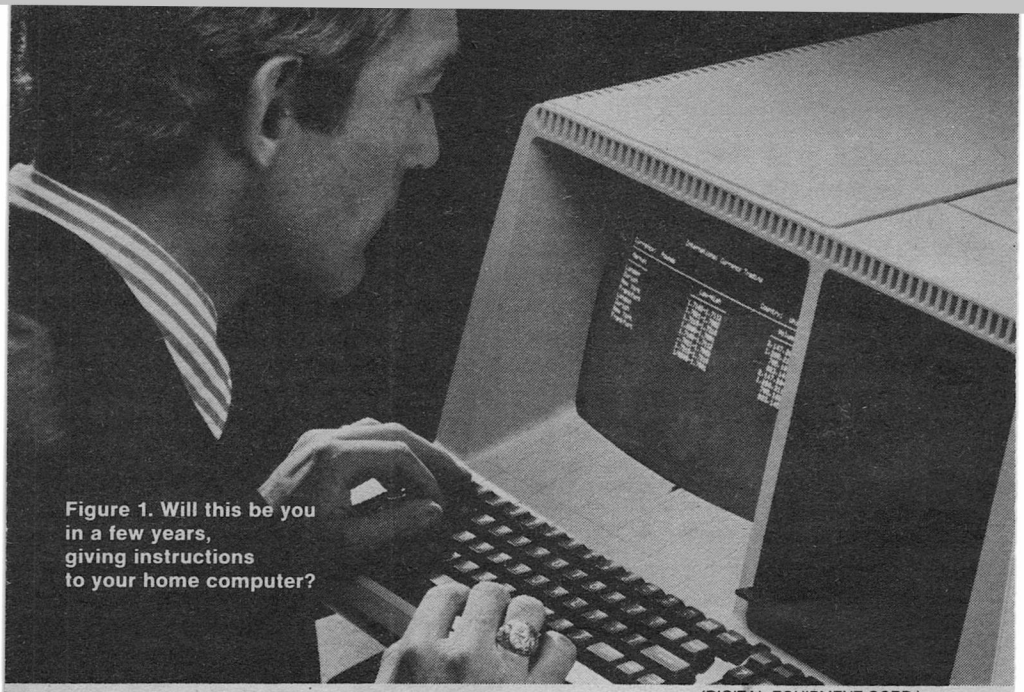


Figure 1. Will this be you in a few years, giving instructions to your home computer?

(DIGITAL EQUIPMENT CORP.)

eryone needs. There are now ROMs that can be programmed once by the user (PROM) or many times by the user (EPROM—Erasable Programmable Read Only Memory). Most of your main memory will be static RAM, from 4K to 16K on a card, with the first cheaper per byte at present. Speed, power consumption, battery backup, and the ability to protect blocks of memory temporarily are all important when buying RAM.

II. Secondary Storage:

The cheapest mass store is a cassette recorder and interface card. Exchanging programs and finding software are easy with this popular system. Audio cassette is slow, 300 bits/sec requiring 6½ minutes to load 8K BASIC. Low density also limits the size of your files. Some hobbyists have purchased digital cassette units which transfer data at several thousand bits/sec, with a similar increase in file capacity. These units are less common, more expensive, and cannot be used as voice recorders.

Most attractive if you have the money is a floppy disk system. Capacity is typically a quarter million bytes, access times average a few tenths of a second, and transfer rates are several hundred thousand bits per second. These units can now be built for less than a thousand dollars.

Texas Instruments has begun commercial production of 100,000 bit magnetic bubble chips. By the end of 1977, "bubble boards" may begin to

replace floppies. Bubbles are potentially cheaper and faster, though not providing a medium for program exchange like the diskette.

III. Input-Output:

To interact in a high level language, the user needs alphanumeric input and output, a keyboard, and either a printer or CRT display. An ASCII (American Standard Code for Information Interchange) keyboard costs about $35. *Video display Modules* (VDM) or *TV Typewriters* (TVTs) are cards which plug into your system and produce a picture on a handy TV screen. Some do graphics only; some display text only; some combine text, color graphics, on-board keyboard input port, on-board memory, etc. Prices range from $100 to $700. By using software, it is possible to coax text out of pure graphics and graphics out of pure text.

The rebuilt Teletype ™ gives you hard copy, a keyboard, a paper tape reader, and a paper tape punch. A lot of software assumes it is talking to a teletype, and my operating system snubbed my tape recorder until a friend tricked it into believing the recorder was a teletype. Teletypes are also slow, noisy, and full of unreliable moving parts. To read paper tape, a manual tape reader kit is available for $75, but doesn't work on all computer systems. For hard copy, certain Selectric based typewriters (the Dura Mach 10) can be bought for around $300 and placed under computer control.

To supplement your basic system, you can have it tell time, talk, look at the world with its own camera, read sensors and control effectors, and talk to other computers. A real time clock, a voice synthesizer (the best one talks with a Swedish accent I'm told), a digital television camera, a seven-channel analog-digital or digital-analog converter, and an inexpensive modem-acoustic coupler are all available as kits.

IV. Software:

When MITS brought out the Altair 8800, BASIC, and the operating system together cost over $100. There are now about a dozen hobbyist written BASICs available for nominal charges ($5); except MITS, manufacturers are only charging a nominal fee for software. There are hundreds of game programs available in BASIC and several sets of books containing popular routines for common processors. An entire magazine devoted to hobbyist-written systems software is going strong.[6] Programs will take up a great deal of your time, but not much money.

I will now describe how you, the reader, might buy a computer, what it will do, and what it will cost.

After reading this article, you buy one of the publications mentioned, or perhaps contact a local computer club by inquiring at the engineering school of a local university. You also learn that there is a computer store in a nearby suburb, call them to discuss

their products, and drive over one evening with your family to see it. You are an engineer and took one or two programming classes in college, and occasionally program problems at work. You have assembled Heathkits and know how to solder and which end is the cathode on a diode. If you do not, the kit assumes little prior knowledge and other hobbyists are happy to answer questions, and there are dozens of books on the subject.

At the store you find several computers and half a dozen people, all active. Two persons at a terminal are playing "SUPER STAR TREK", a "DAZZLER ™" color graphics interface endlessly repeats a hypnotic pattern on a nearby television, and a disembodied voice murmurs through the conversations, "Hello, I am HAL, the talking computer. Daisy, Daisy . . .". The bearded proprietor and a customer are bent over an open computer, trying to detect a fault in the man's memory card. A youth browses through books and stops at a bulletin board to read of club meetings, new products, and equipment for sale. The proprietor's wife comes to help you, and your daughter is soon trying to land a lunar module on the Moon, while you examine specs for a coming FORTRAN compiler and your wife asks about the new bubble boards they have advertised.

During the next month you read the magazines and books you bought, attend a computer club meeting and garner opinions about the products that interest you, send for more literature from manufacturers, and finally attend a hobbyist convention in a nearby city where you can see all the major products in operation.

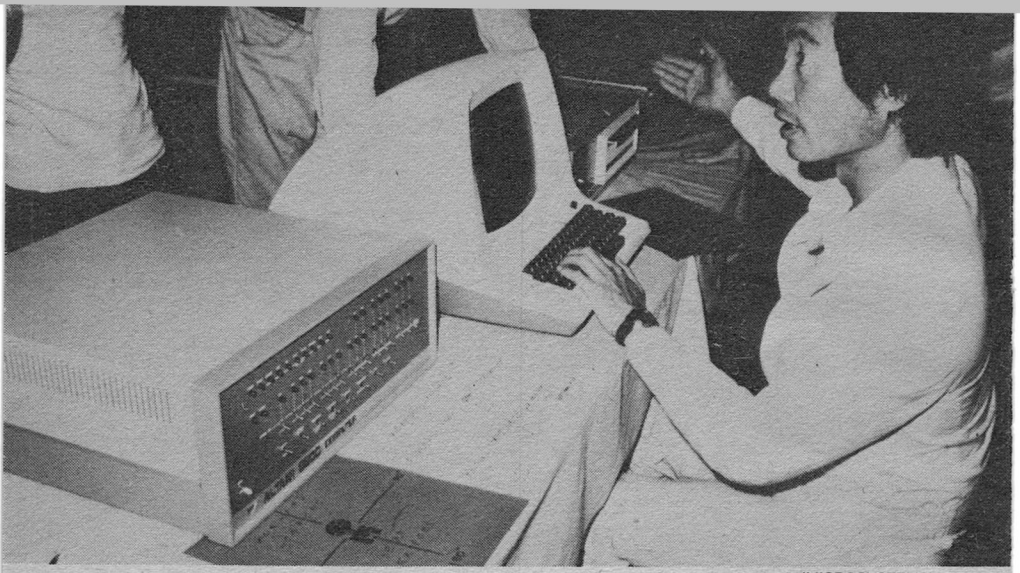
You eventually settle on a kit for $1600:

- an IMS mainframe with standard bus, 4 MHz Z80 processor, 16Kbytes of fast RAM, and a bootstrap-monitor in a small ROM;
- a combination I/O and cassette interface card;
- a video display card which allows both text and color graphics display;
- an operating system and BASIC interpreter on cassette.

You purchase this kit off the shelf from a computer store in the next state. It takes about forty hours, several weeks of spare time, for you and your daughter to assemble the system. You test the processor and memory with a debugging routine in the ROM, check out the front panel functions, attach an RF modulator between your TV set and the graphics card, adjusting the signal to an unused channel, hook up your cassette recorder, and you are off! You jump to the loader and load BASIC, which you then play with, ignoring for a moment your daughter's equal eagerness to enter "?2+3" and have the system answer "5". You run some small test programs, then load a tape of Super Star Trek for your daughter, and retreat to begin writing a program which will allow you to store and retrieve reminders keyed to spe-

Figure 2. This DECstation (TM) can function on its own as a fully-programmable computer for home use, and costs little more than a full-sized automobile.

(DIGITAL EQUIPMENT CORP.)



(MICROSYSTEMS)

Figure 3. George Takei (Star Trek's "Ensign Sulu") plays the computer game "Star Trek" on a kit-built terminal hooked to an Altair 8800 computer with a floppy disk used for added memory.

cific dates or days of the week.

The Future:

First, the exponential improvement of component technology will continue; we are nowhere near physical limits, and molecule-size switching and storage elements are possible. Three new technologies will define the next two computer generations: microprocessors (already described); optical memories (videodiscs); and fiber optics.

Conversion of videodisc technology to the manufacture of a digital storage unit can offer ten thousand times as much storage, access it ten times faster, and transfer data fifty times faster than a floppy disk, at about the same price.[7] Regardless of videodiscs, very large (trillion byte), fast (20 nanosecond cycle time), and cheap (2×10^{-5}¢/bit) read-write optical memory will be available by 1985.[8] Storage and processing will be almost free, and only communications will bottleneck the age of the personal computer. Happily, fiber optics can pipe coherent light around 10^{15} hertz, unlimited bandwidth compared to the few thousand hertz possible through phone lines. Bell Labs has already fabricated the first optical transistors, and in ten years they will boost fading signals in a national network of light pipes, built largely to meet the decentralized demands of the personal computer.

A majority of US workers are involved in information processing: secretaries, phone operators, writers, librarians, programmers, professors,

salesmen, ad executives, postmen, disk jockeys, ad infinitum.

The personal computer tied to an optical communications net can:

- replace most retail stores with remote access to and ordering from catalogues;
- eliminate or greatly weaken commercial radio, television, and advertising, conventional newspapers, the postal service, banks, schools, and universities;
- enable millions to do most of their work at home;
- enable direct access to government data banks covered by the Freedom of Information Act, and electronic impeachment of officials by their constituents.

In the next twenty years, there will be a transformation in our lives and our economy comparable in magnitude to the transformation from a rural to an urban society.

Science fiction writers have seen the future of computing incorrectly. "Multivac", "Uni", "Collossus", "Mike" were all superbrains, completely centralizing the intelligence and decision-making of a world or nation, at least potentially. But there is no dictator cell in the human brain, and there will be no puppeteer in the network I envision. The personal computer will be a great equalizer, a way of independently checking the claims and boasts of all the institutions, both private and public, that depend on myth for their continuing.

Computers are *general mental am-*

plifiers. Imagine, as Poul Anderson did in *Brainwave,* a drastic scaling up of human intelligence, and its effects!

With cheap processors, cheap memory, and cheap communications, what can't we do? The effects on individuals and society will be major and unpredictable. Today's personal computer is just a beginning.

NOTES

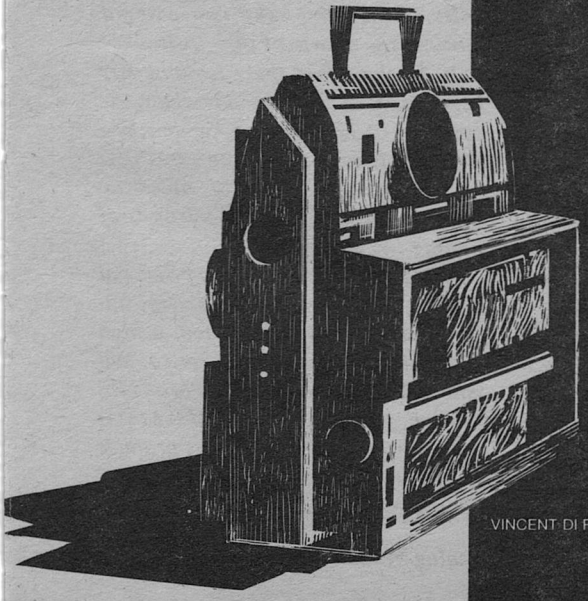
1. *See "Spacewar" by Albert W. Kuhfeld in the July 1971 Analog. John Campbell's introduction said: "It's a great game . . . but I'm afraid it will never be widely popular. The playing 'board' costs about a quarter of a megabuck!"*
2. *Turn, Rein,* Computers in the 1980s, *Columbia University Press, 1974, p. 58*
3. Byte *is published monthly by* Byte *Publications Inc., 70 Main St., Peterborough, NH 03458 subscriptions $12/year.*
4. *Southern California Computer Society, PO Box 3123, Los Angeles, CA 90051 membership $10/year*
5. *Denny, D. and Broom, J., "Proposed Hobbyist-Standard Bus Structure",* Dr. Dobb's Journal of Computer Calisthenics and Orthodontia, *Aug. 1976, pp. 8-9.*
6. Dr. Dobb's Journal of Computer Calisthenics & Orthodontia, *Box 310, Menlo Park, CA 94025 $10/year*
7. *Buchanan, Martin, "What do you do with a Video disk?",* Byte, *Aug. 76, pp. 6-8, 15.*
8. *Turn, Rein,* Computers in the 1980s, *Columbia University Press, 1974, pp. 196-198* ■

# of future fears

part two

Expert, *n:* one who has acquired special skill in or knowledge of a particular subject through professional training or practical experience . . . *and uses it!*

MACK REYNOLDS



VINCENT DI FATE

SYNOPSIS

It is somewhere after the turn of the century. The United States of the Americas has developed the mini-nuke, a miniature fusion bomb, so small that it can be carried in a knapsack, so powerful that it can level any major city, so simple that anyone can activate it after ten minute's instruction. It is a weapon meant to be utilized after your war has been irretrievably lost. *Meant to be smuggled into your enemy's population centers for revenge. The world is horrified, and, in a surge of revulsion, so much pressure is brought against* all *nuclear powers that in a tear-jerking, self-recriminating, breast-beating wave, the world politicians fall into each other's arms and swear to inaugurate a* real *détente. The pilot model of the mini-nuke is to be sent to Los Alamos and there in a formal affair be symbolically disassembled by international scientists.*

On its way, in a military convoy, it is hijacked by Nayef Habash and his Third World Liberation group, masterminded by a mysterious Westerner. Only Habash and the Westerner escape, with the mini-nuke. All the other terrorists are expendable.

Rex Bader, "the last of the private eyes," is contacted while studying in his New Princeton University City mini-apartment, where he is trying to learn enough to get a job on Lagrange Five, the project building Model One, the first space colony. He is attempting to get a job to allow him to escape being on Negative Income Tax, the fate of most Americans who have been thrown out of employment by automation and computerization. Thus far, the computers of the National Data Banks have failed to select him for a job, any job, though he desperately wants to escape his low-level way of life.

He goes to the home of John Mick-off, Man Friday to John Coolidge, the Director of the Inter-American Bureau of Investigation, and there meets Lady Cecila Duff-Smythe, of British Intelligence, Jean-Paul Lafitte, of Interpol, and, of all people, Ilya Simonov, head of Russian intelligence in America, and John Coolidge himself. The aging American police bureaucrat does not want to admit that foreign agents have been brought in to help, and names Rex as liaison man, with the promise that he will receive an appointment with the IABI if the mini-nuke is recovered through the efforts of this "team."

It develops that there is animosity between Sissy and Simonov whom she suspects of having shot her brother. Jean-Paul, easy-going, confesses that he is a great collector of American graffiti. All go about the business of finding the mini-nuke.

Alioune Senghor, a young Senegal student at New Princeton is approached by Mamadou Diop, a high Senegalese diplomat in America, and convinced that the Third World Liberation group of Nayef Habash is patriotic and gains Alioune's promise to aid the terrorist, if called upon. Shortly after, Habash appears at the

student's quarters and leaves the mini-bomb with him.

Ilya Simonov, in disguise, approaches one of his KGB agents, undercover in New York, and, finding the man knowledgeable about Third World Liberation matters, discovers that Habash is in hiding in the New Princeton University City. He coldbloodedly kills the agent who had withheld information from him.

Meanwhile, The Expert, the mercenary who masterminded the highjacking of the mini-nuke, approaches Anthony Damon, a present-day Don of what used to be called the Mafia, and propositions him. Damon's branch of the Syndicate is on the way out because, though it has legitimate resources, it cannot compete in the world of Meritocracy. Instead of resorting to the data bank computers to select the best managerial brains to head their enterprises, they must keep the reins in the hands of relatives because there are too many secrets. Hence, they have third-rate administrators. The Expert suggests that they hijack the mini-bomb from the terrorists and use it to extort a billion pseudo-dollars from Reunited Nations, threatening to detonate it in a major world city. The Expert promises to reveal the hiding place of the mini-nuke in return for a million pseudo-dollars deposited to his account in Geneva.

The team—Rex, Sissy, Jean-Paul, and Ilya—get together and discuss their lack of progress. In the midst of this, Rex gets a phone call from a would-be client who wants to hire him as a private detective. Since he is supposedly unemployed, and they want no record of him refusing a job, his friends leave so that Rex can receive the supposedly would-be client and brush him off. The client arrives, and announces himself to be Alioune Senghor!

CHAPTER TEN

Rex Bader turned back to the room. "Have a chair," he said, already wondering how quickly he could give this teenager the old brush-off.

The younger man stood there for a moment, however, still frowning. He said, "Is this your office? I had expected . . ." He let his sentence dribble away.

Rex attempted a disarming chuckle. "Not exactly," he said. "In my field, it's continually necessary to keep up with developments in various lines. So I've moved into the University City to take some courses."

"Oh, yes, certainly." The boy's English was a little on the rough side but perfectly understandable. He moved to the comfort chair and seated himself.

Rex took a place on the couch and said, "Now, what can I do for you? I just realized that I've never had a potential client quite as young as you seem to be."

Had the other's face been less dark of complexion, probably a flush would have manifested itself. But he said earnestly, "Mr. Bader, I have long

been an admirer of American private investigators."

Rex looked at him blankly. "Oh?"

"Yes." The words sped up. "You see, since I first began to read, I followed the careers of James Bond, Philip Marlowe, the Continental Op and Sam Spade."

"Oh," Rex said again. "Well, uh, what can I do for you?" It would seem that he had a fellow suspense-story buff on his hands, He wondered if the other had come for an autograph.

"First, Mr. Bader, tell me. Isn't it true that a private investigator is something like a priest or a doctor?"

Rex's expression was blank again.

The boy said hurriedly, "That is, anything told him is in confidence and he is pledged not to reveal it."

Rex thought about that. He said slowly, "Well, up to a certain point. Obviously, if I went around blabbing the confidences of my clients, I wouldn't remain in business very long. In actuality, the law gives us a great deal of latitude in regard to keeping confidential the identity of a client and his affairs. However, if you revealed to me that you had, say, killed somebody, then it would be my duty to make every effort to put you into custody. A licensed private investigator is still a representative of the law."

The younger man worked that over a bit and then finally nodded. He said, "Mr. Bader, I am an exchange student from Senegal to your noble University City."

Rex had already guessed that, other than that he hadn't known from which African country the boy hailed. He nodded. "Fine. But why should you be needing a private detective?"

"I could think of no one else to consult, and remembering the integrity of such outstanding private eyes as Philip Marlowe and Nick Charles . . . You have perhaps perused *The Thin Man?"*

"Yes," Rex said dryly. "But your problem?"

"The National Data Banks revealed that you were the only private detective in residence in New Princeton."

"Yeah. I guess that's right. There's not much business in a university city. But now, just why did you come to consult me, Mr . . . ?"

"Alioune Senghor. You see, Mr. Bader, not long ago the head of my country's embassy here in America came to visit me in my student quarters. He mentioned his friendship with my father in glowing terms. He said that when he had last seen my respected parent that he had promised to look me up, on returning to America."

"Fine," Rex said, wondering what in the name of hell they were building up to.

"However, today is my birthday and my father called me from Senegal. You see, in our tribe, a boy reaches manhood at the age of twenty. It is a very important date in his life."

"Yeah, sure," Rex said. "And . . ." He looked at his watch. It was

taking longer than he had hoped to shake this would-be client.

The boy frowned in puzzlement. "I mentioned to my father the fact that Mamadou Diop had honored me with a visit and had spoken of him admiringly and this surprised my parent. He was not acquainted with Mamadou Diop but belonged to a political party in Senegal which was opposed to his principles."

"Mamadou Diop, Mamadou Diop," Rex Bader said. "Doesn't he sound off periodically in the Reunited Nations for the Third World Liberation group?"

"He is a strong adherent of Third World Liberation," Alioune Senghor nodded.

"All right, go on."

"He secured my pledge to aid the Third World movement, if called upon."

Rex Bader looked at his watch impatiently, and obviously. "Look," he said. "Could we get to the point? From your buildup, I'm afraid that this isn't my type of case."

"Oh, yes. I'm sorry, Detective Bader. Well, very briefly, I believe I have the mini-nuke in my student quarters. And I don't know what to do with it."

Rex Bader closed his eyes in sorrow and held them that way for a long moment. He opened them finally, got up from the couch, went over to his bar and dialed himself another pseudo-whiskey, this time not bothering with the soda and ice. He knocked it back in one fell swoop, put the glass down and returned to his seat. He lowered himself carefully and looked at the young black.

"Wizard. Now, all over again. What did you say you had in your quarters?"

"The mini-nuke. The one that has been in the news so much these past few days. Surely, you have heard about it."

"Yeah, surely. Now then, how did it get to your quarters?"

"Nayef Habash brought it."

"Oh, he did, eh? You know Nayef Habash?"

"No. Only from the news reports, photographs in the news, that sort of thing. But it was most certainly him. Besides, he named himself."

"Why did he bring it to your place?"

"I don't know. He said he would return for it before very long, or, if not, send someone with a letter to get it."

"When was this?"

"Only yesterday."

Rex Bader got up again and shakily went back to the bar and repeated his performance of a few minutes before.

His mind raced. Did he have the time to round up Ilya, Sissy, and Jean-Paul—his team? He didn't know. If he called John Mickoff, he'd get cooperation, undoubtedly, but how long would it take to get someone on the scene? The nearest IABI station was probably in New York; at least one of sufficient size to be able to put a squad of men into action.

He wasn't sure he could wait. Not

even for a little while. The kid had said that Nayef Habash would return for the nuclear weapon before very long. Hell, that could mean no more than hours. In fact, he might be picking it up at this very minute. If young Alioune Senghor wasn't there, the terrorist would simply break in and take over the mini-nuke. Besides, there was another angle. If he could pull this off all by himself, the full credit would redound to Rex Bader and no one else. His name would hit the news broadcasts internationally. He'd be a world hero. John Coolidge would be forced not only to give him a job, but a damned good one. What he could do was to go over to the boy's quarters, get the mini-nuke and clear out, meanwhile notifying John Mickoff to stake out the student's quarters and wait for Nayef Habash and whatever followers he had left to show again and be apprehended—or killed.

In actuality. Nayef Habash wasn't the important thing. Without the possession of the mini-nuke, he was only, once again, a crackpot terrorist, bound to go down, sooner or later, in a fire fight. The hell with Nayef Habash. The mini-nuke was the thing.

Rex Bader opened a drawer set into the mini-apartment's wall and took out the harness containing his Gyrojet pistol. He removed his jacket, shrugged into the harness, buckled it, and then drew the pistol and checked its load of 9mm rocket slugs. He returned the gun to its holster and twice drew it, to be sure it was riding right and not sticking, and then got back into his jacket. He reached down into the drawer, picked up two additonal magazines of cartridges and dropped them into his left jacket pocket.

He turned to see the boy staring at him, wide-eyed, probably thinking, *now here is a real private eye getting ready to go into action.*

Rex said, "Where do you live?"

"In the Hawthorne Building."

"Wizard. Let's go and get the mini-nuke."

Rex Bader had no intention of informing John Mickoff at this stage of the game. The other might come up with some instructions which could bolix the whole thing.

The boy stood and followed Rex from the apartment.

The Hawthorne Building, a duplicate of the high rise Rex Bader lived in, was only a kilometer away. Rex considered summoning an autocab, but then decided against it. The more he knew of The Expert, the less he liked the other's magic. He didn't want to take any chances that the mystery figure might somehow find out that he, Rex Bader, was on his way to the student's quarters. For all he knew, the terrorists had someone planted in the National Data Banks who was monitoring every movement of Rex and his whole little group.

So Rex and Senghor walked, as briskly as possible.

On their way, Rex said, "Why'd you come to me?"

The young Senegalese looked over at him, from the side of his eyes, as

though that was a strange question to ask. He said, "But Mamadou Diop lied to me. My father, the paramount chief, does not support his cause. He would not have wished me to hide the mini-nuke."

"Why didn't you call the police?"

Alioune Senghor was embarrassed. He said quietly, "I was afraid. I have read about how the American police treat suspects. The third degree and all. Especially, when blacks are involved."

Rex Bader winced at that but couldn't think of anything to say. Did the boy think the works of Dash Hammett and Raymond Chandler were history?

The mini-apartment student quarters of the Senegalese were on the 18th floor of the high rise. Rex Bader disliked parading across the crowded lobby of the building, not knowing who might spot them and take action, but there was nothing for it. They made a beeline for one of the elevator banks and took an empty compartment.

Rex said, "Now this is what we'll do. We'll go immediately to your place, get the mini-nuke and clear out. We'll go to the nearest police headquarters and put the bomb under guard and then I'll phone contacts I have in the Inter-American Bureau of Investigation."

"Yes, sir," the boy said, obviously caught up in the excitement of it all. Undoubtedly, he had never dreamed that one day he'd be participating in an important case with a real private eye, in the tradition of Lew Archer and Philip Marlowe.

The elevator stopped, the door slid open and they emerged.

Into complete chaos.

The corridor was clogged in confusion. Several men were on the floor, either motionless in death or kicking and writhing with wounds. More were shouting, shooting, cursing, clubbing with submachine gun butts, since there was little room to open fire without danger of hitting an unintended target.

At the far end of the corridor, near a bend, one participant in the fray had achieved enough open space to get his stubby submachine gun into play, and was chopping out short bursts into the melee.

In the opposite direction, toward the other end of the hallway, cool as the proverbial cucumber, Sissy Duff-Smythe sat on the floor, her tweed skirt hiked halfway up her white thighs, revealing an empty holster strapped to one leg. The holster was empty because she was holding the small caliber pistol in both hands and carefully squeezing off shots as calmly as though on a firing range at target practice.

Rex Bader violently pushed the boy facedown onto the floor. "Down!" he yelled, dropping to a knee himself and clawing for his weapon.

Three doors away, an apartment was open. Two men, their faces livid in excitement, dashed out, the one ahead with an assault rifle held at the hip and searching a target. The one

behind, a heavy military pistol in his right hand, lugged a battle-green knapsack in his left.

Someone was yelling orders in a language Rex Bader didn't place, but it was meaningless anyway, over the din.

He snapped a shot at the man with the assault rifle and the man screamed and fell. Gyrojet pistols are not for fun.

In the confusion, Rex Bader had no idea how many people were present. He estimated at least a dozen, including those on the floor. He could recognize none save Sissy, who had evidently emptied the clip in her gun and was now coolly and efficiently reloading.

Rex fired indiscriminately into the melee. Whoever these people were, obviously they were determined to get the mini-nuke. The man carrying it went down, but it was snatched up immediately by another who crouched and dashed for the corridor's end where the machine-gunner was holding forth, getting in his bursts whenever the way was clear for firing at one of his foes.

Rex came half-erect and leveled his Gyrojet for a better shot at the man carrying the knapsack. And then a shattering blow struck him from nowhere, and blackness rushed in. He could feel his legs collapsing beneath him. The last thing he could remember seeing was Ilya Simonov coming down the stairs to one side, a laser pistol held efficiently in his right hand.

When he awoke, it was to find himself on the floor, Sissy over him applying a tourniquet. Her face was pale.

"I say, don't move," she snarled. "You're dripping red ink all over the place."

She was impossibly beautiful as an angel of mercy, he thought, even at a time like this.

"Will you marry me, Lady Duff-Smythe?" he got out.

"No." She continued her work, ultraefficiently.

The hall was a shambles. Six men were on the floor, weapons were scattered everywhere, ranging from the assault rifle borne by the desperado Rex had shot, to a submachine gun and several pistols of varying type and caliber. The walls and doors were ripped by scores of bullet holes and laser burns.

Ilya emerged from the apartment. His lean face was grim and the gun was still in hand.

"Where in Hades is Jean-Paul?" Sissy demanded.

"Getting in touch with Mickoff," the Russian growled. "Where'd you come from?"

"I was checking out a Senegalese student who lives here," Sissy told him. "He was on our list as the only Senegalese in New Princeton. Two of the terrorists were Senegalese. Possibly he knew one of them, particularly when you mentioned Habash might be hiding in New Jersey. Then, just as I arrived, all hell blew up, don't you know. I still haven't the vaguest idea of what happened."

"That was the mini-nuke in that knapsack," Rex got out. "The student you were looking for is over there on the floor near the elevator. Is he dead?" Rex Bader felt a twinge of conscience over getting the youngster into this.

"No," Simonov said. "Knocked out. It looks as though he hit his head on the floor."

"I pushed him" Rex said. "Nayef Habash had left the mini-nuke in his keeping."

Jean-Paul appeared looking frustrated. "They all got away," he said.

"Who?" Sissy demanded.

"Damned if I know," the Frenchman said unhappily. He looked down at Rex. "How are you coming?"

"Lousy," Rex snarled. "How in the hell did you get here?"

"I was looking for graffiti," Jean-Paul grinned.

"All right, you two clowns," Sissy said, finishing her nursing aid. She came to her feet.

The gunman who had been carrying the knapsack from the mini-apartment came suddenly to life. With a scream of rage, he desperately, though weakly, scrambled for one of the fallen guns, brought it up, bubbling curses in the unknown language, and winged a shot at Jean-Paul.

Ilya Simonov coolly burned out the man's belly.

"I thought he was dead," he apologized.

The Frenchman had clasped a hand to his arm. *"Mon Dieu,"* he blurted. "The pig nicked me!"

Police suddenly erupted into the corridor, seemingly from half a dozen sources at once.

John Mickoff was in the fore, gun in hand. The other police scattered to look for fugitives or bent to examine the fallen men.

Mickoff stared down at Rex Bader, disgust in his face. "What in the devil have you been up to, younger brother?" he said. "You blew the whole trap we had set."

CHAPTER ELEVEN

They weren't able to hold their conference until the following evening, and once again it was at John Mickoff's apartment in the Lincolnville section of Greater Washington.

They sat around glumly, awaiting the arrival of Director John Coolidge. Rex and Jean-Paul Lafitte were now properly bandaged. Rex had taken a heavy slug in the fleshy part of his left arm, the Frenchman a slug in his left shoulder. Neither wound was particularly bad. Rex was chagrined that the hit had temporarily knocked him out.

When Rex Bader first arrived, accompanied by Sissy who had seen him through the rigmarole of hospital care, it was to find the Frenchman and Russian already on scene, drinks in hand.

As soon as the newcomers had received glasses of their own, Rex said accusingly to their IABI host, "What in the name of Zen did you mean by that crack, we blew the trap you had set?"

And Mickoff returned in disgust,

"Younger brother, you suffer from a long-held prejudice that the police are stupid. It was all very well that you volunteers from abroad, and you our local amateur, were hot after Nayef Habash, but so was the IABI. I don't know how close a look you got at some of those stiffs in the hall, but one of them was Nayef Habash and another was Mamadou Diop."

He looked at Jean-Paul. "By the way, it was Nayef who shot you." He turned his eyes to Ilya Simonov. "It's a damn shame you killed him. We could have used him alive. Now we'll never figure out the original crime. At least one of the dead men was a member of the original terrorist gang that hijacked the mini-nuke. We suspect that they're all finished now."

"How about The Expert?" the Russian operative said softly.

"Possibly he's one of the other dead ones in the hall. We haven't identified them all as yet. Possibly we never will. None of them were carrying identification of any sort. None of them had criminal records, at least their fingerprints haven't indicated any."

"We'll do our own checking," Simonov said.

"And we'll do ours," Jean-Paul added. "Perhaps they'll be in the Interpol files."

"Possibly," Mickoff shrugged. "At any rate, early in the game we kept Mamadou Diop under surveillance, along with a hundred or so Africans in this country who have been rabid supporters of the Third World Liberation group. He was never out of our sight."

"I say, who in the world is Mamadou Diop?" Sissy said, sipping disconsolately at her drink.

Mickoff told her, then went on. "Sure enough, he led us to Nayef Habash. The colonel, here, had already hypothesized that the terrorists had lost considerably more of their numbers than they had first planned upon. In fact, they were down to Nayef, himself, The Expert, and one other terrorist, the one with the assault rifle in the shootout in front of Alioune Senghor's apartment. What their plans were, we don't know, and probably never will know. But they were obviously running scared, at least for the time being. For some reason, they chose the kid's apartment to temporarily stash the mini-nuke. Why him, we don't know, perhaps because he was handy. He checks out clean. He had no connections with the terrorists. Mamadou Diop talked him into hiding the damn thing. Like I said, possibly it was because he was handy, young, and easily persuaded. Nayef, his sole remaining follower, and perhaps The Expert, were hiding out in New Princeton, in an apartment that someone, probably The Expert, had rented a while ago."

"Wizard," Rex grumbled. "But get to the action." He grunted and added, "Why didn't you jump Nayef as soon as Mamadou Diop led you to him?"

"Because we weren't sure that he had the mini-nuke immediately at hand. We actually didn't come on the

scene until he had stashed it with the student. It was all rather confused. When they left their hideaway, we followed, hoping they were going to get the bomb. We were right. They were. We got the building all staked out but just when we were about to jump them, the new element entered into it."

"What new element?" Jean-Paul demanded.

John Mickoff looked over at him in resignation. "We don't know, chum-pal. From all we can figure out, some entirely different group snatched the mini-nuke from Nayef Habash. Who and why, we haven't the slightest idea."

"How come you didn't put the arm on them as they fled the building with it?" Rex said nastily. "I thought you said it was all staked out."

"They left by a rear basement door and shot their way out. There are four more dead men that you people didn't even know about. Two of them are members of this new gang, two of them IABI agents. And I have three other of my men wounded."

"Holy Zen," Rex said in protest. "It begins to sound like the Second Battle of the Bulge."

"Younger brother, you have said it. But now it's my turn to ask questions. How in the hell did all four of you get there? From what I understand, you arrived independently."

Rex said, "The kid came to ask my advice, as a private detective. He'd found out that Diop lied to him and

was nervous about having the mini-nuke in his place."

Mickoff looked at Sissy.

She said, "I was checking young Senghor out, simply because he was Senegalese and two of the dead terrorists were as well."

Jean-Paul said sourly, "The same with me. We had a thin suspicion that the man who bought the armament the terrorists used was a Senegalese and that he lived in this vicinity. So I was going to question our student friend."

Mickoff looked at the Russian.

Ilya Simonov shrugged. "My agents had heard rumors that Nayef Habash had, ah, gone to ground as the Americans say, here in New Princeton. I too was checking out all Africans in the university."

Mickoff sighed. "Well, at any rate, we all tripped each other up. Now we don't know who in the hell has the damned thing."

They sat wordlessly for a long moment. Wordlessly and grimly. It had all been so nearly in the bag, until this new complication had arisen.

Jean-Paul said finally, "I saw a wonderful graffiti this afternoon, in the men's room of the restaurant I ate in. It said: *Patrons are forbidden to leave seat while bowels are in motion.*"

Rex looked over at him and said, "Shut up, damn it."

Jean-Paul laughed.

The identity screen hummed and John Mickoff got up to answer it. As expected, he returned with his superior, the aging Director John Coolidge. If anything, the police bureaucrat looked as though he had put on another ten years since they had last seen him.

He sank down into a chair and glowered at them.

"I've had John's complete report," he said. "You four with your confounded interference prevented the finalization of the whole matter."

Ilya Simonov said softly, "Had our liaison been somewhat more close, perhaps we would have been of assistance, rather than a hindrance. You people should have informed us as to what was up."

Coolidge snorted at that. He looked about at them, darkly. "Have there been any new developments that possibly you haven't gone to the trouble of letting us know about?" His voice was cold and accusing.

Rex Bader took over. "None that Mickoff isn't up on. As things stand, the mini-nuke has been hijacked from the terrorists, all of whom we think are dead. It's now in the hands of some unknown group."

The Director snorted contempt of that opinion. He brought from an inner pocket a sheet of business-size letter paper, hesitated a moment, as though deciding whom to give it to, and finally handed it to Jean-Paul Lafitte.

Jean-Paul looked questioningly at the IABI head for a moment, then let his eyes dropped to the sheet in his hand.

He cleared his throat and said,

"The letterhead reads simply, EXTORTION, INCORPORATED." He began to read:

Extortion, Incorporated is in possession of the mini-nuke. Unless our demands are met, the bomb will be utilized in the manner for which it was designed.

The demands are as follows:

1. *One billion pseudo-dollars are to be deposited to our account in Switzerland within one month.*

2. *An absolute guarantee from Reunited Nations and all its member countries that no efforts will be made to prosecute any member of Extortion, Incorporated.*

3. *That neither the Inter-American Bureau of Investigation, nor any other police organization, will be brought into this matter. Failure to comply with this will mean immediate doubling of the amount involved to two billion pseudo-dollars and continuation of failure to comply will mean the immediate carrying out of our threat.*

4. *Within the month, we expect a representative of the Reunited Nations to appear on international Tri-Di with a simple announcement of acceptance. We will then make further contact with details of how to deposit the sum demanded to our account.*

Sincerely,
Executive Committee
Extortion, Incorporated.

"I say," Sissy said meaninglessly.

Rex Bader held out his hand for the paper and Jean-Paul handed it over.

The American ran a finger over the print of the letterhead. "Hand set," he murmured, "and undoubtedly printed on an old-fashioned platen press." He looked more closely at the typing. "Hand typed on an old-fashioned electric typewriter, rather than a voco-typer, by a good typist. It'd be a sonofabitch to try and trace this."

He looked up at the Director. "Is this the only copy?"

The older man shook his head grumpily. "No. It's evidently the original, but the thing has been duplicated many times and is now in the hands of the news media of the world."

Sissy said, "I suppose that there's no need to turn on the Tri-Di news. If I twig it right, the world is in a hysterical frame of mind. If anything, the idea of the damned thing being in the hands of extortionists, rather than political terrorists, is even more frightening."

Ilya Simonov looked at the IABI Director and said, "What do you plan to do?"

"What *can* I do?" the other said wearily. "It's out of my hands. It's now up to the government of the United States of the Americas and the Reunited Nations to make a decision. If, after this warning, I allowed my organization to continue the investigation and the extortionists became aware of the fact, before we were successful in apprehending them, then the fat *would* be in the fire. All I can possibly do is withdraw, or the whole world would be on my neck."

He looked at John Mickoff wearily

and said, "A glass of water, please, John."

While his underling was getting it, he fished his box of pills from an inner pocket and selected one. The others watched him emptily while he washed it down.

His shoulders sagging, the Director of the Inter-American Bureau of Investigation came to his feet and looked around at them.

"Thank you for your attempt at cooperation," he said bitterly. "I assume that you will report in full to your respective organizations which will obviate any need for my office to do so. In view of the warning from the extortionists, I would rather not deal with the matter any more in any manner. If the extortionists found out, they might interpret it as our continuing our investigations. Goodnight and good-bye, all."

He headed for the door, accompanied by his right-hand man.

When John Mickoff returned, he said, "Well, I suppose that winds it up, chum-pals."

Jean-Paul Lafitte studied the glass in his hands. He was again drinking cognac in a snifter. He said, "I have a confession to make. Affection runs deep in my family. I loved my father beyond the point, these days, that offspring usually regard their parents. He was everything to me. He, in his turn, had been inordinately fond of his parents, my grandparents. They had been medical missionaries in Japan. When the Second War came, they were put under protective custody by the Japanese government but allowed to continue their medical services among the other prisoners of war. Their hospital was on the outskirts of Hiroshima. When the bomb came, they were spared the initial blast and survived in good health but descended into the city doing their duty as representatives of their religion and as members of the human race."

Jean-Paul Lafitte took a deep breath. "After exposure to the radiation, they died in agony following many years of suffering. I just barely remember them, as a small boy. But I loved them, almost as much perhaps as my father did. After they died, my father made me pledge to fight not only war in general, but especially the horror of nuclear weapons. And after their deaths he was no longer quite the same. Life had gone out of him as a result of the long years of watching them rot away."

He looked about at the others, all of whom were listening in complete silence. He said defiantly, "I have every intention of keeping my pledge to fight the use of nuclear weapons. I have no intention of standing by and watching the world continue with a daily fear of an atomic explosion from the hands of criminal blackmailers."

"What in the hell are you talking about, chum-pal?" Mickoff said dangerously.

The Frenchman's eyes went to him. "There is nothing in the extortion letter pledging the return of the mini-nuke once the billion pseudo-dollars have been produced. The implication

is that it would remain in their hands. One of the oldest police maxims is that a blackmailer can never be completely paid off. He returns again and again to his prey for new demands. The same would apply here. The only way we can free the world of this threat is to recapture the mini-nuke."

"You damn fool," Mickoff snorted. "Didn't you read that letter? Not only the American IABI, but also no other police organization can be brought into activity. Otherwise they act."

Jean-Paul nodded. "Which is why I have just resigned, as of this minute, from Interpol. I am now a private citizen."

Sissy said conversationally, "By George, now that you mention it, I too just resigned from the National Central Board of Scotland Yard, and am now a free agent."

"Ummm," Ilya Simonov said smoothly. "What a coincidence."

They looked at him.

"It seems as though the *Chrezvychainaya Komissiya* will have to dispense with my services."

Rex Bader said, "Since I am not a member of any police organization, the problem doesn't arise with me. It would seem that we still have a team."

"Have you flats completely scrambled your eggs?" Mickoff demanded. "Didn't you hear the Chief? The whole thing's off. We're not in it any more. The decisions are going to have to be made by the government and the Reunited Nations."

"You mean that *you're* out of it, O heart of my heart," Rex told him. "That is, unless you want to resign your job and become a private citizen, along with the rest of us."

"Go get goosed, you drivel-happy flat!" the IABI man snarled. "What in the hell do you think you can do?"

He pointed a finger at the Frenchman. "What'll you be able to accomplish without Interpol behind you?" He turned the finger to Sissy. "Or you, without Scotland Yard?" The finger redirected itself again. "Or you, without all your goddamned KGB and other Soviet agents?"

Ilya Simonov looked his wolfish look. "That remains to be seen," he said. Then he turned his eyes to the others. "But Mickoff's right. We can't call on our respective organizations—our former organizations—for support. The extortionists might find out about it. We're on our own."

Sissy said, "Shall we get down to a plan of tactics, old chaps? We don't have much time, I wouldn't think."

John Mickoff turned in fury and stamped into his bedroom, slamming the door behind him after shouting over his shoulder, "Deal me out of this. And when you're gone, and the sooner the better, don't come back!"

Sissy shook her head and said sadly, "Stout fella, and all that, but he thinks that Director of his is God."

Ilya went over to the bar and dialed himself another vodka. "Drink, anybody?" he said. "We might as well take advantage of Comrade Mickoff's hospitality, while he isn't here to protest."

"If I knew whether or not he was on an IABI expense account, I'd order vintage champagne," Sissy said. "But, as it is, let me have another Scotch."

"*Never be led astray into the paths of virtue,*" Jean-Paul said piously. "That's one of the cleaner graffiti I ran into. Let me have a double cognac. And make it the real Napoleon this time."

When they were resettled, Sissy said, "Well, chaps, where do we stand? Where do we start?"

Rex said, "We start by taking up the search for The Expert."

All three scowled at him.

Jean-Paul said, "He was with Nayef Habash's terrorists. He's probably dead now."

Rex Bader shook his head. "It had to be he that fingered Nayef and the remnants of his gang. In fact, I'm beginning to suspect it was his dainty finger that stirred up the mess that resulted in the decimation of the terrorists—after they'd initially snatched the mini-nuke. One way or the other, they all got very dead, including, at the end, even Nayef himself, and Mamadou Diop to boot."

"You don't have any evidence to back that," Ilya Simonov said slowly.

Rex took up the sheet of paper bearing the demands of Extortion, Incorporated. "This came out too soon. The shootout took place only yesterday. It means that it must have been printed and typed before the mini-nuke was hijacked from Nayef. In short, the extortionists knew just what was going to happen. Unless somebody comes up with a better idea, I can't think of anybody in a better position to mastermind the second hijacking than The Expert."

They continued to eye him, thinking over what he had said.

He gestured wide with his two hands. "Figure it out. Everybody with Nayef Habash was fanatically devoted to what he called The Cause. They were willing to die for it—and did. But The Expert was only a hired mercenary. We must assume that he wasn't motivated by anything whatsoever, except money. Possibly, Nayef Habash paid him quite well. But not nearly as well as these ambitious extortionists could, if they get their billion pseudo-dollars. He turned coat. He sold out. Now he's with the extortionists, whoever they are."

Sissy nodded. She said, "Let's accept that for the time, until something develops to indicate otherwise. Not that it does us much good. We haven't the vaguest idea of just who he is. What's worse, we no longer have Interpol, the KGB, or Scotland Yard to help us find out. If their files were available, we could attempt to check out any known mercenary who could boast his unbelievable talents. There must be some record of earlier exploits of his, I wouldn't wonder."

Ilya Simonov said, still speaking slowly, as though feeling it out, "The extortionists. There must have been a dozen of them at least, and all well armed. They not only killed Nayef Habash and his followers, but also shot their way out of the building

when opposed by Mickoff's IABI men. In short, they're both a large and well-financed group."

Jean-Paul nodded acceptance of that and looked at Rex. He said, "You're our American authority. What criminal gang is large enough to handle such an operation?"

Rex thought about it. Took a pull at his pseudo-whiskey and thought some more. He shook his head. "There is none."

Sissy said, "I say, on the face of it, dahling, there has to be. The, ah, romp was pulled off."

But Rex was still shaking his head. "Gangs of criminals, in the old sense of the word, no longer exist in the United States. Crime is no longer profitable. The days when a Johnny Dillinger and his gang could enter a bank, shoot a guard or two, and then escape with tens of thousands of dollars, are gone. We no longer use paper money or currency. As in your own countries, all financial transactions take place through computers and data banks. For crime to make sense, you've got to be able to steal large sums, or, at least, things easily convertible into large sums. Sure, a gang could stick up a major jewelry store and haul off a considerable number of gems. But in this age, how could they fence them? Every transaction is recorded in the data banks, either in this country, or some other."

He looked over at Sissy. "What would Scotland Yard do if, knowing that New Tiffany's had been knocked off in New York, suddenly there appeared on the British data banks a recording of a large scale of diamonds, otherwise unaccounted for?"

The Russian finished the vodka he'd been nursing and said, "Very well, Comrade Bader, but the fact remains, there is such a gang and they proved it to everybody's satisfaction. It's a sizable gang, well funded, since it was able to acquire what must have been illegal advanced firearms, and well led, since the whole scheme, involving numbered accounts in Switzerland, is on the complicated side."

Rex Bader knew that the other was making sense, but also knew that it just couldn't be; he hadn't even heard of a criminal gang of that type since he was a kid. They were simply a thing of the past.

But then it came to him like an inspiration.

"You know who we're dealing with?" he said, as though hardly believing it himself.

"Oh, come now, old chap," Sissy said impatiently. "Drop the other shoe, don't you know?"

"Who?" Jean-Paul said.

"The Syndicate."

CHAPTER TWELVE

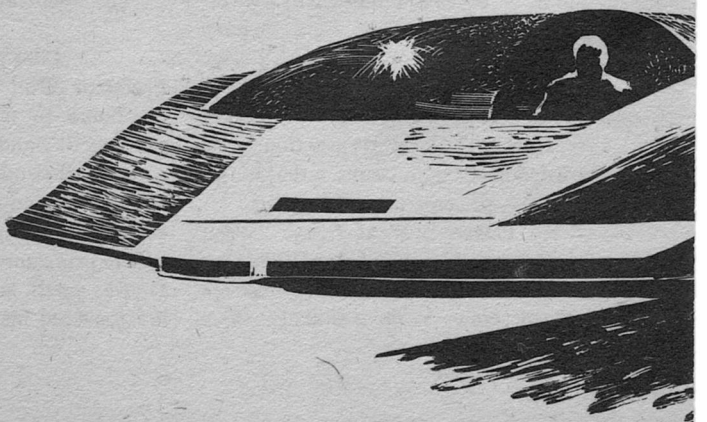
Professor Wolf Gunther approached his home in relief. It had been a grueling day and he looked forward to a very stiff drink, or even two, before sitting down to one of Frank's home cooked, hearty men's meals.

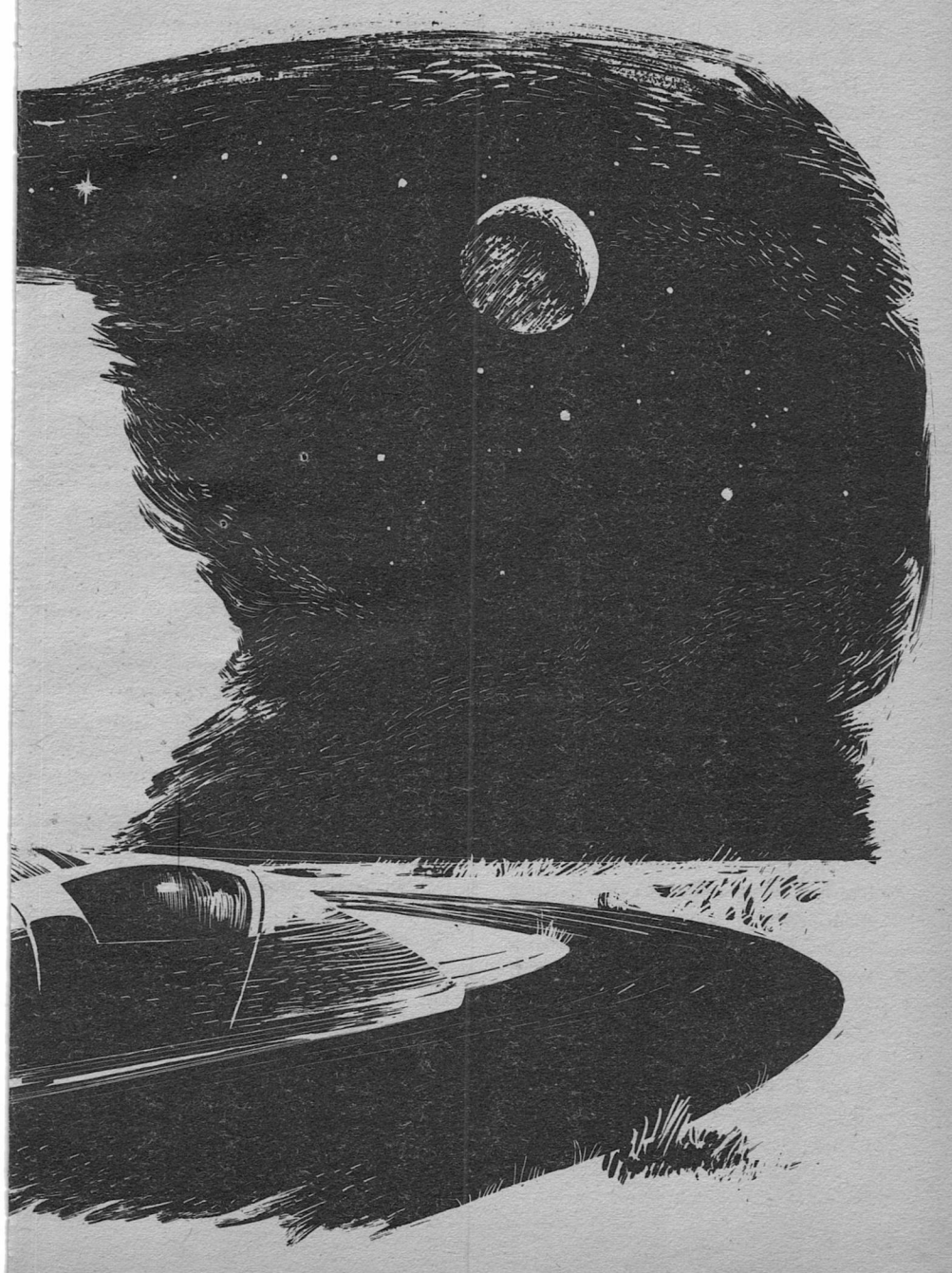
The professor was in his late fifties. He was small, he was slim, his lifeless hair covered his whole head but was

so thin that he looked all but bald. He wore a pince-nez before vague eyes, and he looked every inch the nuclear physicist he was. At the age of sixteen he had graduated from MIT and had never left the academic scene since. Surprisingly, he had an appreciative sense of humor.

Now, driving with care, he approached the isolated underground house which had long been his bachelor home. Not for Wolf Gunther an automated hovercar!, though each day he left his office and laboratories at the New Princeton University City, his assistants looked after him dubiously. He knew they never expected him to make it, driving manually, but it was one matter in which he stood firm. He didn't trust moving vehicles without a driver.

The Gunther manse was built into the side of a hill some thirty kilometers out of town. It was so covered with grass, bushes, and small trees that it was invisible except from quite close. The house was one of the great prides of his life. He was strongly of the opinion that most buildings, including residences, were eyesores that took up too much valuable land—land which should be devoted to life-giving plants and to wildlife shelters. At least one full family of rabbits lived in the





Gunther roof, and a multitude of wild birds in the bushes and trees.

He drove into the camouflaged driveway, dropped the lift lever of the hovercar, shifted his thin shoulders in his worn jacket, got out and headed for the door which led to the patio.

The patio, open to the sky, was a bachelor gardener's delight. There was even a fountain in its center. The bougainvillea on two of the walls were a blaze of impossible color. But roses were his weakness and his tired eyes dwelled on a dozen of his favorites before he pushed his way into the living room. In the house, all rooms, even the kitchen, opened onto the patio. Given the weather, he spent a great deal of his time there, either working, sunning himself, or puttering around the plants.

The living room was a man's room. Wolf Gunther, despite his diminutive appearance, gave not one damn for anything save masculine comfort in his home. The walls were all but exclusively bookshelves; what space was left was devoted to paintings of yesteryear. He even boasted a Monet on which he had expended the total of an international scientific award he had won while still in his thirties. The furniture was strictly meant to be sprawled in, shoes up on the worn leather couch, or wherever. Nor did Wolf Gunther tolerate that modern abomination, the autobar. Not for him, perfectly concocted drinks, measured as though by eyedropper. He liked to surprise himself; a highball would be stronger one day, weaker the next; a Martini would be three to one, or eight to one, all according.

As he entered the room, he frowned in surprise and then smiled with delight.

Frol Alexandrov was seated there, glass next to him on a chairside table, delving into one of Gunther's well-worn books on the Aztecs. A first-rate physicist Wolf Gunther might be, but he was also a third-rate amateur anthropologist, purely in the way of relaxation. He loved real books, both hardcover and paperbacks, and hated the National Data Banks as a source of research, though no one in this age could escape that institution.

Doctor Frol Alexandrov couldn't have been more different than the professor had the Tri-Di studios gone to work on him with all their makeup resources. He was heavyset but moved with élan: he was continually enthusiastic and gestured in conversation like a stereotypical Armenian rug vendor. And he dressed in the latest attire the students were affecting.

The doctor put down his book and stood. He came over and clasped his old-time colleague in an embrace and pounded him on the back, a back too thin to withstand much of such treatment.

"Wolf!" he crowed. "You old *loup-garou*. What a pleasure!"

The professor returned the enthusiasm, but blinked behind his thick-lensed pince-nez.

"Frol! I thought you were still in Stockholm, delving into that ridiculous time-particle theory of yours."

"I came soonest," the other told him. "Just pulled in a couple of hours ago."

Wolf Gunther frowned uncomprehendingly, and turned to the bar. "It's a treat that you dropped in on me first," he said and pretended to scowl at his bottle assortment. "I see you have been into my stone-age Jamaica rum." He cleared his throat. "As always."

Alexandrov took up his glass and said, "I'm being sure that you don't *over*age the precious stuff." He sank back into his chair and waited for Gunther to join him.

"Where's Frank?" the professor said, coming over with his glass and sinking onto a couch opposite his oldest friend.

"He's around somewhere," Alexandrov said. "If I didn't know better, Wolf, I'd think you'd gone homosexual."

The thin man chuckled. "If I ever did, possibly I'd pick Frank. He's priceless. I feel sorry for him. He's so damned devoted, so indispensable. My Man Friday, my houseboy, my selfless companion, my hero worshiper, and so on."

The doctor cocked his head. "Sorry for him?"

"The last of the apprentices. He is inwardly of the opinion that if he is around me long enough some of my abilities will wear off on him."

"Why, you old egomaniac."

The professor took a healthy pull at his drink. He said, "Frank has one of the most retentive brains I have ever come up against. He can memorize anything. But there is an inventive, an intuitive spark missing. I don't believe that I have ever caught him with an original thought. But he is priceless as an assistant."

"I would say so. I believe that he is out in the kitchen right now, whipping us up some sort of tasty to go with our drinks before dinner."

The professor looked over at his colleague and said, "What exactly are you up to these days, Frol?"

"I thought you knew. Space."

"Space?"

"Yes, of course. I'm connected with the new laboratories to be constructed in Island One, the pioneer space colony. When and if it is ever completed."

"What? And give up your fantastic particle which travels faster than light and goes up, down, backwards, or sideways in time, or whatever it does?" The tone was bantering.

"Certainly not, but I suspect that research in space on such projects will be more rewarding."

Frank entered at that point, bearing a tray. He seemed upset.

The younger man projected sincerity. Sincerity and what would have been called squareness not too many decades earlier. He was earnest, period. In his late twenties, no one would have thought otherwise than to brand him a student. He *looked* like a student, in the same way that Gunther looked like a professor. A student, but not a scholar. As a chosen assistant of the noted Professor Wolf Gunther,

Frank Turin was above the need to be selected for a position in the upper echelons of American science. NIT was not for him, but, alas, not because he had been selected for the job with Gunther by the National Data Banks computers. The professor had enough weight to railroad it through and Frank Turin's virtues as an assistant went far beyond his scholastic abilities.

The professor frowned at him. "What is it, Frank? You look distraught."

The younger man put down the tray of hors d'oeuvres between the two research geniuses. "I've just had distressing news, sir."

"Good heavens."

"Yes, sir. I've just had a phone call from the hospital in Arkham. My brother, Tony . . ." He swallowed.

The professor was indignant. "Well, get to him!"

"Sir, I haven't finished dinner for you and Doctor Alexandrov."

"Are you out of your mind? Take my vehicle and get out of here immediately!"

"Yes, sir," the adoring stooge said. He was tearing off his apron even as he dashed for his room.

When he was gone, Wolf Gunther shook his head. "Jesus Christ," he said.

His companion chuckled. "Yes, indeed," he nodded. "That's who he thinks you are."

They could hear the professor's hovercar start up and leave, obviously hurriedly.

Wolf Gunther shook his head and said, "We can dial something from the autokitchens. I apologize but that's about it."

"You mean that they run delivery to remote places like this?"

"Oh, yes. Given time, you could have a home on the top of Pike's Peak and they'd deliver hot meals and everything else up to you through the vacuum-tube arrangement. I'm afraid I'm old-fashioned, largely. They can take all that and . . ."

"Wolf! You astonish me. However, happily, automation hasn't as yet completely taken over in Sweden or Denmark. The cozy little bar, the little restaurant, is still to be found."

Wolf Gunther sighed. "Why did you leave, Frol? I remember how satisfactory it was there in Copenhagen, there on that project where we . . ."

The other was staring at him. "What do you mean, why did I leave? I answered your cable."

And his host stared back. "What cable?"

"Are you jesting, Wolf? The cable that brought me here. It ended *urgent, urgent.* I thought it was some new breakthrough on our old project."

Wolf Gunther was still staring at him. He said, "Frol, I don't know what you're talking about."

A voice from behind them said, "Forgive me, gentlemen. I'm afraid I sent the cable."

The two scientists spun and gaped.

The newcomer entered from the patio, perfectly at ease. There were

two hard-faced, immaculately-dressed young men behind him. They bore handguns.

The intruder turned to his companions and said, "You boys had better search the place, just to make sure. If you do find anybody, truss them up."

"You're the boss," one said, then looked at his leader. "You heeled?"

"Yes. Not that it's necessary. When you're finished, one of you get up on the roof, if that's what you'd call it, and act as a lookout. We'll be leaving shortly."

"Wizard." The two turned and left.

The other went over to the bar and looked down at the selection of potables.

Gunther stuttered, "What . . . what's the meaning of this? Who in the name of Zen are you?"

The intruder looked back over his shoulder as he picked up a bottle of brandy and a glass. He said, "You can call me The Expert, if you wish. The name seems to be getting around."

"What . . . what . . . ?" Wolf Gunther was flabbergasted.

The Expert came over toward them, drink in hand, and settled down into a chair. He said, "That call supposedly from the hospital for young Turin was also a fake. We wanted him out of the way, on the off chance that he might become excited and get himself hurt."

Frol Alexandrov was the first of the scientists to recover from his surprise. He said, "What is it that you want? Undoubtedly, you realize that you have already committed several serious crimes, including breaking and entering while armed."

"Umm," The Expert admitted, crossing his legs comfortably. "We're aware of it. The reason I'm taking the time to explain matters to you is so that you won't go off half-cocked and try something that might land you in trouble. As it is, you are really quite safe."

Gunther blurted indignantly, "I haven't the vaguest idea of what you're talking about, you . . . you criminal."

The Expert looked at him and said softly, "It is perhaps moot just who is the greater criminal among us. You two have both been active in the development of nuclear weapons. You, Professor Gunther, actually worked on the mini-nuke which is now receiving so much notoriety in the world's news media. I suspect that there are now elements in almost every country who would willingly rend you limb from limb if they could lay hands on you."

Alexandrov gestured contemptuously. "You still haven't told us why you're here. The fact that we have participated in research in nuclear fission and fusion is possibly beyond your ability to comprehend. As scientists, we are not responsible for the use to which the military and government put our discoveries. Would you have outlawed the discovery of gunpowder, because a thousand years later criminals used pistols to assassinate their victims?"

The Expert looked at him over the brim of his glass as he sipped his drink. "Ummm," he muttered. "I have heard the argument before. And the point is valid that research into nuclear physics is both called for and inevitable. But how could the development of the mini-nuke have anything to do with pure research? It's only purpose was to put an ultraweapon into the hands of mass murderers."

The scientist grunted and flipped a hand in disgust again. "You still haven't told us what in the world you are doing here."

The Expert nodded acceptance of that. "We're, ah, kidnapping you. We too, having no particular interest in the long view, take immediate opportunity to profit from a world so stupid that it allows the development of the mini-nuke, which potentially could kill hundreds of thousands."

"What on Earth are you talking about?" Gunther blurted.

"We're the Extortionists, Professor," the other said, smiling over at him. "We've seized the mini-nuke, which you gentlemen were so kind as to produce, and now we are using it for our own purposes."

The two scientists were well aware of current news and the fantastic developments of the past week or so. They looked astounded.

The Expert got up, went over to the bar and poured another brandy. He came back, reseated himself and crossed his legs again.

He said conversationally, "It would seem that the Reunited Nations would, ordinarily, succumb to our demands. A billion pseudo-dollars would be as nothing compared to a nuclear fision explosion in New York, London, Paris or any other truly major city. However, there are aspects."

Both of the others finished their drinks and stared at him again.

He said, "It has been pointed out that either the terrorists, who originally hijacked the mini-nuke, or now we, the Extortionists, have one fatal weakness. If we use the bomb as threatened, then we are weaponless, since there is only one mini-nuke. The moment it is exploded our threats have become meaningless."

Frol Alexandrov was still shaking his head in complete lack of understanding. "You keep avoiding the issue. What can this possibly have to do with us? Why kidnap us?"

"Because, at this very moment, the nuclear fission power plant in Far Cry, Idaho, is being raided by another group of our organization. The raid will succeed and a quantity of fissionable enriched uranium will be taken. Tomorrow, the world will know that two of its outstanding nuclear physicists have been kidnapped and a sizable amount of fissionable material seized. The implications are obvious."

Gunther was gaping again. "Are you a complete dizzard? Are you implying that we two will manufacture additional mini-nukes for you? We couldn't even if we wished. We couldn't begin to."

The Expert chuckled. "Yes," he

said. *"We* know that you couldn't do it. And *you* know it. And any competent authority knows it. But the man in the street doesn't know it. At most, he may understand that another mini-nuke, a small portable fusion bomb, could not easily be assembled. But for years he has been fed the scare story that any moderately competent physicist could put together a viable nuclear fission device, given the uranium. The term usually used is, in his garage, or basement laboratory."

He chuckled again and went on. "You two are more than moderately competent nuclear physicists. The implication is obvious, I repeat. We have kidnapped you. You will be forced to build nuclear fission devices for us. It then becomes clear that we have not only the highly portable mini-nuke at our disposal, but other nuclear fission devices as well. We no longer need fear using up the sole item in our arsenal. Our threat continues, even though we blow one major city to prove our determination."

"You are mad!" Gunther blurted, his glass slipping from his hand to shatter on the floor.

The Expert nodded. "So they say, so they say," he admitted. "However, there have been men in the past branded the same due to their lust for the only thing that counts in our society—money. So now, gentlemen, I assure you, you are in no immediate physical danger. We simply wish to hold you, until our plans have matured. The world will be terrified in the knowledge that we have you and are possibly coercing you into building additional nuclear bombs for us."

CHAPTER THIRTEEN

Rex Bader and Cecila Duff-Smythe were seated at a sidewalk table of an automated bar, directly across a mall from the International Diversified Industries Building in Manhattan. It was a beautiful spring late afternoon, beautiful as only a spring day can be in downtown New York.

Rex was in his nattiest suit and looked handsome; Sissy was simply but impossibly-bewitchingly dressed in her usual tweeds, and her beauty was like a magnet. The implication was obvious. Passers-by suspected them of being lovers and smiled tolerantly. All the world loves a lover, even Manhattanites who are momentarily expecting a mini-nuke to go off.

Sissy said, "What did they say?"

"To call back in a half-hour."

"That tells us nothing."

Rex shrugged. "It probably means that she is in town. Otherwise, they would have brushed me off, reporting that she wasn't available."

They both sighed and sipped at their drinks.

Sissy said, "Did you hear the news this morning? I missed it."

"Yeah. The, ah, manure has hit the fan. There hasn't been time for the new hijacking information to seep into the mass mentality. They're still up in arms against the terrorists."

"How do you mean?"

"Up until now, terrorists of just about any stripe got a good deal of

sympathy. Why, I don't know. Possibly it's the same feeling that the masses used to have in regard to gangsters, murderers, and other headline criminals. People were secretly for them. They'd hope that Pretty Boy Floyd, or Babyface Nelson, or whoever, would escape the latest FBI trap and go on to successfully rob the next bank. But now there's been a revulsion that's sweeping the world. This latest act of terrorism was just too much. Possibly because potentially it threatened the whole world. At any rate, terrorists all over Earth are being sought by mobs. The members of their organizations are deserting en masse; in fear, I suppose."

"I shouldn't wonder," Sissy said. "I never did understand the sympathy the bastards received."

"Damn little they ever accomplished for whatever cause they served," Rex nodded. "Take Stalin, back before the Russkie revolution. He robbed some banks in Tiflis, supposedly to finance a Bolshevik underground newspaper. I wonder how much of the money ever was spent on the newspaper. His terrorists had to eat. They had to hide themselves. They had to buy guns and other equipment. Precious little was left for the revolution. The same with that outfit that kidnapped Patty Hearst half a century ago. The so-called Symbionese Liberation Army. They'd rob a bank, supposedly to help finance a revolution. Then they'd spend the money on renting houses and apartments, buying cars for their getaways, supplying themselves with food and guzzle, driving across the country in their efforts to escape. How much of the money actually went for revolutionary propaganda? What the hell difference was there between them and Bonnie and Clyde?"

At that point, Jean-Paul Lafitte came out of the bar and joined them. He was laughing softly as he slid into a chair at their table. He gestured to a waiter and ordered a cognac.

"I say, what's so funny?" Sissy asked him.

"A graffito I ran into on the men's-room wall in the bar," the Frenchman said.

"All right, wizard," Rex growled. "You won't be happy until you've told us."

Jean-Paul said, "Some drunk had scrawled:

"A loaf of bread beneath the bough,
"A jug of wine, and thee,
"Was good enough for Omar,
"But just the jug for me."

Sissy shook her head at Rex and said, "He's as barmy as a box of birds."

Rex Bader looked at his watch and told them, "Well, the half-hour's up."

The former Interpol man said, "You're sure about this? If you're right, that this Syndicate outfit is behind the Extortionists, then you're sticking your head beneath the guillotine."

Rex grunted. "Well, you stay here and if we don't come back within an

analog

A Calendar of Upcoming Events

31 Oct-2 Nov 1977
Eighteenth Annual Symposium on the Foundations of Computer Science at Providence, R.I. Info: Meetings Inquiries, IEEE, 345 East 47th Street, New York NY 10017.

4-6 Nov 1977
LOSCON IV (Los Angeles area SF Conference) at Quality Inn at Airport, Los Angeles, CA. Registration $5 until 27 October, $7 thereafter. More programs and films than previous Loscons. Also an art show. Info: LASFS, Inc., 11360 Ventura Blvd, Studio City CA 91604.

6-11 Nov 1977
Fourth Joint Conference on Sensing of Environmental Pollutants at New Orleans, LA. Info: B. R. Hodson, ACS, 1155 16th Street NW, Washington DC 20036.

8-11 Nov 1977
CompSac 77 (First International Computer Software and Applications Conference) at Chicago, Ill. Sponsored by IEEE Computer Society. Info: Prof. Stephen Yau, Northwestern University, Evanston IL 60201.

11-13 Nov 1977
PHILCON 77 (41st Philadelphia area SF Conference) at the Holiday Inn—Center City, Philadelphia, PA. Principal Speaker—Hal Clement. Registration: $6 until 1 November; $8 at the door. Info: P.B. McGrath, 806 south 47th Street, Philadelphia, PA 19143.

18-20 Nov 1977
PENULTICON (Denver area SF conference) at the Cosmopolitan Hotel, Denver, CO. Guest: Bruce Pelz, Toastmaster: Joanna Russ. Registration: $7 until 1 Nov, $10 thereafter. Info: Penulticon, Box 11545, Denver CO 80211.

30 August-4 September 1978
IGUANACON (36th WORLD SCIENCE FICTION CONVENTION) at Hyatt Regency, Phoenix, AZ. The major meeting of the SF world. Talks, panels, films, masquerade, art show. The Hugos and the John W. Campbell Award for Best New Writer will be presented. Registration: $15 until 31 December 1977; $20 until 31 July 1978; $25 thereafter and at the door. Guest of Honor—Harlan Ellison; Fan Guest of Honor—Bill Bowers; Toastmaster—F. M. Busby. Info: Iguanacon, P. O. Box 1072, Phoenix AZ 85001.

—ANTHONY R. 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.

hour, start making noises."

The Frenchman looked over at the massive building across the mall. He said, "What do you expect me to do? Come in shooting? That place must house several thousand persons. Are you sure that you have an in with this woman who's supposed to be one of their high mucky-mucks?"

"I worked for her once," Rex said. "At the time, she gave me the priority number of her personal phone. It would seem that it hasn't been changed since. When I called, I was immediately put through to her private secretary, or at least one of them. She probably has a half-dozen."

"But, once again, what do you hope to accomplish?"

"I haven't the vaguest idea. We're playing it by ear. There's not much else we can do, now that we no longer have our respective organizations backing us."

The Frenchman shrugged his Gallic shrug. "I'll notify John Mickoff, if you don't come back," he said. "Then I'll try to figure out something else to do."

"Yeah," Rex said. "Mickoff's going to love us, if you do. Let's go, Sissy."

The two stood and headed across the mall.

"Just why am I going?" she said. "I don't twig this."

"Damned if I know. Possibly so that I'll have a witness to whatever she says."

They entered the huge building and began to go through the rigmarole involved in getting into the presence of Sophia Anastasis. As before, when he had visited the beauteous Miss Anastasis, they passed through at least three checkpoints, possibly more. He had no manner of knowing how many mini-identity screens rigged to the building's computers might have checked them along the way. Neither of them was armed. They wouldn't have gotten past the first receptionist armed.

He was first required to identify himself at a reception desk in the huge lobby of the International Diversified Industries Building, complete to putting his pocket phone-identity card in a slot there. Sissy followed suit. The phone screen on the receptionist desk said emotionlessly, "You are expected, Mr. Bader. Please take Elevator Seven."

They made their way to the elevator banks. The lobby could have been that of one of the largest conglomerates on Earth. Young men and women, obviously clerks, stenographers, secretaries, and other nonentities, scurried about intent on the activities that set clerks, stenographers, and secretaries scurrying. An occasional junior-executive type would pass, less hurriedly. Senior executives evidently kept to their offices.

Elevator Number Seven was seemingly expecting them. The door was open invitingly and when Rex said, "Miss Sophia Anastasis's apartment," the door closed and they rose for what seemed an extraordinarily long time.

When it stopped, a voice said, "Put your identity cards in the slot, please."

They complied and the door opened. They stepped out into a corridor which had no business-building characteristics whatsoever. This floor, at least, was obviously devoted to living quarters.

A uniformed young efficient was there. Rex Bader, in the past, had become used to the cold eyes of those connected with Miss Anastasis.

This one said, "May I see your identity cards, please?"

They handed them over, Sissy saying *sotto voce,* "At this rate, they'll shortly be worn out, I shouldn't wonder."

The uniformed one looked at her but said only, "Thank you. You are expected. Miss Anastasis's is the Green Suite. That way, please." He indicated politely.

Rex muttered to Sissy as they started down the corridor, "They don't even letter or number them."

"Oh, I say, very swank," she murmured sarcastically.

Rex remembered the apartment. It was the same in which he had seen Sophia Anastasis the last time. It was identified by a large, square, seemingly real Imperial jade set into the door, and there was no recognizable identity screen. However, he stood before it and it opened almost immediately and she was there.

Had Rex Bader not been accompanied by a girl he considered the most attractive he had ever met, he would have been more impressed by Sophia. She looked five years older than Sissy, but Rex knew that in truth it was more than a decade.

She was slightly tall as his tastes in women went, dark of complexion as though, possibly, of French or Spanish descent. Her hair was so black as to be suspect but she used cosmetics, if at all, in unfashionable minimum. As always, her dress was simple, was obviously an original and undoubtedly from one of the ultraswank dressing houses of Rome, Copenhagen or perhaps Budapest. Her jewelry consisted of the same necklace he had last seen her in, a somewhat elaborate Egyptian item such as once graced the neck of Nefertiti of the Eighteenth Dynasty. Knowing Sophia Anastasis, Rex wouldn't have been surprised if it *had* once set off the neck of possibly the most beautiful woman ever known. Certainly, it was an original.

Smiling, she put out a hand. "Rex! How wonderful to renew our acquaintance."

She had never called him Rex before and he felt ridiculous that it should give him a lift. She shook his hand and turned to Sissy, her eyebrows a bit high but smiling welcome.

Rex said, "Miss Sophia Anastasis, Lady Cecila Duff-Smythe."

Sophia Anastasis still smiled a charming welcome. She was not one easily put off by meeting a woman whose beauty rivaled her own. She offered her hand and said, frowning in memory, "It seems to me that we once

met glancingly at Bryon Gison's place in Menton."

"I've been there on several occasions," Sissy admitted. "I'm afraid that I'm an inveterate gambler."

Sophia Anastasis turned to lead the way back into the living room. She cocked her head, as though in attempted memory and said, "It also seems to me that someone mentioned that you occasionally did, uh, chores for Scotland Yard."

"For a time. For larks," Sissy said. "But it became somewhat of a bore, so I quit."

The Green Suite was comparatively small. Not by the standards of Rex's mini-apartment, of course, but it was certainly not the multiservant staffed apartment to be expected of a Sophia Anastasis. However, Rex knew that the attractive Sophia maintained at least a half-dozen establishments from Switzerland to the Argentine, some of which she didn't visit for years on end. She had long since gotten to the point where ostentation was meaningless.

She said, "Please find chairs, my dears. What would you like to drink?"

But instead of going to her elaborate bar, she sat for a moment at the antique desk in one corner and said into the phone screen there, "Lady Duff-Smythe. You have her coordinates in the computers from the identity screens."

She arose and, smiling hospitably again, as though there had been no interruption, went to the bar.

"Champagne? We have our own vineyards near Rheims. The 1985 vintage is quite good."

"Ha," Rex said. "On my income? Champagne it is. The last time I had vintage champagne was right here in this apartment."

Sissy said, "Thanks most awfully. I'd love to try it, Miss Anastasis."

Sophia Anastasis served deftly and then sank down into a comfort chair across from them.

She said, "This is a pleasure, but I'm afraid I do not know the occasion." She looked at Rex. "I had forgotten I gave you my private number. And now you turn up with a—uh, retired—operative from Scotland Yard."

Sissy said sweetly, after a sip of the bubbling wine, "Rex and I are only dear friends."

Sophia Anastasis made a mocking mouth at Rex. "I had no idea of your romantic attributes. You certainly have taste."

Rex cleared his throat and hurried in to break up this joining of épees before it began. "I came to ask you for some help, Miss Anastasis."

"Sophia to old friends, Rex. But what in the world . . . ?"

"I've become interested in the extortionists who hijacked the mini-nuke."

She stared at him. Took a drink of her wine. Stared at him again. She said, her voice not nearly so friendly, "How in the hell could I possibly help you?"

He attempted to be nonchalant. "If

you couldn't, I thought perhaps you'd have contacts who could."

She was still staring, now with thinly-disguised hostility. "What's all this crud? Who in the hell do you think I associate with? Why should I be able to help you with anything involving those stupid asses?"

Rex leaned forward earnestly, "Look, Sophia . . ."

"Miss Anastasis," she said curtly.

"All right. I'll be blunt. I don't know if you heard this morning's news."

"I hear all news. Not from the broadcasts. From the inside. When anything, but anything, important happens about the news, I get an ultra-accurate briefing."

"Yes, of course," he said placatingly. All over again, he wondered just how high in the heirarchy Sophia Anastasis was. Pretty damn high, he knew. Was she top man? He didn't have the slightest idea. International Diversified Industries, Incorporated was one of the largest conglomerates in the world and its workings were as secret as those of any multinational corporation could be in this era—which wasn't as secret as possible in the past, but secret enough.

He went on doggedly, "It's been pointed out that the Extortionists, as they call themselves, are a large group and well-financed."

"I can see what you're driving at, you sonofabitch, and you're drivel-happy."

"A bit eleven to the dozen, eh?" Sissy murmured.

Sophia glared at her, and at that very moment the desk phone-screen buzzed politely.

Sophia Anastasis put her glass down and marched over to the phone. She activated it and stared into the screen.

For some reason, she seemed slightly mollified and somewhat surprised when she returned and resumed her seat. She took up her glass again, then took up the magnum bottle which she had set in an ice bucket on the cocktail table between them, and retopped all of their glasses.

She said to Sissy, "Your resignation is quite recent. It would seem, though, that it has caused quite a stir in London. For some reason, they are quite upset."

"I say, I couldn't care less," Sissy said, yawning. "Borin' bunch of pen pushers, don't you know?"

Sophia Anastasis looked back at Rex Bader. She said, "Let me tell you something, Rex. When a small group of immigrants come to American practically penniless, it's almost impossible for them to get to the point where they've accumulated a million dollars. But, having the first million, it's comparatively easy to acquire fifty million."

He didn't have the vaguest idea of what she was driving at: but, it was her yo-yo, let her spin it.

She went on. "And it's a damn sight easier to get from fifty million to several hundred million, than it is from one to fifty." She took down a goodly gulp of her bubbly. "By the

time of Al Capone's demise, the families all over the country had in their control several hundred million, most of it made during Prohibition. By then they were expanding into more lucrative fields."

"Such as prostitution and gambling?" Sissy said sweetly.

Sophia Anastasis looked at her and refused to take umbrage. "Perhaps at first. But, even then, more legal endeavors as well." She went back to Rex. "And it's easier when you control several hundred millions to get to the billion category, than it is to go from fifty millions to several hundred millions. The new methods of exchange began to be introduced at that point, by the way, so they were now called pseudo-dollars since they were no longer backed by gold."

"I'm beginning to get your drift," Rex said. "It's easier to get from a billion to quite a few billion than it is to make your first billion."

"Yes. And it's easier doing it in fields that are legitimate—particularly when you can afford the best legal advice in the world—than it is in peddling beer and alky during Prohibition. Neither Paul Getty nor Howard Hughes, in the old days, had much difficulty parlaying up the millions they inherited until they were billionaires."

"What's this got to do with it?" Rex said.

She was glaring at him again. "International Diversified Industries, Incorporated is not interested in extorting a measly billion pseudo-dollars. Certainly not at the risk of collapsing possibly the largest cosmocorps, or multinational corporation, if you will, in the world. Some of you dimwitted law types don't seem to be able to get it through your heads that the families are no longer interested in criminal activity."

"Ouch," Rex said.

"Even the Rockefeller family made its original accumulation of capital by skirting the laws in a score of ways. There are damn few really major fortunes that didn't. But when you get as big as International Diversified Industries you are no longer interested in breaking laws. In fact, you're among those who make them."

Rex said, "Please . . . Sophia. I didn't say that you personally went out and, at the head of a bunch of *capos* hit men, hijacked the mini-nuke from the terrorists and were instrumental in attempting to blackmail the Reunited Nations out of a billion pseudo-dollars. What I did want to know is if you knew of any gang large enough, and well-funded enough, to pull the job."

To his surprise, a strange expression, a far-off thoughtful expression, passed quickly across her face. She composed herself immediately and deliberately refreshed their drinks. But Rex hadn't been mistaken, he knew.

He said, "Well?"

And she answered impatiently. "There are various groups. For instance, in the West Pacific, elements of the old Chinese tongs, based in such centers as Hong Kong, Singapore, and

Penang, go in for varied rough stuff, involving such things as narcotics and smuggling."

"These people aren't Orientals, I shouldn't think," Sissy said softly.

Sophia eyed her. "For that matter, the families aren't all organized into the ones I represent. Possibly you know that they were originally a patriotic Sicilian underground movement whose slogan was *Morte ala Francia Italia anela!* or *Death to the French is Italy's Cry*. The letters spell out MAFIA, which has become a rather silly word now. When some of the families emigrated to America they slowly became more powerful than the mother organization in Sicily, and slowly broke the old ties. Today, the original group still remains in Sicily, at least in embryo, but we have few contacts with it."

Rex leaned forward, eyes narrowed.

"Would they have the clout to pull off an operation such as this?"

Sophia was disgusted all over again. "The numbers and even the resources, but hardly the know-how."

"Suppose they had an experienced mercenary, an expert, to mastermind it for them?" Sissy said, her eyes narrow over the rim of her glass.

Sophia Anastasis shook her head, in continued disgust. "No. Of course not. Few of them even speak English. None of them would know how to get to America. Besides that, we would learn of it immediately and take measures to cool them off. We don't want trouble in our own back yard." She finished so low as hardly to be heard by her two visitors. "If necessary, we'd go to the mattresses."

Rex Bader, old movie buff that he was, knew the meaning of the expression. But he said, "A couple of minutes ago you mentioned that not all of the American families are in your organization. I understand that in the old days your, ah, families often had run-ins among each other. Are any of these other families still operating?"

She fluffed her hair in an impatient, and seemingly uncharacteristic gesture. "Yes, of course. But none of them operate on our level." She glared at him again. "And all are legitimate."

Rex stood and turned to Sissy. "Well, I guess we've taken up enough of Miss Anastasis's time."

"I shouldn't wonder," Sissy murmured and stood as well.

Sophia Anastasis was all charm again and saw them to the door where they went through the usual amenities of departure.

As a last word, Sophia Anastasis put her fingertips to Rex Bader's cheek and said, "Be careful, Rex. Watch out for yourself, I've always had a tiny soft spot for you, you know. I think it's that little boy look around your mouth."

"Well, no, I didn't know you cared," he said wryly. "In fact, I suspected a couple of times that you'd, ah, put out a contract on me."

She took her hand away angrily. "Don't be silly. I just spent the better part of a half hour telling you we don't

do things like that any more."

CHAPTER FOURTEEN

Across the mall, at the automated sidewalk cafe, Jean-Paul Lafitte sat at his ease, periodically sipping at his cognac, periodically checking his watch. He kept the entrance to the International Diversified Industries Building in view. He didn't expect much to come of this idea of Rex Bader's.

To his surprise, an electrosteamer hover limousine smoothed up to the curb before him. He was well aware of the fact that vehicles weren't allowed on the surface in Manhattan, or any other population center for that matter. Save, of course, for police and higher government officials, or somebody with a hell of a lot of pull.

The passenger seated next to the chauffeur alit and came over to the Frenchman, sprawled comfortably there in his chair. Without invitation, he took the chair across from Jean-Paul, the one formerly occupied by Cecila Duff-Smythe.

Jean-Paul raised eyebrows at him and said, "The chair's taken. She'll be returning shortly. Most of the other tables are empty."

The newcomer ignored that and said, "The Chief wants to see you."

The other had goon written all over him. A goon is a goon, internationally. One can pick them out as easily in Tokyo as in Buenos Aires, in London or Rome as easily as in Chicago. His expensive suit didn't negate his colorless voice, nor his expressionless face.

Jean-Paul said conversationally, "I ran into an amusing graffito yesterday. It went, *'Twas brillig and the slithy toves got screwed.* And that's the way I feel about your Chief, whoever he is."

The other stared at him. "What?"

"Tell your Chief to get screwed. I'm busy."

The newcomer's voice was very cold. He said, "Look chum-pal. If the Chief wants to see you, he'll see you. Do you think we're a bunch of clowns and haven't got the manpower to arrange it?"

Jean-Paul looked about and inwardly cursed himself. It had never occurred to him that this possibility would arise. The sidewalk autocafe was just about centrally located in Manhattan. There were a thousand or more people out on the mall before him.

However, there were also two more goons seated at nearby tables. He hadn't spotted them before.

It was no place for gunplay, among all these pedestrians. Besides, he had no standing here in the United States of the Americas now that he was no longer connected with Interpol. Most certainly, he had no right to carry a gun, though he was doing so.

He said, "Wizard . . . using the American idiom. We'll go and see the Chief."

It seemed fairly reasonable that no more than conversation was being called for. If the tough ones had

wanted to finish him, they probably would have done it right here and now and taken off in their illegal vehicle. Come to think of it, it probably wasn't illegal, which indicated that someone behind these men was able to swing quite a bit of influence.

He stood and headed for the electrosteamer, followed by the other man and his two fellow goons.

Rex Bader and Sissy came up some five minutes later.

Rex looked about, scowling. "Where in the hell's Jean-Paul?"

Sissy said, "Probably in the men's room, reading the wall inscriptions, I wouldn't wonder."

Rex looked at his watch. "We have nearly fifteen minutes before he was to go into action. Wait here."

Sissy sat in her old seat while Rex went into the bar proper. The Frenchman wasn't inside. He wasn't in the men's room, either. Rex hurried back to his companion.

"He's not here."

Sissy looked up at him and said, "This chair's still warm. Somebody's been sitting in it since we left. Somebody who's been in it in the last five or ten minutes, or it'd be cold by now."

"Come on," Rex said. "I don't like this." He looked up and down the street and out over the mall without seeing anything untoward and then led the way, holding her arm, toward the metro. They took the fastest transportation back to New Princeton, to the terminal in his high-rise apartment building and then went to his quarters.

They entered and he drew his gun and checked the tiny kitchenette and the bath, and then the only closet the mini-apartment boasted. He went over to the bar and said, "Drink?"

"Do you have Scotch?" she said, sinking into the room's sole chair.

"Not on this bar. It's keyed to my resources. Only American synthetics."

"Surprise me. I could use a drink."

He dialed them two gin and tonics and brought them over and then seated himself on the couch, facing her. They looked at each other silently for a moment.

Sissy said finally, "I wonder where Ilya is."

"Ilya yet. I thought you hated his guts."

She took down some of her drink and said, "After you were knocked barmy, there at the Senegalese boy's digs, the colonel nailed two of those blokes in the hall who were centering in on me while I was trying to reload. He's a good member of the team, no matter what we might think of the overall policies of the Soviet Complex—or what he's done in the past."

Rex looked at her. "Wizard," he said. "Admittedly, I didn't show up too well in the action."

"You did all right," Sissy said, then added offhandedly, "After he winged the two, he went over and finished both of them off."

Rex grunted. "What he should have done. The shooting was still underway. A wounded man might recover to the point of getting back into the

action. Witness the way Nayef Habash woke up and had time to hit Jean-Paul before Ilya finished him. That Russian is a damn one-man massacre."

Sissy said, "I dare say. But it seems somewhat of a coincidence, don't you know? that there are never any survivors in these frays connected with the mini-bomb. Not a single one at the original hijacking in New Mexico. Then not a single one at the shootout with the State police when Nayef Habash and The Expert were making the getaway with the mini-nuke. There's never anybody left to question."

He knocked back a quarter of his drink and thought it over. "I hadn't considered that," he said. "Quite a coincidence."

"Yes," she said. "I shouldn't wonder. However, the immediate thing now is that Jean-Paul has disappeared and we haven't heard from our trigger-happy Russian since this morning. Did he say where he was going?"

"No," Rex said unhappily. "He never does."

"I get the impression that he's still in contact with the KGB, or other agents of his organization."

"He said that he was resigning, so that the Extortionists wouldn't take exception to any organized police investigating them."

"That's what he said, old chap, but he's in a different category than I am, or Jean-Paul."

"How do you mean?"

"There are no organized gangsters in the Soviet Complex in the sense that we have them in the West, or used to have. They've never had the equivalent of the Mafia, the Syndicate, the Cosa Nostra, or the Camorra."

"What was that last?"

"Unimportant. It was a rival organization to the Mafia located in Southern Italy, largely Naples. They united in Atlantic City in 1920. Lucky Luciano, for instance, was from Naples rather than Sicily. At any rate, such organizations were unknown after the Soviets took over in Russia and later their other countries. Oh, certainly, they had minor gangs and individual criminals. Among other things, one supposes, their economy couldn't afford them. So they shot them for even offenses that would have called for no more than a few months in the nick in your country, or mine."

"What the hell's all this got to do with Ilya still keeping contact with the *Chrezvychainaya Komissiya* and the KGB?"

"From what we know so far, it would seem possible that our foe might have some leaks available from your National Data Banks or from the International Data Banks, or both. Otherwise, I don't see how the Expert could have accomplished some of the things he has. But it seems unlikely that he has equal sources in the Soviet Complex Data Banks. So Ilya is possibly taking his chances."

The TV phone rang and Rex Bader put down his glass, went over to the desk and activated the screen.

It was John Mickoff, who grinned at him wryly. "Well, younger brother, what spins?"

"Get goosed," Rex growled at him.

"Wizard, chum-pal. However, this is an official call to notify you that your private investigator's license has been rescinded. Among other things, your license to carry a shooter is no longer valid."

"Why, you bastard."

Mickoff grinned sadly. "No doing of mine, younger brother. The orders came directly from the Director. At any rate, don't let anybody pick you up heeled. It'd be a criminal offense. Couple of years or so in the slammer."

Rex stared at him in frustration.

Mickoff said, "By the way, you wouldn't know where Lady Duff-Smythe is, would you?"

"No."

"Well, we don't seem to be able to raise her at her hotel. We wanted to let her know that she had been declared *persona non grata* in the United States of the Americas and has exactly twelve hours in which to leave the country. And, oh yes, her International Credit Card has been declared invalid and she won't be able to utilize it for any financial transactions." Mickoff grinned. "Not even to buy a stick of chewing gum—if our British aristocrat is so plebian as to chew gum."

Rex glared at him. "How about Jean-Paul?"

"Same with him. His passport isn't valid. His International Credit Card isn't. And he has twelve hours to leave the country. Nothing personal, of course, the Chief just wants to be sure that your two chum-pals don't interfere in police affairs. Pass on the good word, younger brother."

"And Ilya Simonov?"

Mickoff's grin turned mocking. "He's not even in the country legally, so we could hardly throw him out—unless we find him. And Zen only knows what kind of phony credit-card he's carrying. But the word has been passed on to the boys to pick him up at any opportunity." Mickoff paused before adding, more soberly. "Or to finish him off, if he resists."

Rex looked at him emptily. "Wizard, Mickoff. I have the messages. Tell your boss that he's a sonofabitch."

"He probably already knows it," the other said. "You don't get to be Director of the Inter-American Bureau of Investigation otherwise."

Rex flicked off the phone screen and turned back to Sissy. "I assume you heard all that?"

"Yes," she said.

"What do you think?"

"I think that John Mickoff is still on our side."

He snorted contempt of that opinion.

She said, "If he was really looking for me, Jean-Paul, and Ilya, he'd have your place staked out with a squad of his men. And we'd both be in the broth by now. The fact that he hasn't already arrested us is proof that he's

made with the proper noises, but is making no effort to see them through."

"I didn't think of that," he admitted. "What do we do now? I guess all we can do, is wait for Jean-Paul or Ilya, or both, to show up." He was frustrated.

"Jolly good," she said.

"What did you say?"

She looked at him, frowning. "I said, jolly good."

He said, "I'll be a sonofagun. I thought that was what you said. I've been reading that expression for absolutely . . ."

"Donkey's years," she said.

He looked at her.

She said, "But you've never really expected a Britisher to say it. Like sonofagun."

"How do you mean?"

"I've been waiting to hear an American say sonofagun. It's a genteelism, you know. You really mean sonofabitch. Only you Americans say it. Along with sonofabee, or S.O.B. Very phony."

"All right, all right," he said. "The question is still, what do we do now, other than wait?"

"One thing is sure, old chap. I can't go back to my hotel, I shouldn't think."

She flicked up her skirt and brought forth the small 7.6mm Gyrojet pistol she had holstered on her thigh. She flicked a stud, let the magazine drop into her left hand and checked the load. It was evidently satisfactory since she rammed it back into the butt of the gun, jacked a cartridge into the firing chamber, set the safety, and returned the gun to its place.

Rex's eyes were drawn to the pinkness of her inner thigh.

She ignored that and said, matter of factly, "I'll have to stay here tonight."

He looked at her and found all over again that she was the most beautiful woman he had ever seen. He cleared his throat and said, "That makes sense. I can sleep in the chair."

She looked over at the couch. "Doesn't that unfold to make a double bed?"

"Kind of three-quarters."

"I say, haven't you ever had a girl in it before?"

He eyed her emptily.

And she said calmly, "If you slept in the chair you'd be stiff as a board in the morning. Neither of us can afford to have stiff muscles."

She sighed and said, "Rex, possibly I could add to Jean-Paul's collection of graffiti the next time we see him, by mentioning one I saw on the ladies'-room wall. *Chaste makes waste.*"

"*Some* lady must've written that," he snorted, grinning at her. "My pet peeve again. A genteelism."

"You mean that you're complaining, old boy?" she said with a twist of her mouth.

"No."

She said, "If you have any gentlemanly reservations, let me put it another way. I was first gang raped over five years ago."

He stared at her silently.

"By a group of guerrillas in the Southern Rif, during a subversive rebellion there. Six or seven of them captured me. I suppose I should be thankful they didn't kill me after, uh, putting me through a fate worse than death."

"You poor kid," he said gruffly. "But no normal man would kill a woman as attractive as you."

"Thank you, kind sir," she said. "I just wanted you to know that I'm not exactly a virgin. Should we get something to eat before going to bed? I suspect that you're right about remaining here—unless we can think of something better to do—on the off chance that either Jean-Paul or Ilya will come looking for us. I suspect that both of them are intelligent enough not to use the TV phone. It might be tapped by just about anybody, you know."

He led the way into the tiny kitchenette, then looked at her and said, "When was the second time?"

She frowned as she sat herself at the autotable. "What second time?"

"You mentioned the first time you were gang raped."

She managed to laugh. "Oh. There wasn't any second time, you know. Only a first."

He looked down at the day's menu, set into the autotable's top. "We're going to have to watch our resources," he told her. "With both your and Jean-Paul's International Credit Cards invalid, and Ilya's in doubt, we might have no funds on hand save my Negative Income Tax, and, frankly, I usually spend it right up to the edge, until my next month's stipend is deposited to my account."

"So we'll have to starve to death in honest poverty," Sissy said lightly. "You order. I shouldn't wonder that by this time you know the cheapest dishes."

He ordered. The inner part of the table top sank down and shortly returned with their dinners.

As they ate, Sissy said, in mock awe, "I say, you Yankees really *do* know how to starve, don't you? Do you really have to eat this sort of muck very often?"

"Yes," he said bitterly. "Guaranteed Annual Stipend isn't meant to allow you to live like an aristocrat, but just enough to keep you going. They used to call it poverty level. GAS keeps you exactly one dollar above the poverty level, whoever the hell computes that. It's not impossibly bad if there are several of you in the family, man, wife, and some children. Then you pool your resources and they go farther—unless the parents are drunks, or something."

"Good heavens, what a way of life."

"Yeah. Not everybody's happy about Meritocracy, or People's Capitalism, or whatever you want to call it."

Following their inadequate meal, the dishes and utensils went back into the middle of the table and they sank away into the bowels of the building to be recycled.

They went back into the living room cum bedroom and Rex said, hiding embarrassment. "Well, then for the time there's nothing to do except await developments."

She nodded. "I'll take the bathroom to undress." She went into that small compartment, closing the door behind her.

Rex shook his head in continued surprise at her nonchalant acceptance of the situation. But, of course, she wasn't exactly a child. He went over to the couch and fanned a hand over the tiny electric eye behind it. The couch unfolded automatically into a three-quarter bed.

Rex quickly got out of his clothes, hung them in the small closet, got pyjamas from a drawer set into the wall, climbed into them hurriedly and got into bed. From that vantage point, he extinguished all lights save one small one, and waited.

Shortly, she emerged from the bath and stood there for a moment. She made a rueful mouth and said, "I'm afraid that I didn't come equipped with a nightgown for this . . . assignation."

She was completely nude.

He couldn't take his eyes from the perfection of her body. She flushed, in sudden modesty which she had hidden until this point, and hurried to her place beside him.

Rex Bader had never bedded a more frank woman, though, somehow, he detected a lack of the expertise and experience which she had pretended. Lady Duff-Smythe was not as sophisticated in the sack as all that, he decided.

Later, sleepily, he murmured, "Are you sure that you were gang raped?"

She laughed softly and as sleepily as he. "Not really. I was just trying to calm any inhibitions you might have had, you know."

But somehow he knew she was lying and, before he fell off to sleep, wondered how such a woman had got involved in such an occupation.

CHAPTER FIFTEEN

The Expert was impatient. He looked across the heavy table at the three men on its other side. One of them was Anthony Damon. The other two hadn't been introduced. They were older men than Damon and though as expensively attired, didn't have quite his suave air. Largely, they had been holding their peace through the conversation and letting Damon carry the ball.

Next to the sole door of this basement room leaned a younger man, the twin of the Freddy who had acted as a receptionist and bodyguard at Damon's office on the first occasion that he and The Expert had met. His hands were empty but the expected bulge was there under his left arm. He acted as though he wasn't listening to this conference of the mighty.

The Expert said, "What is your complaint? Everything is going as scheduled."

Anthony Damon said, his voice grudging, "We lost three men at that raid on the nuclear fission plant in Far

Cry. We can't figure out why it was necessary. Or snatching those two egghead professors, for that matter."

The Expert crossed his legs and said patiently, "It's a diversion, to keep them upset and at odds, until the deal is completed. I already told you. By this time, most people have figured out that if we actually ever use the mini-nuke, then the whole thing is off. We'd no longer be able to threaten, because we'd have nothing to threaten with. Now the world is scared silly that we're building more nuclear weapons. That's the only answer to why we'd kidnap the two physicists and steal the uranium."

One of the older men flanking Damon said heavily, "Why did we put in that note that they didn't have to pay off for one month, hah? That gives them too much time, hah? They'll figure out something to do. Something we don't know nothing about. Some way to fuck up the whole operation."

The Expert shook his head. "No they won't. They're all scared to death. The whole world. They're getting hysterical. And they're afraid to use their police organizations to try and lower the boom on us."

Damon said suddenly, "Who's this Jean-Paul Lafitte?"

The Expert looked at him calculatingly, albeit with a touch of humor there. "He's one of the top men in Interpol, as I'm sure you already know. He's capable and he's smart, and almost always accomplishes what he's after."

Damon eyed him for a long time before saying, "And who's this Duff-Smythe curve?"

"Lady Cecila Duff-Smythe isn't exactly a curve. She's a member of one of England's oldest aristocratic families. In spite of the fact that she's so damned good-looking, she's one of the toughest, most cold-blooded operatives out of Scotland Yard. And those good looks of hers don't stand in the way of her abilities. In fact, they're one of her strongest weapons. I know of a Frenchman who once had her in front of his gun. She was the only thing that stood in his way of escape and he was up on a murder rap. He couldn't bring himself to shoot her, being a Frenchman. While he hesitated, she pulled her famous quick-draw from under her skirt and drilled him neatly between the eyes."

"We'll have to remember that," Damon said. "Now, how about this Rex Bader?"

The Expert shook his head. "A second rater. The IABI has hired him once or twice before and for the same reason. They use him when they don't want to utilize any of their own agents, for whatever reasons. He's not very stute, as the expression goes, or he wouldn't continually be drawing his NIT credits. After all, this is Meritocracy. If he had anything on the ball, as you Americans say, the computers would select him for a job. He evidently wants one so badly he can taste it."

"And Colonel Ilya Simonov?" Damon said.

"The sonofabitch Russian com-

mie," one of the older men grunted.

"He's by far the most dangerous of the group, so far as we're concerned," the Expert told them. "He's top man of the notorious *Chrezychainaya Komissiya* and for good reason. I've been up against him on at least two occasions."

"What do you mean, at least?" Damon said, his tone sour. "Don't you know?"

The Expert eyed him. "Not necessarily. Ilya Simonov usually works in the dark. He's a loner. If I was superstitious, I'd say that he had ESP, second sight, or some such. The two times I *know* he was on the other side, my side lost."

Damon said nastily, "Maybe you're not as smart as you think you are."

"I'm smart enough to not overevaluate myself, or underevaluate the opposition," the other told him flatly. "Simonov's dangerous."

One of the older men said heavily, "Maybe we oughta have him hit—the old-fashioned way."

The Expert shrugged that suggestion off. "You can try, but you'd have your work cut out. He's already, ah, liquidated, as the Soviets call it, at least three of your hit men."

Anthony Damon took a deep breath and changed subjects. "We now get to the main point of this get-together," he said evenly. "Just why do we need you any longer, Mr. John Smith?"

The Expert smiled at him for a long moment before answering. "I've been expecting that question," he said evenly. "In fact, I expected it before this. You need me because I'm the only one who can handle the operation."

"How come?" one of the older ones said complacently. "We got the mini-nuke, we've made all the arrangements for the numbered accounts in Geneva, everything's set. Why should we give you the million bucks?"

"Because I'm the only one who knows how to detonate the mini-nuke."

They eyed him.

Damon laughed scornfully. "Everybody knows, Mr. *Smith,* that the damn thing was made so any damn fool can set it off. Any damn fool at all can, say, carry it into a hoverbus terminal, in some big city, set it to go off in twenty-four hours, and take it on the lam. So all we've got to do is locate some college kid who's studying physics and in half an hour he's figured it all out for us. So why do we have to give you the million, like the Don just asked?"

The Expert leaned back again and smiled again. "Let me tell you about the mini-nuke," he said. "The reason it's so small is because it's detonated by a small laser beam, very small, instead of by the explosion of a nuclear fission device. And, surprise, surprise, gentlemen, I have removed an indispensable part of the laser. A top-secret part of the laser. You could hire experts in the field until hell froze over—*if* you could hire such—and it'd take years to figure out the missing part and how to build a new one."

They were staring again. Damon

said finally, "It's not important. We don't figure on really exploding it, anyway. We're just using it to scare them out of a billion pseudo-dollars."

The Expert nodded. "But if anything happens to me, a friend immediately reveals to the international news media that the mini-nuke is inoperative and that no one has to fear it. And this friend of mine has the proof. The whole project folds if anything happens to The Expert, gentlemen."

The stares had turned to glowers.

It was then that the TV phone, sitting to one side on a stand, buzzed for attention.

Anthony Damon looked at it impatiently. "Who in the hell can that be? This meeting's supposed to be top secret." He made a motion with his head. "Get it, Gino. Whoever it is, we're not here."

One of the older organization men growled, "Itsa probably a wrong number."

The young man at the door crossed quickly to the phone screen and activated it.

They all watched, all scowling save the Expert, who was still sitting, legs crossed nonchalantly.

Gino came erect, his face pale, and turned and said to Anthony Damon. "It's Sophia Anastasis and she's boiling mad."

CHAPTER SIXTEEN

Rex Bader and Sissy were having a meager breakfast when there came a knocking at the door.

A knocking, instead of the identity screen registering? Odd.

Rex went into the living room, so called, in the mini-apartment, and to the drawer in which he kept his Gyrojet pistol—now illegal—brought it forth and checked it. He flicked off the safety and went to the door. Lady Cecila Duff-Smythe, her own Gyrojet in hand, faded to one side of the portal.

Rex flung it open.

To one side, up against the wall, was Ilya Simonov supporting a battered-looking Jean-Paul. The Russian held up one hand in a gesture for silence, and, helping the Frenchman, crouched low to avoid the identity screen and hustled the other into the apartment. After they'd gotten in, he kicked the door shut with a foot.

The Russian looked up at Sissy. "I surrender," he said sardonically.

She returned the gun to its thigh holster and looked at Jean-Paul in distress. "Bad?" she clipped.

Ilya Simonov hauled the smaller man to the chair and lowered him into it. He shook his head. "No. I, Sir Galahad, came to the rescue in the, uh, nick of time, as the Yankees say. Let me see if I can remember my university British literature. My strength was the strength of ten, because my heart was pure."

Jean-Paul, not appearing too badly off, stared up at him and said, "Your strength was the strength of ten because you damned Russians don't bathe often enough."

Rex Bader tossed his gun onto the couch, in disgust, and said, "Wizard,

you two comedians. What in the name of Zen happened?"

Simonov was still evidently in unwonted good humor. "I cut 'em off at the pass, as you Yankees say."

"God damn it to hell, the two of you. Quit clowning. We're in the soup. I don't know how much longer we're safe here. All of you, including Sissy, are on the run. I'm in almost the same situation."

"How about a drink?" Jean-Paul said. "A stiff drink and I'll be all right."

Sissy went over to dial the Frenchman the drink and Ilya Simonov sank down onto the couch.

He said to Rex, "To sum it up quickly, evidently we were working on the same project but from different directions. You checked out International Diversified, which was ridiculous. Among other things, they own the whole Bahama Islands, not to speak of Malta, not to speak of Andorra—probably. At any rate, they're not interested in blackmail. They're too big. I checked some other former Syndicate families. Their *Capo de capos,* or whatever they used to call them, a certain Anthony Damon, is suddenly mysteriously not to be found—even by my people. But I tailed some others. They led me to our friend from Interpol, or, at least, formerly of Interpol. I continued to tail them, now with him in their company. They took him to a remote house and held him there for an hour or so, and then took off with him again. I decided, at this point, that he was being taken for a, what do you Americans call it? a ride. So I interfered."

Sissy, who had come back with the drink for Jean-Paul, handed it over to him and said to the Russian, "How do you mean, you interfered?"

"There was a scuffle," Simonov said.

Sissy looked at Jean-Paul. "I shouldn't wonder."

The former Interpol man downed the drink, at first as though gratefully, then sputtered and stared at her accusingly. "What in the name of the Holy Mother is this? Cyanide?"

"I'm frightfully sorry. The kind of potable Mr. Bader has available on the autobar," she told him.

Rex Bader's eyes were still on the Russian. "How do you mean, a scuffle? What happened?"

"Well, finally their vehicle overturned. That's how Jean-Paul was battered up. I pulled him out of the wreckage."

Sissy said bitterly, "And finished off the other occupants, I dare say."

Simonov was defensive. "The laser is rather final," and then, "There were only two of them," as though that was justification.

Jean-Paul came to his feet and made his way in the direction of the bathroom. "I'll get cleaned up. I'm still on the stiff side. Then can I get something in my stomach?"

Rex was still looking at the Russian. "How'd you get him here?"

"I was afraid to bring him in until there were more people on the streets, so we stayed in the car all night

waiting for morning. I didn't want to be conspicuous. Then we drove to within about a half-kilometer of here and parked and we walked the rest of the way."

Rex stared at him. "You mean you drove a vehicle into New Princeton on the surface road? And, from what you say, you must have been driving one earlier even in Manhattan, if you tailed his kidnappers."

Simonov smiled wolfishly.

Rex rolled his eyes upward, appealing to greater powers. "For all practical purposes, only the mayor and the police commissioner can drive on the surface of Manhattan." He added sarcastically, "And the head of the *Chrezvychainaya Komissiya,* of course."

"Of course," Simonov said.

Rex said coldly, "But you're no longer with the organization."

The Russian took a seat on the couch, now made up again for day use. He said, "I have still other contacts."

"What kind of contacts?" Sissy demanded. "You claimed you'd resigned."

He looked over at her, as though considering whether or not to answer. "Contacts outside the KGB and any other official Soviet Complex organization," he told her. He hesitated again before adding, "I am in accord with the government of my country insofar as the need to regain the mini-nuke and to bring world détente to nuclear warfare. However, there are some aspects of Soviet government with which I do not see eye-to-eye. So I have contacts here in the United States of the Americas, former citizens of the Soviet Complex, refugees, you might say, who also do not see eye-to-eye with the manner in which the Party governs."

He turned his gaze to Rex. "I assume that you, yourself, do not exactly approve wholeheartedly with Meritocracy and the Ultra-Welfare State." Then back again to Sissy. "And perhaps you have reservations about the present socioeconomic system prevailing in Common Europe."

Jean-Paul came back from the bathroom, looking considerably better, though his clothing was in less than its usual dapper style.

He said, "Let's eat."

And Rex said dryly, "That's another problem. Sissy and you have both been declared *persona non grata* and your International Credit Cards are invalid. And my credit account in the National Data Banks Banking Section is scraping bottom. Assuming that you all wish to continue this search for the mini-nuke, how are we going to finance it?"

Simonov stood and headed for the kitchenette, chuckling. "Happily," he said, "I have a valid Universal Credit Card."

"Wizard," Rex said in disgust. "And just how long will it take for John Mickoff to get a cross on that? The first time you use it, that's how long."

The Russian agent looked at him in amusement. "I doubt it," he said.

"Besides, I change it every day or two, just to be sure. I've operated in this country for years, Rex Bader. Long since, I've made arrangements for almost all contingencies."

Indeed, the two newcomers put down a much heartier breakfast than Sissy and Rex had allowed themselves earlier. They stood on the sidelines glumly and watched Ilya and Jean-Paul wolf down ham and eggs and the various breakfast fixings. The Russian put his credit card in the slot for payment.

Afterwards they returned to the living room and the three men crowded themselves onto the couch, while Sissy Duff-Smythe occupied the comfort chair.

"Wizard," Rex said, discomfort in his voice. "Where do we stand now? Everybody's on the lam but me, and I assume that they're keeping an eye on yours truly."

Ilya said, "We'll have to separate into two teams; Jean-Paul and me, and you and . . . Sissy." He looked at her as though checking her reaction to his using that name, but she said nothing. He went on. "I have a credit card, and you have one, though your account is low. I'll see if I can arrange having some pseudo-dollar credits deposited to your account."

"Oh, no you don't," Rex said. "Mickoff would get an immediate report on any such transaction and be on my neck."

The Russian shrugged. "Perhaps you're right. At any rate, you can use your card for any transactions you and Sissy must make. I can use mine to carry Jean-Paul."

Rex nodded, albeit unhappily. "Perhaps you could order some things for Sissy on your card. She can't return to her hotel, obviously. Some clothes, toothbrush . . ."

"Certainly."

"Thank you, kind sir," Sissy said sourly.

The Frenchman said, "The question is, what are we going to do?"

"Who was it that picked you up, old chap?" Sissy asked him.

"I got the impression that it was some of Miss Anastasis's Syndicate men."

"Seems unlikely," Rex growled. "What were they going to do with you?"

"I don't know. I suspect that Ilya interfered before they had gotten around to whatever they had in mind—including the possibility he was right—that I was going to be taken for a ride."

Sissy said, "Did you see anything in the house where they kept you that would give any sort of a clue as to who they were?"

He turned one side of his mouth down. "A couple of graffiti."

"Goddammit," Rex blurted. "This is serious."

The Frenchman nodded. "So am I. The first graffito read:

"Oh, East is East, and West is West,
"And who am I to doubt it?
"And they're hanging Danny Deever,
"Though he could have done without it."

"I say, what in the bloody Hades has that got to do with it?" Sissy demanded in disgust.

Jean-Paul went on, "Underneath that, someone else had written, in the traditional graffiti style:

"And Gunga Din was a water boy,
"And he didn't have any pay.
"And the dawn comes up like thunder,
"Out of China 'crost the bay."

The other three were eyeing him as though he had gone out of his mind.

"And what did you deduce from that?" Ilya Simonov said.

"That the house was some sort of student dormitory, or, at least, a place rented by several students in conjunction."

"Why?" Sissy said skeptically.

"Because, one, whoever wrote those graffiti were well acquainted with Kipling. And, two, one does not write graffiti, ordinarily, on the bathroom wall of a private home, particularly one's own home."

"Why a student? Why not an older person acquainted with Kipling?" Rex said.

Jean-Paul looked at him. "Because grafitti are a young man's game. An older person, certainly one well enough educated to be up on the words of the British poet, does not write on walls."

"Hummm," Sissy said. "Possible, don't you know?"

Something came to Rex. "Those two nuclear physicists that were kidnapped by the Extortionists, Gunther and Alexandrov. The first is a professor. Both of them taught advanced scientific classes."

"What of it?" the Russian asked.

"I don't know," Rex said. "It just came to mind." He looked at Ilya Simonov. "Perhaps we ought to check that house out."

"I can do that, though I doubt if we'll find anything. The Expert has them too well organized to make any silly slips. I suspect that they merely held Jean-Paul there temporarily, while his abductors checked with some higher up, possibly The Expert. The two I rescued him from were possibly taking him to that higher up when I intervened."

"I got that impression," the Frenchman nodded.

Rex sighed and then said, "We've got one thing to go on. Probably, wherever they have the two scientists, they have the mini-nuke as well. They wouldn't want there to be too many hideouts involved. It would just complicate things."

"Sounds possible, I should think," Sissy agreed. "But how do we find the scientists?"

Rex said slowly, "Somebody had to finger them. The story is that Alexandrov got a fake cable from Gunther telling him to come soonest. Then, when they got together, someone else phoned and got Gunther's assistant, Frank Turin, to leave the house, supposedly because his brother, Tony, had been in an accident. Accomplishing all that means that the Extortionists had inside information."

Sissy said, "What did you say the

assistant's name was?"

"Frank Turin."

The British girl said musingly, "Turin is an Italian city in northwest of Italy on the Po river. Its Italian name is Torino."

"And the brother's name is Tony? Short for Antonio? And Frank? Probably a nickname for Francesco. In short, they're Italians."

Ilya Simonov made a gesture of dismissal with his right hand. "John Mickoff would be checking out such items."

But Rex shook his head. "No, he wouldn't. Even if it occurred to him. He and his boss, Coolidge, are afraid to use their organization. They're afraid the Extortionists will react if they do anything."

He came to his feet and went over to his desk and sat down to his TV phone screen. He took out his pocket Identification cum Universal Credit Card and put it in the phone slot and said, "What is my priority rating in the National Data Banks?"

A mechanical voice said, "You have a Priority One rating."

Rex turned back to his three companions and stared at them in disbelief. He said, "John Mickoff told me that by order of John Coolidge my private investigator's license has been canceled, along with my license to carry a gun. However, he hasn't rescinded my Priority One access to the National Data Banks. There aren't a hundred men in the country with that priority."

Sissy said, "I told you, dahling. John Mickoff is still on our side. Possibly the Director isn't. But Director or no, John Mickoff is still in there pitching to the extent he can. Why did you want to know your priority rating?"

"Because ordinarily, as a private citizen, I have a rating of Four," Rex told her. "And I could never have gotten this . . ."

He turned back to the screen.

"I want the Dossier Complete of Frank Turin, the assistant of Professor Wolf Gunther, of the New Princeton University City."

CHAPTER SEVENTEEN

The Expert looked about the dingy hall, thinking inwardly, *why are they always dingy?* Invariably, they were, be they in South America, or Italy, in Spain or Portugal, in Greece or where have you. And even in the United States of the Americas. Was it because such organizations seldom had a good many women members, and, even if they had, seldom women with the feminine touch? After a half-century of women's lib, the average woman could still be counted upon to keep even a radical headquarters neater than a squad of men.

There was a large sign on the wall in red paint and obviously executed by someone who had yet to take his first lesson in lettering. *Anarcho-Syndicalist International.* Also on the wall were portraits of Karl Marx and Friedrich Engels, the founders of Scientific Socialism; Pierre Joseph Proudhon, Prince Peter Kropotkin,

and Bakunin, the Anarchist pioneers; and such johnny-come-latelies as Karl Liebknecht and Rosa Luxemburg, the only woman represented. The Americans were Eugene V. Debs, Big Bill Haywood, and Daniel DeLeon, long past heroes of the Socialist Party, the IWW, and the Socialist Labor Party. None of the portraits were smiling. Revolutionists obviously had little to smile about.

Also on the wall were various slogans. *Workers of the World Unite, You Have Nothing to Lose but Your Chains. One Big Union! Workers' Solidarity Forever. Don't Mourn, Organize!—Joe Hill.*

Around the walls also were battered, sometimes improvised shelves and cases, containing books, pamphlets, brochures, leaflets and stacks of old-fashioned newspapers, some of them looking to be a quarter of a century or so in age. The Expert didn't have to bother to look at titles.

He approached the kitchen table behind which the four members of the National Executive Committee of the Anarcho-Syndicalist International sat. They were all on folding wooden chairs. There was another, unoccupied seat, across from them. For a moment, The Expert was reminded of the similar meeting he had held with the leaders of the Syndicate of Anthony Damon, so recently.

He seated himself and returned their inspection. They were typical. Typical of radicals the world over. Only one was well enough dressed to suggest that he was not dependent upon Guaranteed Annual Stipend for his complete income. He was the oldest of the four, pushing sixty, and he had a tired intellectuality about his face. The other three were more proletarian in appearance and ranged down from possibly forty-five to twenty-five. The youngest, a woman, was sullen of expression, though bright of eye. She made no effort in dress or otherwise to live up to her potential attractiveness. It was there, but she obviously didn't give a damn. Her hair was worn short, her eyes were grayish, her features were good though her mouth was a bit too wide, and, of course, untouched by lipstick. Her lackadaisical clothing covered what must have been an excellent figure.

In actuality, the four of them summed up quite well; there was an air of dedication.

The Expert nodded and brought two letters from his pocket and handed them over to the oldest, who was obviously the chairman. He said, "I have introductions from *Socialisme ou Barbarie* and from *Revolution International,* Comrades."

He to whom The Expert had given the letters nodded and looked at him for a moment before taking them from their envelopes. He scanned both before saying, "I do not read or speak French, Comrade."

"I could translate them for you," The Expert said.

"I will have them translated later," the other told him, putting the letters down on the table. "However, I can see that your . . . name is mentioned.

Comrade John Smith. Undoubtedly, an organization name."

"Yes, of course. It has been many years since I have traveled under my own, Comrades. I am a full-time organizer and propagandist for the international movement."

The one to the older syndicalist's right, a square-faced, blondish, Germanic type of about forty, said, "The letters could be forgeries, or have been stolen from the comrade to whom they were originally given. The name Comrade John Smith is hardly enough to guarantee your identity."

The Expert nodded and said, "Of course." He relaxed and smiled ruefully before saying, "Comrades, it is all but impossible for a true American Baptist Fundamentalist to project himself as an atheist to a group of atheists. He can read the works of Robert Ingersol, and can all but memorize Tom Paine's *Age of Reason,* but he simply cannot comprehend. He cannot truly believe that anyone could sincerely, honestly, not believe in God. And it comes out when he talks, he makes the wrong kind of jokes and so forth." His smile was again rueful. "The same applies to an atheist. No matter how diligently he has read, say, *Genesis,* he cannot really take it seriously, and if he tried to intrude upon a gathering of Baptist Fundamentalists, he would soon reveal himself."

The sullen-faced girl chuckled sour agreement but said, "What is your point, Comrade?"

"It is also impossible for a non-Marxist, a nonradical, nonrevolutionist to pass himself among true veteran members of the movement. It is not just a knowledge of Marx, Engels and the other founders of our cause. It is a whole way of thinking, perhaps a whole way of life. The terminology, such as calling each other comrade, using such terms as the *bourgeoisie,* instead of capitalists, speaking of the proletariat, instead of simply saying, the working class—can easily be acquired. But it is more than that. It is, perhaps, something like the sports buff, the baseball fan, who can tell you instantly how many bases Ty Cobb stole in 1910, or such equally remote data. The nonbaseball fan simply looks at him blankly, and perhaps as though he is mad to spend a lifetime acquiring such statistics."

The chairman of the National Executive Committee laughed lightly as well. "Develop your point, Comrade."

"We who have immersed ourselves in the revolutionary movement are a type apart. We are able to sit for long hours debating the stand Rosa Luxemburg took on the Kronstadt revolt. We are able to point out the mistakes Bela Kun made in Hungary in 1919. We are able to argue whether or not the IWW at its third convention should have expelled Daniel DeLeon and the delegates from the Socialist Trade and Labor Alliance."

"The damn fools!" one of the four blurted. "He was the best founded Marxist among them!"

The Expert looked at him and nod-

ded. "Exactly, he said. "I would like to discuss it with you on some occasion. I am of the opinion that sincere Marxists should have backed the counterorganization, the Workers International Industrial Union, the WIIU, which was formed in opposition to the IWW, in Detroit by DeLeon's followers. However, you get my point. An outsider simply doesn't speak our language and cannot learn it. It is beyond his capacity, because he doesn't understand."

"How about the damned Soviets?" the one who looked Germanic growled.

The Expert shook his head. "For almost a century, the so-called communists have been giving lip-service to Marx and the other socialists and anarchist pioneers, but I haven't met a Party member in twenty years who was a real student of Marxism. They too can't comprehend it. They simply recite slogans. They can't comprehend the concept that the State will wither away once the revolution is accomplished. They can't comprehend it because, once in power, they strengthened the State. They became not a dictatorship of the proletariat but a dictatorship *over* the proletariat. After almost a century of power, they are no nearer to socialism than they were when Lenin died. And the Communist Party has no desire to be; they wish to retain their positions of power. Their socioeconomic system is a form of State Capitalism, not socialism, not true communism. No, don't look for real socialists among the Soviets."

"Obviously, we get your point, Comrade," the chairman said. He thought for a moment and then said, "What is the meaning of the quotation, *Religion is the opium of the people?"*

The Expert said, "It comes from Marx's youth, even before he and Engels wrote the *Communist Manifesto,* in the introduction of a short work entitled *Critique of the Hegelian Philosophy of Right,* published in 1844. It is one of the most often reprinted quotations of Marx and always taken out of context, to indicate the exact opposite of the idea he was trying to convey. In spite of the fact that Marx was raised in a Christian family—his father had converted from Judaism—it seems unlikely that he was religious whatsoever. In spite of that, the quotation was never meant to be an attack on religion. So far as I know, and I would know, Marx never attacked religion *per se,* although he often attacked religious *organizations* such as the Roman Catholic Church, when they entered into the field of politics and socioeconomics.

"But to get back to the question. Marx indeed said that religion was the opium of the people, but his detractors have interpreted that to mean it was an evil thing. In actuality, opium is one of the greatest blessings man discovered in antiquity. For a millennium or two it was, for all practical purposes, the only effective drug we had against impossible pain. Two thousand years before the discovery of chloroform and ether, you could take

off a man's leg when he was under opium, or later, its derivative morphine. In short, opium was one of the outstanding medical discoveries of all time. When Marx said that religion was the opium of the people, he meant it in the most sympathetic sense of the word. It soothed people in their sorrows, it helped them bear their burdens. Heavens knows, the people have had their full share of them, down through the ages, be they proletarians, serfs, or slaves."

The girl, the sullen-faced one, said, "How many volumes of *Das Kapital* were there in all?"

The Expert smiled at her chidingly. "You tried to set a trap for me. No English-speaking Marxist ever calls it *Das Kapital*. It's a standing joke among us that people who have never read *Capital* call it *Das Kapital*. We call it *Capital*. However, to answer your question. Karl Marx never finished this almost lifelong work of his. He finished only the first of four volumes. It was entitled, *Capitalist Production* and Part One was entitled *Commodities and Money."*

"What was the first chapter devoted to?" the girl said.

"It's entitled, *Commodities,* and Marx devotes over fifty pages to examining just what a commodity is, which is understandable, since his whole study is based on just that. To go on, Marx himself finished only the first volume. However, he left a great deal of finished material and extensive notes for volume two, which was completed and published by his lifelong collaborator, Engles. Then Engles, too, died, and Karl Kautsky, a German social-democrat, finished volumes three and four from the inadequate notes that Marx left."

"Kautsky!" one of the others snorted in disgust.

The Expert nodded. "Most of us today think that he betrayed the Marxian ideal. However, he was an intimate friend of both Marx and Engels while they were still alive."

The chairman was laughing softly again. He held up a restraining hand. "Very well, Comrade Smith. No more, or we shall be here all afternoon listening to a discourse on Marx and opium and *Capital."* He looked questioningly at his three colleagues before turning back to the newcomer. "I accept you as a member of the international movement."

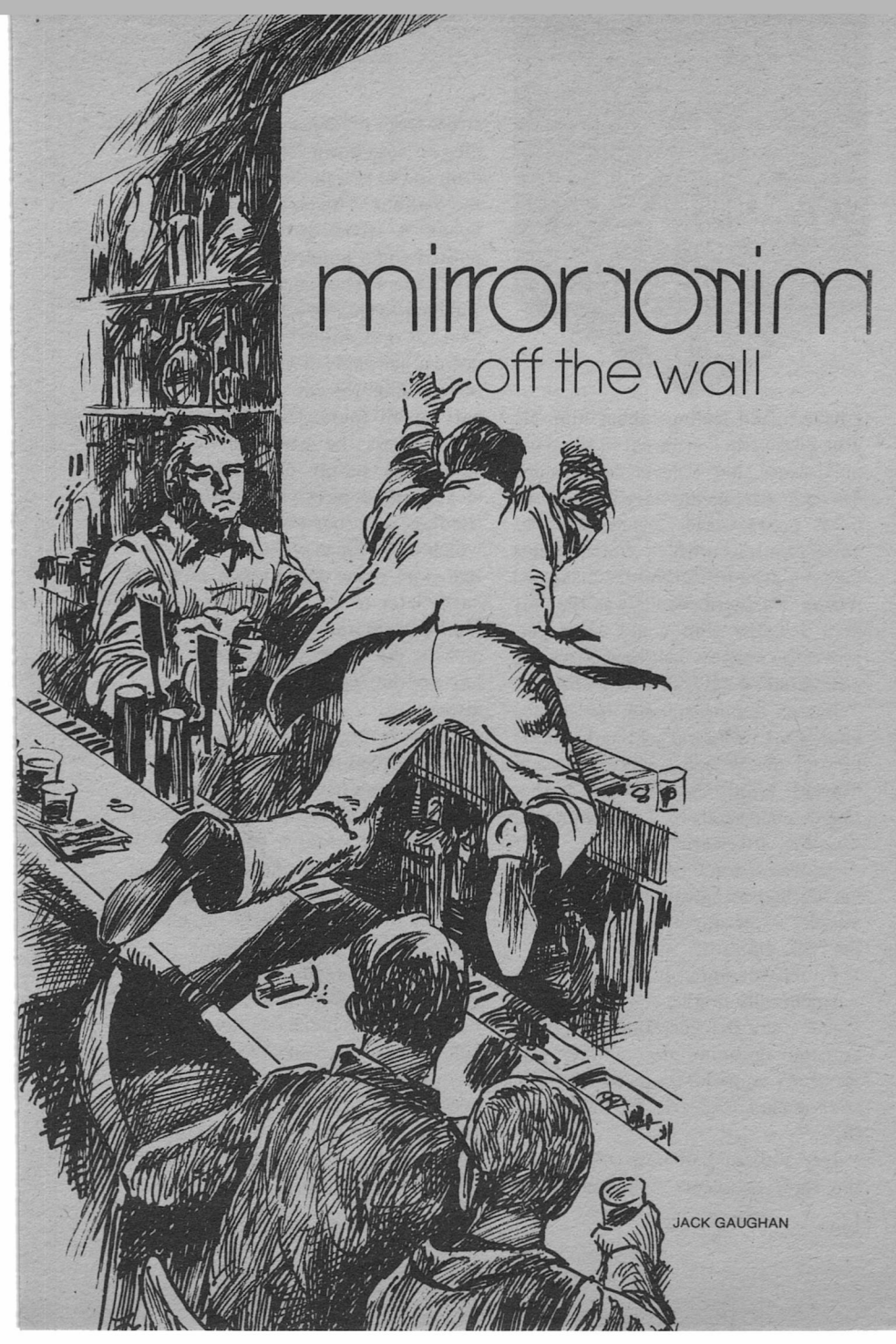
The others nodded, all three of them smiling.

The Expert laughed too. "I told you," he said. "We speak the same language. How many of you could bluff it out with a Wild West buff who could tell you how many men Custer had at the Little Big Horn, or exactly how many victims fell to Wild Bill Hickock's guns?"

The chairman smiled acceptance of the sally and said, "Very well, Comrade. And now the question becomes, why have the European comrades sent you to us?"

And The Expert said, "I want to blow up Island One in Lagrange Five."

TO BE CONTINUED


mirror mirror
off the wall
JACK GAUGHAN

You think Alice had troubles with a looking-glass?

SPIDER ROBINSON

I have mixed feelings about him. He was, of course, a criminal in the technical sense, but I never cared much for such. And he did have some of the finest booze I ever tasted, and was quite generous with it, which counts for a lot even if it *didn't* taste as good to *him*. Furthermore, he was the only man I know who could have performed so unlikely a miracle as taking a hundred pounds off Doc Webster.

But on the other hand, he was the kind of man who was willing to betray himself to the feds, in order to save himself from the feds—and that strikes me as selfish. Struck him that way, too, afterwards.

And so I don't feel too bad about having helped betray him to the feds myself. After all, it saved him from the feds, didn't it?

I'll tell you about it.

I generally don't get to Callahan's Place much before seven at night—but that morning my mailbox had saved my neighbor's life, so I decided noon wasn't too early for a drink or three.

Her Valiant had been slipping off the right shoulder, right across the street from my house, and was beginning to nose down off the twenty-foot drop to the marsh flats when it struck the mailbox. The box and the big six-by-six it stood on were of course punted some hundred yards at once, in flinders the smallest of which weighed twenty-five pounds, but they held for that millisecond necessary to correct her angle of incidence. Instead of tumbling, the car went down like a cat, on all fours: from my point of view, across the street on my front stoop, she simply disappeared. She cleared the sloping bank by inches, hit the flats in a four-point Evel Kneivel which only ruined the suspension system, and came to rest two hundred yards later in Stanley Butt's garden, the bumpers and crannies of the Valiant so crammed with marsh grass, hay and lupens as to resemble a poor attempt at camouflage. We talked about it in my kitchen, Doris and I, and concluded that while a few inches lefterly would have made her miss the mailbox, fall cattycorner and explode on maybe the fourth bounce; a few feet to starboard would have put her into the telephone pole beside the mailbox and ended it right there. She needed a drink and a ride home, but I keep no liquor in the house (why would I drink *alone?*) and the last car I ever owned was the one my wife and kids died in, so I walked her home and let her husband pour her a drink. I declined one, refused to let him take my ten-gallon hat and left hastily, so that they could collapse in each others' arms and weep while the need was

still sharp, and let my feet take me to Callahan's, while my mind ruminated on the fragility of these bags of meat we haul around.

Callahan and Fast Eddie were just pulling into the lot when I got there, and it wasn't until I saw the amp, mixer, and speakers in the bed of the truck that I remembered it was Fireside Fillmore Night. I've never tapped out on a gig before, but I didn't feel much like playing or singing, so I told them so, and how come. Callahan nodded and produced a flask from the glove-box, but Eddie began offloading the equipment anyhow—it looked like rain. While Callahan and I shared an afternoon swallow, Eddie staggered to the door with my big Fender Bassmaster, set it down, unlocked the door, hoisted the amp again, took two steps into the bar and dropped it on his feet.

Curiously, I was more puzzled than dismayed—because I was certain that Eddie had screamed a split second *before* the amp mashed his toes, rather than after.

He instinctively tried to cradle both wounded feet in his hands, but this left him unable to hop, so he sat suddenly down, raising dust from his jeans. But he wasted no time on getting up or even on swearing—almost as he hit he was . . . well . . . *moving* backwards, without using hands or feet. Sort of levitating horizontally, the way Harpo used to do when he wanted to break Groucho up in the middle of a routine, propelling himself with his hams alone. Eddie backed into the truck at high speed, his head bouncing off the fuselage, and he sat there a moment, still cradling his injured dogs, face as white as the tornado in Trudy Jones's kitchen.

Callahan and I exchanged a glance, and the big barkeep shrugged. "That's Eddie for you," he said, and I nodded judicious agreement.

Fast Eddie stared vaguely up at us, and his eyes *click*ed into focus. All things considered, his expression was remarkable: mild indignation.

"Mechanical orangutan," he complained, and fell over sideways, out cold.

Callahan sighed and nodded philosophically. "Probably shat rivets all over the floor," he grumbled, and picked Eddie up under one beefy arm, heading for the door.

I got there first. I know in my bones that *anything* can happen at Callahan's, and the Passing of the Mailbox had used up all the adrenaline I had in stock—but I'd never seen a mechanical orangutan.

But I was not prepared for what I saw. As I cleared the doorway, a tall demon with pronounced horns came at me fast out of the gloom. Callahan and Eddie and I went down in a heap, with me on top, and it knocked the breath back into Eddie. He said only one word, but it killed three butterflies and a yellow jacket. We sorted ourselves out and Eddie glared at me accusingly.

"Demon," I explained, and backed away from the open door.

Callahan nodded again. "Monkey

demon. Probably lookin' for Richard Fariña—he usta drink here." He dusted himself off and lumbered into the bar, receding red hair disarrayed but otherwise undisheveled. Somehow I knew he planned to buy the demon a drink.

He cleared the doorway, slapped the lights on with his big left hand, and stopped dead in his tracks. I was prepared for anything—I thought—but the two things he did then astounded me.

The first thing he did was to burst into laughter, and a good-sized whoop thereof: if the shutters hadn't been closed I'm certain dust would've come boiling out the windows. *One way to drive off a demon,* I decided dizzily, and then he did the second thing. He reached into his back pocket, produced a comb and, still looking straight ahead, put the part back into his hair. (Doc Webster once said of Mike's hair that the part is the whole.)

Then he turned back to me and Eddie, still laughing, and waved us to enter.

"It's okay, boys," he assured us. "It's only a mirror."

Only a mirror!?!

At any other bar in the world, the "only" might have been accurate—barroom mirrors are traditional. But Callahan follows his own eccentric traditions. Where most bars have a mirror, he has a blank wall on which are scribbled thirty years worth of the most inventive one-liners, twisted graffiti, and pithy maxims (no crackth, pleathe) the world has ever seen. They range from allegedly humorous ("Vacuum sucks") to dead serious ("Shared pain is lessened; shared joy increased.") and include at least the punchline of every Punday Evening-winning stinker ever perpetrated. Callahan says he'd rather encourage folk-wisdom than narcissism. So I refused to be reassured.

I eased up to the door and peered past Callahan. Sure enough, with the lights on, it was evident that there was now an enormous mirror behind the bar, installed in the traditional manner behind the rows of firewater and the cashbox. Only if I squinted at the rolled ends of my ten-gallon hat could I make them look like horns, now, but my mind's eye could see much more clearly how Eddie might have mistaken a Fender with his face on top for a robot orangutan. A part of me wanted very much to laugh very hard, but most of me was too busy being flabbergasted.

I mean, *anything* can happen in Callahan's Place—granted. But the Place itself is supposed to be immutable, unchanging, at least in my mind. "What the hell is *that* doing there?" I yelped.

A man can live his whole life long without ever being granted a straight line like that. Callahan blinked and answered at once, "Oh, just reflecting awhile, I guess."

Eddie and I, of course, briefly lost the power of speech, but the little piano man managed to express an

opinion of sorts—and, behind the bar, his spitting image did likewise.

We examined the thing together. It was held in place by four clamps that resisted our every attempt to pry them loose—Callahan bent two pry bars all to hell in the attempt. The graffiti seemed unharmed beneath the mirror, as far as we could see, but we could not uncover them. There was no clue as to who might have installed the thing, or why.

"Must have been done overnight," Callahan said. "It sure wasn't here when I left."

We kicked it around awhile, but even a quart of Tullamore Dew failed to shed any light on the mystery. But it did kill most of the afternoon, and finally Callahan glanced up at the Counterclock over the door and tabled the subject. "Sooner or later some joker'll come 'round with a bill for it," he predicted, "and we'll use him to pry it off the wall with." And he busied himself opening up cases of glasses, barely in time. The regulars began showing up, and the glasses started hitting the fireplace. The more inventive the theory offered for the mirror's appearance, the more glasses hit the fireplace. Almost, I suspected Callahan of arranging the novelty himself in secret: for it tripled his average take and generated some fearsomely bad jokes. Nobody even missed my guitar or Eddie's piano.

Because of the commotion the mirror caused, I nearly failed to notice the newcomer. But on account of the mirror itself, I could hardly help it.

I become at least peripherally aware, always, of any unfamiliar face in Callahan's Place. But when this guy appeared four seats down from me, next to Tommy Janssen, I heard him tell Callahan that "Dr. Webster said to say he sent me," so I knew he belonged *some* way or other. I glanced, saw no urgent need or pain in his face, and put him out of my mind. Things happen in their own good time at Callahan's.

And as I started to turn back to Long-Drink McGonnigle, I did the first and only triple take of my life.

In the mirror, the chair next to Tommy was empty.

By this point in the day, my adrenals were not only out of stock, they were running out of room to file the back orders. So I can't claim any credit for the fact that I kept my composure. But I converted the triple take into a headshake so smoothly that Long-Drink offered to connect me with a chiropractor and bought me a "neck-unstiffener" besides. When Callahan delivered it, I caught his eye and winked. One eyebrow rose a quizzical half-inch, and I nodded to the mirror, thanking Long-Drink effusively (and sincerely) the while. Poker-faced, Callahan turned back to the mirror, stood stock-still for a second, and then went back to his duties, no more chalant than ever. But as his reflection nodded imperceptibly at mine, I noticed him take a couple cloves of garlic out from under the bar

and place them unobtrusively by the cashbox. *As long as the guy doesn't order a Bloody Mary,* I thought, and wondered if any of the firewood came to a point.

By unspoken mutual consent, Mike and I restricted ourselves to watching the stranger as the night wore on. He didn't look much like my notion of a vampire; I'd have taken him for a Democrat. He was of medium height and weight, with few distinguishing features: no long pointed canines, no pointed ears—just a small keloid scar on his left cheek. And yet somehow there was a . . . a *lopsidedness* to him, an indefinable feeling of wrongness that nothing appeared to justify. His hair was parted on the right, like a Jack Kirby character, but that wasn't it. When I saw where he kept his wallet I thought I had it: he was left-handed. One of the determined ones who even has his jacket cut so the inside pocket is on the right—for from that place he soon removed a quart-sized flask and offered it to Tommy Janssen, saying something I couldn't hear.

Callahan clouded up—does a hooker welcome amateur talent?—and began to descend on the stranger like the wolves upon the centerfold. But before he got there Tommy had thanked the guy and taken a hit, and as Callahan was opening his mouth Tommy suddenly let out a rebel yell that shattered all conversation.

"Waaaaaaa-A-A-A-A-*HOO!*"

Everybody turned to see, and the only sound was the lapping flames in the fireplace. Tommy's face was exalted. The stranger smiled a strangely lopsided smile and offered the flask to the nearest man, Fast Eddie. Eddie glanced from the flask to the stranger to the transfigured Tommy and took a suspicious snort from it.

Before my eyes, Eddie's forest of wrinkles began smoothing out one by one. The face revealed was undeniably human.

It smiled.

Long-Drink McGonnigle could contain himself no longer. Snagging an empty glass, he shouldered past me and held it out to the stranger, who smiled benevolently and poured an inch of amber fluid. Drink raised it dubiously to his nostrils, which flared; at once he flung the stuff into his mouth.

His eyes closed. Wax began to drip out of his ears. He screamed. Then he extended a tongue like the one on an old cork boot and began to lick the bottom and sides of the glass.

Callahan cleared his throat.

The stranger nodded, and held out the flask.

Callahan held it like a live grenade, and inspected Tommy, Eddie, and Long-Drink. All three were still paralyzed, smiling oddly. He shrugged and drank.

"Say," he said. "That tastes like the Four Eye Monongahela."

A gasp went up.

The stranger smiled again. "Exactly what I thought, the first time I had anything like it."

"Where'd you get it?" Callahan inquired eagerly.

"Liquor store."

"What *is* it?" the barkeep burst out incredulously.

"King Kong," the stranger said.

"King *Kong?"* Callahan exclaimed.

"What's that, Mike?" I asked. "I don't know it."

"I only had it once," Callahan said. *"Years* ago. It was gimme by some fellers who was camped out in a Long Island Railroad yard. One swallow convinced me not to go on the bum after all." He looked down at the flask he still held. "It is the backwards of this stuff."

"I assure you," said the stranger, "that that is King Kong. I bought it in a standard liquor store, transferred it to a flask and brought it here straightaway, unadulterated, just as it came out of the bottle. Nothing has been added or removed."

"Impossible," Callahan said flatly.

"Truth."

"But this stuff tastes *good.* In fact, 'good' ain't even the word. I never had none o' the true Four-Eye, but a feller that had told me if I ever did, I'd know it. And this stuff fits that description."

"De gustibus non es disputandum," the stranger observed. "The point is, I've got four quarts of this stuff out in the car, and I'm willing to trade 'em."

"How much?" Tommy, Fast Eddie, and Long-Drink chorused, showing their first signs of life.

"Oh, not for money," the stranger demurred. "I'll swap even, for five quarts of your worst whiskey."

"Huh?" "Huh?" "Huh?"

"What's the catch?" Callahan asked.

"No catch. You line up five quarts of whiskey—and I demand pure rotgut. I'll match them with five quarts of my King Kong . . . precisely like this one," he added hastily. "Sample them all you wish. When you're satisfied, we all go home happy. Think of me as a masochist."

"It helps," Callahan admitted. "All right, bring on your sauce."

The guy excused himself and headed for the parking lot, and an excited buzz went round the room. "Whaddya think, Mike?" "Think it's really the Four-Eye?" "What was it like, Eddie?"

The last-named groped for adequate words. "Dat incestuous child is de best oral-genital-contacting booze I ever drank," Eddie said approximately.

"I dunno from Four-Eye," said Long-Drink reverently, "but it's for *me."*

Tommy only eyed the flask. His face was wistful.

The stranger returned with the additional four quarts, and beheaded all four flasks. "Sample up," he urged, and a stampede nearly began. Callahan filled his great lungs and bellowed, and all motion ceased at once.

"I will sample the hooch," he said flatly.

Amid a growing hush, he bent to

each flask and sniffed. Then he placed his tongue over the end of one, inverted it, and put it down again.

"Yep."

He repeated the procedure with the second.

"Yep."

The third.

"Yep."

The fourth.

His face split in a huge grin. "Yes sir."

Pandemonium broke loose, a hubbub of chatter and speculation that sounded like a riot about to happen. The roar built like a cresting tsunami, and then was overridden by an enormous bellow from Callahan.

"If we can have some order in here, *gentlemen,*" he roared, "there'll be drinks on the house for as long as this stuff holds out."

Sustained standing ovation.

When it had died down, the big Irishman turned to the stranger. "I don't believe I got your handle," he said.

"Bob Trevor," is what I thought he said.

"Bob," Callahan said, "I am Mike Callahan and I believe I owe you some nosepaint. What's your pleasure?"

"Oh," Trevor said judiciously, "I guess Tiger Breath'd do just fine."

"*Tiger* Breath?" Callahan cried. "Why, the only use for that stuff is poison ivy of the stomach. Tiger Breath'll kill a cactus."

"Nonetheless," Trevor insisted, "it's Tiger Breath I'm bargaining for. Have you got any?"

Callahan frowned. "Hell yeah, I got a couple gallons in the back—I use it to unplug the cesspool. But that stuff's worse'n King . . . worse'n King Kong's *supposed* to be."

"Whip it out," the stranger said.

Shaking his head, Callahan lumbered out from behind the bar and fetched a half-keg from the back. Its only markings were four Xs (a nice classical touch, I thought) and a skull and crossbones. People made way for him, and he set it on the bar.

"You're welcome to all of it," the barkeep declared.

Trevor unstopped the bung. A clear ten feet away, a fly intersected an imaginary circle drawn round the bunghole. It went down like a shot-up Stuka, raising a small cloud of sawdust from the floor when it hit. The nondescript stranger tilted the barrel, and the slosh sounded like a dangerous animal trying to get out. He poured a sip's worth into an empty glass, and the drops that spilled ate smoking holes in the mahogany bartop. Tiger Breath is industrial-strength whiskey, and it tastes like rotten celery smells. It is perceptibly worse than King Kong.

He sniffed the bouquet with obvious relish, and puckered up. As the first load went past his tonsils his face lit from within with a holy light, a warm soft glow like a gaslight jack-o'-lantern. His pupils opened to their widest aperture and I saw his pulse quicken in his throat. His smile was a beatitude.

"Done," he said.

He and Callahan shook hands on it, and the rest of us marched as one man to the bar and held out our glasses. Callahan returned to his post and began measuring out shots of Trevor's mystery mash, and not a word was spoke nor a muscle moved until two flasks were empty and the last glass full. Then Callahan's voice rang out.

"To Bob Trevor."

"To Bob Trevor!"

And we drank.

At once, my eyes (which are rated 20/20) clicked into true focus for the first time in my life, my I.Q. rose twenty points, and my cheeks buzzed. A thin sheen of sweat broke out over every inch of my body. My powers clarified and my perceptions sharpened; my pulse rate rose high and stabilized; the universe took on a crisp, brilliant presence and none of these things was anything more than incidental to the *TASTE,* oh god the taste . . .

There are no words. "Rich" is pitifully inadequate. "Smoky" is hopelessly ambiguous. "Full" is self-descriptive, semantically meaningless, and "smooth" is actually misleading. It felt, to the tongue and to the taste buds, like I imagine a velvet pillow must feel to the cheek—and it kicked like a Rockette. It enobled the mouth.

It was the Wonderbooze.

I gazed at my fellows—and knew them at once in a new and subtle and infinitely compassionate way, and knew that they now knew me too. We began to speak, within an empathy so profound as to be nearly telepathy, leaping a million parsecs and a hundred years of intellectual evolution with every fragmented sentence, happily explaining the alleged mysteries of life to each other and sorrowing cosmic sorrows. Men wept and laughed and embraced each other, and never a hail of more scrupulously empty glasses hit the fireplace. I found a new reason to admire Callahan's custom: it would have been sacrilegious to use those glasses again for a lesser fluid.

As the conversation gained depth and profundity, Long-Drink and I stepped up to Trevor and smiled from our earlobes. "Brother," said the Drink, "let us assist you."

"Why, thank you," he said, smiling back.

Drink and I picked up the half-keg between us and poured his glass full of Tiger Breath. Trevor drank deep, and since we already had the keg in the air it seemed foolish not to top off his glass, and then it seemed reasonable to line up some glasses for him and fill those so we wouldn't have to keep shouldering the keg, and in the end we poured six glasses full to be on the safe side, and sure enough he drank them all. So to be polite Drink and I had Callahan pour us some more of his King Kong, although it was the sort of booze that left no need for a second snort, and we sipped while Trevor gulped, and it got pretty drunk out. I remember walking over to where the fly lay dead on the sawdust,

dipping my finger into my glass and letting a drop of Wonderbooze fall onto the fly. At once he rose from the floor in a series of angry spirals, spraying sawdust, and I swear he shouldered me aside on his way out the door. The conversation got a little hard to follow, then. I sort of remember the Drink insisting that a close analysis of Stephane Grappelli's later music clearly proved that infinity is translucent; I vaguely recollect Callahan challenging us to name one single person we had ever met or heard of that wasn't a jackass; I believe I recall Fast Eddie's reasoned argument for the existence of leprechauns. But the next stretch of dialogue I retain in its entirety.

Trevor: "Who's that stepping on my fingers?"

Me: "That's you."

"Oh, That's all right then. Beer for ev'body, on me. Gotta celebrate."

Callahan nodded and began setting 'em up.

"Fren'ly place," Trevor went on. "Helpful fellas. Hardly seem backwards atall."

"Naw," I agreed. *"Strange,* yes. Backwards, no."

"Strange?"

Callahan began passing beers around, and I snagged one. "Sure. Li'l green men. Time travelers. *Anything* can happen in Callahan's joint. But not backwards. This guy here, now," I pointed at Long Drink, "this long drink o' beer here, did you know sometimes at midnight he turns into a driveway?"

The punchline, of course, was that the Drink works as a night watchman two nights a week, and turns into the driveway of K.D.C. Chemicals at midnight on the dot. But I never delivered.

"Mmmm," mused Trevor. "Like to see that. Wha' timesit?"

And Drink and I, not thinking a thing of it, gestured with our beers at the Counterclock.

The 'Clock has always seemed to suit Callahan's Place perfectly. I don't know where Mike got it, and I've only seen one other like it, in the New York apartment of a lovely lady named Michi Stasko, and I don't know where she got hers either. What it is, it runs in reverse. I mean, the numbers are reversed—4,3,2,1, etc.—and run *counter*clockwise from 12, and the works are geared to run in reverse accordingly. It's a rather elaborate jape, but like I say it suits the Place, and if you hang out long enough at Callahan's you often have to stop and transpose in your head to make sense of a normal clock. Doc Webster has gone to the extent of having a mirror installed in the inside-cover of his pocketwatch so he can tell the time at a glance. Apparently Trevor just hadn't noticed the Counterclock over the door until now, and I always enjoy observing people's first-time reactions to it. But I'd never witnessed so spectacular an effect before.

Trevor saw the clock; his eyes widened to the size of omelettes and the blood drained out of his face. He let out a hell of a yell, backed off two

paces, raced up to the bar and vaulted it, plunging headfirst into the mirror.

I mean *into* the mirror.

He had disappeared into it up to the hips and was still in headlong flight when Callahan's meaty hand trapped a flying ankle and yanked backwards, hard. Trevor came sailing back out of the mirror and into the real world like a dog jerked from a pond by its leash, and he dangled upside down from a fist like a catcher's mitt, swearing feebly. The big barkeep was expressionless, which is his scariest expression.

"You owe me ten bucks for them beers," he said quietly.

I don't care *how* drunk you are; if a chair bites you on the leg, you sober up at once. Your mind is perfectly capable of fighting off your own bloodstream if it must. It's an emergency procedure, beyond volitional control, and it doesn't *care* if it makes your head hurt. I found myself sober, at once.

But it probably didn't help Trevor any to be upside down. Clearly, his first action showed confused thought. He reached into his right hand pocket with his right hand, and pulled out and gave to Callahan a bill.

Callahan glanced at it and frowned. "Mister," he said, walking around from behind the bar, still holding Trevor by the ankle at arm's length, "up until a minute ago I liked you okay. But a man who'll try and stiff me twice running might try it a third time, and I can't be bothered keeping an eye on you." With no change in the tone or rhythm of his speech, he began during the last sentence to swing Trevor around by the ankle in a wide circle paralleling the floor. Fast Eddie, divining the boss's intent with the supersonic uptake which has earned him his name, sprang forward and opened the door.

Centrifugal force prevented Trevor from getting enough air into his lungs to shout, but I noticed something fluttering from his *left* hand and read it the way you read the label on a spinning record.

"Hold it, Mike," I called out. "He's got the sawbuck."

"If it's like the last one, he'll only bounce the once," Callahan promised, but he slowed his swing, grabbed Trevor's collar with his other fist and set the hapless stranger down on the floor feet first. Trevor spun three times and collapsed into a chair.

"I don't understand at all," he said dizzily. "Which side am I on?"

"The flip side, apparently," I said, "if you really tried to cheat Callahan."

"But the mirror . . . that clock . . . I was halfway *through* the mirror, it *must* be a Bridge . . ." He shut up and looked confused.

I looked at Callahan. "The mirror must be a bridge. Because of the clock."

He nodded. "Mechanical orangutan."

Then I saw the first bill Trevor had offered Callahan, lying forgotten on the floor. It said it was a 012 bill.

It actually began to make a twisted kind of sense. I turned back to Trevor and pointed a finger at him. "I only *thought* you said 'Trevor'," I said wonderingly. "It was 'Trebor,' wasn't it? Robert Trebor?"

Trebor nodded.

"There's a mirror dimension," I went on, "one identical to our own, but mirror reversed. And you invented a dimensional bridge . . ."

He looked at it from all sides and gave up in confusion. "Yes," he admitted. "It can only be *initiated* in my continuum, because the molecules of the activating substance, thiotimoline, have different properties when they're reversed. But if the first bill I gave you looks backwards to you, then I must be in the *other* dimension, where a Bridge can't be activated. But I *did* get halfway through that mirror instead of breaking it, and there's that clock—I just don't understand this at all."

"The clock?" Long-Drink spoke up. "Why that's just ouch."

" . . . just one of the many mysteries we have to consider," I finished smoothly, smiling at the Drink and rocking back off of his toes again. "So perhaps you'd better just tell us the whole thing."

Trebor looked around at us suspiciously. "You'd blow the whistle," he accused.

Callahan drew himself up to his full height (a considerable altitude). "If I understand this," he rumbled, "you ain't tried to cheat me after all, so I owe you an apology. But I'd as soon you didn't insult my friends."

It's a traditional moment at Callahan's, familiar to all of us by now. The Newcomer Examines Us And Decides Whether To Trust Us Or Not. Some take their time; some make a snap decision to open up. Nobody *ever* pressures them, one way or the other. Most of 'em cop. I had to admire Trebor at that moment. His mind must have been racing at a million miles an hour, just like mine, but he brought it under control for long enough to give his full attention to evaluating each of us one by one. Finally, as most do, he nodded. "I guess I've got to tell *some*body. And even if you wanted to cross me up, there isn't a sober witness in the lot of you. Okay."

We all settled into listening attitudes, and Callahan passed around fresh beers to them as needed 'em.

"Yes, I am an inventor," he began, "and I did invent a dimensional Bridge—which my counterpart in *this* dimensional continuum could *not* do, since as I said thiotimoline doesn't work right here."

"Then this *ain't* a perfect mirror of your world," Long-Drink interrupted.

"No," Trebor agreed. "Not a perfect mirror. There are subtle, generally unimportant differences. In my continuum, for instance, all the rock groups are different and Shakespeare wrote Bacon. Disparities like that, that make no tangible difference to the world at large. But they're essen-

tially similar—like 'identical' twins. It's only because of their congruencies that the two continua lie close enough together for a Bridge to be feasible at all."

"Then you're like a time traveler into the past," I pointed out. "At least in a sense. If you change *this* world in any significant way, you'll never be able to return to your own."

"Precisely what I'm afraid of," Trebor agreed. "Which is why this Bridge-mirror of your disturbs me so much. Because I didn't build it, which means someone else did, which means the chances of some accident making the two continua diverge have just effectively doubled. At *least*. I ought to get home at once . . . but I *can't.*"

Because his Bridge couldn't be activated from this side? Surely he must have planned for such a contingency. *I* always buy a round-trip ticket.

Unless I'm rushed . . .

"What about your counterpart?" I asked, breaking his train of thought. "The Robert Trebor of *this* world, I mean?"

"Oh, I swapped places with him," Trebor said absently.

"Where's he now?"

"In jail, I should exp . . . uh, I don't know."

"I don't get this," Callahan growled, "but I don't think I like it."

I was still enough under the influence of the Wonderbooze to be capable of positively Sherlockean flights of deduction. "I think I get it, Mike. Trebor here invents a dimension-Bridge to our world, right? What does he do? Collect samples of our 'reversed' artifacts as proof of where he's been. Then when he gets home, he gets cagey for some reason and decides to keep his mouth shut. That makes sense: if too many people hear about the Bridge, it becomes useless.

"But he makes a fatal error. Through some mixup, just like the one he pulled here tonight, he spends some of *our* money over *there*. This puts the feds onto him, and he finds it necessary to change neighborhoods in a hurry. So he steps through the Bridge to *our* world again, somehow suckers his mirror-twin into trading places with him, and burns his Bridge behind him. He probably has a second Bridge hidden somewhere, set to activate itself whenever the heat has died down—all he has to do is wait. His twin takes a fall on a bad-paper rap, and he walks away clean. Pretty slick."

There was a pistol in Trebor's hand. I noted absently that the safety was on the wrong side, and that it was off.

"Very astute," he said quietly.

"Listen Trebor," I called, "don't be a jerk. Right now you're wanted by the cops in one dimension only—in *this* one your biggest problem is that a barful of guys think you stink. Don't blow it." I spoke with great haste, but my mind was racing even faster.

"You have a point," he allowed. "As long as no one is foolish enough to get in my way, I believe I'll just take my Tiger Breath and toddle off." He picked up the half-keg in his right arm

and started edging toward the door.

The deductions were coming like clusters of grapeshot now. I glanced up at the mirror, and what I saw there confirmed all speculation. Trebor *had* a reflection in the mirror, now, and the image looked straight at me with pleading eyes.

"Hold on, buddy," I barked. "The least you can do is tell us why you went through all this."

He stopped, about three feet out of position. I wanted him right on the chalk line from which one addresses the fireplace. "I don't expect you'll believe me, at this point, but I sincerely want to improve both worlds," he said.

"How? By swapping your booze for ours?"

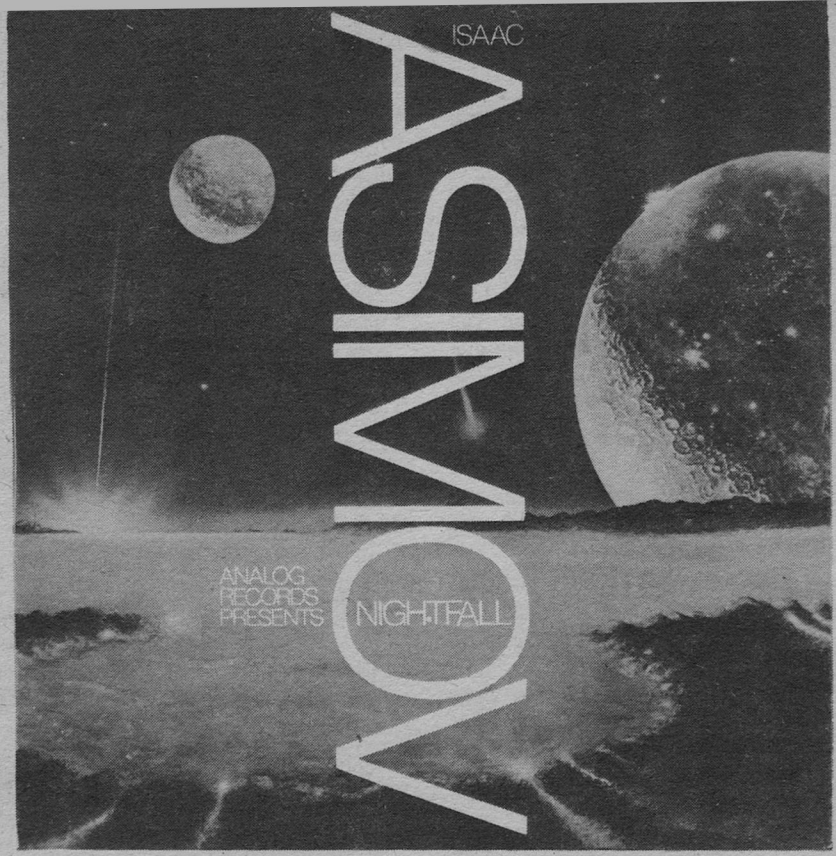
"That's one small way," he agreed. "Alcohol has a symmetrical molecule, so either one gets you loaded. It's the congeners, the asymmetrical esters which produce the taste and the impact, that make one world's mead another world's poison." He paused, and giggled. To my annoyance, so did I. "But there are infinite possibilities. That's what I've been doing for the last week: walking around your world thinking of all the splendid possibilities. Once it's safe to use my auxiliary Bridge, I could . . . well, figure it out for yourself. Suppose I swapped our smog for yours, molecule by molecule, in bulk? The reversed ozone wouldn't be an irritant any more . . ."

"Brilliant," I said sarcastically. "It'd still block sunlight and foul our lungs, but it wouldn't be irritating enough to remind us to clean up the source any more. Remove the nuisance value and leave the menace intact, that's a *great* idea, Trebor." I was frantically trying to catch Callahan's eye without alerting Trebor, and at last I succeeded. I motioned imperceptibly toward the mirror, and Callahan casually turned to it. The mirror-image of Trebor gesticulated at him, and I prayed that Mike would dope it out in time. Just like Doris's Valiant and my mailbox: the only thing that could help Trebor now was an unexpected collision.

Trebor failed to notice. "Well," he said, plainly crestfallen, "then suppose I imported food from my dimension, and exported yours? Really fattening items, I mean. Tarts, cream-puffs, banana splits. The stereisomer of a strawberry shortcake would *taste* as good as the real thing—I know, I've tasted it—but your digestive system would ignore it entirely. All the fat people could get thin!"

Callahan answered this time, coming around the bar with an air of total innocence, plainly involved in the intellectual exercise of talking to this nice man with the pistol. Trebor moved slightly to let him by, covering him carefully with the pistol, placing himself just where I wanted him to be. I hoped Mike understood his part.

"Nope, I'm afraid that's no good either, pal," he boomed. "Glandular cases aside, the only genuine cure for fat is not to be a hog. Your method would encourage fat people to keep on being hogs—so, they'll keep on being



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fat people, regardless of what they happen to weigh. I'd know one anywhere. That's the third time you've proposed to treat the symptoms instead of the disease."

"Third time?" Trebor said, puzzled.

"Yeah. The first was when you decided you could get yourself out of a jam by throwing your mirror-twin to the wolves. They used to say when I was a kid that that kinda stuff'd grow hair on your palms. Self-abuse, I mean. And just like the last two 'cures' you proposed, it didn't cure a thing. *Look!"*

He pointed over Trebor's shoulder at the mirror, and Trebor smiled.

"That's an *old* gag," he said reprovingly.

And then Fast Eddie caught sight of the mirror and yelped, and Trebor must have known the runty little piano man was no actor, for he whirled himself then, gun ready, and—

—froze. In the mirror, he saw himself, keg and all, but the "right" hand held no pistol, and it was upraised in a ritual gesture that loses nothing by mirror-reversal. Trebor's jaw dropped, he raised the pistol . . .

And Callahan kicked him square in the ass.

No other man among us could have pulled it off—but Callahan is built along the lines of Mount Washington, and I've seen him carry a full keg in each hand. His big size-twelve impacted behind Trebor's lap with the speed and power of a cannonball, lofting the inventor into the air, clean over the bar and into the mirror. As he struck it, he seemed to reverse direction and bounce back into the room, landing in a heap on the sawdust.

But when he landed, his hand was empty.

"Thanks," he gasped to Callahan. "I *needed* that."

And in the mirror, a man in a gray flannel suit stepped up to *that* Trebor, took away his pistol, and slapped handcuffs on him. He turned to the mirror, aimed the pistol at it and pulled the trigger. There was no bang, but the mirror exploded in a million shards, which fell to the floor of Callahan's Place with the multiple crashes you'd expect.

Fifteen minutes later, Bob Trebor—the one who *belonged* here—was sitting by the fireplace with his feet up, sipping at some Wonderbooze and rounding up the story of his exploits in Mirrorland.

"If the local police had apprehended me, it might have been a sadder story. But the .I.B.ꟻ has some people bright enough to add together my story plus the fact that my fingerprints were mirror-reversed plus the scar on the wrong cheek plus what the X-rays showed and come up with the plain truth—and tough-minded enough to believe their own eyes. Pretty soon everybody I was talking to was named Smith, and they cooked up a plan to trap the other Trebor and send me home again. They put a top nogat-nɘP computer onto predicting Trebor's movements, using data I supplied

them as well as their own dossiers. Then, with access to *his* lab and notes, I used my similar background and skills to build another Bridge. It took me a week. By that time computer analysis indicated that he was 89% liable to come in here, tonight, so we had the Bridge installed. I hope you didn't mind?"

"Not at all," Callahan assured him. "Livened up a dull night."

"I don't get it," Fast Eddie complained. "Why didn't the feds just come t'ru de Bridge an' bust 'im?"

"They couldn't, Eddie," Trebor said patiently. "Jurisdictional questions aside, the more changes they caused in *this* continuum, the greater the chance of separating the two forever. They were nervous about doing anything at all."

"So you worked it out with the folks at Callahan's Place—the *other* Callahan's—and they agreed to stage as perfect an exchange as possible," I said wonderingly. It was kinda nice to know that each world had a Callahan's—but I wondered if the other me still had his wife and kids.

"Yes," Trebor agreed. "And fortunately for me, you were as quick on the uptake as your counterparts assured me you'd be. You followed my cues beautifully."

"The Wonderbooze helped," Callahan observed, sweeping the last of the mirror into the fireplace.

"That's what *I* don't get," I admitted. "Most of our food must have been wrong for his digestive system—and theirs must've been mostly useless to you. How come neither of you came down with malnutrition?"

"We were both starting to," Trebor said dryly. "That's what brought *him* to Dr. Webster, which in turn brought him here. He must have planned to use his alternate Bridge to bring food across eventually, and he must have had a cache of food *with*

clichéland

"I *know* it will work," said Professor Pencilbeam. "The world's first time machine, and I invented it."

"But Professor," argued his blonde, beautiful, braless graduate-student helper, "we've always been told that time travel is impossible. The paradoxes are . . ."

"Nonsense!" snapped Pencilbeam. "Paradoxes be damned. This device will transport me through time, and I'll prove it."

He stepped into the shimmering, whirring, glowing cage of metal and energy that was the heart of the machine before she could raise a hand to stop him.

"Back!" Pencilbeam shouted. "Back 50,000 years! And I'll return with evidence!"

She stood and watched, openmouthed, as the Professor vanished in a *poof* and a slight whiff of ozone. She waited. After a while, she sat in the cluttered lab's only chair, and waited for many hours. But he never returned.

The machine worked. Professor Pencilbeam found himself 50,000 years in the past. And nearly four light-years from Earth, because the Earth had moved that distance over the 50,000 years in question. He just had time for a smile of triumph before he froze solid.

him that he could ration out 'til then. If I find it at my house I'll bring it around." That, by the way, is how Doc Webster came to lose a hundred pounds. For a while, anyway—the hog. Don't tip him off, okay? "I guess he simply expected me to starve—if he thought about it. He couldn't have been very imaginative, or he'd have realized that I had enough evidence to sell the truth to the .I.B.Ꟊ"

"That kinda bothers me too," I said. "The feds are not, for one reason and another, my favorite people—and I don't imagine a mirror-fed is any better. I have to admit I don't find it reassuring that men analagous to our F.B.I. possess a secret bridge to our world."

"True," said Callahan. "But what do we do? Tell *our* feds? With no sober witnesses and no way to make a working Bridge in *this* world? If we *could* put it over, would it help—or make things worse?"

"Forget it," Trebor advised. "Whatever their intentions, there isn't a lot they can do, for good *or* ill. If they take any action benefitting their continuum at the expense of ours, the two continua become too dissimilar and the Bridge is useless."

Callahan burst into gargantuan laughter. "I'll bet they're sittin' around a table right now, quiet as mice, wonderin' what the hell they can possibly *do* with the golden thing," he whooped, and slapped the bar.

The picture of a dozen top government thinkers staring in silent frustration at a device more awesome than the atomic bomb—with no known use—was so lovely that we all broke up, and Eddie struck up Stevie Wonder's "It Ain't No Use."

"At least they got a half-keg o' Wonderbooze out of it," Long-Drink yelled, and we laughed louder; and then Eddie yelled, "An' so did *we!*" and a cheer went up that rattled the rafters.

But I noticed that Trebor wasn't smiling. "What's wrong, Bob?"

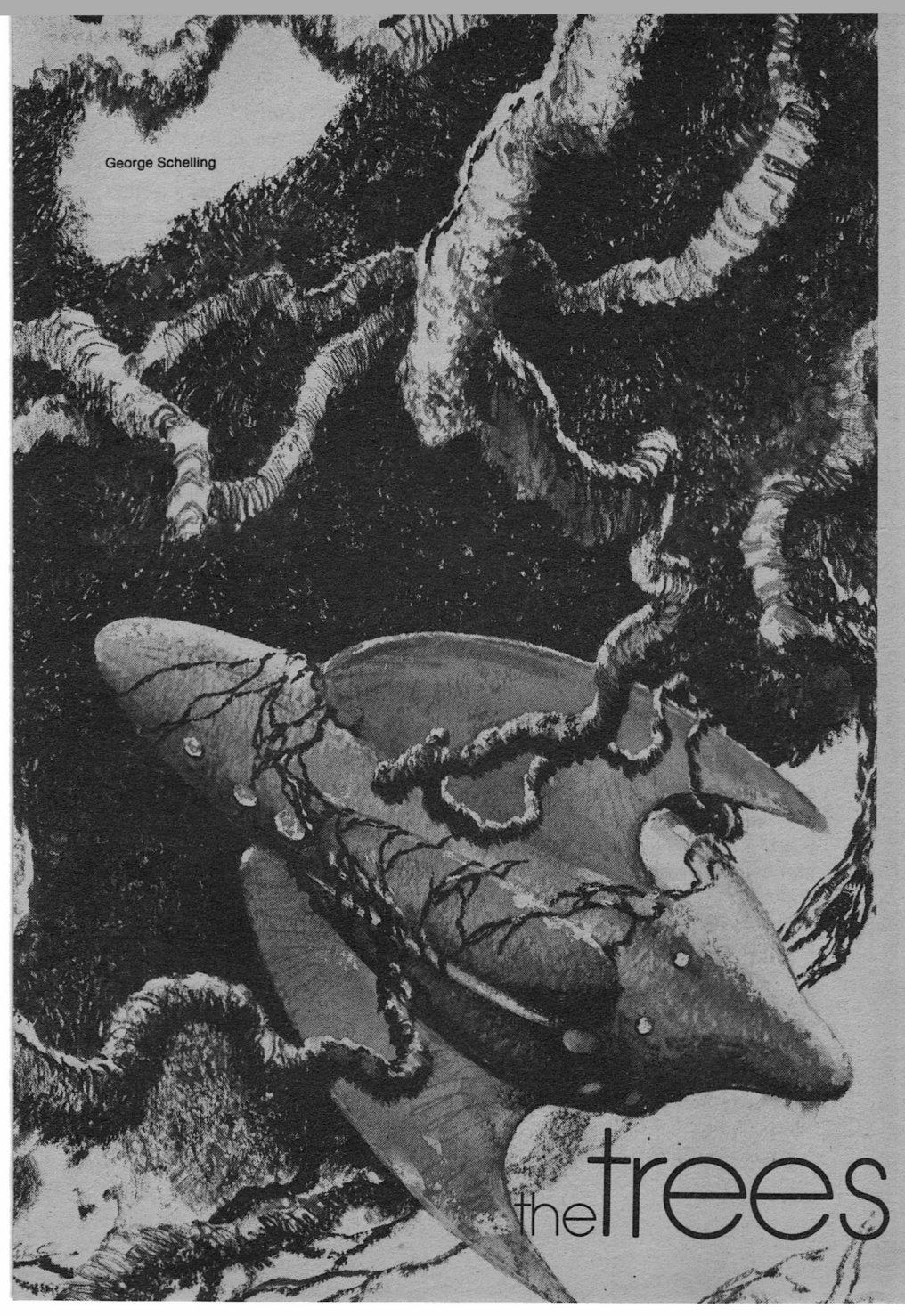
He sighed moodily and sipped of the Wonderbooze. "It's not fair," he said.

"How do you mean?" Callahan asked. "You're home free and your rotten twin is in Leavenworth—what's your beef?"

"That's it precisely," Trebor said exasperatedly. "My counterpart is, I agree with you, rotten. I knew him only for the half hour it took him to shanghai me into stepping through his damned Bridge, but in retrospect I don't believe I've ever met a more classic sociopath. I, on the other hand, like to think of myself as . . . well, as one of the good guys, and I believe I've conducted myself honorably throughout this affair. I even took a kick in the pants that I'm not certain I deserved. That's why I think it's unfair."

He emptied his glass, tossed it into the fire, and sighed again.

"Why is it," he mourned, "that *I'm* the one who'll never again see his face in the shaving mirror without wincing?" ■


George Schelling
the trees

Intelligence is the ability to generalize knowledge from specific information inputs.

JOHN CHARLES BAKER

"How far down is it?" the grizzled old engineer asked, peering into the blackness beneath the derrick.

"Three thousand four hundred and sixty-eight feet."

"Just stopped going in?"

"Completely. This is the fourth bit," replied one of the roughnecks standing around.

"Whacha do with the bad ones?" Russell said as he unwound his legs and stood up, feeling the numbness in the joints. He reminded himself he shouldn't crouch so long—not as young as I once was, he thought to himself. Then he saw them, almost before Cliff could point them out to him. Expensive pieces of junk, piled a dozen or so feet away.

He poked at each one in its turn, his ancient weatherbeaten fingers and bright blue eyes missed nothing. After half a century of experience he had seen it all. But these were different enough to make him frown. The tungsten carbide cutting surfaces had been worn down. Not chipped off, or smashed, but merely worn out.

"You sure these were *new* when you put them on, Clifford?"

"Look, Chief, you don't think I'd use . . ."

"Just asking, Clifford, can't always trust a college man." But he knew he could trust Cliff, who had earned his degrees only after growing up on rigs all around the country, first tagging along after his father and then when Skip had been killed offshore in the Gulf of New Mexico, tagging along after his oldest brother, Coddy. Cliff took the kidding good-naturedly.

"Wha'da make of it?" he asked the old man.

"Something mighty hard down there, son. Peculiar, too. You got the cores here still?"

"Sure do, it's right at the bottom of the *Bansfovian* strata."

"No disconformity on the maps at that level, is there?"

"Not in any of the other holes. They went right on through. We've got a pretty fair picture all the way down to the dome."

"OK. Bring this one back up, kids," he said, pointing toward the operating shaft.

"Back up? But we just . . ."

"Come on, son, what makes you think a fourth new bit is going to do anything extra for the company's No. 537?"

Cliff shrugged his shoulders and ordered the crew to raise the drill. It took a while. Both men looked out over the carnage. The derricks, of course, came and went quickly, to be replaced with small pumps, buried for the most part and supported by a

small surface station. It was an eyesore, but the real stigma was the forest of mighty broken giants which stretched out around them.

At one time the tallest trees on Earth stood here. So tall and massive they were more like buildings or towers than trees. Then the gold rush had come and lumber was needed; the trees had been plundered.

"It's a goddamn shame son, them buggers cut that timber—," he said to Cliff and anyone else in earshot.

"Sure is a mess."

"Son," he said walking over to the edge of the platform to gaze off into the desecration, "I reckon you done heard me say it a thousand times—but it galls me they'd just leave 'em lying around."

"Too big to move—too much trouble."

"Think them morons woulda had enough sense not to cut 'em in the first place—least wise they coulda quit once they seen they was all going to splinter like cordwood when they hit."

"Maybe they didn't have anything else to do," said Cliff patiently, knowing the old man just wanted to talk it out.

"Damn fools! I've followed the rigs all over the face of this here world son and there ain't another place like this anywhere."

"Old."

"Old? Say sonny, this place was *old* when Helen was launching them thousand ships. These saplings was just getting started good when Christ climbed that long hill. Old? These things been here practically *forever.* And them yo-yos go and cut'm all down and left'm lying on account of 'm bein' too big to tote off! Damn fools!"

"Does seem like a waste," replied Cliff. He knew the old man grew up in the wilderness of California forests and that someday soon was planning to have himself buried there. But Cliff was an oil man and the only timber he'd ever known was the planking they used in the derricks. So he humored the old man.

"Son, you're a damn fine cub of an engineer but frankly I don't think you give a fart one way or another 'bout them old trees."

Cliff suppresed a grin. "Well, to tell the honest to god truth I'd feel a lot better about things if we could get this bit down."

"Oil. You young cubs—that's all you ever think about. That and women. That precious stuff comes directly from the bodies of these old giants—Miocene swamp down there. They teach you that in college, son?"

"They taught me if we don't get that bit through, my stock options are likely to be damn near as worthless as that piece of meat between your legs, old man."

"Humph!" snorted the old man as he moved away to sit. He was thinking, poor Cliff, too damn busy to practice patience. He was nodding off in the afternoon sun when they finally finished.

"Got it!" hollered Cliff. "Still hot!"

he said, touching the tip with a wet finger.

Russell walked over to it and extracted a small envelope from his pocket. With his penknife, a treasured old pearl handled Case, he scratched at the ends of the cutting tool. He said:

"I'm gonna take this stuff to the lab, you send the others there too. Make sure they stay crated up. And son . . ."

"Huh?"

"Don't get lost on the way."

"You sure you did that right?" asked the old man, staring at the results of the preliminary lab work.

"Did it twice. Want me to do it again?"

"Reckon you better, Steve, 'cause if it's right I 'magine the whole world's gonna be lookin' over our shoulders directly."

"Why don't you just move the rig and forget about it?"

"You gotta point. Might be the best thing we could do. Shore is gonna cause one helluva ruckus."

"You going to call the home office?"

"After you do them tests over once more—got a powerful plenty of time. Damn fool thing must've been down there close to ten, maybe twelve million years. Wanta bet on what it is?"

"Your ball game, old man. I'm just a lab technician."

"Trouble with the darn world—all you jokers ascaird to stick your fool necks out. Worst thing about specialization of labor. Can't find nobody willin' to do everything anymore."

"OK. So what is it?"

"Intelligence and technology."

"Twelve *million* years ago?"

"Yep. Knowed it right off too sonny, long before you finished this here report. Ain't nothin' nature makes 'll dull tungston carbide that fast, that clean—had to be hardened steel."

"Crazy old man," Steve said to himself going back to his lab.

But the old man was right. It took a while to prove it. And it caused considerable ruckus—as the old man put it. To top it all off the grizzled, weatherbeaten engineer lived through the entire salvage operation, most of it under his supervision, while an entire world waited with bated breath.

"Seem like it's been three years to you, cub?" he asked.

"A mite longer. Three years and ten days from when we first dulled that bit." It was Cliff—his face still young and tanned, but his hair beginning to turn toward the roots. "How could you have ever known, after just a week of testing, that it was a Star Ship?"

"You get a feel for things, son, after you grow up. Compensates you for what you lose in other areas," he replied, suppressing a smile. He had grown paternally fond of the young engineer during their three year association. And had been favorably impressed with the change in Cliff which he attributed to his tutelage.

"Sounds like you must've struck out

with Rossey last night old man." Before he could object, Cliff changed the subject: "You think they'll cut through it today?"

"Likely to. Lots of darn trouble working inside that vacuum. But it oughta keep things fresh." After they had tunneled their way to it, after the equipment had been constructed to raise the ship to the surface, an elaborate penetration environment had been fabricated around it. A hard vacuum created inside. They were taking as few chances as possible.

"Hell of a change in this place, cub," he said looking around at the temporary buildings housing the work crews.

"Government money."

"My ass, government money. Son, when are you *ever* gonna learn anything? You can take all that phony paper and pile it up until it plum fills up Death Valley and not get nothin' at all done. Men do things cub—not money. Men. They wanted this here thing so bad they damn near done gone and moved heaven and earth—damn fools should have left it alone. Gonna cause a might smart bit of trouble pretty soon now, I reckon."

"Didn't really expect you'd live to see this," Cliff confessed, ignoring his portent.

"Shit, son, I'm fit as a new pair of shoes and ifin' I hadn't been round to wipe your arse for you and tote you out of the shaft when them fools let it collapse on us—*you* wouldn't be here to see this."

"Your point—but don't look now. Here come them newsmen. Your turn, I believe," he said, nodding toward a group of well-known media personalities. "You're the one who gets such a kick out of riding them since they moved in on us a week or so ago."

"Damn fool liberals. Ain't one of them worth the powder it'd take to blow 'em to hell. Matter of fact they're so stupid they've come plum around to liking me despite how plain I've been 'bout it."

"I thought you guys were engineers, what's all this theological talk about hell," asked one of the ones with the sharpest ears.

"I was just telling Cliff, here, that when I die I'm gonna miss all you guys who are bound to spend the rest of your days roasting in hell," he said, grinning at them.

in times to come

Stanley Schmidt's "Dark Age" heads off our December issue. In this latest installment in his continuing "Spaceship Earth" series, we see how the battered remnants of the human race struggle to survive while our planet makes the long, dark voyage to the Andromeda spiral galaxy. Rick Sternbach's cover shows the Earth fleeing the Milky Way.

What will it be like to fly NASA's Space Shuttle? Al Ragsdale, who works on the full-size simulator of the Shuttle's control system, describes the thrills of landing dead-stick from orbit.

We'll also have the final installment of Mack Reynolds' "Of Future Fears," plus more stories and features.

"Come on now. We walked all the way up this hill to get you to come down and be with us when they open it up."

"A likely story. What you gents want is for me to vouch you past the guards and into the front row. What'a you reckon, Cliff, these liberal fools deserve a front-row seat?"

Cliff gave them a long count before he replied: "Sure, why not?"

"I'll tell you boys what I am gonna do for you—on account of the way I feel about you."

They waited for him to go on.

"I'm going to stick you on the front row. Then when the fool thing blows up I'll be rid of you jokers forever!"

The men laughed, slapped each other on the back and walked off toward the building. It would not have taken a trained ear to detect the slightly hollow sound of their gaiety. The old man, after all, might be right again. It was what had them all worried. Suppose it was booby-trapped?

"Morons. Told'm once, told'm a thousand times. That thing was still workin'. Would'n lissen—smart alecks. College men."

"OK. OK. So you were right again—I suppose you knew it was going to send out that message."

The old man sighed audibly and shook his head. "Yes, son, I had it figured. Had to be workin'. Nothing on its own could withstand the pressures. Special steel or not. Three thousand feet right smart lot of rock to have piled on something hollow."

"But twelve *million* years! How could it work for that long?"

"Lissen cub, told you once, told you a hundred times. I ain't got *all* the answers. What makes me smarter than you is my head ain't full of all them doors what them books you been readin' done shut in your face." Cliff endured the bantering. He'd learned to let the old man have it his way.

"So?"

"So—fact was you had this thing sittin' down there under all that pressure for all them years. Still spic and span, clean as a pin, not messed up even a tiny bit. Had to still be workin'. Think on it for a minute, cub, if you sent out a machine to explore somethin' for you—wouldn't you want it reportin' back to you?"

"Looks bigger inside than it does from the outside, don't it son?"

Cliff still wasn't used to the silence—after they had finally, about a month or so after it was opened, been left with the gutted remains. "Lot quieter."

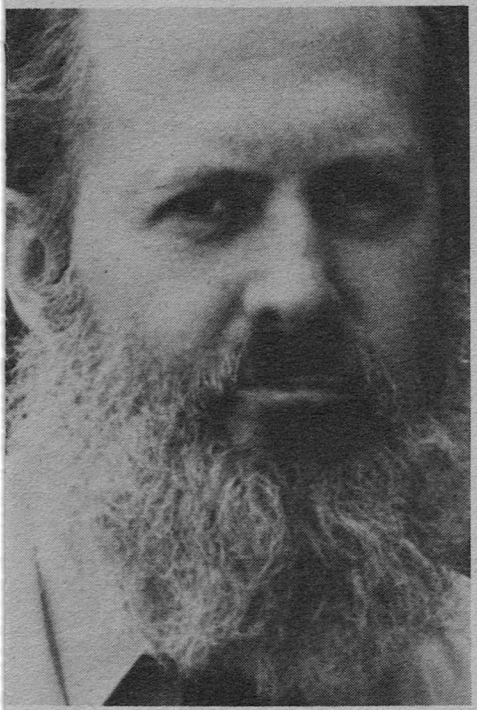
"Nothin' much left to see after they gutted it. Like a bunch of pack rats."

"You're just jealous they didn't leave you anything to play with but the shell."

"Not my piece of cake anyhow, cub. Let'm have at it. Them whiz kids 'll figure it out directly. Reckon you can wait'm out?" Cliff let it pass.

"Heard they are going to turn this place into a park."

" 'Bout time. Oughta got started on it 'fore them fools ever cut down the



●Dean McLaughlin

Use of a typewriter can do wonders for a person even whose signature, like Dean McLaughlin's, strongly resembles an oscilloscope tracing. Dean's typewriter has indeed worked wonders, since his first Analog story way back in July 1951: "For Those Who Follow After." Actually, that was his first published story of any kind.

Majoring in literature at the University of Michigan, and interested in science from an early age with parents educated in the physical sciences, Dean writes only science fiction. He was born in Ann Arbor, Michigan, and spent twenty years operating a bookstore across the street from the university. Now he is the proprietor of The Book Stop, some distance away from the university in a small shopping mall. New books only, with, of course, a good science fiction section.

Dean discovered science fiction in the summer of 1945, shortly before the Bomb sent the future rippling around the world. For those who wonder about such things, Dean started writing science fiction stories two years later and took just three years to sell one to John Campbell. The particular areas of science Dean finds fascinating are physical geology and cosmology. Politics he looks upon as a spectator sport. Exceedingly well-read and a gifted, witty conversationalist, he can talk on nearly any subject.

Running a store seventy-two hours a week doesn't leave much time for writing, but Dean's small output has been well received. His most recent book is a Scribner's product, a collection of three novellas from Analog, titled after his July 1968 classic, Hawk Among the Sparrows.

timber. You believe they can ever get them trees to grow back 'round here?"

"Not while we're alive."

"Nor your grandson's sons. I got a sneaky suspicion they gonna give it one helluva try, cub."

"Why?" Cliff had learned not to let these little hints from the old engineer slip by him completely—so he finally rose to the bait.

"Come here, cub, and I'll show you," he said, turning off toward the shaft.

"Well, don't just stand there, get in," he said, motioning Cliff into the elevator. "Gotta start at the bottom of these things cub, before you can get to the top."

Cliff sighed inwardly. When the old man was in one of his moods it was still best to humor him. And despite the high-power minds which had been brought in from all over the world, the old man had an uncanny knack about being right. More times than he'd been wrong.

Cliff shivered with both cold and claustrophobia as the working elevator made its descent. Unlike the finished products, a work-cage elevator was open on all sides, and Cliff reminded himself not to look down—where the lights merged into one in the distance—he was, he kept telling himself, an oil man not a gopher.

"I want you to pay close attention to this here strata down here son," said the old man as they approached the three-thousand-foot mark. "Ain't often we get a chance to look at it like this; close up, face to face."

Cliff willed his mind off the shaft above them and forced his attention to the walls which surrounded him.

"See anything peculiar?" asked the old man, stopping the car just a few hundred feet above the bottom.

Cliff looked into the formations. Rocks, rough-hewed walls, steel bracing, fossils here and there in the strata. His paleontology was shaky. So he confessed his ignorance. "Frankly, not much. Just the usual stuff."

"Like that tree stump there?" said the old man, flashing his light on a shape which took on a recognizable quality immediately after it had been pointed out.

"Redwood tree."

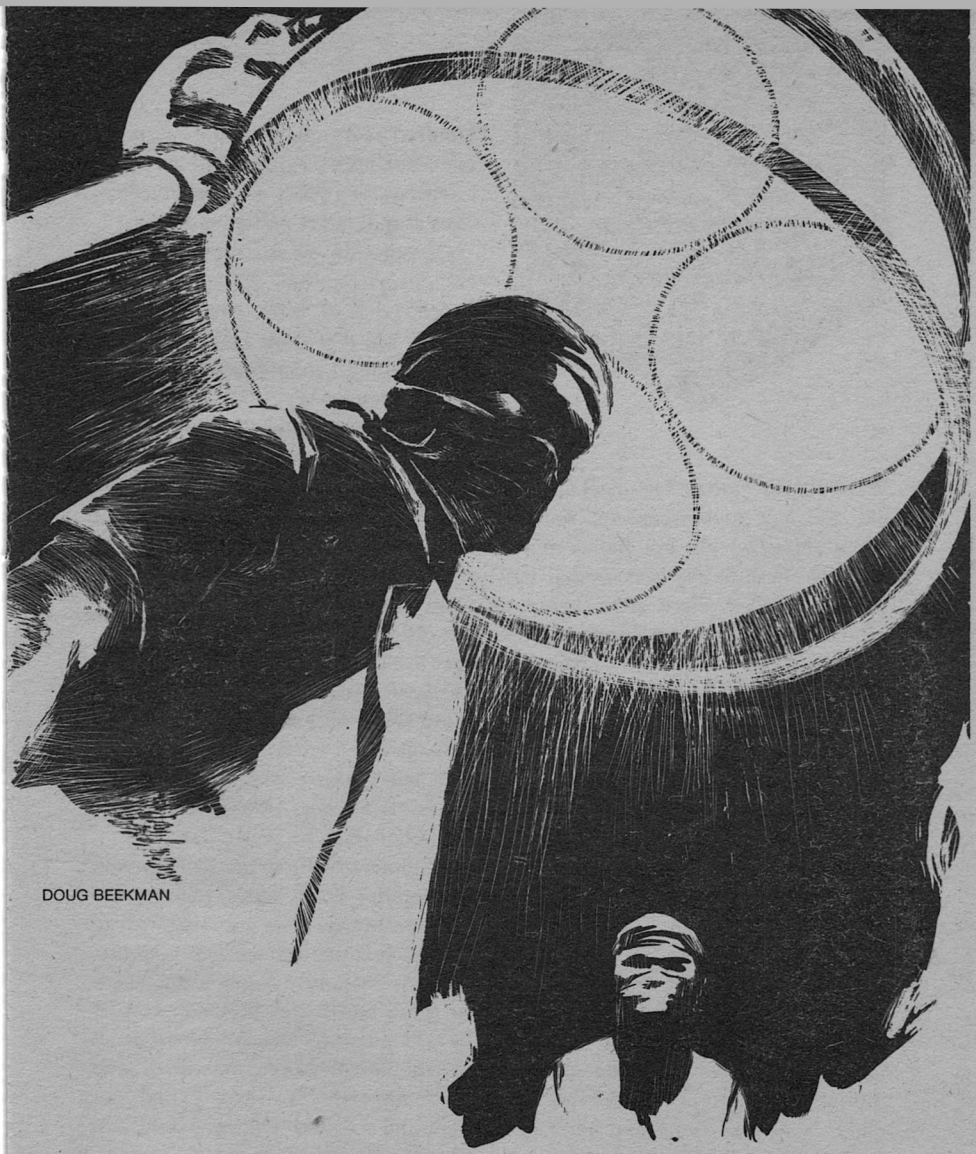
"Damn right it's a redwood tree. Now look at this." They went on down and stopped just above the floor.

Cliff searched the rock wall. "Don't see them anymore."

"Damn right you don't—ain't no more. Tell you what I think, son. You know them empty compartments on the outside of the hull—the ones your slide-rule buddies been figuring on ever since we brought it up?"

"Yeah?"

"Them compartments was full of *seeds*. Seeds, son, for the mightiest forest the ole world ever saw. Redwood seeds. And some day soon the folks what sent 'em are gonna come lookin' for them trees and *us*—and you know what, cub? They're gonna find we cut'em all down. Damn fools!" ■



DOUG BEEKMAN

malpractice

Religion offers immortality of soul. Can biology produce immortality of body?

ORSON SCOTT CARD

Went to Doc today for checkup and got the ole kickinthepants routine about losing weight but theres more. My chest was flabby like normal but he found a scar where there shouldnt be one, I couldnt remember having anything done there. Only operation in last six months was in Tulsa, Okl, where I was *supposed* to have my arm set. (Broke it riding a stupid horse, never get me on one of those things again.) So Doc made me lie down and go to sleep, did an exploratory on the spot (miracles of modern medicine) and he asked me when I came out of it why the hell did I have a heart transplant?

So who had a heart transplant?

Somebodys been mucking around in my body and when I find out who hes going to eat that horse that crammed me into the tree and hes going to eat everything that horse has produced in the last six years. Doc says its obviously somebody elses tissue and even though the operation was neat it looked hurried, some of the laser sutures look as bad as if theyd been done with catgut like a few hundred years ago. Nothing *wrong,* he says, but pretty ragged. As if it mattered how ragged it is with somebody elses stupid heart pumping my blood.

Consolation prize: Doc says its an OK heart, except for a murmur, which he says wont cause me any trouble but if it stops murmuring and starts yelling I should drink nitroglycerin or something.

Why would somebody stick a different heart in me? My old one may have skipped a beat now and then (Ah, Marilyn!) but it ticked OK and it was mine and I was kind of attached to it (Ha ho).

So I thought back to when since my last checkup I had been out anywhere near a loose scalpel and the only time I've been gassed that I know of was in Tulsa with my arm. I asked Doc, he said maybe it could have been done then but the guy wouldve had to be pretty fast. And the spare pieces wouldve had to be pretty handy.

So tomorrow Im flying to Tulsa and Im madder than hades (once every third profanity I use a euphemism to keep in practice for the Daily Noose, which is "a family paper") the hospital there had better be on there toes since I plan to do some onthespot transplants of heads and arms and other appendages when I find out what and who did what was done and why. Goodnight, dear diary.

August 3

As long as Im writing this thing might as well be accurate and put in the good old 5Ws. Im in a plane and

Tulsa is sliding forward to meet me and I thought Id fill in some details.

I read yesterday's stuff and it sure looks like a rough draft. But thats what it is. For the Noose they pay a guy who can spell to fix my stuff and they pay him half what they pay me, for the very good reason that he may know how to spell but I know how to write, which is worth more.

Name: (love those little colons) Frank Mabey as in perhaps but the ys at the end.

Ocction: Journalist which means I can write better than the president but not as good as Van Clapper which is fine because what the hell would I do with all that excess money the old man's got.

Temperament: Mad as heck.

Reason for writing this stupid diary: Every boy should keep a journal. I somehow dont feel like telling anybody that Ive got the wrong pump. Might suspect something else is transplanted, too, and Id just as soon avoid speculation. Id tell my sweet loving X only X doesnt give a damn which is fine, because I dont want any of her lousy used damns anyway. Darns. Got to keep up those euphs.

August 3 cont. (tune in next week, same time, ect.)

Went to Tulsa Center for Medical Treatment (everythings a center. someday Im going to build a building and call it the Indianapolis Edge for Journalistic Somethingorother) the guy who did my arm has retired. In fact, the day he did my arm was the last day he worked at the hospital, which is lucky on the next days patients but pretty tough on me. He put in a hard day that last day. Got a list of 12 opers the guy did (his name is Hyman Maier—he must be a Baptist. Ha ho).

: (love those colons)

Amos N. Ditweiler

Ronald Smith

Joann Capel

Morris Major

Scott Peterson

Valery Van Vleet (geez, the things some parents do to there kids

R. R. Trane (I hope to hell his name isnt Rail Road)

Bartholomew (Ha ho) Biscuit (actually Bascom, but the name biscuit occurred to me and Im compulsive)

Wanda Bath (Im not making this up, folks)

John Jorgenson (back to the relms of the ordinary

William E. Jagger

Mark Muse

The reason for this list, dear diary, is that I dont want the names left around on any scraps of paper and you, dear diary, never leave my side. These people who were operated on were all in for relatively minor operations but for some reason which the hospital people do not pretend to fathom he used total anaesthetic on everybody. The guy I talked to looked at the records and said, (I quote) "Why did he put you under total for an arm?" Im supposed to know this? Im the doctor? What do I tell him, he put me under total because he had a

spare heart he wanted to find a home for. And I looked warm and loving and not the romantic type—heart unlikely to get broken. So much for you, X.

So heres my whole sweet lead on the guy. Hes a doctor, pretty good, only he retired (he wasnt all that old) and left no address, didnt even pick up his last check and his lawyer paid his bills. Ordinary guy, no wife (died, I should have been so lucky, widowers dont pay alimony) one kid, works in an ad agency in NY. nobody knows where nobody knows his name. And Maier (the doctor who retreaded my radial) was a GD. Which I think is appropriate.

GD, dear stupid diary (must assume diary is stupid for the sake of clarity) stands for Gods Deliverance, the church that believes god is reincarnated every twenty years or something, there prophet got zapped in Denver by a pervert with a laser meatcleaver (some tight security there, folks, those things weight thirty pounds and you just dont stick em under your jacket), and the girls all wear long hair or short hair or something so they look alike. This is Frank Mabey, journalist, speaking. You can tell by the preceision of my data.

In other words, I have a choice to find Maier. I can look through the whole GD church.

Oh, theres another choice. I can forget it and just take my pulse a lot.

August 4

Whee. Its back to the whole world. The GD church keeps no membership records, on purpose because then somebody might try to do them harm. Not a bad idea, because the guy looked like he was going to be helpful till I said Hyman Maiers name and then suddenly Im a communist and he gets slanty eyes just looking at me. My heart feels funny. Not the murmur, its kind of a pleasant lullaby at night. I just *feel* it, thats all, and Ive never felt my heart before. Come to think of it, Im not feeling *my* heart now!

August 11

I mustve decided to forget it because I havent done anything for a few days now, only Doc called today and theres something more and now Ive gotta find that bastard Maier and find out what the hells going on. Found thee, dear diary, because we are back on the trail. The boss asked me what I was investigating today. Told him "heart throbs" (ha ho, laughaminute).

News from Doc—pictures show something funny about the heart, he wants to open me up again. Good thing my insurance covers everything. I think Im becoming Docs hobby.

August 13

My heart is growing. Good news, huh? The ragged edges were not all sloppy surgery, they were heart tissue overgrowing the sutures, which means that the new heart is taking over (welcome to Latin America, heart, time for a coup). My aorta is two inches

new tissue, with a whole new genetic pattern. And the veins to my lungs are completely new tissue. What scares Doc most, besides the fact that hes never seen this happen before, is that the new tissue is moving into the lungs. Why would heart tissue take over the lungs? Only its changing from heart tissue into lung tissue, and Doc says it seems to be progressing faster.

Whatever kind of heart this Maier stuck into me, it thinks that *it* got a *body* transplant. I wish to persuade it otherwise, but Doc says what is he supposed to do, give me a third heart? Generally frowned on, and the new thingamajobby (more than a heart now) isn't doing any *harm*. Replacing it would be cosmetic surgery. Which my wonderful policy dont cover, mine friend.

Why oh why did I ride that horse? Why did I go to the Tulsa Center for Medical Treatment? Why was I born? (This last, dear diary, is mock despair, lest you think Im becoming desperate. I am, but think it not.)

August 17

The GD church doesnt like me, which is mutual. Not only that, but Im pretty sure theyve got a tail on me, in the form of a very nice looking girl who could probably kill me with one hand (she looks mean) and who isnt very good at hiding. In fact, I think maybe there not worried about whether I know their tailing me or not. Maybe they want me to know. Maybe she isnt tailing me. Maybe she thinks Im a male prostitute. Here the speculation is more fun than finding the facts, because there jes ain no facks to fine.

August 18

Visiting my fellow operatees, the ones on my list. Amos N. Ditweiler is on a business trip, Ronald Smith was killed in a car accident (waste of good operation, there, Maier, what did you give him an elbow?), Joann Capel was home but refuses to show me her scar (and slammed the door when I told her I really had to see it) which is understandable considering the operation she was in the hospital to get, Morris Major wants me to go to hell. Thos are all the ones who live right in Tulsa that I was able to talk to. Good days work. Morris looks like Maier gave him a new nose. Without removing the old one.

August 19

Id rather be selling fuller brushes. These people are more than rude. There nasty. Scott Peterson is a fag with a fat giant for a girlfriend, and even though Peterson didnt scare me, when his girlfriend told me to scram, I scrum. Valery Van Vleets mother thought I was a child molester (shes 11) and so I cant see her. R. R. Tranes name is not Rail Road, its Robin Rex, and Id go by R. R. too. But Trane *did* admit that he had an operation, which was for gall bladder, but thereve been no complications and no extra scars. Heres my guess—he got a new gall bladder and doesnt know it. Or was I

the only lucky transplantee?

But, dear diary, we hit paydirt with Bartholomew Biscuit (nee bascom) who viewed me with suspicion but when I told him my sad story got a worried look and told me that hes been really worried because he had his lungs cleaned out (a smoker, filthy habit) only there are scars on both sides of his chest and the anticancer operation is supposed to be done through the throat. What is more (and this interests me a lot) he has noticed that his scars are actually getting wider, and the skin of his scars is white (he is black), which makes him suspicious that somethings a little bit wrong. He promises to call me. Oh, he also said the new skin is hairy. I inspected my scars for hair today. None, so far, that werent already mine. I hope.

August 20 in the wee small hours

Met my tailer from the GDs tonight, we had dinner. She *is* a tailer from the GDs, admits it cheerfully, but she says shes only there to protect me. Sweet. I offered her five hundred dollars to protect somebody else, but she only smiled and told me to go to hell. I asked her if shed follow me there and she said "anywhere" so I went to my apartment. No dice, GDs believe in virginity for single women, she has the apartment next to mine and told me that she is bugging my room for sound. Nice of her to be so frank. Im Frank too (ha ho) and I told her that she was bugging me too. She said sorry. I said a word that the Noose would replace with a euphemism. She slapped me (do women still slap men for being obscene? X slapped, but it was for kind of the opposite reason) and we went to bed, in different rooms thank heaven, except that heaven is on the GDs side.

Maier was a GD. This girl (Myrel Merle Murl Mirl Mural who knows how anybody spells a weird name like that?) is also a GD. My heart seems to be on their side too. And one (just one, but hes the only one who really talked) of the other operees has weird things happening to him too. I think Im onto something and it aint peaknuckle.

August 20 in the evening after four hours of sleep and a hard days work.

Wanda Bath doesnt.

John Jorgenson is an ad executive and his operation was a very personal one because he is middle-aged and middle-aged people tend to think such operations are very personal. But he, too, for reasons he refuses to describe, is also worried. I urged him to see his doctor, he said he would, and said he would tell me if there was anything unusual. William E. Jagger lives in Sacramento. Mark Muse is a talking aardvark, Ive never seen such a repulsive person, why didn't Maier transplant his head? His operation was to remove a bunion—total anaesthetic, for petes sake, Im going to sue the hospital, they let any nut stick any patient under anaesthetic and nobody even asks questions. His bunion is all better. He also has a scar on his throat

and when I asked about it he said "what scar" got a mirror and by gum, he had a scar, hed have to check into that, by gum, by gum. So by gum he says hell call me if theres anything to call me about.

Ditweilers back from his trip, I have an appointment tomorrow, but I think I wont bother. Hes the kind who strings investigative reporters on for months without a word, probably thinks Im going to pry into his affairs. Who gives a darn (euph) about his affairs?

August 21 at four a.m. which is grounds for murdering Doc for his phonecall this morning but hes scared and so am I. There is no medical way that what is happening to me could be happening to me. He checked the genetic type, says that with our limited knowledge of genetics exact identification is impossible but the person whose heart I have was male (thank you), had brown hair, white skin, blue or green eyes, and is of medium height barring pituitary problems. That narrows it down to a fifth of the world. Whee.

At least its proof that the heart isnt mine, since Im tall, blond, have brown eyes, though I am male and white, excluding me from any of the attractive minorities. I always wanted to be an indian when I was a kid only I couldnt get into a tribe without a reservation (Ha ho).

August 21 in the evening dear diary, why am I even bothering to write to you, when there is a communist plot to take over my body?

Got a call from Jorgenson at 7 a.m. and he wanted me to come over so I did, his doctor opened him up and looked at his prostate and bingo. Whole new set of male organs, not a tricky operation, but Jorgenson didnt want new ones, he liked the old. Too much sentimentality. And in him, too, the transplant has overgrown its boundaries. His doctor is worried. His doctor told him to take a sedative. Why isnt my doctor that thoughtful?

This afternoon went back to talk to Bartholemew Biscuit since he hadnt called, he told me he hadnt called because it was so damn ridiculous, which I agree with except when its me, in which case its pretty serious. Yessiree bob, a lung transplant, which has taken over his heart (me in reverse) and is progressing to the skin. His doctor is not worried. His doctor is delighted. At last, something new for the MDs to do. And get this—genetic check, and it comes from a medium height male with brown hair, white skin, blue or green eyes. Now maybe thats coincidence but I did some research and now I really am scared.

See, the GDs prophet who was assassinated in June was named George Peppinger and I looked up the old *Time* stories on him and he is, you guessed it, medium height, blue eyes, brown hair, white skin. Im doubtless paranoid, but Maier *was* a GD and what if these nuts have some idea of keeping there rainmaker alive? I dont

like playing incubator to somebody elses chicken. So Im in the airport going back to Doc for a progress report. Murrul Myril Myeroll has bought the ticket next to me, so therell be no writing on the plane. I plan to ask her a few questions. Then I plan to push her out the window (Ha ho). (Whats so funny?)

August 22

Doc is treating me really carefully and I feel like Im already deceased. My new heart (Sweetheart, Heart of Gold) has given rise to new lungs, new trachea (those are the plumbing), a new esophagus, a new stomach, and the list goes on and on, so that theres less of me in me than there is him in me. The Doc admits that since he doesnt know how it happens he cant do much to stop it. No way to transplant my whole innards, therere limits to what the MDs can do.

But you see I know whats causing it and Id tell the Doc only then hed lock me away for believing such drivel. See, my little GD virgin friend Moral (yes, folks, I finally got the spelling of her name, and I nearly puked too) is very starryeyed about Peppinger. They dont think Christ or God or anybody reincarnates *in particular,* they believe that anybody can, if hes got enough of the world spirit. There are spirits and bodies, see, and some spirits are of the world spirit, and they are strong. Others have forsaken the world spirit and stand all alone and so they are weak. So that some spirits are so weak that it takes two or three or many of them to operate one body (welcome schitzophrenia) and other spirits are so strong with the world spirit that they can control many bodies all at once (heil hitler). She has only a little world spirit (humble child) and so only controls one body "But I am alone" she said. I congratulated her and she glared at me.

There was a lot of other stuff. I had to pretend to be very interested, and Im a lousy actor because she said she knew I didnt give a darn (she said darn, not my euph this time, looks like she repented of swearing at me the other night) about the GD church anyway. They think that Christ was not God but his friend, trying to save, not mankind, but God, by casting out all the weak spirits and letting Gods great worldspirit in, and so on, who understands this stuff? I never went to catechism.

August 25

Peg of My Heart, I Love You
Dont let us part, I Love You
I left my heart in San Francisco.
A half-hearted effort
A hearty laugh
Heartless wretch (O that I were so lucky, mother)
My heart is heavy (full, light, in my throat)
My hearts in my throat ha ho hee hee howdy.

There is now strange hair growing around the scar on my chest and also on my back which never had hair before and when I look closely I see a very thin dividing line where the old

me is giving way to the new somebody.

Only I know who the somebody is except that I think Im crazy to believe it but the GDs must believe it too else why are they watching me? Protecting me—maybe they think there prophet can take over. If they think so, their right, and hes doing a damn good job.

I thought of killing myself just for spite but then I figured what good would that do because

A. they would stop me (they watch me a lot

B. and there are 10 other transplantees still living.

Ha ho.

If I could draw I would draw a picture of my head and put a little light bulb over it. There *are* things I can do. World Spirit, go to hell. I shall send you friends.

Luckily, I have done nothing so far to arouse suspicion except that they probably know that I know. Question? How does one untail a tail?

August 26

Answer: You dont. Tighter than glue. I tried taxis, I tried walking through crowds, Moral is tighter than glue.

August 28

Victory. I am now on the plane to Sacramento and except for the fact that anybody around me might be a GD, I think I made it. Moral is waking up about now unless I broke her neck, which I doubt because lets face it, Im not all that tough. If I hadnt had my gun (registered, folks, my occupation allows weaponry for self defense) and if she hadnt happened to hit her head on a urinal I think I wouldnt have made it. Shes pretty scary. She may be a virgin but she knows all about the laying on of hands. The bruise on my arm is pretty bad, I can see it through my shirt sleeves.

Took a jet to Boston, then from Boston to Dallas only I got off in Chicago and flew to Tulsa and hopped right on another flight to Sacramento. Maybe they'll catch up and maybe they wont, but at least theyll have to do a little research unless somebody saw me who knows me and thats the gamble Im taking.

August 29

Greyhound bus to San Francisco. Job done.

August 30

Landing in Tulsa. I reread this thing and Im absolutely sure Im insane except sane or not Im committed (ha ho) to this now. No turning back at all.

August 31

Radio is talking about the rash of Tulsa murders and frankly I dont see what these nut murderers get out of killing strangers. I would kill myself right now except that it would leave the job undone. I had to kill Valery Van Vleets mother too because there was no way to get to the little girl without

I want to vomit

I vomited but I dont feel any better. What am I doing Im killing people and even though I dont believe in God I feel damned. I cant be insane because insane people can black these things out and why the hell am I writing at a time like this except that I guess when Im dead I hope that people will understand and at least think I was crazy except Im not except that thats what all crazy people say (and all sane people too) but at least I know that what Im doing is insane. I know its insane but the MDs dont understand whats happening to me and the others and I cant think of any explanation except what the GDs say oh what the hell Ill just shutup and try to sleep

I cant sleep

I dont want to sleep anyway. I want to die.

Septemberemberemberemberember the First

And the mission is accomplished I had to kill a whole bunch of GDs and thank heaven for my permit to buy ammo because without it theredve been no way. If Im right or wrong it doesnt matter anymore because there all dead and Ill be too as soon as I finish writing this which Id better hurry and do because my guess is theyre trying to find me right now. I realized after I got all but Biscuit that theyd better not try to stop me because the only way they could do it would be to kill me and Im a peace of there prophet, who they dont want to kill. Im carrying valuable cargo. Which is why they havent called the cops, because the cops would kill me. And besides, how would they explain how they know who Id kill next without letting out their little secret which even if nobody believed it I figure they dont want anybody guessing.

I got all new skin on my tummy, and this Peppinger must have been a pretty virile guy, if body hair has anything to do with virility. I feel like a new man Ha ho.

I thought maybe it would be kind of harder to do Biscuit because after all I liked him but after youve killed about twenty people who arent fighting back, who just look at you allsurprised and frightened Vomit Vomit. Good thing I dont plan to get myself with poison because Id puke it up before it got me. Dead time, boys and girls. Whoever reads this, take a good look at the GDs and do yourself a favor. Dont let anybody operate on you under total again. There aint nothing worth dying for, unless its making sure that youre the only person living in your body.

I just thought of something. What if I had waited a little longer, and this Peppinger had got to my brain? Would I just become Peppinger?

Who gives a darn (euph.

I do.

I found myself with a pistol barrel in my mouth wondering why. I remember why now, I think. I have read this journal, and I think I remember thoughts of a few minutes ago. They

were not my thoughts. But they are my memories.

This gun has killed. These hands pulled the trigger. This heart beat faster as the gun fired. These ears still ache from the explosions. These eyes wept in remorse. My mouth still tastes of vomit.

But I did not kill. Please, God, I did not kill.

I was killed. Mabey says so and I remember a mad face and a meat-cleaver, coming from nowhere in the depths of a crowd of smiling, laughing, loving faces. I remember a moment of pain, and then

No. This I cannot

I can think of no reason to believe that this journal is a fraud.

I have looked in the mirror. I am the man I remembered myself to be.

3 September

I have met with Hyman, Ron, Moral, Chaste, and Egan. The answers are clear. Such a great sin has never been committed, and yet the hearts of those who sinned were pure.

Surely the humble fishermen whose hearts' love had been torn from them did not sin in wishing him alive again. And in the wishing, neither did these

disciples of God's Deliverance sin. But ours is a different age, and it was the genius of Egan and Chaste, the deft hands of Hyman, the force of will of Ron and Moral that have brought me back, not from the grave, for I never was there, but from where I was, and that is sin enough.

The chemicals are destroyed, boiled away or burned or both. The papers are all ash, which has been raked to dust and scattered through the fields and woods of this countryside. And they have knelt before me and given solemn oath before God and before me (it is a mark of all our weakness that they and I hold it necessary to vow before someone else than God) that their secrets will die with them.

We all have blood on our hands. They have the blood of eleven murdered men, women, and children. I have the blood of Frank Mabey whose body I stole. I have done what cannibals only mocked: I have eaten his flesh and taken his virtue and I live because he is dead.

This sin is on our heads, and though we will proceed as we had planned before the man servant of sin cut the thread of my thin and nebulous life, nevertheless we, like Moses and Aaron, will not see the promised land.

I will lock this away until my death, because for the sake of the movement we must go on. Penance for these sins will come later, in God's time. Now we must work in God's Deliverance. After my death this will be Frank Mabey's testament and my confession.

It is no jest that religion forbids all good things, and the stronger the forbidding, the better the thing forbidden. But the forbidding is only for a time. To own is forbidden, until the thing owned has been earned. To copulate is forbidden, until that copulation is locked within a family. And to die and to kill are forbidden, until God himself reaches down his hand and releases us from life. This I have taught them now. I see that it must be the cornerstone.

10 September

They ask me, again and again, what is death like? What did I feel? What did I see?

I show them, but they see not. I tell them, but they hear not. If death were not desirable, it would not have been forbidden us. We are taught to fear it, and we are forbidden to seek those who have died, because if we knew, if we understood what lies within our reach, at the cost of a pill, a bullet, a blade, a breath, then in the moment we understood, this world would be unpopulated. We would leap into our graves like a lecher into his lady's bed.

But we do not know, and the fear is on us, and God in his mercy will deliver us from ourselves if we can school our passions.

Perhaps God will let me stand on a high hill and look out into the promised land before he lets me return to him. Then my people will mourn me. But I will go singing. ■

Legal Rights for Germs?

Class Action Suit Stirs Turmoil Among All Sentient Life Forms

BY JOE PATROUCH

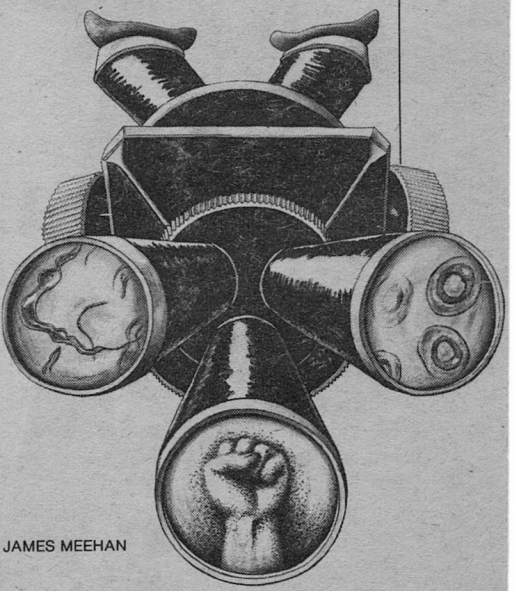
(UD Jan. 17) Mr. Felix Gardener, a carpenter living in Des Moines, Iowa, today filed a class-action suit in federal court on behalf of all viruses, bacilli, etc. (in short, germs) living in and

on the human body. "Every creature, however small, has a right to live its own life," Mr. Gardener explained. "By bathing and by taking medicines to combat what the doctors—in their slanted language—call 'diseases' and 'infections,' we are killing billions and billions of living, experiencing creatures each and every day."

When asked about the origins of his suit, Mr. Gardener said he had always believed that flying saucers were interstellar spaceships carrying sentient beings from a higher civilization to our own, and that these beings have not contacted us because we show so little respect for life in all its forms. We casually kill insects to keep our homes comfortable and our crops growing, we kill animals for food and pleasure, and we even kill one another on the streets and battlefields.

While watching a television program last month, Mr. Gardener saw a commercial depicting a group of friendly bugs being chased and murdered by an animated can of bug-spray, and he began to wonder about the legal and moral rights we owe to insects. Later that same day he saw two more commercials that triggered his suit. One showed a woman spraying a bathroom in order to kill germs that cause household odor, and the other recommended a mouthwash which caused clean breath by killing germs. "Why have these germs, also among God's creatures, no right to live their own lives?" Mr. Gardener asked. "How can we have the arrogance to kill so many living things just so our bathrooms and breath will smell clean?"

When asked why he had left the insects out of his suit, he replied that he and his wife had decided that insects deserved a suit of their own, and that therefore Mrs. Gardener would appear in court the next day on their behalf. The Gardeners argue that all life is sacred and that wiping out the life forms that cause polio, diptheria, lockjaw and other so-called diseases in human beings has resulted in an unbalancing of Nature, an unhealthy proliferation of human beings, and the total disruption of the ecology. Only by protecting the right-to-life of viruses and bacilli, they argue, can these microscopic animals resume their rightful place in the



JAMES MEEHAN

natural, God-given order of things and in so doing solve for us the world's present population, energy, food, and natural resources problems.

Reaction to the Gardeners' proposals has been mixed. Religious leaders tend to agree that all life is indeed sacred, that death is not an end but a beginning and therefore plagues and famines are not in themselves evil, and that the discomfort of great numbers of human beings suffering and dying should be viewed as a temporary inconvenience since the temporal world, seen in its proper perspective, is nothing more than a thoroughfare of misery and woe through which we travel to an eternal happiness.

Business leaders, however, scoff at the Gardeners and their suit. They point out that without the manufacture and sale of large quantities of deodorants, soap, mouthwash, athlete's-foot ointments, household cleaners, bug-sprays, medicines, large numbers of people would be out of work and unable to buy deodorants, soap, mouthwash, athlete's-foot ointments, household cleaners, bug-sprays, medicines, and automobiles. They point out further that economic chaos always results from a lack of automobile sales.

Doctors themselves were divided on the issue. Two doctors, conscience-stricken at the sudden realization of how many billions of tiny lives their prescriptions and medications had cost, have already committed suicide, and a few more may be expected to follow. Most, however, have stuck firmly to the physicians' traditional attitude that so long as they are making money, everything is all right and nothing should be changed. They have refused to take the Gardeners seriously. "I don't see where the money is in letting people die," one said succinctly, "unless you're an undertaker."

Finally, insurance companies across the nation are opposed to the "Pro-Germ" movement. "The longer people live, the more they can pay on their policies and the longer we can collect interest on their money," they say. "If everyone starts dying, we'll go bankrupt paying off all the claims."

It is difficult to predict at this time how the courts will eventually decide on the issue of "legal rights for germs." Should they rule favorably, however, everyone in America will become, by law, a vegetarian.

[NEWSPAPER HEADLINE:]

What about US plants?

(UD Jan. 23) Dr. Roseann Amythest, an unemployed chemist, today filed suit in federal court seeking to protect the plants of the United States from acts of what she refers to as "overt cannibalism" on the part of U.S. citizenry. "How would you like to be plucked from your comfortable beds and cooked?" she demanded angrily. "Everyone should be forced to eat chemically synthesized foods." Dr. Amythest reports that she has some preliminary recipes that she would be willing to develop for the government at a cost of . . . ■

the reference library LESTER DEL REY

PERSONAL OPINION:
Every so often, some reader takes me to task for passing judgment on books without admitting that I'm only expressing my personal opinion. He then tells me exactly how wrong I am to do this, without stating that his diatribe is only *his* personal opinion.

Frankly, I have no intention of burdening every review with the repeated statement that it's my personal opinion. That would be rather boring. And it should go without saying.

Of course there are some criteria that can be used in evaluating fiction, but these are pretty low-level standards. A writer must use English well enough to be understood without unintended gross infelicities. If science is involved, known science should not be violated in ignorance. Coincidence must not be used to solve key problems. Consistency—inner and otherwise—is desirable. And a sudden, unjustified change of heart by a character is undesirable.

Beyond such obvious things, however, the spectrum of desiderata is very wide. Some readers want fully detailed characters; others find mere props to the plot actually better for their purpose of projection into a story. Some actually like banal plots that give them repeated doses of the same pleasure, others want ingenious inventiveness. Some want the simplest style, others like to study elaborate symbolism and metaphor—and a great many readers actually seem to like "purple" prose which they call poetic. Most read for pleasure—but a fair number (particularly professional students of literature) seem totally aesthetic, and prefer study to reading. Some want an emotional stimulus (as I do, to some extent), while others delight only in what they conceive to be intellectual.

And since a reviewer must be a reader, he brings his own prior opinions of fictional values to bear on whatever he reviews. Ideally, he should be capable of appreciating the intent and achievement of the writer and then conveying to the reader whether that intent and achievement are ones the reader desires. This means that he should have an extremely wide reading background, not merely in the type of fiction discussed, but in all fields. He should have made an adequate sampling of everything from Aeschylus to Zelazny. Probably some professional editing experience would help, since that should—but not necessarily will—test his judgment against those of the readers and enable him to determine his own values more fully.

Thus having stated what should be obvious, let me say for perhaps the first time and probably for the last time that most of what follows is my personal opinion!

In my opinion, therefore—but one I hold very strongly—Marion Zimmer Bradley is rapidly becoming one of the

best writers in our field. Book by book, apparently beginning sometime around 1970, she has been increasing her command of the craft and art of writing. The depending of her characterization and the widening of her grasp of background, along with the increasing honesty and inventiveness of her plotting, are all joyous developments to behold.

Her "Darkover" stories are her best known ones, of course. And they depend on psi-effects to a major extent—a subject which I don't normally enjoy very much. Frankly, while I found the early Darkover novels fairly good reading, I wasn't much impressed. Now I look forward to each one with the keenest anticipation.

The latest is **The Forbidden Tower** (DAW Books, 368 pp., $1.95). And it lived up to my anticipation in every way, despite the fact that much of the story involves a sort of love relationship among a group of people—something that becomes unendurably treacly in the hands of a lesser writer.

This is a direct sequel to *The Winds of Darkover*. In that, the Terran Andrew Carr was drawn into a crisis between Darkovian people and another race that had learned to control the psi-crystals that are the source of Darkovian power. He rescued a Keeper (a sort of virgin priestess), and at the end was riding off with her toward his new home on Darkover.

This book picks up immediately with their intended marriage. And while Callista, the Keeper, knows something of what lies ahead, Carr only thinks he realizes the troubles facing them. Callista has been deliberately given psychological and physical conditioning that makes her suitable only as a Keeper; as a wife, she's potentially dangerous to the ultimate degree. And meantime, Andrew has to face the roughest kind of culture shock. He's learned some of the psi-ability of Darkover—but he hasn't learned the basic attitudes of the people, which are not those of his native Earth. In microcosm, he must undergo all the conflicts between Terrans and Darkovans that have been the basis of the series of books.

In the middle of such troubles, there comes almost a war between the traditional power of the Towers where the psi-jewels are understood and used and the needs of the family in which he finds himself—something that extends to the whole political structure of the planet before it is finished.

Somehow, the characters—even many of the lesser ones—become very real. And the background of Darkover—by this time a most fascinating world—is deepened. Psi, which is too often just a magic gimmick, becomes more and more a believable alternate body of science; each book recently has developed more and more of the understructure of this; as Bradley uses it, it no longer bothers me, but becomes a truly fascinating alternate.

I found it splendid, and can't recommend it too highly.

If you want straight science that's often as fascinating as any piece of fiction, there is **The Hot-Blooded Dinosaurs** by Adrian J. Desmond (Warner Books, 352 pp., $2.50). The title is an honest one, incidentally. Despite what we know about modern reptiles being cold-blooded, it now seems that the dinosaurs had to be warm-blooded creatures.

There are a lot of other fairly recent discoveries about the ancient saurians covered in the book, which deals with the subject excellently throughout. Desmond shows the development of our knowledge from the first discoveries to the latest theories; and to one who has grown up on older ideas, as I learned them, there is almost a new world back in time to be explored. There is also a wealth of insight into the nature of some of the men who became great in the field of anthropology, of their feuds, prejudices, shrewd guesses and understandable errors.

For instance, everyone knows—outside the field, that is—that all the saurians were lacking in hair or other external body covering. But it turns out that some of them may well have developed feathers for insulation, long before there were any birds to use such feathers for flying. And there is evidence that pterodactyls may have had hair—probably even white hair.

Desmond makes the new evidence and theories fascinating, and his writing is entertaining. He also covers the increasingly puzzling end of the dinosaurs as completely as can be done; but anything responsible for such a universal holocaust as that must have been still seems to be beyond easy answers.

The book includes appendices, glossary, bibliography and an index. Generally, it seems by far the best one-volume coverage of the subject of life during the mesozoic and late paleozoic that I have seen. It's also one of the most readable ones. Well worth the price to anyone who has ever been interested in the subject.

If you like fantasy, you should already be familiar with the name of Patricia A. McKillip. Her **The Riddle-Master of Hed** (Atheneum, 228 pp., $7.95) promises to be a richer book than her previous *The Forgotten Beasts of Eld,* which was declared the best novel of the year at the first Fantasy Convention in 1975. This is not a book for children, though I believe it is catalogued as such. It's a complex story of a young man in a world where all knowledge is hidden in riddles. He has become a master of such riddles, though he is only the prince of a tiny island off the mainland.

Then he discovers that in winning a supposedly impossible riddle contest with a dead king, he has been sucked into the tangled affairs of the main world. And gradually, he discovers that that world—as well as all he holds dear—is being threatened by some dark force which can seemingly take on any shape it desires. The man who comes upon you may look like your best friend—and may be a minion of those dark forces.

Eventually, it becomes clear that even the whole business of the riddles may be only a device set up by ancient wizards who have long been supposed to be dead. His only hope is to penetrate to the mysterious Erlenstar Mountain, where an even more mysterious master of his world is believed to rule everything. And to do that, he must become both warrior and wizard, though the princes of Hed have long been simple, peaceful men.

As I suggested, this promises to be better than McKillip's previous book—and so far as it goes, it is. But the book only takes the story halfway to whatever ending it may have. Un-

fortunately, this is not a complete novel.

In this case, however, Atheneum has not cheated the readers. The publisher states on the jacket copy that "the story of Morgon only begins here" and that the rest is another book. I disapprove of incomplete books—but somehow, when a publisher is honest about what is being done, I mind it far less. Anyhow, the second and concluding book should be out shortly.

So far as it goes, it's an excellent fantasy.

I wish I could say the same for **The Book of Suns** by Nancy Springer (Pocket Books, 289 pp., $1.95). This has one of the most attractive covers I've seen on a book for a long time—uncluttered, clean, with type and illustration somehow blended beautifully, and that despite the fact that there is more of a description of the contents in front than most books can carry. Looking at it, it seems that no lover of fantasy could resist it.

Unfortunately, the contents simply don't live up to the package. Oh, it has all the ingredients that should make a good fantasy. (I'm not sure however that the world in which it lies is as good for fantasy as it might seem; it's a sort of Robin Hood world, and that seems to grow into something of a cliché very quickly.) There is a good prince who is denied his heritage, another young man who is sort of an outlaw, and a hidden world of elder magic which only the prince knows how to reach. And there is the Book of Suns, with its prophecy of destiny. All fine ingredients.

But those ingredients need to be brought to life. And here, that fails. The good guys are just that—good guys, character tags lacking any real humanity. And the bad guys are simply evil. (There are also downtrodden peasants, good forest outlaws, etc. All stock figures.) And every time one of the good guys gets into trouble, you may be sure there is someone or something coming along to save him. It's all simplistic and unrewarding. I found myself skimming it, and even then it was hard to get through the book.

Readers of sword-and-sorcery will probably be delighted to know that Conan is back. There's still a legal hassle over the rights to the tales, but Prestige Books (distributed by Ace) has just issued **Conan of Aquilonia** by L. Sprague de Camp and Lin Carter (171 pp., $1.95). It strikes me as a rather short book for the price, considering the size of the type; but I doubt that will bother the real Conan fan.

Also available from the same source is **Conan the Conqueror** by Robert E. Howard (224 pp., $1.95). To my mind, this is the finest of all the Howard stories, a complete novel written at the very peak of Howard's form. (The book version has been edited by L. Sprague de Camp.) Of all the sword-and-sorcery I've read, this remains in my mind as the best ever—and while some of that attitude may be nostalgia, I've talked to a number of younger readers who agree.

David J. Lake seems to be a prolific writer, since he has had three books in a fairly brief space of time. And he has some really interesting ideas. **The**

Right Hand of Dextra (DAW Books, 176 pp., $1.50) takes place on a world where Earthmen have settled but found all native life incompatible with their metabolism. Earth life is based on chemicals which are levorotary (that is, as crystals, they rotate light to the left). Life on Dextra is right-handed, or dextrarotary. And now, though Dextra life had all been six-limbed and not intelligent, so far as men knew, that life seems suddenly to be highly adaptable, because new forms are appearing with only four limbs and with rapidly increasing intelligence.

Unfortunately, as in his previous *Walkers on the Sky,* Lake's good initial idea is quickly ruined by later developments. In this case, the people tend to become mere adjuncts to the plot—growing too good too rapidly; and the menace turns out too quickly not to be a menace, but practically a god in the pod, a being of supernal good will. (This gets even worse in the sequel: *The Wildings of Westron*—188 pp., $1.50. There the possibilities quickly fall before simplistic characterization.)

Apparently, Lake suffers from an error that often afflicts beginning writers—he falls in love with his creatures and situations and can't bear to be other than goody-goody to them. Too bad.

There is now an official biography of J. R. R. Tolkien available. This is **Tolkien** by Humphrey Carpenter (Houghton Mifflin, 287 pp., $10.00). Unlike other attempts to cover Tolkien's life and works, this one had the blessings of Tolkien's family and heirs. As a result, Carpenter was given a full opportunity to consult with those who knew Tolkien and to examine the pertinent papers relating to his life.

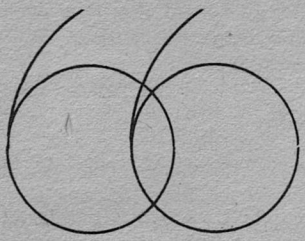
It's complete with appendices giving the family tree, the year-by-year events and a listing of all Tolkien's published works, as well as a useful index.

A good book, particularly informative about Tolkien's early life and the events leading up to the creation of *The Lord of the Rings.* And despite the fact that this is an "authorized" biography, it seems to be a fair and honest account. Recommended.

And finally, though I rarely review collections of short stories without what I consider some special reason, I can't resist mentioning **Skirmish: the Great Short Fiction of Clifford D. Simak** (Berkley/Putnam, 320 pp., $8.95). Apparently, Simak made his own choices of the best of his shorts and novelettes (mostly novelettes); and the result is a very good collection, indeed. There's an interesting Foreword in which he gives some of his own philosophy of writing and his view of the stories. Then there are ten stories.

I'm not going in for a catalog here. All I can suggest is that "The Big Front Yard", "The Thing in the Stone", and "Desertion" alone would be enough reason to buy the book.

Unless you already have most of Simak in anthologies and collections, this is the ideal introduction to just how good Simak is as a writer of shorter works. I had read every story already, but I thoroughly enjoyed reading the book from cover to cover. ■



BRASS TACKS

Dear Mr. Bova:

Of all the material in the March issue I enjoyed Alfred Bester's article "Mastering The Art of Space Cooking" most. It showed the humorous and sophisticated style of writing which Mr. Bester's many fans have come to expect from him. There is so little genuine humor in sf it is always enjoyable to read a piece of writing which is funny as well as of high quality.

Might I ask about one minor point? Mr. Bester's future space vehicle had computer-generated food preparation and the possibility that a saboteur could punch a new, wild menu on the tapes. Wouldn't magnetic tapes be used in a future space vehicle? In the office where I work there is an old-fashioned teletype machine which uses paper tapes for programming. I would assume that on a space excursion there wouldn't be room for four-pound rolls of paper tape that could be used only once. There also wouldn't be room for the little confetti which falls out as each coded word or number is punched on the paper.

THOMAS E. STAICAR
2288 Hardyke Court
Ann Arbor MI 48104

Quite right! But just as certainly as the cook's computer will use some form of advanced input software, there will be somebody with the skill and motivation to try to sabotage the cuisine.

Dear Mr. Bova;

There seems to be a fad in SF publishing these days to prove to the world that there are women who write science fiction. We've seen "Women of Wonder", "More Women of Wonder", and recently Galaxy printed a column in which only women authors were reviewed. Now Analog has done its part in producing even more evidence proving that women can write SF.

But by publishing a Special Women's Issue, you also limited yourselves to the number of authors you could choose from. Perhaps, I reasoned, you might even accept material you would normally reject, just to fill the quota of stories; thus reducing the average quality of the issue. As it turned out I was wrong.

I can't say that the June issue was any better than previous issues of Analog, but as far as that goes it wasn't any worse either. Joan Vinge's novelette "Eyes of Amber" was excellent, as was most of her writing I've ever read. "Lord of All It Surveys" was also quite enjoyable. "The Ax" and "The Screwfly Solution" were nothing special, but readable. Though while I was reading the latter, I was convinced it was the most ridiculous, paranoid piece of writing I'd ever laid eyes on! Only the explanation in the final paragraph saved the story. The science fact article, "And Then There Were Nine . . ." was fantastic! Perhaps Heinlein was closer to the truth than he thought when he wrote of that advanced Martian culture destroying the fifth planet? But we know that there are no such things as Martians . . . Hmm.

The only thing I did not like about the June issue was Leigh Kennedy's short story, "Salamander." The story seemed to illustrate Terri Rapoport's editorial well enough, dealing with how the lives of humans living on a lunar colony would be affected by the desolate lunar environment. But as far as I could tell there was no visible plot at all. The story consisted of a series of incidents trying to make a point. Good science fiction should do this, while also having a story to carry the idea. But I shouldn't criticize too much as I didn't get past the fifth page of the story.

On the whole, I enjoyed the June issue as I enjoyed all the issues of Analog I have read. But why did you publish this Special Women's Issue? I've been reading Analog since November 1975, and it seems to me that you have published a fair share of women authors. Wouldn't it have been better to spread the issue over two or three issues rather than packing it all into one?

STEVE GEORGE
94 Brock St.
Winnepeg, Canada

The Special Women's Issue came about when I realized that we had enough stories by female authors to fill an issue. Each story had been bought separately, on its own merits, without thought of the author's gender. As for "Salamander," to criticize a story as lacking in plot after only five pages is like calling World War II a "Phony War" because there was no immediate action on the Western European front!

Dear Mr. Bova:

As a paralegal, I was very interested in "The Legal Rights of Extraterrestrials" (April 1977). I would like to take Mr. Freitas's situation one step further. Suppose the alien, duly declared a person, was approached by a literary agent. Could he enter into a legally binding contract to write his autobiography? The problems would include:

1. *Capacity*—A contract with a minor or mental defective is not usually binding. A person with knowledge or intelligence inferior to that of a "reasonable man" can't sign a valid contract. If the alien were less intelligent than the agent, he would not have the capacity to contract. If the agent were less intelligent, he (and all humans) would be incapable of contracting with an alien.

2. *Mistake*—A contract is invalid if the parties are mistaken about its

terms. The sale of a stud bull was once declared invalid because it was sterile, a "bull in name only." An alien is almost guaranteed to be mistaken about the terms of a contract. He might lack some human senses (the blind men and the elephant), or he might possess superior senses which would give him irrelevant data. In any case, cultural differences would impede communications.

3. *Consideration*—An alien is unlikely to be collecting greenbacks. He may want his royalties paid in something valueless to humans (dog droppings or ragweed), excessively valuable (Brazil), illegal to obtain (the firstborn children of Akron), or nonexistent (filet of unicorn).

To paraphrase Sam Goldwyn, a telepathic contract isn't worth the paper it's written on.

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10359 Mt. Gleason Ave.
Sunland CA 91040

If the publishing industry (and this includes agents) acts with its usual mendacity, the alien's memoirs will be in every bookstore before the first legal brief is filed. But the entire situation does make an interesting plot for a science fiction story, doesn't it?

Dear Sir:

I very much enjoyed Richard C. Hoagland's "Return to Mars" in the May, 1977 Analog. However, if there really are life forms on Mars, whether they resemble earthly life or not, it seems to me that drinking the water might be asking for a cosmic case of Montezuma's Revenge!

BOB BROWN
1595 Emory Road, N.E.
Atlanta, GA 30306

Er . . . you mean Tars Tarkas's Revenge, don't you?

Dear Ben:

Your April 1977 editorial, "Democracy InAction," was right down my alley, especially so since I've written hundreds of letters to the editors of several local and area newspapers on the virtue and fallacy of the American Government.

You asked us the central question relevant in American politics today, whether the U.S. Government is of, for, and by the people of the United States. I'd say it isn't, never really has been, and we've got a long way to go yet before the present can be called the Golden Age . . .

In order to restore public trust and confidence in the humanity and integrity of the American Government, we've first got to start with the people, with more faith in the presidential type that does not look down too hard on people and is very tolerant of human error. The forgiveness of past offense committed upon mankind and society is what has made our country great today. Not the judging spirit that picks the bones clean in a superior way over others. Anything shorter than that is not Democracy in action that puts our republic further in the wildwoods to be picked clean by our foreign adversaries.

JAMES W. AYERS
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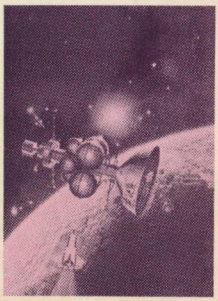

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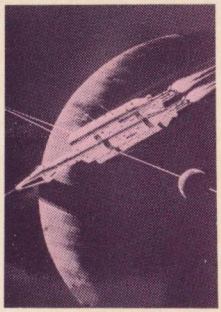

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