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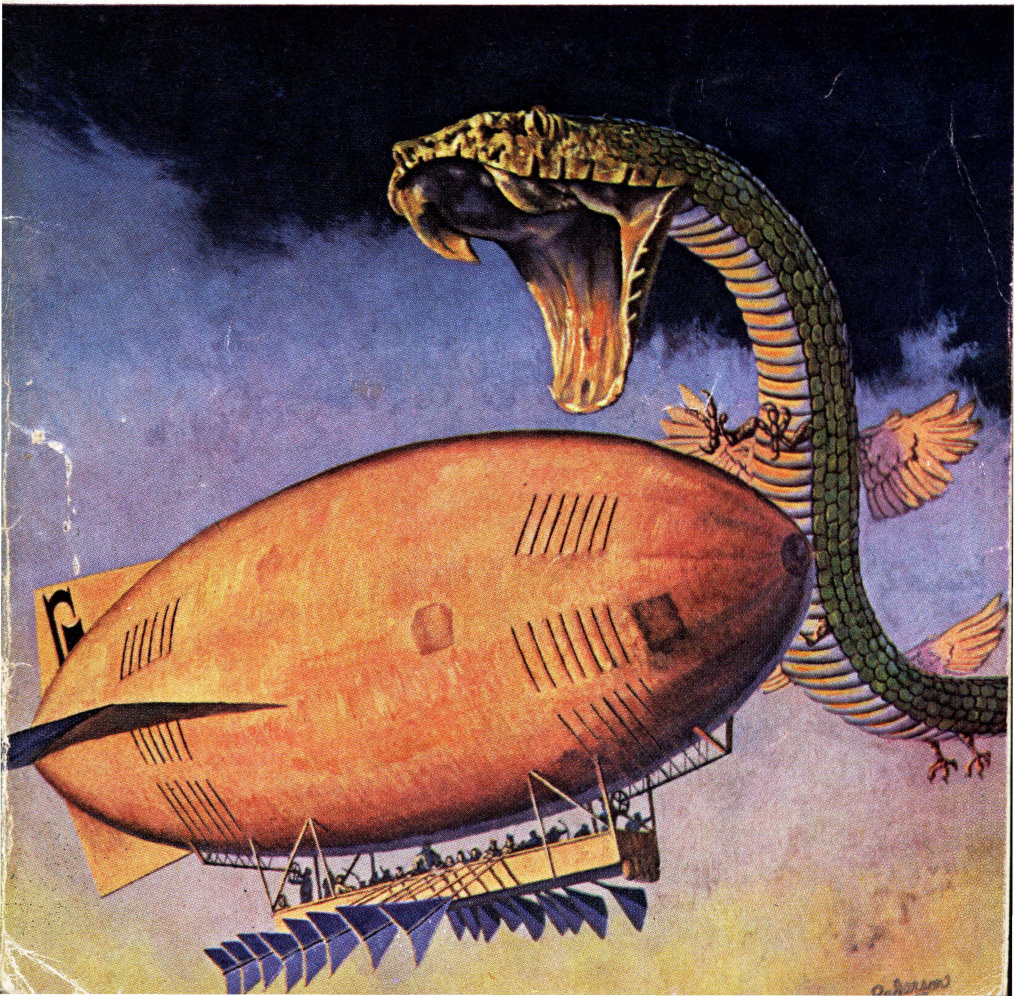

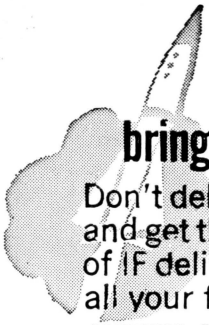

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ALL NEW STORIES

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THE RACE FOR SPACE

Since Sputnik, the United States has spent some thirty billion dollars on the space program; over the next few years it has already committed thirty billion dollars more. Of every ten dollars of Gross National Product approximately a dime goes into space.

Question is, is it all worth it?

That question has been asked before, and nobody's mind seems to get changed by any of the answers. The people who want to go into space still want to; the people who think it's an astronautitical boondoggle still consider it a farce. So a better question might be, "Is there any way of *deciding* whether it's all worth it?"

Let's start by discounting all of the principal arguments that have already been advanced on both sides. "Why go into space when there's so much to be done right here on Earth?" (But it wouldn't be done any faster anyway, you know. Things are moving on *all* fronts.) "We must find other livable planets to core for Earth's expanding population!" (But colonization has never, ever solved a population crisis. Europe exported enough people, out of its original quarter-billion, to supply the Americas with a quarter-billion of their own—and doubled its own citizenry to a half-billion in the same time.)

Probably the best reason for going into space is to learn something about our own planet. We have a complex atmosphere, which makes meteorological theory difficult; a simple one like that of Mars might give us the Rosetta Stone we need to make weather forecasting—and control—a science. If we could only get to it. Our geologists are handicapped through—literally—having barely scratched the surface of their subject, namely the Earth. A chance to study a few other examples would enormously simplify our own search for minerals and our knowledge—and perhaps prevention—of earthquakes.

But the question still remains: Can we afford it?

At the recent Conference on Planetology and Space Mission Planning in New York, Dr. Ewing of Woods Hole made what strikes us a cogent suggestion. Let's turn that problem over the economists, he said; let's find out *what* we can afford, so that we can decide how to budget our resources.

How about it, you graduate students in economics? What a thesis waits there for someone!

—THE EDITOR

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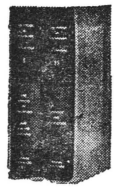

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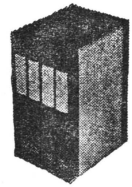

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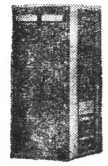

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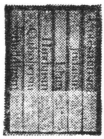

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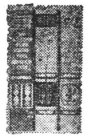

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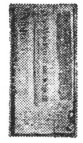

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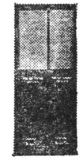

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PRISONERS OF THE SKY

by C. C. MacAPP

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Their world was six centuries lost — now it was threatening to destroy itself completely!

I

Altern Raab Garan, of the Mesa Lowry Fleet, had been pacing and sitting and pacing again in the Admiral's anteroom for two hours, while the Staff argued behind the closed office door. Raised voices carried through it. More than once he heard his own name.

For perhaps the twentieth time, he walked to the net-covered window for a breath of air that didn't reek with the burning animal-fat of the lamps. Midnight was long gone. The barracks and ground were dark. Somewhere, a sentry's footsteps listlessly plodded their rounds. You

could hear defeat in those footsteps, as you could detect its pervasive, dampening effect in so many things these days. He resisted the impulse to shout angrily at the unseen man.

There was a scraping of chairs in the Admiral's office.

Raab turned and stood at attention as the door opened and the Staff filed out. All of them looked furious, and all of them deliberately ignored him — which suited him fine. He knew his own face was flushed and taut, and his hair undoubtedly out of place. When the last of them disappeared, he strode to the office door — which had been slammed — opened it, and stepped in.

Admiral Kline, slumped behind the big desk, his white uniform rumpled, at least had a smile for him. "Sit down, Raab. How's your mother getting along? I've been meaning to call around ever since the funeral, but things have been so disorganized . . . Well, I guess you heard the yelling match I just had."

Raab nodded. "I'm sorry, sir. But — well, hell, excuse me, Admiral, but if they just want to sit and do nothing while we slowly starve, they *need* stirring up!"

The Admiral looked at him for a moment, then said quietly, "They still say that if we hold out, Mederlink will eventually get tired of blockading."

Raab made a disgusted sound. "Mesa Orket tried that. They've got a better mesa than we do in Lowry. *They* didn't hold out."

Kline smiled faintly. "True. Nevertheless, we don't have blimps or helium to throw away on gestures."

Raab said impatiently, "Of course not, sir. But the blockade can be run. We just have to be smarter about it!"

"And you're smarter?"

Raab flushed. "I didn't mean that, sir. But I know the country around here better than anyone from Mederlink. I know where to get helium without being spotted, and I know the guano islands. I sailed with my father from the time I was six. He taught me —" His throat tightened unexpectedly.

Kline only said, "Yes. Well, you haven't helped yourself by being outspoken. They called it insubordination. They not only didn't want to approve your request, they wanted to court-martial you."

Raab said bitterly, "What would you want me to do? My dad's dead. He can't speak for himself."

The Admiral said, "I might want you to show a little more discretion and a little less belligerence. I know as well as you do that your father was no traitor. I knew him a lot longer than you did, remember. But we did lose the battle and most of the Fleet, and people have to have a scapegoat. What we need is time. We still couldn't stand off a landing if Mederlink were ready to commit herself to one. However I agree with you that we can't just sit, so I'm giving you a blimp. It'll be *Gaffer;* she's the best I can do. I'll give you two Trimmers and a Half-altern; they'll be men who've gotten their tails in a crack one way or another.

The rest of the crew will be civilian volunteers. I'm afraid they'll volunteer from hunger, not patriotism, but we'll do the best we can. You'll be short of everything, including helium." He added after a moment, "Maybe it'll be a good thing to get you away for a while."

Raab, trying to control his voice, said, "Sir, *Gaffer* won't lift a worthwhile cargo even if I get through."

The Admiral sighed. "Nobody seems to expect you to get through."

He stood up, grunting a little, and limped around the desk to put his arm around Raab's shoulders. "I don't have to tell you *I* hope you get through. And any cargo you can bring home will be worth while because it'll show it can be done. Lord knows we need *something* to lift morale." He paused. "I'm bumping you to Skipper. Maybe you don't think the Staff howled about that."

Raab flushed again. "Rank isn't what I'm after."

Kline shook his head. "You've got to have it. You can't ignore rank and regulations and then have discipline when you need it. You'll need discipline. Good luck, boy." He looked at Raab oddly for a moment. "I'll see that your mother's looked after."

II

Admiral Kline stood listening absently as Raab's footsteps faded down the corridor. After a minute he sighed, went back to his chair, and lowered himself stiffly into it. His right hand strayed to the pipestand on his desk, then drew back. Tobacco was one of the things Mesa Lowry wasn't growing since the blockade.

He thought, how easy things seem to the young! How could you explain to a young fire-eater like Raab that Authority wasn't infinitely strong nor infinitely elastic? How could you get him to stand still and listen while you described the desperate persuasions and coercions and calling in of old political debts — and yes, the bribery — that had gone into even the present policy of holding out against Mederlink?

Lord knows, he thought, it was a miracle we didn't surrender two years ago, after the Fleet battle. Such an impetuous thing as his giving a blimp to Roal Garan's son — after the young fool had antagonized the whole Staff, too — might upset the whole painful balance even now.

Yet he couldn't be angry with Roal Garan's son. He grinned, sitting there, thinking how like his father the young Roal Raab was. The same lanky frame, the same slightly-bent-forward impatient posture; the hands and feet so restless (when their owner was aground); the hatchet-face with its restless blue eyes and the skin that needed only a token of sun to tan deeply. The almost ludicrous pained expression when he was forced to stand still. The forward-sprouting black hair that loathed combs and brushes. And, unfortunately, the same headstrong impetuousness. Roal had outgrown that eventually, of course, or he'd never have made Admiral.

Where had the years gone? It seemed no time at all since he and

Roal, midshipmen together, celebrated the victory in the first Mederlink war. That had set back the Links' plans for a whole generation. But somehow, people forgot. And now the other free mesas had gone under one by one; even Orket.

The Admiral pondered his motives in letting Raab try the blockade. It was mostly sentiment, he admitted, just as preserving *Gaffer* all these years had been, even as a training ship. She'd been a proud ship once, and it was all right if she perished in combat. But it wasn't all right to let Raab and others die if the reasons were no more than sentiment — and the clearing of Raab's father's name.

It was hard to understand Mederlink's determination to conquer all the mesas. Kline knew his ancestors on Earth had faced such wars of tyranny — he was something of a scholar about the home world — but he'd always supposed, without thinking much about it, that men on Durrent were different. It was six hundred years since the colony ship landed, and another century, more or less — two or three generations — between its departure from Earth and arrival to colonize Durrent. Maybe that wasn't enough time for men to change. But Earth had been under pressures — crowded billions, instead of a few million, as on Durrent, scattered on isolated mesas. And it must have been an uncomfortable world physically, small and dense, with its gravity higher than Durrent's but with an atmosphere so thin that blimps were clumsy and impractical. There was a lot of soul therapy in a quiet blimp cruise. But then Earth had had petroleum, and iron, easily available to support technologies vastly beyond Durrent's. He wondered how Earth was getting along. Durrent would never know, probably, unless a faster-than-light drive were invented somewhere. It certainly wasn't likely that any later emigrations would happen to come to this same planet — this sun wasn't even enough like Sol to attract spacefarers, though it was abidable, with Durrent's thick atmosphere. And Earth wouldn't spend generations tracing the long gone ships.

Durrent was on its own. It would have to sink or swim unaided.

And by all the signs it was sinking.

III

Two days before the scheduled departure, Raab took *Gaffer* on a cross-mesa flight to break in the crew.

Mesa Lowry, at fifty by thirty miles, was smaller than Mederlink or Orket or most of the other settled mesas, and her topsoil was poor. But she was six miles high like the others, with vertical sides that kept dangerous native fauna from reaching the top, and she was at the edge of the sea, handy to the guano islands for fertilizer. There were no other mesas, even unsettled ones, and no hills of any height, within a hundred miles of Mesa Lowry in any direction.

They were following down the mesa's largest stream, which was low

now; it would be nearly dry later in the autumn. It came from the minor hills *Gaffer* had passed an hour ago. Raab was sitting on the forward rail of the basket, looking back toward those hills, where a glider-base had recently been built.

With helium so scarce, hot-air balloons were being used to lift gliders. One was rising now, a glider dangling beneath it like a toy. You couldn't lift a glider very high that way. Enemy blimps, aware of that fact, sometimes sailed impudently over the mesa itself. But at least harpoon-carrying gliders could get up high enough to keep the enemy above effective shooting height.

The balloon rose higher and was hidden by *Gaffer's* tail. Raab shifted position and idly watched *Gaffer's* shadow distorting along the bumpy ground. It was a clear warm day; there were no clouds in sight except the low line of them, dark at the base but dazzling white where the sun hit them, along the mesa's seaward edge where the moisture-laden sea breeze humped itself up. Even *Gaffer's* shadow looked trivial, compared to that of a modern fighting blimp.

They'd certainly given him the next thing to nothing. Her bag was only a hundred eighty feet long, barely forty-five in diameter. The vanes at the rear were fixed, so horizontal steering was by the paddles only. The basket, rigidly suspended, was fifty-five feet long, eight feet wide and four feet high at the rail. The middle thirty-five feet had places for ten paddlers on a side, but because she was undergassed and weight was critical, Raab had only eighteen paddlers, plus himself and the three other Fleetmen. The paddles, at least, were new, with flaps that opened themselves on the backsweep so the paddles didn't have to be wrist-feathered.

In each end of the basket, besides other paraphernalia, was a large handwheel which turned a shaft projecting out forward or aft of the basket. These shafts wound up or released a series of lines running around the gasbag. As they squeezed or loosened they could vary the diameter of sections fore and aft, thus trimming or tilting ship or varying lift without one's having to valve gas or drop ballast.

The Fleetman at each wheel had the rank of Trimmer. The forward Trimmer, standing near Raab, was Ammet Oleeny, whom Raab knew well. He was uncolorful and quiet, seeming to blend into the background, but Raab knew there was wit behind the plain face, and that the man was reliable and very conscientious about his job. The Aft Trimmer, Sols Vannyer, tended to be sullen.

A glider, evidently finishing its tour of duty since it was this low, came toward them, tilting a wing as it made a turn around them. The pilot eyed the nondescript crew, then the single rubber-powered harpoon launched on the forward rail, and finally the bag itself. Even here, where outside air pressure was only eighteen pounds per square inch, the softness was noticeable. Finally he looked at Raab, recognized him, showed surprise — then hostility.

He arrested the hand-wave he'd begun, and banked away abruptly. Raab felt his own face grow hot. He hoped no one would see.

They passed over a farm where a group of men pulled a plow — most draft animals had been killed and eaten by now. The men's faces when they looked up were gaunt, tired, dull.

Anger stirred in Raab. He turned his head and stared at the bank of clouds, ten miles away, until he made out a group of black dots in the sky above it: Link ships, making sure no one tried to sneak off the mesa under cover of the clouds.

That wasn't the way Raab would go. He'd drop off the northern edge, at night, and head inland first for more helium.

He faced aft and called to his Second-in-Command, "Ben, make left, and half-speed toward the Capitol." He watched as Half-altern Ben Sprake, Jr., avoiding Raab's eyes and not acknowledging the order, directed the paddlers. The blimp's nose slowly poked about. He'd known Ben since childhood, both of them being sons of Fleet officers. Ben, a short, slightly plump young man, affected a blond moustache that belonged on a fiercer face. Raab wasn't surprised at his sullenness. Ben had never gotten above Half-altern because he'd been caught cheating on a test; and now Raab, two years younger, had made full Skipper.

But Ben didn't hold grudges (or any other mood) very long. Raab thought he'd be all right. He'd have preferred a tougher man — but there didn't seem to be much toughness left in Mesa Lowry.

They were cutting across a bend of the stream now, toward the mesa's only lake — a one-by-seven-mile body of water beside which the Capitol lay. He could see a few blimps above the Capitol; most of them fighting ships on guard. There were only two or three cargo ships. Government House, the only four-story building on Lowry, loomed above the lake.

He caught Ben's eye. "Give us about five degrees more left, will you?"

Ben muttered to the paddlers, "Ease off portside, two strokes. Now all paddles, half-speed." *Gaffer* steadied on the new course.

They were nearly over the lake now, on the side opposite the Capitol. Raab stared ahead at the farm where he'd been born. Trimmer Oleeny startled him by asking, "Your farm, Skipper?"

"Uh — yes." Even after two years, it was hard to remember that he was legally the owner now, with his father lost in the battle that had destroyed his reputation. It was deserted; his mother was staying in town, and both sisters were married. An uncle was supposed to be looking after the place. There was a very sparse volunteer grain crop, and the fruit orchard looked fair, but the vegetable patches were nothing but straggly weeds.

They sailed past the house, and Raab suddenly stiffened. Someone had put on the front door, in big red letters, "M.M."

That, of course, meant "Mesa Mederlink." Fury rose in him. He strode aft, where the paddlers would be facing him. "Excuse me, Ben. Stop paddles."

Gaffer drifted. When he had control of his voice, he asked, "Do all you men have your affairs wound up?"

They sat looking at him silently for a minute, then Jon Cudebek, whom they'd elected as spokesman — a burly, black-eyed man whose scalp hair seemed to have abdicated completely in favor of bushy black eyebrows — said, "We don't have much in the way of affairs lately, Skipper."

"All right," Raab said, "We're leaving tonight."

Ben Sprake muttered, "We're supposed to . . ."

"To hell with that!" Raab said. Then, regretting his rudeness, "There's no reason to wait. We'll load supplies this afternoon and leave as soon as it's dark."

IV

Gaffer drifted furtively toward the northern edge of Lowry. Neither of the two large moons would be up before midnight, and the stars gave barely enough light to see the ground. Raab, at the forward rail, hands cupped behind his ears for any sounds ahead, was nervously conscious of the blimp's own unavoidable sounds — Ben Sprake muttering cadence aft for the paddlers, the rubbing noises of the oarlocks, the whisper of paddle-vanes, the creak of rigging. There'd been a pair of Mederlink Hens operating off this inland edge lately — huge bulging blimps, with grappling-lines for the gliders they carried. Gliders wouldn't be flying at night, of course. But there'd be fighting blimps backing up the Hens, and they'd be on listening-patrol.

If spies had gotten out word of this sortie, it was probably a good thing he was leaving ahead of schedule.

The dimly seen ground ended, and the black abyss waited. Turning his head so they could hear him aft too, he quietly told Ammet Oleeny, "Give her two turns forward," then reached for a spoke of the handwheel to help the Trimmer haul it around. The rigging creaked and the cinch-lines made rubbing sounds on the bag; the nose dipped. They began to slide down, a little more steeply than he liked. "Ease off half a turn forward."

Now the mesa blotted out the stars aft, and the bag hid them forward; only to the sides was there anything but blackness. Some small flying creature screetched and fled. *Gaffer* picked up speed and began to roll. Ben Sprake tried to cancel the roll with the paddles, but the crew hadn't had enough practice together. "Let it go, Ben," Raab told him softly.

It was good to have a roll. As the basket swung up he could see higher to each side — and possibly spot the bulk of an enemy blimp against the stars.

He was relaxing a little now, though he kept one hand cupped to an ear. He always felt better in the

air. Some people called him sky-happy. Maybe he was. He never got bored, on the longest trip, but could sit during the day watching whatever the sky offered, and at night simply doze briefly or listen to the ship's sounds or the wingbeats of nocturnal flyers circling curiously, or smell whatever faint smells the breeze carried. Right now, those still were mesa smells. They were miles too high for the lustier scents of the jungle.

They had about a two-knot tailwind, if it hadn't changed. With their downward slide through Durrent's thick atmosphere plus what the paddles contributed, they must have close to ten knots ground-speed. By now, he guessed, they were eleven or twelve miles from the mesa and had dropped about a mile of altitude.

At this rate they'd soon be past any likely patrol from Mederlink.

Then, fifteen minutes later, he heard the high-pitched ring of a ship's echo-sounder — a disk of quartz struck with a small mallet. It was ahead and to port, and not close enough to get an echo from *Gaffer's* bag. But one ship wouldn't be operating alone. "Stop paddles," he murmured, just loud enough to be heard, then listened hard.

There was a very faint *ping* from dead ahead.

It was too risky simply to try to slip by; he'd have to dive. He ordered softly, "One more turn, fore and aft."

The sound of the rigging made him hold his breath, but then there was silence except for the growing whisper of air along the bag. The nose dipped farther. They were really going down, now, and he fretted about the softness of the bag. It was anybody's guess exactly how far down he could go before the thickening air squeezed the undergassed bag beyond recovery. Buoyancy versus squeeze; that was the old bugaboo of diving.

The pinging sounds were definitely above them now, but he daren't level out yet. He listened for the sound of signal-flutes, which would mean one of the ships had heard him. They were rolling more than thirty degrees now. Abruptly, someone retched aft. "Damn it!" he muttered savagely, "Clamp your hand over your mouth!"

They must have lost another mile and a half, now. He opened his mouth to order constriction off; hesitated. Foolish to panic and pull out too soon. He bent over the forward rail, felt for the ropes that held the ballast-sacks, made ready to slash them. He'd never been in a dive this steep. His ears popped, and he swallowed hard to clear them.

Suddenly he felt they'd reached the limit. "Off all constriction! Drop ballast fore and aft!" He jerked out his knife and hacked at the ropes, felt the jar as the weight dropped away. There was no similar jar from aft. "Drop ballast aft!" he called sharply. No need for silence now; they were miles below the search. Finally he felt the aft ballast go. They still had the sharp tilt, and weren't slowing perceptibly. He grabbed Oleeny's arm. "Pick up

what you can and take it aft!" He himself groped for a pair of food bags, lurched up the slanting deck, heard Oleeny slip and curse behind him. He groped his way forward again, bumping into the Trimmer halfway, and got another load.

That was all they could move quickly. He and Oleeny stayed in the stern. He fumbled for a lantern, thumbed its striker until it lit. Now all they could do was wait. He heard a sound he'd never heard before, but which he could recognize — the nose of the bag flapping in the pressure. God, they were far down! The air was soupy, making the lungs labor. Ben Sprake leaned over the rail and was sick again. The paddlers' faces were frightened in the harsh light.

But the nose was lifting, and at last they were level.

But they hadn't enough buoyancy, even in this heavy air, squeezed as they were. He tried not to cringe. A crash in the jungle would be mild — but the jungle wouldn't.

He could hear the huge wings now, still below them but not far, of the predators that could pluck men out of a basket like fruit, or tear a bag to shreds if they took the notion. How much altitude now? A quarter-mile? The jungle reek was strong in his nostrils.

The nose was tilted up slightly now, and he told the paddlers, "Now. Give it everything you've got. Pull! Back, rest, pull!" He gave Oleeny a nod, and led the way to the two empty seats; unlashed the paddle and picked up the stroke. "Pull! Back, rest —"

Their slow descent hadn't checked any; the tighter squeeze on the bag offset the increasing buoyancy of the air. But, with the uptilt, the paddles fought the negative lift. The men grunted with effort, making the paddles creak as if they'd break. Something huge flapped by with a harsh croak, and Raab held his breath until it was gone.

Gradually the descent slowed. Now they were holding even, but the men — and Raab — were gasping.

Between strokes, he got out, "A — little — longer." He forced his own shoulders to go on, though every stroke was agony.

Were they rising a little now? If they weren't, they were beaten. He might as well find out; if they bumped into a tall tree, or some hill . . . "Ease paddles. Half speed." The temptation was awful to quit altogether.

They certainly weren't falling anymore. There was time, now, to unlash supplies and jettison them, if need be, but he thought he'd wait until he was sure he had to. "Stop paddles."

They all slumped there, except the Aft Trimmer, who hadn't offered to spell anybody, and Sprake, who was too sick. They waited. *Gaffer* lost all headway and began to swing, very slowly, in a breeze that couldn't amount to more than a fraction of a knot.

After a while one of the paddlers, a wizened little man called Pokey Reger, whom Raab had accepted only because he wouldn't weigh much — but who apparently could

pull a fair paddle — said, "Be it likely them ship'll see this lantern, Skipper?"

"No," Raab told him. "We're miles away now, and the bag hides it. I'm more concerned about —" He didn't finish. If they didn't lift, it would be time enough to dump scarce supplies.

But, very gradually, he began to feel that the air was moving down along the bag. "We're lifting," he said.

Some of the men began to grin. This dive was something they could talk about the rest of their lives. "By damn," someone said, "I sure thought —" Raab wondered how many of them knew how close it had been. A little less gas, or a minute longer in the dive . . . "Paddles, half speed," he said, and got up to take the lantern forward, so he could better see anything that loomed ahead of them. But they must have gained a thousand feet by now; the jungle sounds were faint.

The first of the big moons came up. He could see the wild tangle below them, the great ponderous flappings.

Wearily he made his way aft. "We may as well shift this stuff forward and get leveled." When that was done, he ordered, "Stop paddles. Ammet, get out some sandwiches and a skin of wine. After we eat, anyone who feels like napping can go ahead."

He sat on the forward rail with a sandwich. *Gaffer* could lift on her own for an hour or two.

He watched the second moon's big half-disc grow slowly up from the horizon. He remembered seeing, as a boy, a distant blimp drifting in silhouette against just such a moon. That way — east — lay conquered Orket, and beyond that, Mederlink. The Links were probably operating their blockade out of Mesa Orket now.

What he needed first of all was helium. He'd have to get it slowly, a few Floaters at a time, avoiding the rich Floater lakes that were likely to be watched. He'd also have to shoot some game with the two hand-bows aboard, and cook up a supply of meat, and stock some fruit and greens. Then he'd head west and try to get around the blockade to the sea and the guano islands.

But of course he couldn't begin to feel optimistic until he was inland, out of sight.

He looked aft. Lowry, plainly visible in the moonlight, still occupied thirty degrees of the horizon, rising to twice his present altitude. He decided he'd better put out the lantern and gain another couple of miles, for insurance. But he'd better slow their lift; they had buoyancy to spare now. "One-half turn, fore and aft." When he got her up there and balanced, he'd have a nap.

The seventeen-hour night came to an end, and Durrent's sun poured gold upon the planet. Lowry was a little farther away now; but not reassuringly so. The sea was visible as a blue strip on the horizon, only a little dirtied by haze. The paddlers, refreshed, were pulling steadily.

By noon they were over grass country, where the jungle invaded as slim fingers along the river valleys.

They passed over an immense herd of grazing animals, looking individually tiny from this height, though Raab knew a big male could weigh twenty tons. The air was full of flying creatures, though the big ones, of course, were confined to lower levels. *Gaffer* had an escort — mostly triphibs under five feet long; of various species but all basically like snakes with two pairs of stubby wings in tandem and with eight thin legs, folded in flight — but including also Terran-descended gulls, which had been brought for some reason in the old colonization ships from Earth. They adapted to the medium-altitude lakes rather than to the thick-aired sea level. It was good to have the escort, for the creatures would warn by their behavior if an enemy blimp came down from above.

The gorge country loomed higher by the hour. He worked the paddlers in shifts, that day and the next night. By the following morning he was within a few miles of sanctuary.

V

At some time in the geological past, a layer of molten rock several miles deep had occupied this edge of the continent, overlaying solid rock of higher melting point.

As the upper layer cooled it cracked in a mosaic pattern, leaving, between masses of hardened rock, a labyrinth of miles-deep fissures; some only a few yards wide, some as wide as a quarter of a mile. Erosion, quakes and volcanos had complicated the original jumble. There remained an unpredictable maze of twisting gorges, tunnels, caves, lakes, dead-end fissures, sudden open pockets and partly filled valleys. Rivers, from the still higher snow-country farther inland, found torturous ways through the jumble, carving away rock, bringing in soil or washing it away. In general, there was considerable water, fewer sunny hollows than shaded ones, more rock than soil and many isolated anomalies. Inland, the chasms were more filled up; farther seaward, they were mostly washed empty. A spectrum of ecologies had formed, often badly intertangled.

Floaters, the source of helium, grew on shady lakes at medium altitudes.

From *Gaffer's* present position, one saw abrupt cliffs in one long wall, with gaps here and there like missing teeth, the gray rock lined vertically as if hundreds of black threads hung down it. Each of those threads was a vertical chasm. Most of them were wide enough for a blimp to enter.

Raab was following up a river that was placid at this season. Presently it could be seen that the river emerged from a narrow chasm, the bottom of which it had undercut into a virtual tunnel fifty yards wide and twice that high. He took Gaffer down slowly toward the opening. Finally, little Pokey Reger said, "Be we going in there, Skipper?"

Raab grinned at the wizened awkward little man. "It's safe. I've been through it more than once."

The crew eyed the hole, unconvinced. Finally Jon Cudebek said, "Why this way?"

Raab said, a little impatiently, "This is the most direct, and easiest, way to a place I have in mind. Also the safest, because the Links won't know about it. Ben, will you take us in?"

They pulled in slowly, giving their eyes time to adjust. By the time they were a quarter-mile in, the bright opening was lost behind a turn. A sound of rapids came from ahead, but here the river flowed smoothly, perfectly clear, bordered by clean sand on either side. The walls and the overhang were covered with pale-green moss, giving the dim light a greenish tinge. In places, the six-mile deep crack above them was straight enough to let in a streak of brighter light, blue by contrast, along the middle of the river. Fish and small triphibs darted away from Gaffer's shadow. The place had a dank smell, made more unpleasant by the density of the air. What breeze there was came downstream: cold air dumping itself through the tunnel.

They passed the rapids, a place where rock had fallen and not yet been worn away, then moved along another smooth stretch. That ended at a sharp turn, where the water had deeply undercut one side, leaving much fallen rock and a cave. Raab, busy with the turn, had only glanced into the dark cave, and it was Ammet Oleeny who said suddenly, "Skipper, I think I saw something in there!"

"Oh? What?"

"A wreck, I thought!"

Raab faced aft. "Stop paddles!" He struck the biggest lantern, which had a white-painted board behind it for a reflector. "Ben, take her back a few yards."

He aimed the light into the cave. Someone grunted in surprise. A limp gasbag lay upon the rocks, the contour of a basket showing through it. "Ben, land us between those two big rocks." While they maneuvered in, Raab broke out mooring stakes. "Ammet, take one of the handbows." He looked from one to another of the paddlers. "Cudebek, how are you with a bow?"

"Fair, Skipper."

"Take the other one, then. There might be triphibs here."

He lit a smaller lantern and took it with them. He, Oleeny, and Cudebek clambered over the rocks to the wreck. A six-foot triphib launched itself away from them, its bulging eyes reflecting the light, and slid smoothly into the river. Raab held up his lantern near the vanes of the wrecked bag.

The name *Goshawk* stared back at him.

He stood frowning at it, bewildered. *"Goshawk?* Why, she was one of the squadron escorting our Hens, and she was shot down a hundred miles at sea!" His heart was suddenly pounding. "Or — so the report said!" He called back to *Gaffer,* "Make camp! We're going to be here for a while!"

Five hours later, they sat for their second meal in the cave. Raab, his mind awhirl, realized suddenly that little Pokey Reger had spoken to him. "I beg your pardon, Reger?"

"I said, be she got away, why didn't she come home to Lowry, Skipper?"

The others waited on the answer. Raab, curbing his impatience, said, "Obviously, because she'd been hit and lost too much gas to lift that high. She was probably coming after gas when they ambushed her."

Reger seemed to puzzle over that. Cudebek, his heavy brows pulled down, said, "The fact that they were killed with Lowry harpoons and arrows isn't necessarily proof of treason, is it? Couldn't they have been captured weapons? Couldn't a whole ship have been captured?"

Raab looked at him, scowling. "The report's definite, whether it's false or not. It says they went down in the first surprise attack on our Hens. There *couldn't* have been any ships captured before then. And those men were killed here, not at sea. They were sitting at the paddles when the arrows hit them. So they were ambushed. By whom? This passage was a Fleet secret. Did any of *you* ever hear of it?"

They admitted they hadn't.

"All right, then," Raab demanded, "what do you make of it?"

Ben Sprake said, in a subdued but belligerent voice, "It seems funny that you brought us right to it."

Raab spun and walked over to him. "That's a pretty stupid remark. Your father as well as mine was killed in the battle."

Sprake's blond mustache bristled. "At least, I'm sure mine was loyal!"

Raab hit him and he went over backwards, gasping with pain as his elbows hit gravel. He lay glaring up, a small trickle of blood coming from one corner of his mouth. Raab took two steps and stood over him, shaking, slowly opening and closing his right hand. He'd never felt so hot and tense in his life. An astonished part of his mind realized he was ready to kill Sprake if he got up. But Sprake, as much surprised as hurt, stayed down, and Raab's fury slowly drained away.

He turned his back on the Half-altern. He was sorry now he'd hit him, or half sorry. He knew Ben hadn't really meant what he'd said. It was just frustration and envy spilling over. Well, it was too late now. He faced the silent crew.

"We'd better get out of here. I'm not sure now what the Links *do* know. There's a place I want to get to before sunup."

VI

Collapse, at an intersection of chasms, had left a roughly circular pit about a mile in diameter and a mile and a half deep. A river had made it into a lake and deposited sediment over the rubble before finding itself a new course elsewhere, leaving the lake fed only by small local streams. The lake had shrunk to a few hundred yards' diameter, exposing good soil which got a certain amount of sun. Suitable grasses and trees had found the spot, then animals had moved in. Some triphib,

probably, had unwittingly carried in live fish eggs. Gulls added the foreign phenomenon of feathers and hard-shelled eggs.

What brought Raab to this particular valley was a large rock-fall on the northern side. With the help of trees it camouflaged a cave where *Gaffer* could be hidden, and where a fire could safely be built.

He got the blimp maneuvered in and tied down, and sent out men with signal-flutes to watch the various approaches, then gave the rest of the crew their leisure. "You can bathe or wash clothes in the creek, but stay out of the lake itself. There are some real teeth in it. The best way to fish the lake is with a throw-line. Have clubs handy in case you hook anything big. Stay near cover and don't leave tracks or stray gear, and listen for the flutes. We'll organize a hunting-party this afternoon." With a little embarrassment, he told Ben Sprake, "You can have the first watch off if you like."

Sprake mumbled something, got a bar of soap and his dirty clothes, and went with the others. Before long Raab heard them whooping and swearing at the coldness of the stream. He grinned. He hadn't planned it that way, but later, when he took his own bath, the sun would have warmed the creek.

He stuck a signal flute in his pocket, then walked over to Oleeny, who, typically, was checking over the forward rigging before thinking of leisure. "You'll spend the first watch here, Ammet?"

"Sure, Skipper. I'll get a fire going, in case we catch anything."

"Thanks," Raab said, and started out to check on his sentries.

By the time he got back, most of the men had their clothes washed and spread out under trees to dry. He made sure they were well hidden from the sky, then walked to the lake where some of the men were fishing. Jon Cudebek had already caught something and was cleaning it. Raab walked over for a look, and grunted with surprise. "Is that a *metal* knife?"

Cudebek, squatted beside his catch, looked up at Raab for a moment, then wiped the knife on the ground and held it out, handle first. Raab took it and examined it.

The handle was bone, and fairly ordinary. Blade and hilt were one piece of dark bronze. He ran his finger along the ten-inch cutting edge. It was a fine piece of metal; over an inch wide and more than an eighth inch thick. The hilt itself would have made a passable knife, beaten into shape. Such a knife must have cost years of a paddler's earnings. He handed it back. "Thanks. I've heard a lot of pro and con about metal blades. What's *your* experience?"

Cudebek pursed his lips to show he was considering his reply, and deftly hacked a wing off his catch. It was one of the common triphib species, like a fat eel, five feet long and ten inches at the middle, with two pairs of rather small legs. Cudebek sliced off the last wing, turned the belly up and paused before slitting it open. "There are good and bad features. That thing of yours

—" nodding toward Raab's Fleet Issue knife of polished flint, with bone handle — "will saw a lot more rope and hold its edge. But bronze won't break or chip as easily, and it can be honed sharp in a few minutes. The main trouble is, you have to keep it cleaned and greased so it won't corrode, and you have to be careful what you grease it with." He sliced open the triphib, exposing red blood and pinkish meat (which, grilled, would be delicious). "Of course, a metal knife's compact and easy to carry."

"That's true," Raab said. "Is that Terran metal, or native?"

Cudebek grinned. "Native. You'd have to burglarize the Orket Museum to get a piece of Old Terran metal this big, any more. It's a native bronze, hammered and burnt repeatedly to get rid of impurities, or something." He deftly sliced out the triphib's viscera, and answered the question Raab would have asked. "I spent all my savings on it, four or five years ago when I was younger and foolisher. I've been tempted to sell it more than once, since things have been bad, but I've always gotten by somehow and hung onto it. Maybe I'm still pretty foolish."

"No," Raab said, "I wouldn't say that. It's a beautiful thing." He half turned to leave, then paused. "Oleeny's got a fire going, when you want to cook that."

The watch ended. He took his own laundry to the creek.

The water was still chilly, but bearable, and the sun was almost too warm. He remembered a happier time when he was about fourteen, and his father brought him here. There'd been talk of establishing a Fleet base, to guard the Floater lakes hereabouts, but it had never been done.

After bathing and doing his laundry, he went back to the ship, where there was hot water, to hack off his beard. When that chore was done, it was time for lunch. Then in the afternoon he took a hunting-party out with the two bows and got some tree-phibs, which had a little different flavor from those that stayed mostly in the water. And while they were hunting they gathered some fruit and some greens and dug a few roots that weren't much for taste but were very effective in warding off scurvy.

At sundown, everyone except a few lookouts gathered in the cave, where there were now four small fires. Cudebek, helped by the willing but bumble-handed little Pokey Reger, was cooking and salting-down extra meat. The Aft Trimmer, Sols Vannyer, had checked over the aft rigging by now and was showing his first signs of geniality, in a gambling session with about half the paddlers. Ben Sprake sat near them, watching, silent but not sulking. A paddler named Willie Wainer, a tall young man with straight black hair who wasn't too bright but had a good pair of wrists and hands for the paddles, was, surprisingly, coaxing something like music out of a signal flute. Later, when the wine began to take effect (Raab had rationed out enough for euphoria but not drunkenness), somebody got a food-tub to

thump on, and there was a sort of hornpipe dance. One of the men began bellowing an ancient chant, senseless and nearly tuneless, "Johnny, does your dog bite, dog bite, dog bite—?"

Raab knew what a dog was; had seen pictures of them; but if any survived on Durrent, it wasn't on any of the settled mesas. He supposed the song went back as far as Earth itself.

That made him a little moody; for the idea of Earth carried with it connotations of mighty lost glories.

Anyway, the men were having a good time; and since they were rehabilitating so fast, he wouldn't have to spend a second day here. He'd chase them to bed at midnight, and lift early in the morning for a Floater Lake.

VII

The surface of the Floater lake was about three miles above sea level, which left it an equal distance below the top of the gorge it was in. The gorge itself ran roughly north and south, and enjoyed a few minutes of sun a day even though it was less than two hundred yards wide. Except when the sun shone directly in at midday, it was very gloomy at lake level. Looking down into it from above, a searcher would see only blackness below the upper mile or so. The lake itself was only four or five miles long, and not rich in Floater plants, so Raab didn't expect to find more than six or seven mature Floaters. To put *Gaffer* in really luxurious shape, gas-wise, he'd have to harvest ten or twelve such lakes. Half as many would put her in fair condition.

Winding along the gorge toward the lake, *Gaffer's* bag hid the thin bright blue ribbon which was the morning sky overhead. The river deep in the the gorge was lost in gloom. Ahead, the falls that emptied the lake were a growing mutter.

He decided it was time to get some altitude. "Off one turn, forward." The nose lifted slowly. The paddlers shifted their feet, bracing against the mild tilt. The mutter ahead became a rumble, then a roar. Two more bends of the gorge, and the falls came into sight — not a single cascade, but a series, spilling white and foamy over the stairway of fallen rock that dammed the gorge. It was remarkable how much that white water, reflecting sky-light, brightened the gorge. Now he could feel the spray on his face. A flight of small triphibs, disturbed by *Gaffer,* leaped from some rocky ledge and took undulating flight to sanctuary in the lake.

The ship lifted and passed over the brink of the falls, and the roar faded behind her. The lake was a dark placid ribbon dotted here and there with the dark-green, sixty-foot-wide Floater pads, each with its forest of man-tall vertical shoots that gathered light and air. He peered up the lake, looking for the pale straw-colored mature spheres. "Half-altern, ahead and to the left. See it? Take us down there, please."

Gaffer settled until the basket hung above a pad. Raab dropped a rope ladder over the rail, paid out a

hose, then turned and beckoned to Pokey Reger, whom he'd chosen to help him because the man didn't weigh much. He descended, turned and watched Reger's awkward efforts as the men leaned over the rail, grinning at the same thing. Reger's job wouldn't be complicated. Raab reached up a hand to help him, then turned and pushed a way through the shoots.

The mature sphere, close to the center of the pad, was eight feet tall and a little less in diameter, translucent, ribbed vertically and — now — bulging with helium. Theory was that the planet extracted hydrogen from water and somehow turned it into helium. There was controversy as to whether that was possible, but Raab was willing to take the gas and let the theory go. He said to Reger, "Ever do this before?"

"Can't say so, Skipper. I only been off the mesa a few times."

"Well, stand on the other side of it and hold two corners of this square of cloth, in case it breaks free. I'll be ready to grab the other two."

He waited until Pokey was on the other side, then tossed the cloth so it spread over the top of the sphere. Then he poked the nozzle of the hose into the thin-walled sphere, pushing it in until a soft rubber gasket made contact. The hose stiffened with pressure. Later, when the sphere grew limp, someone in the basket would work the hand-bellows.

It was only a few moments later that Reger said in a quiet voice, "Don't move a eyelash, Skipper." Simultaneously Raab heard a ripple of water somewhere behind him.

Not daring to turn his head, he turned his eyes up toward Oleeny and asked quietly, "What is it?"

"Quadrala, Skipper. Big one."

Raab kept his voice down. "Sprake, lift and draw it away. You'll have to kill it or it'll attack you, eventually."

The creature, circling *Gaffer,* came into view. It was a quadrala, all right — close to sixty feet long, its snake-like head nearly as big as a man. Its two pairs of wings — one about a third of the way back along its body, the other, two-thirds back — flapped alternately, so that its long body undulated. The skin was a crazy-quilt pattern of light and dark green — out of place here; but a common jungle pattern. The eight legs looked insignificant. But any pair of them could jerk a man into the air. It followed *Gaffer* up, uttering its harsh croaks, trying to decide whether the moving objects in the basket were edible parasites of some kind or whether they were part of the whole strange object — which was too big to attack.

When *Gaffer* was a few hundred feet up and a thousand or so down the lake, Oleeny swiveled the harpoon launcher around.

Now the thing had decided there was food to be had. It twisted in the air and shot toward *Gaffer,* neck bent into an 'S' to strike. Oleeny put the harpoon just before and below a front wing. The creature contorted and checked itself before crashing into the ship, but the head lashed out. Men ducked from sight.

Even at this distance, Raab heard wood splinter. The beast shot about the sky, biting at itself, and apparently got the harpoon out. Then it turned back toward *Gaffer,* and this time it stayed wide while it labored for altitude. Raab was clenching his hands until they hurt. If it ripped the bag open . . .

But the thing's flying became erratic and more and more desperate. It screamed in frustrated rage, but it was falling. Finally it set its wings and glided down to hit the surface of the lake.

There was some thrashing, then it was still. It didn't submerge, which meant it was dead.

Reger said, "There be many of those abouts here, Skipper?"

"No," Raab told him, "it's the first I've ever seen at this altitude. It must have chased something in here, and been too exhausted to go home right away. Surprising it could fly at all in this air."

Gaffer turned and headed back. Raab wondered what he was going to say to Ben — it was a little embarrassing to have had to depend on him like this.

As if Reger had read his thoughts, the little man said, "That Sprake. He don't mean you good, Skipper."

Raab flushed a little. "Ben? I've known him all my life!"

"Just the same . . . well, you watch him, Skipper. I ain't going to say more."

VIII

Eight days later, *Gaffer's* bag was as rigid as safety permitted. Now he was ready to head west around the blockade.

Since he didn't know the gorges very far in that direction, he'd eventually have to lift to sky level. However, he did know a fairly direct gorge route for thirty miles, and he thought he'd take it. It involved crossing a rich floater lake, so he'd have to go at night. There was a technique for navigating gorges at night (if they were known to be unblocked and fairly vertical), which consisted of fixing fend-poles to the basket, sticking out to either side, with flexible wands on the ends that could scrape audibly against the rock walls without breaking.

By midnight, feeling their way along thus, they were nearing the Floater lake. They lifted over the falls that emptied it, and saw ahead, through the narrow opening of the gorge, bright moonlight shining on the opposite wall of the lake valley.

The two big moons were fuller now, and rising earlier. For caution's sake, Raab slowed down. "Half-altern! Take us in at quarter speed, and as quietly as possible."

Gaffer inched toward the opening. Then Raab smelled wood smoke.

He hesitated, on the point of ordering a back-track. Oleeny, sensing his tenseness, whispered, "What is it, Skipper? Are we — oh! I smell it! Uh, could it be a natural fire?"

"At this season?" But Raab let the possibility run through his mind. There'd been no lightning storms for months; anyway, growing things were too green, in places like this, to burn easily. There hadn't been active volcanoes for ages. No; it had to be

campfires. And they could hardly belong to anyone but the Links.

He knew it wasn't prudent, but he didn't want to sneak away without having a look.

"Back in a minute," he told Oleeny, and groped his way aft. "Half-altern, I want to emerge over the lake very quietly, at about half a mile above the water, and turn right immediately at half speed. I want to stay within fifty feet of the wall, but not much closer. We won't have the feelers."

Ben's voice was petulant. "How can I do that? This is the dark side of the lake!"

"There'll be enough reflected light to see by." Raab gave him no more time to protest, but went back forward.

This was another case where rock —between two parallel cracks —had been undercut and finally collapsed. The valley was four miles wide, about thirty long. The rubble had filled in the gap to about three miles from sky level, or a little less. Then the two parallel rivers had joined to make a lake, deposit sediment, cut away at the spine of higher rock left at the middle and finally reach some sort of equilibrium. Now the lake was fairly shallow, with a mud bottom that supported Floater plants (via long roots) and a string of islands up the middle. Some of the latter had accumulated soil around them, and so were wooded.

The one where the Links had made camp was two or three miles up the lake from the outlet.

The first thing Raab saw, as Gaffer crept up the east wall, was two great fat Hens, tied down at the upper end of the small beach. Then he saw six fighting blimps, inland from the beach, floating above the strip of trees (undoubtedly because there wasn't room to tie down). There were two fires near the Hens, and four others farther down the beach. At this distance he couldn't make out human figures except as moving dots, but it appeared they were having a wine bout.

Where were the gliders?

Finally he spotted them at the edge of the beach. Twenty of them in a line, barely illuminated by the fires.

He couldn't tell whether the fighting blimps were manned at all. Usually at least a few men would stay aboard when the ships weren't tied at ground level. But there'd be rope ladders dangling, and it would take the carousing men a while to climb them.

He jerked his mind out of that channel. He wasn't leading any attack squadron; he had *Gaffer*, with one harpoon launcher and two handbows. Each of those fighting blimps down there had eight launchers on a side.

What was a squadron like that doing here? Getting helium for one thing, of course. But Hens were slow. When they came for gas they usually didn't bring their gliders, and didn't have fighting blimps along with them, slowed to their pace unless they needed escorts. And there was certainly no one in a position to attack two Mederlink Hens, even unescorted.

The probability was that the Links knew *Gaffer* sneaked off Lowry, and dispatched this group to patrol the nearby Floater lakes. The gliders meant a sky watch, too.

Well, he'd seen them. And they evidently didn't take their patrol very seriously, and the thing for him to do was go on quietly up the lake before the moons rose any higher, and be safely to the west before morning.

He paused, on the point of giving the orders, and stared a moment longer at the impudently unguarded camp. And there was an intoxication in his blood that made his head a little fuzzy, and made his breathing deep and uncomfortable. He let out an unhappy sigh. Was there any chance that this was a trap?

The odds were very much against that.

Just one running pass . . . Four or five harpoons; and ordinary arrows, falling almost vertically, would pierce gasbags too. And there were those gliders, so beautifully lined up, floating. A few sacks of ballast, slit open and raining gravel, some of it coarse enough to crash through a wing . . .

He knew he was being a fool. But he turned and went aft, and told Ben Sprake, "I want a course along that beach, at the edge, especially over the gliders. About two thousand feet as we pass over. A dive first, to get all the speed possible. Then —"

Sprake's gasp and low cry interrupted him. "You, uh — you can't be serious!"

The intoxication swirled through Raab's brain. "Why not? It'll take them fifteen minutes to get the first blimp lifting! And look at the area they'll have to search. There's a narrow gorge off the west side, about five miles up, and we'll be there before the moonlight's down to the water on that side, and—"

Cudebek's voice broke in. "Hold on there, Skipper. We didn't sign on to fight. We're civilians."

Raab's words galloped on. "Not now you're not! I'm in command of a Fleet unit, and we're in contact with the enemy, and I have the power to conscript you. You're now Fleetmen."

The hush was a palpable thing. I mustn't do it like this, with a heavy whip, he told himself. He took a deep breath and tried to speak calmly.

"Let me explain things to you This task force here is looking for us. Before dawn, those Hens will lift to three miles above ground level. With that, and with what breezes and thermals they can find, the gliders will range sixty miles or more in all directions, and be able to see thirty miles more. We won't be able to poke our nose into daylight. And there aren't any charted gorge routes we can take. We'll have to travel at night only. Meanwhile they're apt to find one of the places we cut Floaters, and know for sure we're in the area." He realized with a shock he was exaggerating, but plunged on. "Half the blockade will be after us then. But if we puncture those Hens, it'll be two days, maybe more, before they're patched and

pumped up again." He felt shame and added, "Besides — that's the enemy! That's Mederlink. We've got a chance to hit them, slow them down a little, without adding to our own risks. We'll actually gain a few days." He paused, wishing he could see their faces. "It isn't that I want to *compel* you."

After a minute, some one said, "I didn't sign on to fight."

There was a period of muttering and argument, in which Raab had to remind them to hold their voices down. Finally Cudebek said heavily, "We'll vote on it. Would you try to conscript us against our will?"

Raab hesitated. It was hard to know just how to apply pressure without antagonizing them even more. Finally he said, "No. I won't try to force you. But you've read the Articles of War. As citizens, you'll be responsible — not to me or to the Fleet, but to the Government — if you refuse."

There was more growling. Finally Willy Wainer spoke up. "I got an eight-year-old sister back on the mesa. I been watching her get skinnier every day; that's one reason I signed up. I'll fight."

Cudebek said, "So will I, if a majority's for it. Let's vote."

One by one, the voices chimed in. "I'm for it!" "Me too!" "You're a bunch of damned fools! We'll all get killed!" "Shut up! Jump out if you want to!" "I'll fight!"

Cudebek chuckled. "A majority for it. What do we do?"

Raab fought to control his excitement. "Mostly, just paddle like hell when the time comes. I'll want you personally, I guess, to use one of the bows."

Little Pokey Reger said in an unsteady voice, "I sure never thought I'd be a Fleetman."

Gaffer slid down toward the island. Raab, at the forward rail working to get the harpoon launcher unmounted and transferred to the port side, wiped sweaty hands on his uniform.

He hadn't been entirely honest with the men. There might be blimps already in the air, guarding the camp. There *might* even be a third Hen aloft, her gliders flying by moonlight. Or, quite possibly, at two thousand feet and more (he dared go no lower, as he needed some altitude to escape) he might not score a single hit with harpoon or arrow. And the number of exits from the lake valley weren't unlimited, after all.

Reflected moonlight was bright enough here so he could see his own hands easily, and that worried him. If there were anyone alert on watch . . . Now he could hear the shouts and singing. He hurriedly finished mounting the launcher, cranked it up and slid a harpoon into place. Oleeny was ready with one of the hand-bows; Cudebek, midships, with the other. Raab craned his neck to make sure they were aligned with the parked gliders. They were; Sprake, though obviously frightened and furious, was doing a good job. There was a very slight roll. Now that he thought about it, that wouldn't hurt. It would help spread the gravel in a wider path.

They were getting close.

He watched two men wrestling near one of the fires. If that only kept the Links' attention for another few minutes . . . He wiped his hands again, seized the handles of the launcher and twisted it down and forward, one of the bulging Hens in the sight.

Automatically he let go with one hand to pluck at the great braids of rubber, making sure the tension was equal on each side. They thrummed identically. He tried to visualize how much the trajectory would curve if he shot now. Wait a little? No; time was too short. He squeezed the trigger and the basket jarred slightly as the big, vaned harpoon streaked away.

He cranked frantically, fumbled for another missile. Oleeny sent an arrow arching out ahead. Too far for much hope, but there were plenty of arrows. Raab shot again, at another compartment of the closer Hen. He couldn't see his first harpoon until it struck, just aft of the nose. He felt like shouting as the fabric split, then flapped outward. The two Links stopped fighting and whirled. Figures were leaping into motion all over the camp now. He threw a glance toward the fighting blimps as he cranked a third time. No action there yet. Now the shouts began to reach him. He slammed another harpoon into place, but let the weapon hang while he lunged forward to slash at ballast sacks. Damn! He should have had another man forward to do that. He called aft, "Gravel!" and hoped Trimmer Sols Vannyer would act fast. At the launcher again, he shot nearly straight down. There were other punctures now, as Cudebek or Oleeny got lucky arrow-hits.

The place was a chaos. Links were scrambling up rope ladders now. He got reloaded, swiveled the weapon and shot at the second Hen. He couldn't see whether his second and third missiles had hit or not, but the first Hen was losing plumpness fast. He cranked, knowing there'd be only one more shot, and aimed very carefully.

Rigging creaked now as Oleeny and Vannyer hauled at the constricting-wheels to compensate for the lost ballast. Raab leaned over the rail, squinting back at the parked gliders. If any of them were damaged, he couldn't see it from here. Cudebek sent a last arrow arching aft, then took his place at a paddle. Sprake picked up the tempo until the men grunted with effort. One of the fighting blimps was manned now, and a Link was slashing at the ropes.

Raab seized Oleeny's arm. "Can you stand half a turn more?"

"Yep." Shaft and wheel protested as Oleeny hauled on the spokes.

Raab had been too enthusiastic, he knew, with the gravel. He should have kept half the forward ballast. He daren't lift into thinner air now, even if he wanted to.

He stared aft. The fighting blimp was rising fast, its paddles straining, its launchers beginning to swing away from the rails. It rose out of sight. Two more were ascending now. *Gaffer* was still slanting down, on the same course.

It all depended on whether they had him in sight. If they did, they'd simply overtake *Gaffer* and riddle her. If not, they'd expect him to turn, and more than likely to lift skyward as fast as he could.

Since he couldn't see them, he couldn't know. His ears strained for the *woosh* of harpoons. The shouting at the camp was beyond hearing now, but he could hear signal flutes from there, and answers from some of the blimps. One Hen was deflated to her inner cells. The other was limp forward, but only sagging a little midships and aft, probably just an arrow hit or two. They'd be swarming over her, patching those before she lost more gas.

What was above *Gaffer?* If they had lost sight (surely they'd seen her by firelight as she passed over) they might be going on up. The farther they went, the less chance they'd see *Gaffer* in the shadow. And if they got into actual moonlight, they might as well be blind.

It seemed to him now that he'd been an incredibly optimistic fool. There was nothing better to do than take the gorge he'd originally had in mind, to the west. Would they know that gorge? Wouldn't they guess he was going west, around the blockade? They should — already he was far west of Lowry, which was a plain clue.

It depended on how fast they thought, he supposed. He slumped on the forward rail, brooding over it. He felt tired now, and drained of courage. He could navigate that narrow gorge by feelers, but where it ended — where the charts ended, rather — he'd have to lift clear or he'd simply lose himself in twisting mazes.

Not at the end. The charts showed the sharp turn there, which would be plain enough to the Links even in starlight. So, he'd have to lift five miles or so this side; enough so they wouldn't (assuming they followed that gorge, above it) be waiting.

Maybe he wouldn't even go that far. A couple of hours after midnight, the moons would be past the zenith, but still high, so *Gaffer* wouldn't be so well lit from the side. He'd take his chances that they weren't watching that particular spot.

But there was the problem of the ballast . . .

Only one thing to do about that. The river, above the lake, would provide gravel. They'd hide *Gaffer* in shadow, and gather ballast by moonlight. Or should he let that go, and valve helium instead for a lower (and safer) pressure at higher altitudes?

No; he wasn't going to give up the painfully collected gas. He started aft to give Ben the necessary orders, but Cudebek heard him, and, between grunts of exertion, got out, "Skipper, when can I talk to you?"

Raab halted, annoyed. "Why, as soon as we're safe. We've got to refill ballast sacks, then get away from this vicinity. There's no time to waste because we have to dodge the moonlight."

Cudebek's voice was ugly. "This won't wait, Garan!"

Raab suppressed anger. He couldn't afford a shouting match

now. He stood there, torn between the urge to keep going, and the recognition that being rough with the spokesman could mean trouble later. After a moment he said bruskly, "As soon as we're tied down."

IX

He kept them pulling farther than he'd originally intended, to where a bend would keep the moonlight from striking the river at all. It was very dark here; they had to tie down by feel. A couple of hundred yards downstream, by his reckoning, there should be enough reflected light to work by. They could walk that far.

First of all, allowing only one man out at a time, he got some rocks stacked in the basket so the Trimmers could ease off the strain on the constricting gear. Then they tied down to large boulders.

"Now," he demanded from Cudebek, half inclined to make it plain that the man was under Fleet discipline now. "What's so urgent?"

Cudebek said flatly, "Someone's stolen my knife."

Raab checked an angry curse. He said instead, "Your knife? Why . . . it probably fell out of the scabbard when you were shooting arrow! Or when you moved around!"

Cudebek fairly snarled at him. "Damn it, Garan, don't you think I know how to keep a scabbard buttoned?"

Raab's face grew hot. "You'll address me as 'Skipper' or 'Sir'! I'll order everyone out, and you can feel around the deck yourself."

Cudebek said, his voice murderous, "It won't be on the deck. I want everyone stripped and searched. And I want all the cargo gone over."

Raab's anger broke free. "You complete fool! Do you think we're going to light all the lanterns and make a search *here?* Why in God's name did you bring a knick-knack like that anyway? Did you think this was a women's and children's outing? Feel around the deck if you want to. Otherwise, shut up and get to work looking for gravel."

He realized suddenly that he had his hand on the hilt of his own knife, ready for a challenge. Thank God it was too dark for anyone to see that. But his raised voice alone was shame enough; that wasn't the way a Skipper acted. He said, with more control, "All the rest of you out. We've got to mend the sacks first of all." As a sudden afterthought, he added, "if anyone *does* have Cudebek's knife, I'd suggest putting it quietly back on his seat when no one's looking. Theft in combat carries the death penalty. I won't hesitate just because we're short-handed."

They got the gravel. Cudebek had felt his way over the ship and was ominously quiet as they prepared to lift. In order to get where Raab wanted to be by midnight, they had to risk going back downstream during the few minutes when moonlight shone directly in. They reached the westward-running gorge he wanted, and turned into it. He lifted to within half a mile of the top, and kept the men rowing harder than he had

to. That turned out to be unfortunate, because they had a wait before it was time to lift clear out. And as soon as they slowed down Ben Sprake said, with a mixture of emotions competing in his voice, "Sir, as Second in Command, and with concurrence of a majority of the crew, I invoke the right of Question."

After his first instinctive anger, Raab found he was neither deeply furious nor surprised. He gave himself a moment, then said coolly, "I grant the right. Just what is it you want to question?"

Ben said hesitantly, "Uh, your orders. We weren't — that is, we feel you've exceeded your orders."

"Oh?" Raab had never felt this kind of cool, controlled anger before. "Are you sure you know exactly what my orders were?"

Jon Cudebek spoke up. "As crew spokesman, I'd like to talk, Skipper." His voice in the darkness was precise and cold.

Raab told him, "Now that you're Fleetmen, you don't rate a spokesman. Go ahead, though, and have your say."

The burly man said, "When we signed on we were told we'd make every effort to avoid the enemy. As long as it was put that definitely, I think your orders must have been along the same lines."

Raab considered for a minute. "Just who's making this protest? You, Cudebek? Or Half-altern Sprake?"

It was a loaded question. The crew could be punished for mutiny, whether they were right about the orders or not, if a Board of Inquiry so decided. Sprake, as Second in Command, would be held as within his duty if his action were found to be in accord with facts.

After a minute Ben said sullenly, "Well, uh, I am, sir."

"All right," Raab said. "Can you quote my orders? Did you see a written copy "

"No, sir." Hesitantly.

"Then," Raab said, "actually, you're protesting on behalf of the crew. Is that it?"

"Well, yes, sir."

"Fine. Now that that's established, just what is it you all want? Should we go back and apologize to the Links for hitting them? Or do you want to sneak home without even trying for any guano?"

Ben was silent. Finally Cudebek put in, "If I may speak again, Skipper. What we want is a guarantee that we *are* going after guano, and nothing else. That's what we signed on for. Not to go around looking for fights. Even if the odds weren't so, uh, ridiculous, we think that's the Fleet's job. And I don't think you can conscript us the way you did, and be backed up once we get home."

"I'll remind you," Raab said, "that you voted. But let's forget that. Will you accept an assurance that we'll try to avoid any more contact with the Links?"

Cudebek said in the same politely hostile voice, "Not quite, Skipper. I understand we can refuse if you try to order us into any more fights."

Raab smiled grimly in the dark. "Not exactly. If I commit gross misconduct, or treason, or directly disobey my orders — and you don't know those—Half-altern Sprake can take over command, with the concurrence of two-thirds the crew. But you'll face an Inquiry at home, and Mr. Sprake will have to represent you. If he's willing."

Ben said angrily, *"I'm* invoking the question!"

"Um," Raab said noncommittally. "All right, we'll leave it that way. Now, it's time to lift out of this trench. Half-altern, since you contemplate taking over command in the future, you'd better get some experience. Will you take her up and set a course west?"

There was a charged silence in the basket. The feelers scraped rock as *Gaffer* rose. Now the cleft became faintly lighted as moonlight from above bounced from wall to wall.

Sprake's voice was nervous as he directed the paddlers. Another quarter-mile up and he ordered hesitantly, "One-half turn constriction, fore and aft." The lift slowed and *Gaffer* hung, ready to start down again. Ben ordered a quarter-turn off, and she rose very slowly.

Relaxed at the forward rail, Raab grinned to himself. If you wanted to dwell on it, the rigging did creak a trifle ominously. Of course the danger was that, with the bag so taut, as they rose into thinner air the increasing expansion of the helium would break constricting-lines, or tear them loose from the shaft. Even worse, with an old, patched-and-repatched bag like *Gaffer's,* the swelling helium might rupture the bag.

The light brightened. Far down the gorge, Raab could see, beneath the bag's nose, a stretch of brightly lit rim. They ought to emerge very slowly and creep along close to the ground (which was mostly rocky here) to be as inconspicuous as possible.

He knew all those things were churning in Ben's mind.

A minute later Ben burst out, "Sir, may I valve a little gas?"

Raab said curtly, "You're temporarily in command, Half-altern."

They were very near the top. Sprake, with a touch of panic, said, "Raab, I'm not familiar with the ship! I'd like to valve a little gas and drop a little ballast!"

Raab allowed himself a chuckle. "That's up to you. But remember we'll be going to sea level. You can't afford to throw away too much gas. And you haven't much ballast to spare, either."

The silence resumed. Then Sprake said furiously, "Sir, I don't know how much this ship will stand. Will you take over?"

"Why, yes, if you wish, Half-altern." Raab arose, climbed to the rail, stood up and thumped the bag, more for effect than anything else. "Off a quarter-turn, fore and aft. Mr. Sprake, as soon as we emerge I'll set the course, then I'd like you to call cadence if you feel up to it."

He could think of many clever things he might say. Instead, he calmly got them headed west, then

let Ben take over. The lesson would speak for itself.

Ben's voice, mumbling cadence, sounded almost tearful. Raab, relaxed again forward, examined his own feelings with wonder. He didn't seem to feel any sympathy at all for Ben. Nor for Cudebek — it was too bad the man had lost his knife, but that wasn't Raab's responsibility. And he and Ben had challenged Raab's authority. Ben, he thought, was thoroughly put in his place now, but Cudebek might need a little discipline.

He was amazed and vaguely ashamed at his own hardness.

X

Six more days had passed. Five had seen *Gaffer* fighting her way westward and seaward against breezes that wouldn't have bothered a better-shaped, better-manned blimp. One had been spent on an unsettled small mesa, when the paddlers were exhausted and on the point of rebellion.

Just before dawn of the seventh day, Raab stood at the forward rail peering ahead for the island he had in mind. He'd tried to time things so they'd arrive earlier in the day than gliders were likely to be flying. But the island wasn't in sight, and if he didn't spot it soon he'd simply have to risk lifting higher to get a more distant horizon.

He moodily pondered the future. He'd fill the ballast sacks with guano, and, when they reached Lowry, try to lift to the top with as much as possible. He didn't look forward to making the same long roundabout trip back. Rather, he thought he'd try to reach the seaward edge in two nights. That would mean lying at sea level during one day, hoping he wouldn't be spotted, then pulling hard for the mesa as soon as the sun went down. On the seaward side, there were updrafts that would add a little to his lift.

He scowled, sweeping his gaze along the horizon. He must have misjudged it badly. He glanced toward the pale orange glow in the east. Fifteen minutes until the sun poked up.

Then he found the small dot on the horizon, and his mood brightened. "Half-altern, forty degrees left. And let's push it."

The sun was an hour up when they crossed above the bare rocky ridge of the island to settle by a grove of trees where *Gaffer* could be camouflaged. That took another hour, but there hadn't been any sight of blimps or gliders. They had a late breakfast, and he considered giving the crew a day of rest, but decided he'd get the guano dug and sacked up first, so they'd be ready to leave. He called the crew together and gave instructions.

"Stay off the higher rocks unless you're on lookout. Don't scare up clouds of birds. Look for deposits that have washed down and have grass sprouting from them, but that aren't too wet. If you hear a flute, get out of sight and get back to the ship as fast as you can. Half-altern, I'll draw you a sketch of the south end of the island, and you can take half the men. I'll take the others

north. Oleeny, you stay with the ship."

Raab posted one of his men less than a mile from *Gaffer*, then led the rest on about an equal distance. They'd reached a good deposit and were starting work, when, from farther along the island, someone hailed them.

Raab jerked upright and stared at a band of gaunt, bearded men in tattered Fleet uniforms, at the edge of another grove. He dropped the bag he was holding and ran in that direction, calling over his shoulder, "Come on!"

When he was within fifty yards of the castaways, one of them recognized him. "Garan! Raab Garan!" Raab stared at the grinning emaciated face. "Why — good God; Nik Roos! What in — Trimmer, you were reported dead!"

The two groups met and there was a babble of happy curses, jokes and handshakes all around. Trimmer Roos told Raab breathlessly, "We were riddled and falling before we knew what hit us. The Links were going over low, shooting survivors, but eleven of us hid inside the bag. Then that night we chopped up the basket and made a raft, enough to keep us afloat, anyway. I remembered this island and didn't think they'd be looking this far west, and we made it. Nine of us did, that is. A big triphib got two. Another's died since. When we saw *Gaffer* coming this morning . . ." He sobered. "Things must be bad, eh? Did your father make it back to Mesa Lowry all right?"

Raab said, "He died on the retreat."

Roos looked at the ground silently for a moment. "I'm sorry to hear that, Raab. Somebody signaled he was hurt. And it looked as if what was left of the Fleet would have to fight all the way home, if they made it at all." He looked up again, eyes blazing. "But as long as you're still holding out, I guess you got the traitors."

Raab seized his arm fiercely. "Roos! Do you know who it was? They — *my father* was accused!"

"What?" Roos looked incredulous. The others stood in a silent circle. "Why, those . . ." Trimmer Roos snarled, "You can be damned sure I know who they are! When we get back —" His face changed. "But you'll be here for guano, and you've only got *Gaffer.*"

Raab frowned at him. "Eh? Oh! Why, don't be stupid! Of course we're taking you back! Do you think we'd — why, hell; none of you weigh very much, from the looks of you. Any guano we take back will be only be a token, anyway. Say, why don't you all go on back to *Gaffer* and get yourselves a decent meal? We've got greens and fruit, and plenty of cooked fresh-water 'phibs. Ammet Oleeny's on watch there." He grinned. "I think you know him."

Roos chortled. "Ammet?" Politeness struggled with hunger and the prospect of seeing an old buddy. "Well, sir . . ."

Raab gave him a shove. "Go on. We'll sack up a little guano and be along in an hour."

Raab was too excited to care about guano now. They'd just fill a few sacks, and . . . now that he thought of it, they wouldn't have to jettison it completely, as ballast. There were a few ledges partway up the mesa's sides, where he could drop some of it. Maybe a blimp could sneak down later and pick it up. The main thing was to get Nik Roos and his companions home, so they could talk.

Almost incoherent, he hustled his men along and they started back with a dozen filled sacks. But when they'd gone part way, he heard Nik Roos shouting his name again. The Trimmer, panting and staggering with exhaustion, burst into sight. "Raab! Oleeny's been murdered and *Gaffer's* flat!"

XI

Raab, feeling dazed, stared down at the body. Oleeny lay on his back, feet near the basket, as if he'd been facing it and had fallen or been pulled over backward. His throat was slashed almost to the spine. The blood on the ground was congealed, and he wasn't bleeding any more. There was a mark on one temple as if he'd been clubbed unconscious before his throat was cut. He must have been killed shortly after Raab and the others had left.

Raab felt physically sick with remorse. How could he have been so stupid as to leave one man alone on watch? Slowly, he turned to Nik Roos. "You're *sure* there's no one else on the island?"

Nik pulled his gaze away from the body. "Of course. We've been here two years." He colored. "You don't think one of us—?"

Raab made an impatient gesture. "Of course not." He turned and stared toward the sea. "Could someone have . . . No; it has to be one of my crew. Maybe more than one. From the other half." Dull anger began to replace his daze. How many? Why had he let Cudebek and Sols Vannyer go with Sprake? They were both hostile, and might be traitors for all he knew.

Nik said, "Why didn't they take the ship and leave us stranded?"

Raab's mind began to work. He strode to the basket, made sure both hand-bows were there. "Because there weren't enough of them, obviously. As many as three could have taken her up, and paddled enough for heading. They could have just drifted until the Links spotted them. If there *are* patrols this far west."

Roos said, "There are patrols, all right. Every four days. Blimps and gliders." After a minute he added, "So, one man or two. And they plan to signal, and be picked up by the Links — with the rest of us."

Raab nodded slowly, and turned to stare at *Gaffer* again. The bag could be mended, all right; but most of the helium was gone. Only the inner cells — which wouldn't lift the basket alone, even without crew or cargo — kept the bag from being completely flat. He turned, shaking with anger, to Nik. "Maybe we should let them signal, but be watching. Or — maybe we can lure a blimp down some way! Even if we

had to hole it, we could get enough gas for *Gaffer!* Do you have any weapons on the island?"

Nik shrugged. "Two hand-bows we brought."

"That makes four," Raab said, beginning to feel excited, "And the launcher. And we can make other bows, and—"

Nik shook his head. "Hardly. There hasn't been a lone blimp over since we've been here. The patrol's a full unit; Hens and gliders and fighting blimps. They come by late in the day, as if they're on the way back to base."

"Oh," Raab said dejectedly. Then his head snapped up suddenly. "Base? What do you mean?"

Roos gave him a quick glance. "Didn't you know? They've got an island base somewhere. I think it must be Mell Island, from the direction they take. There's nothing else near with greens and fruit and game. And it would be a handy location."

Raab nodded, dejected again. It *would* be a good location, if one had plenty of helium for lifting, and the Links had plenty. It explained some things about the blockade, and also explained the task force he'd hit on the lake. So maybe they hadn't been looking for him, after all.

Well, a base that near put him and his crew in even a worse fix. He certainly hadn't turned out to be beginning to understand why Admiral Kline, and others, acted so beaten. He could imagine now, for much of a hero, he mused. He was had felt, mortally wounded, seeing the first time, how his own father the Fleet shot to pieces around him, desperately gathering together what he could salvage for an almost hopeless fighting retreat. Maybe Command wasn't a desirable thing, after all.

But he, Raab, had asked for it; it was up to him to do what he could. "Maybe," he said wearily, "we'd better just round up the rest of my crew and keep them under guard." A little of his anger returned. "I'll question them one at a time! Maybe I'll find out something."

The others were vituperative at being herded under weapons, until they saw Oleeny's body and the condition of *Gaffer*. Raab addressed them first of all in a group. "At least one of you is a murderer and a traitor. I'm going to ask each one of you, separately, for any information you can give me that might point to some and clear the rest. You understand I haven't any choice but to keep you all under guard meanwhile. Anyone who resists or tries to escape will be killed on the spot."

Later, after long hours of interrogating, he sat down for a late evening meal and to discuss things with Nik Roos. "Well, unless all of them are lying, we can definitely clear two or three. No more."

Roos agreed. "What about Ben Sprake? Excuse me, I know he's an officer. But he acts pretty vague about where he was at what time, and he seems to have a lot on his mind. And the others can't pinpoint him very well either."

Raab shrugged. "True. But I be-

lieve his story that he went to check on his lookout, then moved from group to group. He's very mad at me for something that happened before we got here, but I can't see him as a murderer, or a traitor. Actually, it's my fault for not telling him to keep his group together." He cut a small chunk of cold meat and chewed it without enthusiasm.

"What about this Jon Cudebek?" Nik asked.

Raab said, "Possibly. But Oleeny would probably have been suspicious of him in particular. As I see it, someone Oleeny had no reason to mistrust came and asked him for something out of the basket — probably said Sprake had sent him — then, when Ammet bent over the rail to get it, clubbed him. Well, I'm going to get some rest, then take the late watch. Are you satisfied with the guard arrangements?"

Roos said, "They're as good as they can be. The only thing is, Ben Sprake outranks all of us except you. By the way, I haven't congratulated you."

"Thanks," Raab said bitterly. "I've told Sprake what to expect if he misbehaves."

He knew he wasn't going to sleep. He didn't.

There were so many things he had to think about just to keep from being discovered by the patrols. *Gaffer's* camouflage would have to be renewed every few days; and the foliage couldn't be taken from where it would show. Cook-fires, and any fishing or egg-gathering, would have to be handled carefully. And how did you guard eight or nine men so well that none of them could possibly leave any sign, without actually keeping them tied up? He might have to do just that.

And what of the long run? He didn't think there was any reason a single blimp would land here, or even fly over so it could be lured down. How would they do the luring, anyway? Disguise themselves as marooned Mederlink crewmen? Not promising.

Could they leave this island by raft, get to a bigger one, with game and other food, outside the blockade? That might permit them to die of old age, eventually, instead of malnutrition. The coast offered nothing. It was all jungle for thousands of miles, except for the mesas. And none were climbable.

It all came back to helium. Would it be possible to reach some island where a single blimp might land, for food or fresh water? His pulse quickened. Now he was beginning to make sense! A raft, with paddles . . . But why a raft? Why not a boat, if they were going to take time to build something? They could chop up *Gaffer's* basket, and — no! Why chop it up? It would make a boat frame as it was! Or, build on a pointed bow and stern. Cover it with the bag fabric — two layers, for insurance. It would be more of a barge than a boat, flat-bottomed, wider than her draft, but it would be sturdy and plenty big enough. The air paddles should work in water, with the right handling.

He began to go over in his mind the suitable islands. He'd never been

much farther west than this. There was one big island, a little farther west and farther out, but that was probably two hundred miles away.

Mell was the only closer one. If Mell weren't already occupied . . .

He gasped, rolled to his feet and groped through the darkness to where Nik Roos was on guard. "Can you get someone to relieve you? I want to talk to you!"

Shaky with excitement, he led the way to an ioslated spot. "We want helium. The Links have it. We can't lure them down here, because they'd be suspicious. But on Mell Island — which we can reach by boat — they wouldn't be expecting us!"

Roos was silent for a minute. "But . . . even if we could steal some gas, how'd we get *Gaffer* there? How big a boat are you talking about?"

Raab felt like laughing aloud. "We won't worry about *Gaffer*. We'll take the helium blimp and all. Maybe we can capture the whole base!"

Roos drew in his breath. "Good God! Why, that's — no; it's no more impossible than surviving here!" Then his voice dropped. "But a third of us are suspects."

Raab said, "I've got the beginning of a plan about that, too."

XII

They were approaching an island from the windward side. It was not Mell Island, but few of the boatful knew that. He'd taken Nik Ross into his scheme to find the traitor, and he'd had to tell Ben Sprake because Ben knew star navigation well enough not to be fooled by a lie.

He'd had less argument from Cudebek and the others than he'd expected. The story he'd given them was that they'd stay under restraint and be taken back to Lowry. He spoke only of stealing one blimp, if possible, and stressed mainly the food on Mell.

He had most of the group bunched forward, so the bow wouldn't rise and slap down hard every time they met a swell. If he ever had to build another boat, there were some changes he'd make. However, at least this one had a very shallow draft that would make it easy to beach.

They were approaching a beach now, in a cove that was enclosed by a half-circle of cliffs and heavily wooded. The wind was mild, but there were breakers to worry about. The two big moons (nearly full now, and one of them near setting) lit half the cove; the other half looked black.

Raab let the paddles rest for a minute. "We'll go in fast, jump out and drag the boat up among the trees, then smooth out the sand behind us. We'll stay here a couple days and reconnoiter. The base will be on the other side of the island, and they'll have lookout posts on the highest ridge. We'll have to locate those first of all."

There was no talk. Most of the men, not knowing the island was unoccupied (or so Raab assumed), were tense. He didn't see any need to prolong their worry. "All right; let's go in."

The boat was hidden and their tracks obliterated. Raab, squeezing water out of his clothing, looked at the moon and made calculations. Less than two hours until sunup.

He told the group, "I'm going to reconnoiter alone. If I'm not back by noon, you'd better figure you're in trouble; but just in case they don't come after you, I'll tell you the closest way up the ridge. About a mile in the direction I'm going, there's another cove, with a stream leading up from it that you can follow. Once you get out of the cove, you'd better leave the stream and stay in the thickest woods you can find. The other side of the island's not so steep; you can get down anywhere, almost. I'll stay on the right side of the stream as you face up it — that's this side. So if I don't make it back, you'd better try the other. I suggest you eat before sunup, then post pickets and stay quiet until noon. Got it?"

He took his knife, a light twenty-foot rope, and a small pouch of food. That was for show. He moved through the trees, not looking back while they could see him. As soon as he was out of sight he moved at a trot to get to the end of the cove as soon as possible.

There, he stood in the fringe of trees a minute, scanning the narrow strip of beach ahead. He needed some hiding-place, and he had to leave a convincing set of tracks. He spotted a shallow cave that provided a deep shadow, and headed toward it. He went on past and around a bulge of rock, then carefully backtracked, putting his feet in the same prints. He leaped for the shadow and made it without leaving exposed tracks.

The surf was luminous in the waning light. Somewhere out over the sea, a small triphib kept uttering its harsh screech, probably seeking others of its kind. Raab, careful to stay in shadow, squirmed for a less uncomfortable position.

His plan seemed a little silly now. All he had to bank on was that the traitor ought to be feeling desperate by now. If he didn't get away and reach the Links, he was likely to be killed with the others in some foolhardy action. And even if they did come — if there were two of them — it occurred to him that they'd be warned by the ending of his tracks a few yards beyond. Why hadn't he thought of that?

And he suddenly saw another hole in his original plan, in case there *were* two. One, he'd hoped to overcome, by surprise, even if it was the burly Cudebek. But he'd thought two could just be abandoned on the island, once he knew who they were — he'd just let them go by, then go back and take the boat and the rest of the crew out to sea. God, he thought; what a numbskull I am! They could signal! Why don't I ever think things through?

Then, vaguely, he saw movement among the trees.

The pumping of his blood was almost unbearable. He had to take deep breaths and force himself to hold still. Very carefully, he drew his knife, gripped it for throwing. Now the dimly seen figure took an-

other step, and he nearly gasped aloud.

It was Pokey Reger.

His mind darted over events and the crew's statements. Yes, it was possible! In fact, it was Reger's testimony, more than any other, that made Cudebek a suspect. His eyes strained to see into the shadows, locate a second man if there were one. But, after a moment, Reger stepped from the trees alone and trotted — with no sign of his former awkwardness — along the narrow beach.

Raab's astonishment was such that he almost let Reger go past without a challenge. But just as the little man came opposite, he stepped out of the shadow and called the single word, "Traitor!"

Reger spun toward him. Raab started another step, intending to seize the man by the arms, throw him down and tie him so he couldn't struggle. It was in his mind, in a dim way, that he'd have to be gentle with the little man. But then Reger's arm was sweeping up like lightning, and Raab had a glimpse of the knife ready to throw. Before he could move, it flashed through his own mind that this was no clumsy little nothing, but a trained killer who'd know how to throw a knife. His own arm snapped up and he threw, quickly, mostly with his wrist. As soon as the knife left his hand he hurled himself to the side and down.

Reger's knife missed him by inches. It clanged against the cliff as no piece of flint ever did. His own knife took Reger dead center, in the solar plexus. Reger gave a suppressed cry and fell. Raab rolled to his feet and leaped toward him.

But Reger was through. He lay on his side, knees partly drawn up, one fist clenched around the hilt projecting from his middle, but not trying to pull the knife out. He breathed in shallow agonized gasps. He struggled to turn his head toward Raab, and forced the ghost of a grin. "I — should have — figured . . ." His voice trailed off in a groan.

It wasn't long before the breathing stopped.

Slowly Raab stooped and took hold of the knife. He had to wrench hard to get it free. In something of a daze, he washed it in the surf, dried it on his uniform and put it in its scabbard. Then he went looking for the knife Reger had thrown.

As he expected, it was Cudebek's bronze one. He hefted it in his right hand. An excellent throwing weapon, no doubt; but probably Reger had been a little off due to its density. To that Raab owed his life.

He dragged the body out of sight, then spent fifteen minutes washing the blood into the sea and covering the spot with clean sand. Then he started back.

He called ahead of him, "It's Garan," so they wouldn't be startled. The second moon was partly set, but there was still light enough to see the question in their faces as they gathered round. He stepped forward and handed Cudebek the knife.

Cudebek stared at it wordlessly, then looked up. "Who had it?"

Raab said, "Who's missing?" His voice was hoarse.

Someone said, "Pokey Reger!"

"You wouldn't call him Pokey," Raab said, "if you'd seen him in action."

Cudebek said, "But how —"

Raab found a spot and sat down. "I doubt if we'll ever know. The only thing I can think of is that he had it hung beneath the basket on a string, and dropped it the first time we landed, then picked it up again after we'd searched everything. Maybe he hid it in the food, or someplace." He sighed. Killing your first man was just as shaking an experience as he'd heard, and he didn't feel up to much now, but he had to talk to them. "The way things work out, I'm sure he was alone. So now I can tell you that this isn't Mell Island. Before we go there, I want you to decide whether you're willing to take on more than just trying to steal one blimp."

XIII

Raab, Ben Sprake, Nik Roos and Willie Wainer lay on a slope overlooking the Mederlink base. They'd carefully scouted the lookout posts and the paths that led to them. Here they were reasonably safe from discovery.

Steep cliffs, forming an angle, protected two sides of the area below them. The slope they were concealed on sheltered a third side. The north side, facing the mainland, was open to the sea, with a good beach where gliders, landing on the smooth leeward water, could be drawn up. Eighteen of them lay there now, with mechanics working on some of them.

The nearly flat area was about two miles long and half a mile wide, stretching along the beach. The Base was at the western end, in the angle of the cliffs, where an area about a quarter-mile square had been cleared. The rest of the flat was heavily jungled with the typical twisting, dark-green trees. One half of the cleared area was planted with a variety of vegetables of Earth-descended types.

The buildings included a hangar (where more gliders were being worked on), an Armory, a recreation hall, a mess hall, three barracks and a stockade. That stockade — attached to one of the barracks — had about forty prisoners in it, while as many more outside worked at various jobs, under guard. Most of them wore unmarked fatigues, but there were a few each of Orket and Lowry Fleet uniforms, much mended.

Moored a short distance from the building, near the cliff where they'd be sheltered from storms, were six fighting blimps and two Hens. It was not the same group Raab had encountered already; that one evidently hadn't gotten back yet. That was a break, but it wouldn't last.

Near the ships, dozens of thick-walled balloons, rigid with helium, were tied. There was assorted gear, and tie-down spots for perhaps fifteen more ships. Trodden paths led to five evenly spaced spots at the edge of the jungle. Raab said, "Launcher emplacements. Two men to a launcher?"

"Probably." Roos said, "if they're manned at all."

"They'll be manned," Raab predicted. "If only against big triphibs that might come in." He watched the workmen moving about. Their idle talk came up faintly. Now and then there was an outburst of laughter from the rec hall. He arrived at an estimate. "Two hundred fifty Links and about eighty prisoners. Ouch."

Ben, who'd been very quiet lately, put in, "There'll be more if another group comes in from patrol."

Raab nodded unhappily. "We can't wait that long, then." He looked at Nik. "From the times they were over your island, when would you say they're due in?"

"Not more than three hours after sundown."

"And tonight's the night? For sure?"

"Yes, sir. Unless the one that's due is the one you hit, and it's delayed."

"I'm sure it's not," Raab told him. "There are three groups based here, obviously. Well — we can take those fixed launchers easily enough. But then we'd have to get to one of the ships fast, and get hand-bows. If we could get most of them bottled up in the buildings . . . We'll have to get the prisoners loose and armed within a matter of minutes."

Willie Wainer said, "It doesn't look like a very good chance, Skipper."

"No," Raab told him grimly, "but it's the best one we'll have. When that group we hit gets back with the word, there'll be no more carelessness."

Ben put in suddenly, "Do you trust me at all . . . sir?"

Raab turned his head to face him. "How much would you trust me, if the situation were reversed?"

Ben flushed but said doggedly, "I'd like to try for the ship. You'll have five launchers aimed at my back. If I can get to the ship — the one closest to the buildings — and get *its* launchers manned, we can pin them down in the buildings for a few minutes. Maybe hand bows will be better. Anyway —"

Raab said, annoyed, "That's going to be a desperate try. You might look like a pin-cushion before you got halfway there."

Ben's eyes turned to the ground. "I . . . Raab, I was wrong about your father. I was wrong to question your command. I'd like to make it up, if I could. If I try anything or yellow out, you can — can shoot me in the back."

Watching his face, Raab couldn't feel angry. "All right," he said, "You've got the job. You'll only have about five men. But we'll reinforce you as soon as we can."

All the rest of the afternoon, he worried. He'd made another hasty decision, and he wasn't at all confident it would turn out right.

XIV

Half-altern Ben Sprake, Jr., lay on mouldy leaves, with low-hanging jungle branches jabbing at the back of his neck. He could hear the murmur of small talk from one

of the Mederlink launcher emplacements, and smell cigarette smoke. From farther away, in the clearing, came occasional raised voices of a few mechanics still working. Lanterns had already been lit. A few gleams came through the foliage.

He squirmed into a slightly less uncomfortable position, then lay wondering if something had gone wrong with the plan.

There were rustlings all about him, but he couldn't tell whether those were small jungle animals or Raab's men creeping into place. It seemed to him a long time had passed. He worried about the animals, too, though there weren't supposed to be any dangerous ones here.

This would be his first combat, and it didn't feel good. He hoped he wouldn't get sick; it was hard enough to fight the fear and the weakness of his limbs and the tightness of his chest muscles that made it so hard to breath. He hoped very fervently that Raab had called things off, and wondered how long he'd have to lie here before he dared assume that.

The sounds from the clearing were fewer now, and the lanterns seemed to be moving away. There was only the very dim hooded light from the emplacement.

He wondered if Raab would bother to tell him if things had been called off. Raab probably hated him now. Raab would hate him if he knew everything. If he hadn't believed Reger's vague hint that Raab was planning something strange, and left his own responsibility to go after Raab and spy, Oleeny would probably still be alive and *Gaffer* would be flying on the way home. And of course, afterward, when he suspected Reger, he should have spoken up; but he'd have had to admit his own dereliction of duty. And he hadn't been sure.

He'd been a fool, the way he'd let Reger lead him on with innocent-sounding little remarks. But then, Raab ought not to have humiliated him the way he did. That wasn't the way one officer was supposed to treat another, especially in front of the men . . . even though he, Ben, had been wrong about some things.

Well, it was too late now. All he could do was make sure he didn't turn coward this time. He'd lived with his own cowardice all his life, and that hadn't felt good either. In fist fights or knife fights or games where he might get hurt, he'd always been a coward. He'd vowed so many times to change. But the trouble was, things happened so suddenly you didn't have a chance to set yourself.

It must have been *hours* he'd been lying here. He pondered unhappily whether he should start crawling away, and delayed that, more from indecision than anything else.

Then bows twanged, and men shouted or screamed in pain and surprise. The whole jungle seemed to erupt.

He told himself desperately, I've got to move; yellowing out now would be worse than dying, worse than having a knife or arrow pierce

my flesh. With a terrible effort he forced his unwilling muscles into motion, and once he started, they seemed to move of their own will. The physical exertion actually made him feel a little better. He plunged through the foliage, skirted the emplacement where three of the crew stood staring down at two Link bodies. He turned his eyes from the blood, and cried out, "Come on!" in a voice that shamed him by being shaky and too high. He ran toward the blimp nearest the buildings.

The shouting around the emplacements had ended now, but all over the clearing and in the buildings other men were shouting. Arrows and harpoons flashed toward the few mechanics and guards still outside. They ran for the buildings, and one or two of them went down, screaming. Someone was shouting, "The Armory! To the Armory!" Ben saw him; a Link Skipper who'd come out of the hangar. Arrows converged on the man, but he was already running and got to the Armory door without being hit. There were six men following Ben now, and it began to look as if they'd reach the ship safely. But arrows began to come from the armory, and Ben's fear suddenly became the familiar sharp, paralyzing thing. Still his legs kept pumping, somehow. He heard a cry tossed a glance behind him and saw Willie Wainer go tumbling. It was too dark to see where he was hit. He brushed off the notion of stopping to help, and forced himself on. He was gasping for breath now, and so exhausted he could hardly move.

Then he was at the ship, and he slammed awkwardly into the basket, half stunning himself.

He clung for a moment, then gathered all his strength and pulled himself over the rail. The handbows first, he thought; they're much faster. Others were tumbling in after him. He fumbled for the weapons, nocked an arrow and sent it toward a window of the Armory. Harpoons were slamming into the building now. The Links got the wooden shields in place at the big windows, and there were only the narrow slits to shoot at. That worked both ways; the men inside couldn't aim very well through the slits. But arrows did come, and he flinched every time one came near him. He was shooting as fast as he could now. The physical effort seemed to drive the fear away a little.

Raab and several others burst into sight, running for the stockade. The men in the Armory couldn't concentrate much in that direction, but someone in a Barracks had a bow and an easy range. Ben cried out, "Aim at *him*!" He dropped the bow and groped for the lashings of a launcher, got it loose and fumbled for a harpoon while he cranked with one hand.

He sent the missile at the door of the Barracks, which was open a crack, and slammed it wide open. Other harpoons, from the emplacements, streaked that way and the men inside stopped shooting. A moment later someone shoved the door shut and Ben heard a bolt thud into place. But one of Raab's small

group was down and another was limping badly.

They reached the stockade and worked frantically at the gate. It came open and men spilled out, yelling. The rest of *Gaffer's* crew—plus Nik Roos's men, but excepting those still manning the emplacements—were at the ships now, grabbing hand-bows and cranking launchers.

It was because Ben was so busy watching for counter-attacks, and because of the dusk, that he didn't see the harpoon coming from the Armory until it was almost upon him.

He stared at it in fascination, realizing in a flash that he wouldn't have time to dodge. Instinctively, though, he was moving, and got turned to the side so that it didn't hit him from the front and kill him instantly. Even as it pierced his body, missing the spine, and slammed him hard against the other side of the basket, his mind rejected the fact. But he was lying there, hardly able to squirm, and he could feel his own blood flowing hot under his uniform.

Wonder seized him that it didn't hurt more. There was a great pain somewhere, but it was as if it were walled away from him somehow, so that he only got a faint spill-over. The smell of blood was worse. His mouth was open and he was afraid he was going to scream, but what came out, feebly, was "Raab . . ." He clamped his lips on a whimper, beginning to feel the pain now, and the fright, and thinking that he wouldn't even know if they won.

Then there were men swarming around, grabbing bows, and Raab's voice said, as if from a distance, "Fire arrows! Make some fire arrows!" Then someone mentioned his own name, also from a great distance, and then Raab was bending over him. He took a breath to speak, clenched his teeth in agony at the motion of his lungs, managed to whisper, "Are we—?"

Raab bent close. "They're all bottled up. We'll let them surrender a few at a time, and have them all tied up before they realize how few of us there are." He seemed to be speaking as clearly as he could, and in detail, as if he understood Ben's anxiety.

Now Ben could feel death creeping over him, and he was afraid, but above that, he was proud. And he knew Raab wouldn't leave him.

XV

Less than seven weeks after the departure from Lowry, Raab stood at the forward rail of a Mederlink fighting blimp, staring ahead and down at the lights of the mesa.

It was pre-dawn. The moons had set. He could have been here two or three days earlier, but he'd chosen to stay with the other captured fighters, escorting four Hens which were loaded down with gliders, guano, food and weapons. But they'd easily evaded what was left of the blockade, and there hadn't been any trouble from the Links pressed into service as paddlers (and tied to their seats). Now he'd pulled ahead to persuade the ground de-

fenses, before they cut loose with harpoons, that this wasn't the enemy. They'd seen him against the stars, of course; they would be waiting for him to come within range.

The movable steering vanes made navigating a lot easier than with poor old *Gaffer,* the remains of which he'd gathered up and brought home. He ordered, "Constrict a quarter-turn forward." He still forgot, sometimes, that it was Nik Roos beside him instead of Ammet Oleeny. He hadn't put anyone in Ben's place, aft.

This ship's pinger was a good loud one. He struck it twice, paused, struck it twice again with the little mallet. No reply. He sent the signal for 'Parley' again, then gave up. They'd soon be in flute range.

Finally he got a reply to a flute message. "Ship aloft; say again. Message not clear."

He sighed, and fluted again. "*Gaffer II* asking permission to land. Skipper Raab Garan, commanding."

There was a long wait, then, "Come in slowly. No tricks."

He turned his head aft. "Paddles, quarter-speed." He let his hands rest on the levers that controlled the vanes. "Nik, will you strike a lantern so they can recognize me?" Unless, he thought, he looked as much older and different as he felt.

They were slanting nicely toward the tie-down spot outlined in lanterns. He could see individual faces now; ground handlers waiting to seize dangling ropes, bowmen with weapons ready. "Stop paddles." They settled close. He tugged at levers to raise the nose a little. They bumped gently.

A middle-aged man in a Skipper's uniform came from the shadows to peer. "By God! It is Raab Garan!" His face hardened. "What the devil?"

Raab put down a smoulder of anger. "A captured ship, sir." The other's longer time-in-rank made him Raab's senior. "There are more coming. I'd like a signal-fire to call them in."

The senior Skipper, whose name was Linder, looked bewildered and undecided. "Garan, under the circumstances you can't blame me for taking precautions."

Now a little anger did spill from Raab. "Linder, it doesn't matter who blames who. Do you recognize this man beside me?"

Linder peered, and ejaculated, "Nik Roos! I thought he was dead!"

"So did a lot of people," Raab told him impatiently. "But he's alive, and he knows who the real traitors were. There are two of them on—" He stopped, realizing how many men were listening. "Can you bring the rest of my ships in? The crews have been through a lot. And I'd like to get to Admiral Kline as soon as I can. Sir."

Linder's face turned dejected. "If you'd only gotten here sooner. The Admiral's under house arrest, and under heavy guard. I think—Raab, it looks like surrender."

"*Surrender?*" Raab fairly shouted. "Why—" He forced himself to speak quietly. "Sir, with what I've got—and what the Links have lost—

we can wipe out the blockade! For months, maybe. They'll have to send out a whole new fleet!"

Linder gestured hopelessly. "Even if that's true—and you have to admit it sounds fantastic—it's too late. The staff has decided to surrender to Mederlink."

"The Staff!" The words burst from Raab savagely. "Why, Linder—excuse me, Skipper." He beckoned the man close and spoke in a very low voice. "I've got ships, gliders, plenty of helium. What men I have, except for prisoners, will face up to whatever has to be done. They won't let a group of weaklings, moved by traitors, order them into surrender. How many men do *you* have who'll follow you?"

Linder looked shocked, then amazed. He swept his eyes over Raab's crew; then spun back to Raab, eyes blazing. "Yes! Free the Admiral first thing; get some legality behind us! I'd better send messages, and make sure—" He started away at a run, halted suddenly. "Oh!" He gestured to an Altern. "You, there. Help Skipper Garan with a signal fire, and have hot food and baths for those crews. I'll be back!"

His voice trailed away as he left, heading for the headquarters building.

Heart pounding, Raab climbed out of the basket and started away with the Altern.

From the blimp's basket came Cudebek's chuckle. "It looks as if the Skipper's getting ready to exceed his orders—again." END

BUILD WE MUST

by DANNIE PLACHTA

We went to visit the Martians —
but they greeted us at the door!

When I was still very young — and still very foolish, I must admit — I happened to encounter a particularly intriguing theory regarding the Martian moons. Some Soviet astronomer had reasoned that the twin moons of Mars were actually gigantic artificial satellites. You may recall the details; I won't go that far into it. But the speculations sounded so damned *possible.*

In any event, it really fired my imagination. Artificial satellites ten miles in diameter . . . artifacts of a vastly superior civilization . . . The romantic fool in me demanded some concrete action in a matter of such obvious importance. It must have been then that I caught the bug. So I went through the whole bit and became an astronaut.

Before I'd completed my training, most of our non-military space operations had been placed under international control. There'd been a few spectacular and even tragic failures by both sides in the space race, and I guess that enough level heads prevailed to allow all of us the advantages of pooled resources. Anyway, when our U.N.-sponsored flight left as the first manned Mars probe, we were one happy family.

I won't bother running through our flight roster. You read the papers; you watch TV; you know things about us we've forgotten. What *is* important is that a hundred thousand miles Earthside of Mars, we were met by one of their spaceships.

They eased the shock by radioing ahead (yes, their English was quite perfect) of their wish to meet us. One of our people was to meet their representative between, and outside of, our respective ships. This was the best technique because of our environmental differences. Since I was the least willing, I was the man selected to suit-up and rendezvous with the Martian.

I won't attempt to describe him as he appeared to me in his space suit. About all I saw of him *was* his space suit, and that looked pretty much like mine. He propelled himself over from his own craft very

easily, and I struggled out to him as well as I could. We floated alongside each other at a distance of a few feet — him free and in complete control of his movements, me twisting at the end of my umbilical line. I felt a little foolish.

The alien spoke through my headset. "We have been putting off any actual contact with your race," he said.

"Any special reason?" I asked him.

"We are a peaceful race," he replied.

I guess I understood but didn't say anything. About that time I tumbled over, and with an easy motion he righted me.

"But we know nothing of you," I reminded the Martian. "Have you — has your race — been here long?"

"Approximately five hundred thousand Earth-years," he answered.

I didn't say anything. The alien went on.

"Our race is from another solar system. We colonized this immediate area."

Like an utter idiot, I tumbled again, and once more he straightened me up.

He continued: "The point where we settled was the optimum position for the physical requirements of our race — just the proper distance from your star — an ideal location.

"But we were forced to make some changes. There wasn't sufficient living space. Then too, the planetary environment failed to meet our needs. So we set out to do that which was necessary. Fortunately for our race, we succeeded."

I suddenly remembered the old pet theory. "Then you *did* build the moons! You had to expand, and alter the environment, so you constructed the twin satellites!"

"Oh, the moons were here when we arrived, though in entirely different orbits. We did, however, have to build the object you call Mars."

END

THE KETTLE BLACK

by STEVE BUCHANAN

Illustrated by NODEL

Three Earthmen battled a whole planet. Clearly the odds were enormous — against the aliens!

I

Stade had been a month dying before he sent for Witten.

During that month he managed to settle his affairs — not that there was really much to do. An xenologist doesn't accumulate a great deal of money, and any man who travels among the stars finds his friends dead or aged past recognition when he — still young — returns. During the last week Stade lay in his room and often reviewed his life.

Happily he found he had few regrets — except for Witten.

As Stade waited for Witten to arrive, he flipped through the yellowed pages of the book, which was expensive and very old. He closed the book and placed it on a bedside table, still unsure just how

much to tell Witten. Perhaps he should just present the antique as a gift; Witten would eventually read it. He's still young, Stade thought. It was only a year ago that we returned from HD 27421 IV.

The survey ship had been decelerating for over six months and approached the star designated as 27421 in the ancient and much revised Henry Draper catalogue with a speed of only a few hundreds of miles a second.

Since the primary purpose of the survey was to find planets suitable for colonization, the ship flashed past the frozen outer planets content with radiation analyses. While still nearly half a billion miles from the star itself, the instruments on the ship monitored artificial long-wave radio signals originating on the fourth planet.

Stade sat in a cubicle just off the control room composing tapes while Witten, a dark youngster with the powerful musculature peculiar to the inhabitants of high gravity planets, programmed a landing sequence into a computer. Both men took pleasure in their work. Stade, because at last he had access to an alien culture in its unsullied native state. Witten, because every task connected with his first exploration mission was, at the very least, interesting.

Witten read the information the computer typed on a sheet of paper and then walked over to Stade. "We blast in about five minutes. You'd better get strapped in."

Stade nodded. "All right, I'll be there in a minute." He carefully marked his place and walked over to an acceleration couch. "How many G's?"

"Up to ten." Witten answered. Stade winced and buckled himself into the webbing.

A few minutes later the ship shuddered as the drive increased from one gravity of acceleration to two. Witten spread his feet a little wider apart as his weight increased to nearly a quarter of a ton.

The crew's third and final member, William Skinner, stepped into the room. He was a huge man who radiated an aura of strength and alertness.

Skinner was a mech — more machine than man. Encased in steel and plastic, only his brain and spinal cord were left of his original body, which had been irreparably damaged years ago. "Is everything ready?" Skinner asked.

"Yes. We go up to four G's in about two minutes." Stade groaned and Witten grinned at him.

Four hours later they were decelerating again at one gravity along a course which would bring them within orbiting distance of the fourth planet.

When they were only a few million miles away, they used the ship's transmitters to send a recording of some of the signals they had picked up. They followed this recording with a rendition of the numbers from one to ten in both the conventional and binary systems, a few simple addition and subtraction problems in both systems, and ended

with Stade reading the first two pages of the ship's *Official Cookbook*. They recorded the whole program and rebroadcast it at hourly intervals.

A few hours after they had blasted again and established an orbit some eighteen thousand miles above the planet's surface where the ship could maintain a stationary position in reference to the planet's surface, Stade was able to announce that contact had definitely been made.

Witten had been idly turning from one station to another, recording choice bits of what might have been the local equivalent of music, speech, or something entirely different for Stade's ethnographic opus, when Stade took off his earphones, tossed them on the table top and stood up from the console where he had been alternately monitoring the ship's transmission and recording the receptions between the transmission in search of a reply.

"Well, gentlemen, we're in," he said. "They replayed our signal and then followed it on the same band with some stuff of their own. All the stations on adjacent frequencies have dropped off the air. I've started the contact computer on its cycle. It's handling all their signals and progressing through those first mathematical symbols to learning their language."

"How long?" Skinner asked.

"We ought to be able to get to the point where it can absorb data from their ordinary radio programs in three or four days if they work with at night on at least two channels. After that, say thirty or forty hours to be able to communicate with them fluently."

Skinner grinned and said, "Ah, the wonders of cultural anthropology, not to mention cybernetics. I guess when and where we land is next. Any suggestions?"

Stade answered, "I'd prefer to land now. If we land near where they seem to have established their communication center, we'll be able to accomplish more. The distance makes it hard on them; they're probably throwing every kilowatt they have at us now."

"Is there any sign of a division of the planet into nations?" Witten asked. "I wouldn't like to be A-bombed because one country thinks we're giving military secrets to another."

Skinner said, "Well, for one thing, there aren't any indications of any kind of an atomics industry or of space travel either, for that matter. I'd say that in thirty or forty years they'll have both. The sensor's haven't picked up any radiation. I'm for landing now, too. There are two main continents, one of which is mostly desert and apparently is almost uninhabited. The other looks like a political unity. At least, there aren't any armed frontiers or outposts.

"Where are we going to put her down?"

"Right next to their second largest city. It's the source of the signals we've been receiving. I've picked out what looks like a good spot — here."

Stade made some adjustments on a console and successive pictures flashed on the big screen. Finally he found the one he wanted and pointed out the spot he had picked. It was a broad plain about thirty miles from the city.

Witten went back to playing with the radio while Stade and Skinner compared the infra-red scannings with the visual picture. Finally they agreed to land as soon as Stade got his equipment in order.

II

In a little over two hours the ship dropped down onto the plain. They had taken the last leg of their approach slow and easy, and before they were far into the atmosphere a group of airplanes were swarming around below them.

Skinner mumbled something about ramming one of the planes that buzzed them. Stade reported that they were being scanned by radar. After the ship came to rest, the men stayed in their seats for a moment. Witten looked at the screen and watched the clouds of dust settle outside the ship. Once a plane shot past overhead. Another plane passed across the screen only fifty or so feet above the ship's nose.

"Damn it," Skinner said as he reached forward and made an adjustment on the board in front of him. "Another twenty feet and he'd have hit the defensive screen and been burned. I'm going to set the discriminator to burn anything that flies within fifty yards that is under half the size of their smallest plane."

"Do you really think that's necessary? I mean setting up the screen at all?" Stade asked mildly. "We could spot the concentration of any offensive force in advance and turn on the screen then." He went on more strongly, "I'd hate to start something and ruin our chances of completing our work through an accident."

"Yeah," Skinner answered. "I can see us spotting one of those planes launching a missile and getting the screen up before it gets here. Sorry, but you've got no precedence. Check the regulations."

Witten had walked to the screen and had been studying it while the other two argued. He saw something and increased the magnification. "I think I see a possible concentration of — uh — offensive force. In advance, even."

Skinner checked the screen and the radar. He whistled, "Yes, an armored convoy of about twenty vehicles leaving from the city, and about eight or ten big choppers right above them."

The three of them watched the screen for awhile and then finally cut the picture back to normal magnification. The cloud of dust which marked the progress of the convoy was still visible.

Stade said, "Well, that's to be expected. They'll probably put enough armor around us to wage a war." He glanced at Skinner and then continued, "We can set the discriminator not to burn anything on the ground travelling under a certain speed."

The convoy deployed in a circle about a hundred yards in diameter with the ship at its center. Some of the vehicles ran on treads and obviously utilized some sort of internal combustion engine for power. There were also smaller, swifter vehicles which ran on wheels. The men kept to the ship and followed developments through closed-circuit television and radar and infra-red scanners.

About an hour after the first convoy arrived, a second, larger group pulled in. They too deployed in a circle around the ship. In the control room Skinner and Witten watched the tanks rumble into position. Stade was below checking his precious computer. They drank coffee and watched as they were watched in turn.

The next two days passed without incident.

The natives did not approach closer than about fifty yards. They threw up some prefabricated buildings outside the circle of tanks and artillary. A shipment of what looked like scientific equipment arrived and was assembled. Skinner grumbled about ray guns and disintegrators. The men took numerous photographs of the inhabitants and occasionally ventured outside the ship in a suit to let the natives have a look at them.

The planet's owners turned out to be about seven feet tall, rather thin, and at least superficially humanoid. Their skin was a mahogany brown. They had binocular vision, but their oblong skulls seemed devoid of hair, ears, nose, or anything resembling a mouth. Witten mused over the problem of how they ate but was unable to come up with any answer. The men never strayed more than a few yards from the ship, and the natives made no attempt to approach. Skinner surmised that they had probably detected the radar sensor screen around the ship and perhaps had deduced something of its purpose.

"Anyway, they probably figure the next move is up to us," he said.

Finally Stade came up to the control room with a sheet of what looked like teletype paper. "It's finished," he announced. "The machine will keep improving, increasing its vocabularly and correcting itself, but these are just refinements. I just sent them a message saying that we are a scientific expedition, wished them long lives and good luck, and told them we'd only be here for a short time. We struck a bargain: they answer my questions, and I answer theirs."

"No doubt they want to know how to build a spaceship and how to live forever?" Skinner asked.

"Not exactly. Their first questions were about our equipment. The computer still doesn't have the scientific vocabulary it needs, but the way they're shoveling information in, it's only a matter of a day or so before it will be able to answer most of what they want to know. They've divided themselves into two groups, one group to frame their questions and the other to answer mine. I'm using part of the

computer as a translator and feeding their questions to the ship's computer."

"And you're giving them the information to build a fusion converter, right? Or have you gotten around to that yet?" Skinner asked.

"That is one of the questions on their list. We don't have the vocabularly yet, but we will." He paused and looked at Skinner for a moment before he continued. "Yes, I'll give them the equations and a description of the conditional requirement. That's all I can do since I don't know their technology. Look, Skinner, what difference does it make? Even with the information, it will take them at least five or ten years to develop the techniques they'll need to build anything. Besides, they'll have it themselves in a century or so." His voice took on a pleading note as he went on. "Please, Skinner. I'm asking for your help. I've even got a release from administration that covers everything. Okay?"

Skinner was silent. Finally he nodded.

Stade said, "Witten, you can keep an eye on the computer. It's already programmed for the next thirty hours. I'll be back before then. They've asked me to visit the city for some kind of ceremony. I ought to . . ."

"No." Skinner cut him off. "Forget it. You're not going."

Stade seemed amazed. "Now wait a minute. Why shouldn't I go?"

"Do I have to explain it to you? We can't trust them. Who knows what they're up to? Beg off somehow."

Stade was getting angry. "You just can't tell me what I can and can't do. There's nothing to cover this in the book. I can call a vote, and I'm doing it." He looked over at Witten. "Well?"

Witten was caught off guard. He looked from one to the other and hesitated.

Stade said, "Phil, if I don't go, besides missing film of the city, we may insult them or really mess things up. I gather this is quite an important ceremony. Please?"

Witten looked at Skinner, who said nothing. Witten said slowly, "Well, if it's important, I vote yes."

For a long moment no one said anything. Then Stade broke the silence. "It's settled then. No doubt you'll want this vote recorded, Skinner. Witten, if you'll . . ."

"It's not quite settled," Skinner said in a low voice. "There's just one thing; I'm going, not you."

"Why?"

"For a lot of reasons. I'm more experienced for one thing. You know I've been on contact missions before."

Stade traded looks with Witten, who only shrugged. "Okay, Skinner, but you've got to promise to take it easy. I don't think you'd do anything on purpose, but if something goes wrong, and I think it was your fault, I'll see that you're finished. I want you to wear a recorder."

Skinner smiled and said, "You forget just one thing. If something

happens, I probably won't be coming back."

Stade looked at him for a second and then grinned. "Right." He looked at his watch. "You'd better get moving. You're due over at their shack in about forty-five minutes. I'll rig up a field relay unit for you so you can stay linked to the ship no matter where you are."

Witten followed Skinner below to help him suit up.

Despite the light gravity, which was only about two-thirds earth normal, Skinner chose an armored suit with a jump attachment. Witten guessed that the suit and its contents, even on this planet, must weigh a thousand pounds or more. Skinner moved easily in the suit even though the power attachments hadn't been activated. He clanked into the armory and looked over the racks of mobile weapons. Witten followed him. After some deliberation Skinner selected a heavy laser beamer and had Witten strap the power pack to his back.

Stade stepped into the room and frowned at his heavily armed shipmate, but said nothing. Skinner slung a belt of fusion grenades over his shoulder and went into the other compartments to get his helmet. Stade looked at Witten and said peevishly, "Good God! You'd think he was going to start a war. If he thinks he's going to pull something funny, he'd better think again."

"Take it easy," Witten answered. "I don't blame him. If I were going wandering around on an unexplored planet, I'd take a ceebomb or two. Relax, he's playing it straight."

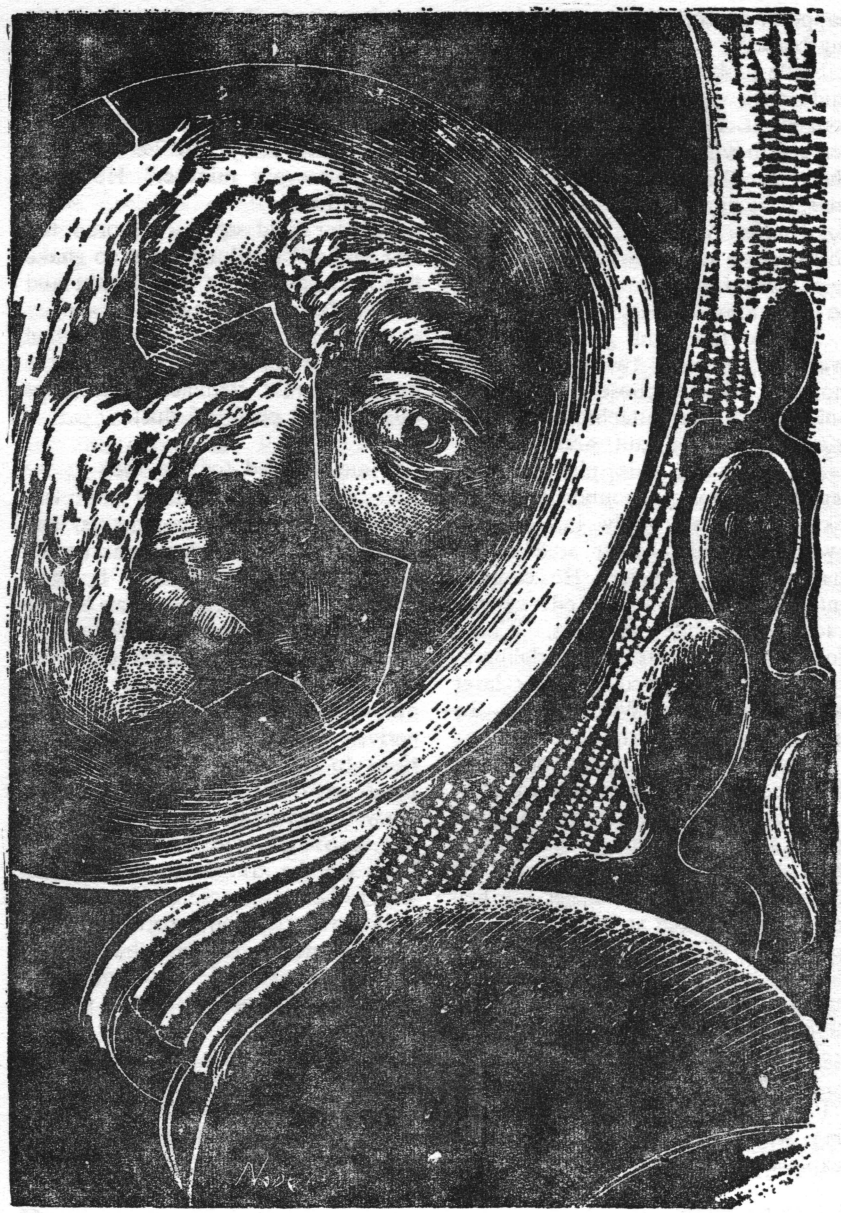
They followed Skinner to the airlock. Stade handed him a plastic-encased gadget on a shoulder strap. "Here's the relay. I'll be in touch with you every minute." He stuck out his hand.

Skinner held up an armored fist and said, "You don't want to shake this." He pulled on the helmet and Witten fastened its seal.

A few minutes later they watched the huge figure stride towards the line of squat vehicles. His steps raised small puffs of dust.

Time dragged for the men in the ship. Skinner didn't seem inclined to make any comments, and apparently the natives communicated their instructions to him by gesture and example rather than by the medium of the computer. Witten and Stade sat in the computer room and watched the translator chatter out an occasional message from the natives. Stade read the communications to Skinner, who either complied with the request or, if an answer was required, gave his reply to Stade, who sent the answer back via the translator. The system was rather cumbersome, but it was effective. After about forty-five minutes Skinner announced that he had reached the city. A few moments later the suit monitor lights winked out.

Stade turned with a puzzled frown on his face and said to Witten, "He probably went into a building with a metal frame. The suit monitor works on regular F.M. I didn't



rig up a circuit for it on the field unit." Nevertheless he flicked a button and spoke into the microphone. "Skinner, are you still with us?"

"Sure," the radio crackled. "We just walked into a really big building. Right now I'm in a large hall. Looks like a church. This must be the place. There are a lot of pompous looking bastards standing around. Don't worry, I'll let you know if I get shot or anything."

"Fine. We were just wondering." Stade put the mike back on the table and turned to Witten. "I knew there wouldn't be any trouble. Now I wish I'd held out and gone myself."

Witten said, "The recorder will pick up everything. They're probably giving him the keys to the city now."

III

In the city Skinner walked through a long hall, glancing upwards occasionally to the vaulted ceiling high above. He was enjoying himself. His guide led him to a highly decorated pavilion-like structure under which a table sat. Around it stood six or seven natives; they were dressed ornately with glittering robes and metal bands around their oddly jointed fingers. Skinner was on the point of saying something to the men in the ship when suddenly one of the members of his escort raised a hand gun and fired directly at him.

For an instant Skinner was stunned, then he whirled and caught the native a back-handed blow with his armored hand. Skinner looked down at his side where the gun had been aimed. The front of the field unit was smashed.

Skinner shook off his surprise and looked around; the whole scene seemed in slow motion. There were armed greenies everywhere. He anticipated a rush, and was surprised when it didn't come. He swung his head from side to side; he was missing something, and he knew it.

Skinner sensed a movement above him and looked up just in time to see a heavy metal net fall towards him.

The net dropped over him and its weight pressed down. He engaged the suit's gyro and power equipment and managed to keep his feet. The natives at the edges of the net hurried to fasten it to the floor. Skinner flicked his right arm and the laser projector flashed into his hand from its sheath on his forearm like an opening switch blade.

Skinner stood upright and watched them fasten the net to cleats in the floor. Easy does it, he reminded himself. Obviously they want me alive. Skinner laced the fingers of his left hand through the links of the net and pulled. He strained, and as the net held he saw the power indicator on the tiny panel in the helmet climb into the overload zone. Then the net parted with a sound like the meshing of gears.

Instantly he was hit by a hail of bullets from his tormentors. The

projectiles bounced off his armor and whined into the crowd. Buffeted by the concussions, he staggered through the rent in the net. The tiny hot eye of the laser winked white.

"Look, the carrier beam from the field unit just stopped," Stade said.

"What?"

"Skinner isn't transmitting anymore. Wait a minute. Maybe it's our receiver." Stade checked the instrument board and then said, "No. we're receiving. He just isn't transmitting."

"Try calling him," Witten said. Stade tried, but there was no response.

The translator began to click as a message was typed out. Stade said, "Maybe this will tell us what's going on." He waited until the machine quit clicking and then tore off the sheet. "There. I thought it might be something like this. They say the field unit was dropped and it seems to be broken. Skinner will complete the tour and will be back here in a few hours."

Witten didn't say anything. The whole thing didn't sound right. He frowned and tried to decide what he should do.

If the greenies were telling the truth, he could make a fool of himself and mess up the whole mission by doing the wrong thing now. And yet, the communicator was a sturdy machine. He couldn't imagine it being broken by being dropped.

Stade chattered on peevishly, "I knew I should have gone myself. He can't possibly get anything accomplished without the translator. I guess I should have—" He broke off as Witten stood up.

"I'm going into the city. Tell them that I'm bringing him a replacement unit and that either they can fly me in one of their choppers, or I can take the flitter."

"But I don't even have a replacement. I've got the components, but he'll be back before I can assemble them."

"It doesn't make any difference. I just want to check on him. Make me up a dummy unit. No. I'll take one of the survey relays. It ought to have plenty of power. You can relay it into the translator." Witten turned and headed for the suit room.

Stade, talking excitedly, followed him. "Witten, now calm down. Maybe you ought to take him a radio, but let's talk this over. We ought to find out . . ."

Witten turned on him and said, "Shut up. I'm going. Now get on the translator and tell them what I said." Stade shut up but followed him down to the suit room. The two walked down the corridor in a strained silence.

As Witten was suiting up, an alarm rang somewhere in the ship. Stade stepped to a wall monitor and dialed into the ship's communications system.

His face was white when he looked up from the screen. "The magnetic sensors just recorded three peaks that would correspond to the

effect of three fusion grenades being exploded at a low yield. The seismograph got them too. I can't triangulate, but they're on a line which extends through the city. The magnitude is about right for there if they were fusion grenades."

Witten continued adjusting the suit. "Get up there and tell them what I told you. I'm taking the flitter. Skinner already programmed the weapons system to blast all that junk guarding us if they fire, so don't worry about the ship."

Stade scampered from the room without a word. Witten grabbed a rapid-fire rocket launcher and two belts of ammunition from the armory, and an atomic torch and a radio from the survey equipment. He climbed up to where the flitter sat snut in its launching tube. As he was checking out the little plane's instruments, the whole ship was buffeted with a series of shudders.

Witten clicked on the radio and said, "Hey! What's going on?"

A moment later Stade's voice crackled in his ear. "They opened fire on us. The laser screen vaporized the first two shells. Skinner must have programmed the system to open fire on the third shell. The beams burned everything they set up and the tanks. The planes are down too. Are you about ready?"

"I'm gone," Witten said and depressed the launching lever. The little craft shot out from the mother ship on ducted-fan air jets.

Instantly it was picked up by the ship's weapons system, but before the lasers released their blast of energy, a signal from a transmitter in the flitter identified it as a friend to the ship. Witten looked into the flitter's viewing screen and smiled mirthlessly.

Below him were piles of smoking slag that had once been armored vehicles. When the flitter hit Mach I, he cut in the ram jets. The ship was still accelerating when he reached the outskirts of the city. Witten checked a direction finder and began to cut his speed as he flew in a wide circle just above the tallest of the city's buildings. A red light flashed on the panel in front of him, and he looked into the screen just in time to see a plane explode somewhere above him.

Compared to the sophisticated system of the starship, the flitter's weapon's weren't much; but they were more than a match for the turbojet and prop competition they were up against.

Witten completed the triangulation of the signals from Skinner's suit monitor. He should have been close enough for voice contact through the suit radio, but he was unable to raise the other man.

Witten flipped a switch and spoke to Stade. "This is Witten. I'm going to bail out right over the triangulation point. Take remote control of the flitter and make some diversionary attacks on the other side of the city. You might drop a low-yield bomb or two. Be careful and don't fry us, though. I'll call you when I need you, okay?" Stade agreed and Witten cut off the radio and opened the emergency exit to his right. He checked his radio, direc-

tion finder, and weapons. Finally he dropped into space.

Witten fell free until he was about three hundred feet above the surface, and then he cut in the suit's jets and slowed his descent.

Below him row on row of ten and twenty story buildings were crowded together. Witten dropped to the ground near one of these buildings and took a reading on the signal. That way. He started down the narrow street in the long strides characteristic of power suit locomotion. Funny that there aren't any people out, he thought. Once or twice he saw a few greenies scurrying around corners at his approach.

He had just stopped to take another reading when a tremendous clang sounded in his ears and simultaneously something jarred the suit.

Immediately he realized some sort of projectile had bounced off the suit's armor. Witten whirled around and saw a group of four or five greenies taking aim at him from a distance of about fifty yards. Again the clang and jar.

Witten raised the rocket launcher, thumbed the warhead setting to a minimal reading, and squeezed the trigger. An instant later there was a bright flash followed by a tremendous concussion.

He trotted around the next corner and knew he had found Skinner. Four tanks were pulled up in a semi-circle with their guns facing the entrance of a building. Fifty or a hundred greenies were hastily throwing up barricades. There were four or five semi-portable weapons of some kind covering another door on the adjacent side.

Witten ducked back around the corner and considered his position. He became aware of a series of dull explosions somewhere in the distance. Probably Stade and the flitter, he thought. Witten decided to enter the building through the door nearest him. If he could knock out the tanks and get inside before they brought up the portable weapons, he would be home safe. Small-arms fire didn't worry him too much; the suit's armor seemed to have handled it well so far. Witten stuck his head carefully around the corner again and studied the entrance.

What if the door was locked? He wouldn't have time to try to figure it out. He hefted the atomic torch and adjusted its position so he could get to it easily. Every second was going to count. He dialed the suit to emergency power.

Now! Witten stepped around the corner and dropped to one knee. He raised the launcher and took aim.

The blast from the first explosion ruined his aim on the second tank. However, he judged the near-miss had done enough damage. He was more careful on the third and fourth shots and scored direct hits. An instant after the last shot he was up and running.

Most of the greenies who had been deployed around the

tanks had disappeared; here and there a mangled trunk or an arm or leg lay on the ground. When he was only a little over half way to the entrance, a puff of dust a few steps ahead informed him that some of the opposition was still alive. A second later he suffered the familiar impact and concussion of a hit on his suit.

Witten looked over his shoulder as he ran and saw greenies in almost every window of the building across the street. The snouts of heavy weapons protruded from several windows. He fired four or five shots over his shoulder without missing a stride and was gratified to see the front of the building collapse. Running past the tank he had almost missed, he noticed globules of metal had formed on one side where armor plate had liquified, run and solidified.

Witten reached the entrance amid a hail of bullets. He pushed the door, but it failed to open. There was no sign of a knob. He was raising the torch when a tremendous explosion smashed him into the side of the building.

Witten climbed up out of the rubble; the damned door was still closed. He flipped on the torch. Witten cut through the lock mechanism and kicked open the door amid a splatter of molten metal.

The interior of the building was pitch black to his half-blinded eyes. Another shell landed just short outside and knocked him through the doorway. Witten scrambled around the corner on his hands and knees and hurried on down the corridor so as to be out of the line of fire. The place was built like a fort; the walls were of stone and about two feet thick. The direction finder pointed to the interior of the building, so Witten took the first corridor to the left. It ended in a heavy metal door. This time he didn't even hunt for the knob or the latch or whatever the inhabitants used for opening doors. Witten used the torch and stepped through the door.

Inside was a gloomy hall littered with piles of smoking rubble. The only light came from a circular skylight in the vaulted ceiling some fifty feet above. His light cut a swath through the smokey air.

Witten knew he had to move fast. There was no telling how long it would be before the greenies got up enough nerve to follow him into the building. What had kept them out in the first place?

He played the light over the floor and started towards the center of the room. The beam picked out a lean brown corpse. He stopped rolled the body over with his foot, and studied it for a second before going on.

Its lower jaw had been torn off and on one arm was a livid handprint in crushed flesh.

He stumbled on three more bodies before he reached the center of the room. Two of them had been burned nearly in two by a beamer, and the other seemed to have been bludgeoned to death.

Witten switched the suit's loudspeaker to its highest volume and called Skinner's name several times. He listened after the echoes had

died away, but there was no reply.

Witten checked the direction finder, but the needle flickered wildly about. He played the light around the circumference of the room and understood why the greenies were still outside. Aside from the door by which he had entered, there was only one other entrance to the building; it opened directly into the hall. It was barricaded with furniture and the wall near it was criss-crossed with beamer scars. He pictured the greenies trying to rush the door against a laser beam; it would be hopeless.

Skinner must be somewhere in the room.

Suddenly the whole building rocked to a terrific explosion. Plaster fell like snow and at the front of the room a huge beam crashed to the floor. Witten flashed his light over to where he had seen a slight movement.

A second later he was kneeling at Skinner's side.

IV

The huge frame was propped up against the top of an overturned table. Skinner still held his beamer tight in his fist. Witten shined the light into Skinner's face and then flashed it hastily away.

What he had seen sickened him. The synthaflesh was blackened and contracted by heat, and the left side of the face, including the eye, seemed to have been scraped away. Metal gleamed through in several places. The other eye, however, gleamed with life. Witten realized that either the speech or auditory equipment, or both, must be damaged.

"Skinner, can you hear me?" His voice boomed out with earthshattering strength and echoed through the hall. Witten thumbed the volume down.

Skinner shook himself and waved his right hand weakly. A sound like a cross between a cough and a belch issued from his ruined face. He shook his head and tried again. The result was no better. "Take it easy," Witten said. "I'll have you out of here in a minute. Can you walk?"

Skinner shook his head negatively. Witten shined the light over his body and immediately wished he hadn't. What he saw was, if anything, worse than the face.

The left side was crushed and the left leg, from the knee down, seemed to have been cleanly amputated by some colossal knife. Witten kept reminding himself that it wasn't flesh and blood, only steel, plastic, and wire. "Are you in pain? Is there anything I can do?"

Skinner shook his head no to both questions. However, he made no effort to get up.

Witten tried to think. Obviously he couldn't call the flitter down now and load what was left of Skinner into it; the greenies would blast him into pieces the minute he stepped out of the building. Only the great speed of the power suit had saved him before. Carrying Skinner, he wouldn't have a chance. He flipped on the radio. "Stade?"

"Yes. I'm here." The quickness of his reply conjured up a picture of

him sitting expectantly on the edge of his chair. "Have you found Skinner yet?"

"Yes." Witten paused. "He's in pretty bad shape. Thanks for keeping them off our backs. Now listen, here's what you do. Project a circle about ten miles in diameter with us in the center. Launch six missiles from the ship. Have each one punch in equidistantly around the rim of the circle. Adjust the yield settings so we get a fourth-magnitude blast here."

"Good God! That'll destroy the whole city . . ."

"Do it," Witten cut him off, "exactly at 17:23. That's seven minutes from now. Okay? 17:23 on the second."

"All right."

Witten snapped off the radio and stood up. He said to Skinner, "Let me know if you want anything." He picked the big man up and slung him over his shoulder.

Even in the power suit, it was rough going. He took a roll of wire from his belt and lashed the other man to him as best he could. Abruptly Witten wondered why the greenies had been quiet for so long. Of course, they had other things on their minds.

Which way out?

He eyed the two doors and tried to make up his mind. The issue was decided for him as the main door and most of the barricade in front of it disintegrated in a jarring explosion. Witten staggered but kept his feet. Should he make a run for the other door? Already greenies were swarming in the just-opened aperture. Weighed down as he was, they'd catch him before he made it. Okay, right down the gut.

Witten swung the torch up and trotted towards the main entrance. Ten or fifteen greenies had climbed through the tangle of wreckage that still partially blocked the entrance. They seemed thrown into confusion at his approach. Before they could fire, Witten switched on the torch.

Although he was still twenty feet away from them, the effect was more than sufficient. They were subjected to a wave of heat that immediately roasted the ones directly in front of the torch and set fire to the uniforms of those around its periphery. Several exploded in a confusion of detonating ammunition belts; others afire clambered frantically over the rubble, already dead without knowing it. One of them blundered directly into Witten, who grabbed the thin neck in one mailed fist and squeezed. The thing weakly flailed its limbs. Witten squeezed harder and felt something snap. Its eyes bulged out incredibly, and a hair-thin vertical line suddenly dilated into a gaping hole that covered half of its face.

So that's how they eat, Witten thought, and tossed the body aside.

He stopped just inside the entrance and stuck his head around the corner. Witten found himself almost face to face with another group of greenies. The surprise was mutual. He managed to get his torch up and on before his opponents could raise their heavy weapons, though several lighter projec-

tiles bounced harmlessly off his armor.

Witten peered outside through the smoke and made out just what he had feared. The greenies had reinforced their forces around the building. Barricades, tanks, and heavy weapons were everywhere. He retreated from the rain of shells. The thick wall protected him from a direct hit, and his suit saved him from chips of stone and from concussion.

Witten's chronometer showed a little over three and a half minutes to go before the rockets were due. He had to be in the open when they hit, otherwise the two of them might be buried under tons of wreckage if the already battered structure decided to give way.

Two minutes and forty-five seconds to go.

Witten picked off two tanks that began firing into the building. The others seemed content to wait for the rest of their forces to get into position. He waited and waited. They think they've got all the time in the world, he reminded himself.

After two more minutes had passed, Witten stuck his head around the corner again and nearly had it blown off. He stuck a full slip into his rocket launcher and dialed the warheads to high yield. He stuck the launcher around the corner and started pulling the trigger as fast as he could. Then Witten was around the corner running and firing. He got five more shots before he was knocked down by a combination of his own blasts and two near hits from tanks. Witten lay stunned for an instant. Then he was up and running again.

Although Skinner slowed him and there was something wrong with the extendor on the left leg of his suit, he managed to get almost to the middle of the street before Stade's rockets hit.

Witten was nothing. Abruptly a disagreeably bright play of colors floated into the darkness, and he shook his head complainingly. His body began to throb. Witten opened his eyes.

Aside from the glare from a dozen or more fires in the upper stories, he could make out very little about the buildings around him; a thick smoke had rolled in from somewhere. Witten struggled to his feet and found Skinner on the ground beside him. The wire had broken.

The huge frame seemed lifeless, but that meant nothing. Skinner might still be conscious in the ruined mass of metal and plastic. The necessities for life, the basic nutrient and the brain case and pump, were heavily armored. Witten flipped on his radio and called hoarsely into the mike. "Stade, get down here fast. Hurry up, damn it."

To him the flitter, when it appeared overhead, was the most beautiful sight in this or any other world.

Two hours later Witten and Slade sat in the ship's dispensary while the automedic clucked sympathetically and moved its appendages over what was left of Skinner. A chime sounded somewhere in the machine.

Stade took the diagnostic card that appeared in a slot.

"How does it look?" Witten asked.

"All right, I guess. He'll have to stay in the machine until we get back, but we can rig up some photocells and sensory equipment. There's no real danger."

"The bastards!" Witten clenched his fists. "You can never trust them. We ought to . . ."

Stade interrupted. "That's not the way to look at it. It's just that to them we were fair game. They think just like we do. Look at Ceton II and Cowper. We get along fine . . ."

"Yeah. And look at Wolf IV and Paradise and Wilson," Witten gritted. "Skinner told me a lot about the greenies. In the end, it's either going to be us or them, us or the greenies."

Stade looked at him with confusion and a growing recognition.

V

Stade was brought back to the present by a persistent pain in his side. He took a pill from the table beside his bed and swallowed it.

The pills didn't do much good any more, and he knew things were going to get worse. There were only a few varieties of cancer that were still incurable, but he had an inoperable case of one of them that had grown with almost unbelievable speed.

There was a knock on the door and Witten came in. He was even bigger and broader than Stade remembered him. For awhile they talked as people in such situations have always talked—of the weather, of the hospital food and the nurses. When Witten got up to leave, Stade picked up the book. "Here's a little present for you. Even aside from its historical value, it's worth reading. It's about some of your ancestors."

Witten smiled. "I'm from Carman, one of the first colonies. My ancestors came from Africa."

"Not all of them," Stade said. "Some of them were in North America almost from the first."

Witten took the gift and made the proper sounds of appreciation and approval. Outside in the corridor, he looked at it again.

It was too bad that old Stade was dying, he thought. He always was rather strange; giving me a book—he probably even went to some trouble to get it. He looked at the strange title once more and then pocketed the book. A few moments later he stepped blinking into the sunshine where his friend waited for him.

Skinner was resplendent in a new body that was even bigger and more powerful than the one he had had before.

Witten looked up at the symmetrical planes of his face and asked, "Have you ever heard of a book named Uncle Tom's Cabin?" Skinner shook his head from side to side and they walked away, the ivory of Skinner's synthaflesh contrasting pleasantly in the sunshine with Witten's ebony skin. END

Nine Hundred Grandmothers

by R. A. LAFFERTY

It's not so odd to have ancestors. But these people's ancestors were still quite alive — all of them!

Ceran Swicegood was a promising young Special Aspects Man. But, like all Special Aspects, he had one irritating habit. He was forever asking the question: How Did It All Begin?

They all had tough names except Ceran. Manbreaker Crag, Heave Huckle, Blast Berg, George Blood, Move Manion (when Move says "Move", you move), Trouble Trent. They were supposed to be tough, and they had taken tough names at the naming. Only Ceran kept his own—to the disgust of his commander, Manbreaker.

"Nobody can be a hero with a name like Ceran Swicegood!" Manbreaker would thunder. "Why don't you take Storm Shannon? That's good. Or Gutboy Barrelhouse or Slash Slagle or Nevel Knife? You barely glanced at the suggested list."

"I'll keep my own," Ceran always said, and that is where he made his mistake. A new name will sometimes bring out a new personality. It had done so for George Blood. Though the hair on George's chest was a graft job, yet that and his new name had turned him from a boy into a man. Had Ceran assumed the heroic name of Gutboy Barrelhouse he might have been capable of rousing endeavors and man-sized angers rather than his tittering indecisions and flouncy furies.

They were down on the big asteroid Proavitus—a sphere that almost tinkled with the potential profit that might be shaken out of it. And the tough men of the Expedition knew their business. They signed big contracts on the native velvet-like bark scrolls and on their own parallel tapes. They impressed, inveigled and somewhat cowed the slight people of Proavitus. Here was a solid two-way market, enough to make them

slaver. And there was a whole world of oddities that could lend themselves to the luxury trade.

"Everybody's hit it big but you," Manbreaker crackled in kindly thunder to Ceran after three days there. "But even Special Aspects is supposed to pay its way. Our charter compels us to carry one of your sort to give a cultural twist to the thing, but it needn't be restricted to that. What we go out for every time, Ceran, is to cut a big fat hog in the rump, we make no secret of that. But if the hog's tail can be shown to have a cultural twist to it, that will solve a requirement. And if that twist in the tail can turn us a profit, then we become mighty happy about the whole thing. Have you been able to find out anything about the living dolls, for instance? They might have both a cultural aspect and a market value."

"The living dolls seem a part of something much deeper," Ceran said. "There's a whole complex of things to be unraveled. The key may be the statement of the Proavitoi that they do not die."

"I think they die pretty young, Ceran. All those out and about are young, and those I have met who do not leave their houses are only middling old."

"Then where are their cemeteries?"

"Likely they cremate the old folks when they die."

"Where are the crematories?"

"They might just toss the ashes out or vaporize the entire remains. Probably they have no reverence for ancestors."

"Other evidence shows their entire culture to be based on an exaggerated reverence for ancestors."

"You find out, Ceran. You're Special Aspects Man."

Ceran talked to Nokoma, his Proavitoi counterpart as translator. Both were expert, and they could meet each other halfway in talk. Nokoma was likey feminine. There was a certain softness about both the sexes of the Proavitoi, but the men of the Expedition believed that they had them straight now.

"Do you mind if I ask some straight questions," Ceran greeted her today.

"Sure is not. How else I learn the talk well but by talking."

"Some of the Proavitoi say that they do not die, Nokoma. Is this true?"

"How is not be true? If they die, they not be here to say they do not die. Oh, I joke, I joke. No, we do not die. It is a foolish alien custom which we see no reason to imitate. On Proavitus, only the low creatures die."

"None of you dies?"

"Why no. Why should one want to be an exception in this?"

"But what do you do when you get very old?"

"We do less and less then. We come to a deficiency of energy. Is it not the same with you?"

"Of course. But where do you go when you become exceedingly old?"

"Nowhere. We stay at home then. Travel is for the young and those of the active years."

"Let's try it from the other end," Ceran said. "Where are your father and mother, Nokoma?"

"Out and about. They aren't really old."

"And your grandfathers and grandmothers?"

"A few of them still get out. The older ones stay home."

"Let's try it this way. How many grandmothers do you have, Nokoma?"

"I think I have nine hundred grandmothers in my house. Oh, I know that isn't many, but we are the younger branch of a family. Some of our clan have very great numbers of ancestors in their houses."

"And all these ancestors are alive?"

"What else? Who would keep things not alive? How would such be ancestors?"

Ceran began to hop around in his excitement.

"Could I see them?" he twittered.

"It might not be wise for you to see the older of them," Nokoma cautioned. "It could be an unsettling thing for strangers, and we guard it. A few tens of them you can see, of course."

Then it came to Ceran that he might be onto what he had looked for all his life. He went into a panic of expectation.

"Nokoma, it would be finding the key!" he fluted. "If none of you has ever died, then your entire race would still be alive!"

"Sure. Is like you count fruit. You take none away, you still have them all."

"But if the first of them are still alive, then they might know their origin! They would know how it began! Do they? Do you?"

"Oh, not I. I am too young for the Ritual."

"But who knows? Doesn't someone know?"

"Oh, yes. All the old ones know how it began."

"How old? How many generations back from you till they know?"

"Ten, no more. When I have ten generations of children, then I will also go to the Ritual."

"The Ritual, what is it?"

"Once a year, the old people go to the very old people. They wake them up and ask them how it all began. The very old people tell them the beginning. It is a high time. Oh how they hottle and laugh! Then the very old people go back to sleep for another year. So it is passed down to the generations. That is the Ritual."

The Proavitoi were not humanoid. Still less were they 'monkey-faces', though that name was now set in the explorers' lingo. They were upright and robed and swathed, and were assumed to be two-legged under their garments. Though, as Manbreaker said, "They might go on wheels for all we know."

They had remarkable flowing hands that might be called everywhere-digited. They could handle tools, or employ their hands as if they were the most intricate tools.

George Blood was of the opinion

that the Proavitoi were always masked, and that the men of the Expedition had never seen their faces. He said that those apparent faces were ritual masks, and that no part of the Proavitoi had ever been seen by the men except for those remarkable hands which perhaps were their real faces.

The men had reacted with cruel hilarity when Ceran had tried to explain to them just what a great discovery he was verging on.

"Little Ceran is still on the how-did-it-begin jag," Manbreaker jeered. "Ceran, will you never give off asking which came first, the chicken or the egg?"

"I will have that answer very soon," Ceran sang. "I have the unique opportunity. When I find how the Proavitoi began, I may have the clue to how everything began. All of the Proavitoi are still alive, the very first generation of them."

"It passes belief that you can be so simple-minded," Manbreaker moaned. "They say that one has finally mellowed when he can suffer fools gracefully. By God, I hope I never come to that."

But two days later, it was Manbreaker who sought out Ceran Swicegood on nearly the same subject. Manbreaker had been doing a little thinking and discovering of his own.

"You are Special Aspects Man, Ceran," he said, "and you have been running off after the wrong aspect."

"What is that?"

"It don't make a damn how it began. What is important is that it may not have to end."

"It is the beginning that I intend to discover," said Ceran.

"You fool, can't you understand anything? What do the Proavitoi possess so uniquely that we don't know whether they have it by science or by their nature or by fool luck?"

"Ah, their chemistry, I suppose."

"Sure. Organic chemistry has come of age here. The Proavitoi have every kind of nexus and inhibitor and stimulant. They can grow and shrink and telescope and prolong what they will. These creatures seem stupid to me; it is as if they had these things by instinct. But they have them, that is what is important. With these things, we can become the patent medicine kings of the universes, for the Proavitoi do not travel or make many outside contacts. These things can do anything or undo anything. I suspect that the Proavitoi can shrink cells, and I suspect that they can do something else."

"No, they couldn't shrink cells. It is you who talk nonsense now, Manbreaker."

"Never mind. Their things already make nonsense of conventional chemistry. With the pharmacopoeia that one could pick up here, a man need never die. That's the stick horse you've been riding, isn't it? But you've been riding it backward with your head to the tail. The Proavitoi say that they never die."

"They seem pretty sure that they don't. If they did, they would be the first to know it, as Nokoma says."

"What? Have these creatures humor?"

"Some."

"But, Ceran, you don't understand how big this is."

"I'm the only one who understands it so far. It means that if the Proavitoi have always been immortal, as they maintain, then the oldest of them are still alive. From them I may be able to learn how their species—and perhaps every species—began."

Manbreaker went into his dying buffalo act then. He tore his hair and near pulled out his ears by the roots. He stomped and pawed and went off bull-bellowing:

"It don't make a damn how it began, you fool! It might not have to end!!" so loud that the hills echoed back:

"It don't make a damn—you fool."

Ceran Swicegood went to the house of Nokoma, but not with her on her invitation. He went without her when he knew that she was away from home. It was a sneaky thing to do, but the men of the Expedition were trained in sneakery.

He would find out better without a mentor about the Nine Hundred Grandmothers, about the rumored living dolls. He would find out what the old people did do if they didn't die, and find if they knew how they were first born. For his intrusion, he counted on the innate politeness of the Proavitoi.

The house of Nokoma, of all the people, was in the cluster on top of the large flat hill, the Acropolis of Proavitus. They were earthen houses, though finely done, and they had the appearance of growing out of and being a part of the hill itself.

Ceran went up the winding, ascending flagstone paths, and entered the house which Nokoma had once pointed out to him. He entered furtively, and encountered one of the nine hundred grandmothers—one with whom nobody need be furtive.

The grandmother was seated and small and smiling at him. They talked without real difficulty, though it was not so easy as with Nokoma, who could meet Ceran halfway in his own language. At her call, there came a grandfather who likewise smiled at Ceran. These two ancients were somewhat smaller than the Proavitoi of active years. They were kind and serene. There was an atmosphere about the scene that barely missed being an odor—not unpleasant, sleepy, reminescent of something, almost sad.

"Are there those here older than you?" Ceran asked earnestly.

"So many, so many, who could know how many?" said the grandmother. She called in other grandmothers and grandfathers older and smaller than herself, these no more than half the size of the active Proavitoi—small, sleepy, smiling.

Ceran knew now that the Proavitoi were not masked. The older they were, the more of character and interest there was in their faces. It was only of the immature active Proavitoi that there could have been a doubt. No masks could show

such calm and smiling old age as this. The queer textured stuff was their real faces.

So old and friendly, so weak and sleepy, there must have been a dozen generations of them there back to the oldest and smallest.

"How old are the oldest?" Ceran asked the first grandmother.

"We say that all are the same age since all are perpetual," the grandmother told him. "It is not true that all are the same age, but it is indelicate to ask how old."

"You do not know what a lobster is," Ceran said to them, trembling, "but it is a creature that will boil happily if the water on him is heated slowly. He takes no alarm, for he does not know at what point the heat is dangerous. It is that gradual here with me. I slide from one degree to another with you and my credulity is not alarmed. I am in danger of believing anything about you if it comes in small doses, and it will. I believe that you are here and as you are for no other reason than that I see you and touch you. Well, I'll be boiled for a lobster then before I turn back from it. Are there those here even older than the ones present?"

The first grandmother motioned Ceran to follow her. They went down a ramp through the floor into the older part of the house which must have been under ground.

Living dolls! They were here in rows on the shelves, and sitting in small chairs in their niches. Doll-sized indeed, and several hundred of them.

Many had wakened at the intrusion. Others came awake when spoken to or touched. They were incredibly ancient, but they were cognizant in their glances and recognition. They smiled and stretched sleepily, not as humans would, but as very old puppies might. Ceran spoke to them, and they understood each other surprisingly.

"Lobster, lobster," said Ceran to himself, "the water has passed the danger point! And it hardly feels different. If you believe your senses in this, then you will be boiled alive in your credulity."

He knew now that the living dolls were real and that they were the living ancestors of the Proavitoi.

Many of the little creatures began to fall asleep again. Their waking moments were short, but their sleeps seemed to be likewise. Several of the living mummies woke a second time while Ceran was still in the room, woke refreshed from very short sleeps and were anxious to talk again.

"You are incredible!" Ceran cried out, and all the small and smaller and still smaller creatures smiled and laughed their assent. Of course they were. All good creatures everywhere are incredible, and were there ever so many assembled in one place? But Ceran was greedy. A roomful of miracles wasn't enough.

"I have to take this back as far as it will go!" he cried avidly. "Where are the even older ones?"

"There are older ones and yet older and again older," said the first grandmother, "and thrice-over older ones, but perhaps it would be wise

not to seek to be too wise. You have seen enough. The old people are sleepy. Let us go up again."

Go up again, out of this? Ceran would not. He saw passages and descending ramps, down into the heart of the great hill itself. There were whole worlds of rooms about him and under his feet. Ceran went on and down, and who was to stop him? Not dolls and creatures much smaller than dolls.

Manbreaker had once called himself an old pirate who reveled in the stream of his riches. But Ceran was the Young Alchemist who was about to find the Stone itself.

He walked down the ramps through centuries and millennia. The atmosphere he had noticed on the upper levels was a clear odor now—sleepy, half-remembered, smiling, sad and quite strong. That is the way Time smells.

"Are there those here even older than you?" Ceran asked a small grandmother whom he held in the palm of his hand.

"So old and so small that I could hold in my hand," said the grandmother in what Ceran knew from Nokoma to be the older uncompounded form of the Proavitus language.

Smaller and older the creatures had been getting as Ceran went through the rooms. He was boiled lobster now for sure. He had to believe it all; he saw and felt it. The wren-sized grandmother talked and laughed and nodded that there were those far older than herself, and in doing so she nodded herself back to sleep. Ceran returned her to her niche in the hive-like wall where there were thousands of others, miniaturized generations.

Of course he was not in the house of Nokoma now. He was in the heart of the hill that underlay all the houses of Proavitus, and these were the ancestors of everybody on the asteroid.

"Are there those here even older than you?" Ceran asked a small grandmother whom he held on the tip of his finger.

"Older and smaller," she said, "but you come near the end."

She was asleep, and he put her back in her place. The older they were, the more they slept.

He was down onto solid rock under the roots of the hill. He was into the passages that were cut out of that solid rock, but they could not be many or deep. He had a sudden fear that the creatures would become so small that he could not see them or talk to them, and so he would miss the secret of the beginning.

But had not Nokoma said that all the old people knew the secret? Of course. But he wanted to hear it from the oldest of them. He would have it now, one way or the other.

"Who is the oldest? Is this the end of it? Is this the beginning? Wake up! Wake up!" he called when he was sure he was in the lowest and oldest room.

"Is it ritual?" asked some who woke up. Smaller than mice they were, no bigger than bees, maybe older than both.

"It is a special Ritual," Ceran

told them. "Relate to me how it was in the beginning."

What was that sound — too slight, too scattered to be a noise? It was like a billion microbes laughing. It was the hilarity of little things waking up to a high time.

"Who is the oldest of all?" Ceran demanded, for their laughter bothered him. "Who is the oldest and first."

"I am the oldest, the ultimate grandmother," one said gaily. "All the others are my children. Are you also of my children?"

"Of course," said Ceran, and the small laughter of unbelief flittered out from the whole multitude of them.

"Then you must be the ultimate child, for you are like no other. If you be, then it is as funny at the end as it was in the beginning."

"How was it in the beginning?" Ceran bleated. "You are the first. Do you know how you came to be?"

"Oh, yes, yes," laughed the ultimate grandmother, and the hilarity of the small things became a real noise now.

"How did it begin?" demanded Ceran, and he was hopping and skipping about in his excitement.

"Oh, it was so funny a joke the way things began that you would not believe it," chittered the grandmother. "A joke, a joke!"

"Tell me the joke then. If a joke generated your species, then tell me that cosmic joke."

"Tell yourself," tinkled the grandmother. "You are a part of the joke if you are of my children. Oh, it is too funny to believe. How good to wake up and laugh and go to sleep again."

Blazing green frustration! To be so close and to be balked by a giggling bee!

"Don't go to sleep again! Tell me at once how it began!" Ceran shrilled, and he had the ultimate grandmother between thumb and finger.

"This is not Ritual," the grandmother protested. "Ritual is that you guess what it was for three days, and we laugh and say 'No, no, no, it was something nine times as wild as that. Guess some more.' "

"I will *not* guess for three days! Tell me at once or I will crush you," Ceran threatened in a quivering voice.

"I look at you, you look at me, I wonder if you will do it," the ultimate grandmother said calmly.

Any of the tough men of the Expedition would have done it — would have crushed her, and then another and another and another of the creatures till the secret was told. If Ceran had taken on a tough personality and a tough name he'd have done it. If he'd been Gutboy Barrelhouse he'd have done it without a qualm. But Ceran Swicegood couldn't do it.

"Tell me," he pleaded in agony. "All my life I've tried to find out how it began, how anything began And you know!"

"We know. Oh, it was so funny how it began. So joke! So fool, so clown, so grotesque thing! Nobody could guess, nobody could believe."

"Tell me! Tell me!" Ceran was ashen and hysterical.

"No, no, you are no child of mine," chortled the ultimate grandmother. "Is too joke a joke to tell a stranger. We could not insult a stranger to tell so funny, so unbelieve. Strangers can die. Shall I have it on conscience that a stranger died laughing?"

"Tell me! Insult me! Let me die laughing!" But Ceran near died crying from the frustration that ate him up as a million bee-sized things laughed and hooted and giggled:

"Oh, it was so funny the way it began!"

And they laughed. And laughed. And went on laughing . . . until Ceran Swicegood wept and laughed together, and crept away, and returned to the ship still laughing. On his next voyage he changed his name to Blaze Bolt and ruled for ninety-seven days as king of a sweet sea island in M-81, but that is another and much more unpleasant story.

END

NOT BY SEA

by HOWARD L. MORRIS

Illustrated by GAUGHAN

What history does not tell about England's brave defense -- against the invasion that did not happen!

"I do not say the French cannot come to England. I only say they cannot come by sea." (Lord Collingswood in the House of Lords, reported by C. S. Forester.)

"In England of Time Track Gamma, the enemy came." (Report of the Parallel Universe Time Track Exploration Society.)

I

Sir Hubert Wulf-Leigh was a four-bottle man. Every night four pints of the acrid yet sweet wine called Rossa slipped down his gullet to the obvious discomfort of his liver. Heavy set, given a little to fat, his face flecked with the

brownish mottlings of cirrhotic disease, at thirty-two he was a poor bet to see his fortieth birthday. With him would perish the last of the Barons Minor (hereditary Knights) of Wulf-Leigh. And the plain fact of it was that Sir Hubert didn't care.

For these were heroic times, the long years of the war against Naflin the usurper, King Elective of the revolution riven Kingdom of Fraunce. An enlarged heart had kept the Baron Minor from serving actively in the armed forces; a rejected heart, cast aside by a young lady with a cruel proclivity for classing the medically unfit as cowards, had started him on the road downward toward the shipwreck of his health via the bottle and the bawdy house.

Yet there was still a space of about five hours each day between the morning's bottle fatigue and the late afternoon's thirty craving when Hubert was able to perform useful work. He served in those hours as Particular and Confidential Clerk to the Board of Lord High Admirals. The nature of the job (the result of one of the Lord High Admirals' remembrance of past friendship for Wulf-Leigh's late father), was the close examination of enemy documents (periodicals, government bulletins and the like) which trickled into England by various means. From them he took useful intelligence.

On the day in question he was perusing the back pages of *Observator National,* the official paper of the Naflon government. These back pages were concerned with the economic decrees of the regime. Suddnly, Sir Hubert noticed an item placed there by the chief agronomist of the Sunken Lands: "This year by order of the King Elective ten thousand Hekkares have been planted to augment the regular crop of flax."

"That's a funny one," mused the Baron Minor. "Why the devil are they adding a third to their regular acreage in that crop? They can't need that many new petticoats. There is something here. Maybe Doll Broadrump will know. I'll be seeing her tonight, and I'll be sure to inquire."

Doll Broadrump kept one of the most exclusive brothels in Lindesnes. Running to fat (her once magnificent figure was now better described as ample) and a bit o'erly fond of the wine bottle, she found herself attracted to the High Admiral's clerk by a perverse mutuality.

When the Sunken Lands matter occurred to him, he had already half undressed her.

"Not so fast, Wilfy!" (This was an endearment based upon his name which was usually pronounced as a clipped Wilfly.) "You'll have me all unstayed before I'm ready for it."

"I'm just practicing for the Fall when you'll doubtless have two or more petticoats than you're wearing now, smuggled over here along with your Freunch perfumes," he teased her.

"Coo, Wilfly, how you do talk. You'd think I buy from the smug-

GREAT GASBAGS

Freunch hopes punctured by English needles

glers, do you? Well, only a little, like perfumes and stuff. But certainly I won't be buying Linen Petticoats. Why they're classed as demode now."

The thick set lover was puzzled by this response. "Demode? That means out of fashion, doesn't it? That doesn't go with information I've acquired. Are you sure of your facts?"

"Am I sure? Let me off your lap for a moment, ducks, and I'll show you." Dolly began rummaging through an overstuffed disorderly armoire. "Here we are, lad. This in Mme. Godolfin's Ladies' Book. Mme. Godolfin dictates the styles in Naflon's kingdom. It's said she sleeps with Naflon when his queen is otherwised disposed. Now read this here. Underlinens shall not be of that material any longer. Petticoats shall be of silk to cling to the figure with gentility and grace. You can bet our ladies will be following that trend. So by the fall there won't be a petticoat of linen worn by a fashionable lady in Lindesnes."

"So this Madame Godolfin rules the fashions for both England and Fraunce. Maybe some of our people ought to talk to her, use her as a kind of a modern day Lysistrata. But that's not in the Lord High Admiral's purview. But you've given me a useful lead. You shall have ten c'ronets beyond your usual two royals tonight."

Leaping back on Hubert's lap, she exclaimed with proud and eager excitement: "Crikey, luvvy, ye're a real gent!"

II

The next day Sir Hubert, when he finally whipped himself into his office, checked through the *Observator* again to see if he could make any connection through other surplus production.

The only thing he noted was a rather querulous article above the signature of Naflon's Minister of Conservation of Scarce Reources, complaining about the low surrender rate for tallow and its excessive use in the home for home supplies of candles. The article urged that he who is a good son of his country will not keep six candles burning in a room where two would do and in that way his deliveries of tallow could be raised by two or three pounds a week to the agents of the Ministry of Conservation . . . .

Wulf-Leigh labored through the afternoon trying to make a connection between flax and tallow and Naflon's war. The only thought he had was of shoemaker's thread; and he didn't think that Naflon was going to paddle his way to England in a specially sewed, water-repelling cobbler's invention.

"Damn, there has to be something. Well, no chance to find out now. I play cards with Munkertny tonight. Maybe he can enlighten me."

With an exaggerated deliberateness, Wulff-Leigh put down the picture cards with incantation: "Chief, Prince, and King of Swords and (playing the Ace) the Almighty One whose Sward cuts down even

Kings. That's Skirmish, Battle and War. We have you on the hip again, Munkertny. At five Royals a Skirmish, we have you down nine to four; and five Royals on the battle . . . that's thirty Royals you owe us additionally and twenty-five for the earlier games. That's fifty-five bright boys you owe us."

"Biggah," exploded Munkertny (Lord Henry Phillip Mountcourtenay, Senior Captain in the Royal Navy.) "Playing with you, Sir Hubert, is a habit I shall have to forego. I can't afford many evenings like this!"

Wulf-Leigh shrugged off the complaint. "You probably take twenty times the value of this evening's little session from the Freunch in prize money. I'm just leveling off the inequities in the country's wealth. It wouldn't do for the Navy's captains to grow too rich. With wealth comes independent thinking and with independent thinking grows disobedience to orders and the breakdown of all discipline."

"Gah, Wilfly, it's good you're saying that smiling! This prize bit isn't all you civilian side fellahs make it out to be. Last week we took a coaster making for Bullon on the coast near the Sunklands, and what do you think she had on board? One hundred madman's tea pots! They were big enough to hold three barrels of tea. They had the spouts in the cover, and not one spout but two. And to top off everything else, they had a grommet and clamp arrangement for dogging down the cover. I'll bet even Prisker, our chemistical genius, couldn't tell me what those were for. They couldn't be just ordinary urns for the army — Naflon hasn't got more than seventy-five regiments in his whole demmed army."

Sir Andrew Priest-Kerr, Master of the Lord High Admiral's Powder Works and brilliant analytical chemist who had partnered Sir Hubert in the game just concluded, thought for a minute and then asked quietly: "Tell me, Munkertny, were these tea pots of yours porcelainized on the inside? I mean did they have a glassy smooth finish over the metal?.

"Demme, Prisker, I believe you know the answer! Yes, they did have a glassy surface inside. What are they?"

"Well, sir, if I were right in that deduction, I'd say your teakettles were not kettles at all but gas generators. With a two-hole set up like that, the top would be lifted — fifty or a hundred pounds of zinc and fifty or sixty gallons of oil of vitriol put in one vent — stoppered — and ninety-thousand cubic feet of Hydrogen drawn off through the other before a new charge would be necessary."

"Hydrogen, eh?" sniffed Mountcourtenay. "Can't say I've heard of the stuff. What's it good for?"

"It will produce the hottest flame imaginable without leaving an ash. Since it's about eighteen times as light as air, it can be used in balloons. You know this, of course — those cloth envelopes that are sufficiently lighter than air around them and thus can lift a weight of

men and materials to sail with the wind for hundreds of leagues."

"Gad, sir! Naflon wasting good shipping space to inflate children's toys? It's most incredible. You might even say disappointing. I thought we faced a worthier opponent. He'd do better to put his canvas into ship's sails and coming out of his harbors to meet us."

"He can't make them of canvas," snapped Priest-Kerr, "it's too heavy. The best stuff is heavy silk or other light, air-tight materials."

Wulf-Leigh got back into the discussion. Remembering the economic note about the Sunken Lands, he asked quietly: "Could other light cloths like linen be used?"

The powder master said, "Not usually. Linen is light but it's too porous a weave to hold the gas properly. Linen rag paper could be used, but unfortunately the aero men don't care to trust their lives to paper. You might use a close woven linen with an air-proofing compound spread over it."

"Could you — " the baron minor was suddenly tense and hissing between taut lips — "use tallow as such an air-proofing compound?"

Prisker nodded. "Yes, I calculate you could. But why this sudden concern with balloons?"

The victor at cards put the pieces together as carefully as he put together the "Suite of Swords" in the card game previously. "Gentlemen, you have just given me the clues — along with a certain woman named Doll Broadrump — that may block an invasion by Naflon."

The other three men at the table (the fourth was a Naval commisary officer) said as one, "Come now!"

The captain spoke first. "Naflon wouldn't have the nerve to send a thousand of his men over here. Why, our country folk would eat them alive."

"But suppose he sent not one thousand but three or five thousand? Suppose they could hold out long enough to do us some serious hurt, like burning the dockyards at Plymness or even capturing His Majesty with a quick swoop here on Lindesnes? Suppose they landed at Overwick with some Pantler claimant and raised Celtland? There are all sorts of deviltries they could manage."

Priest-Kerr finally ended the discussion. "You know I'm not a real expert on these balloons. The best man for you to see is the Baron Lambruton. He's a Freunchie and crossed the Sheeve by one of those sky wagons about four years before the revolution that ended by bringing the usurper to power. He's also a red hot aristocrat and broke with Naflon very quickly. You'll find him at the Gafe des Exils."

"You Anglias are savages. When a bottle of Chambergnon is at hand, to choose instead a glass of Rossa, that gut-corroding enormity of a wine! Well," shrugged the Baron Lambruton, "when one is driven into foreign lands, you must put up with the barbarities of the natives. You had mentioned

business to me; please get on with it."

"Forgive me, please, my dear Baron, but my stomach is used to Rossa and I doubt if it would do justice to your admirable Chambergnon. As to the business, I am told by Sir Andrew Prisker, the Master of his Majesty's Powder Works, that you are the greatest expert on ballooning now in England."

The Baron suddenly became expansive. Ballooning was evidently the first love of his life. "The greatest in England, ma fois! There is none better than me in all Fraunce, or, for that matter, in the whole continent. You Angilas are preparing to use ballons in Scouting as I suggested to your government three years ago?"

"No," smiled Wulf-Leigh apologetically, "though it's an idea. It's Naflon who's using the balloons and it's my job to estimate the strength he's using them. Can you give me some idea of the amount of weight one can lift?"

The Baron's brows knitted. "So, Naflon is using balloons! My apprentice, Fremeau, must be doing better there than I am here. This is not an easy thing to calculate. You know it depends on the height to which balloon is expected to ascend. Is this use for spy work? No? A descent upon your unconquerable isle? Ah, yes. Then the safest height to get above the shooting range of your fleet would be three thousand feet. These balloons will naturally be of oiled silk, the best balloon cloth?"

The bureaucrat shook his head. "I think not. I have reason to believe that they are going to use a tight woven linen coated with tallow. I have been given this information by a most reliable source."

"That is very possible, ma foi! The usurper has one overriding fault. He is a cheap swine. He will throw away a coronet to save a groate's worth of tar, or what ever your English expression is. Also, there is a distinct advantage in linen. If he is going to build up an airmada to invade your previously impregnable kingdom, he will have to rely on inexperienced crews. After all, my dear Wulf-Leigh, in all Fraunce, in all the world, perhaps there are only three hundred Aeronauts. That means he will have to make the balloons of the most difficult to damage light cloth available. That could very well be your linen."

"Very good thinking, Lamberton," mouthed the Particular secretary of the Lord High Admirals. "but tell me, is there any way to judge the amount of linen that the project would use?"

"You will pardon me for my delay, 'sieu Wulf-Leigh, but it is not the easiest thing for a man of Fraunce to think in English and it is not easy for an airman to think in terms of oiled silk and then have to revise one's thinking to cover linen.

"You see, cher 'sieu, that the varying weight of the cloth makes a difference in the amount of lifting power available to given material. Our usual estimate for oiled

silk, for example, is that eighteen hundred square feet of material will support one man in flight. With linen, we would need more. The envelope would then require perhaps two thousand feet. Any further questions, 'sieu?"

"None at the moment, thank you. But I hope I can find you easily?"

"Easily, cher 'sieu, as long as you pay for the wine."

III

A few visits to linen establishments and a visit to the royal botanical gardens at Avenhouse near Lindesnes added the other facts that he needed.

He knew that the Freunch would get thirty-five bushels of flax to the Hekkare, that a bushel of flax would make two hundred square feet of tight-cloth per bushel; and he estimated that the Freunch would put half of their Sunken Lands area into production of balloon cloth. At any rate, be came to a final figure of two thousand balloons each capable of carrying three men as the potential strength of the Freunch assault.

He drew up a paper outlining the piecing together of facts and conjectures and submitted it to the Lord High Admirals.

The day following his submission of the paper he was called to the office of Admiral Viscount Cockroftsbury-Stow, junior among the Lord High Admirals. The Admiral was pacing the floor as he had paced many a quarter-deck.

"This is," he began without preamble, "a brilliant piece of deductive logic. Starting with a small paragraph in the *Observator* and picking up scraps of knowledge in brothels, at card tables and in toad-eaters' cafes, you have figured out a whole scheme invasion. Only trouble is: I don't believe It."

"Why not, your Lordship? I have challenged Senior Naval Captains men like Prisker, the Master of the Powder Works, and Lamberton, the best areonaut in the whole continent, to pick flaws in my logic. And they haven't been able to. Now you shoot up the whole works with a simple 'I don't believe it'. Why don't you, my Lord?"

"Young man, one of the privileges of being Lord High Admiral is that I don't have to answer any man who asks me, 'Why doest thou thus, or why don't thou do that?' — unless the person asking is a King or a King's First Minister. And sometimes the latter eminence doesn't get answers either. But in this case the answer is simple. You can't expect a nation of toad-eaters to display that kind of imagination! You know, don't you, that they all eat toads? Naflon eats toads, his first minister eats toads, every ruddy Freunchie eats toads. If they can get down a little beast like that without chucking their guts, they lack imagination. That's why the Royal Navy has always whipped them; superior imagination. That's why King William's army has never licked them on land. Our army blighters don't have the same kind of imagination our tars have. Now

if we start giving the toad-eaters credit for that kind of imagination, it will wreck the morale of the whole ruddy navy!"

"First of all," rebutted Wulf-Leigh, "it's not toads they eat but frogs. They're not half bad. I've eaten them on occasion. And you have to give Naflon credit for imagination — otherwise he'd never have risen from a half-pay captain of Sappeurs to the head of a great nation. That kind of imagination could scheme up this balloon plan.

"So I should like to urge you to keep a close inshore watch on Bullon and at the first sign of the effectuation of the project take steps to protect the country from a hard blow."

Too late, the Baron Minor realized the faulty choice of words. Cockroftsbury-Stow smiled icily.

"My dear Wilfly, for forty years in the Navy, I've gotten used to hard blows. We've dealt as many as we've given. We are not going to panic the country with this talk of flying machines. You are forbidden, upon peril of your post and possibly imprisonment to tell or write farther on this theme. Am I understood, Wilfly?"

Choking down a rough-tongued answer, the pleader answered stolidly: "Aye, Aye, sir."

The lucid interval between end of hangover and beginning of thirst became shortened somewhat as Wulf-Leigh graduated to the five-bottle class. The cirrhotic spots on his face became larger and better defined. Finally his physician ordered him to take the waters at Inverhocking Spa, a noted hot springs in the Midlands.

He expressed doubt as to any ultimate benefit but went there as obediently as he could. He bathed in the hot springs, clad in the white sackcloth robe that was the mark of the spa pilgrim, choked down the sulphur-reeking water that was drunk as part of the spa regimen and paid a timorous smuggler to bring him a bottle a day of the forbidden Rossa.

Clad in the white robe of clinical penitence, he was on the fifth day of a fortnight's projected stay and glumly gazing at the three quarter-full glass of rotten-egg water that he was supposed to empty within the next twenty minutes, when Lord High Admiral's message arrived.

It was short and to the point: "Come at once to the Lord Admirals'. We were wrong; you were right. The Freunchies came out and there is hell to pay. Apologetically, Cockroftsbury-Stow."

Ten bone-jolting chattered stage hours later, Sir Hubert stood in the presence of a clearly chastened Viscount and listened to the explanation of the "Hell to Pay". "You see, Wilfly, the King Elective had similar doubts too, so this blighter in charge of the project — Fremeau, I think that's the name the intelligence chaps have given — decided to show the usefulness of the damn balloons in war. So they sent off a half dozen balloons and dropped explosive-laden shells on our fleet — dropping them from

four thousand feet, which was beyond the range of any guns we had around there. They blew up two frigates and a ship o' line and dismasted another frigate. Then when the breeze swung around again to an on-shore wind, they casually sailed back to Fraunce. Naflon's happy, Fremeau's happy, but the Board of Lord High Admirals are not happy, not happy in the least. We've got to save our Navy from a demoralization and possibly destruction. If the blockade is broken and Naflon can get across the Narrow seas without getting his feet wet, England is his for the taking. And he won't even use your suicide squad method. Now our men are damned nervous every time there's a wind shift in the offing. You're the blounder who dug up this balloon scare in the first place. We're looking to you for an answer."

Wilfly stroked his chin thoughtfully, savoring the discomfort of the Viscount sitting before him. Finally the combination of pity and patriotism overcame him and he murmured: "I think we can save the fleet. It will entail a visit to S'r Andrew at the Royal Powder Works."

"Sir Andrew?" Cockroftsbury-Stowe looked baffled, then smiled. "Oh, you mean Prisker. He's an odd sort of chap; knows all about stinks and stuff. Let's go, my carriage awaits."

Sir Hubert dared to offer an amendment to this suggestion. "Since the powder works is up the river, can't we go up there by the Admiral's barge? With a good upriver wind we can make as good time as we do by carriage, and my bottom's still sore after that road from Inverhocking."

"By Jove, that's a capital idea! I could stand a ride behind the wind horse today. We'll go down by the water-gate."

Sir Andrew Priest-Kerr stalked the floor of his powder-blackened, brimstone smelling workshop. He was obviously annoyed at the appearance of his distinguished visitor and even more annoyed in the breach of his private confidence by the Baron Minor. "Dammit, Wilfly! What I told you about isn't fully tested, won't be for about two weeks—and besides that it's a signalling device, not a weapon."

The Particular Clerk was used to spasms of annoyance on the part of the chemist. He shrugged it off. "Look, Prisker, suppose you doubled the charge of your fire drake. You've said the ones you have now reach two thousand feet. You could very well make a fire drake go up four thousand feet and it could gain some extra altitude by emplacing it on the fore-t'gallant yard."

The Master of the Works shook his head. "No, that would never do! My Lord, we're talking of my fire drake, a signal flare impelled by a self-contained powder charge. Chap on one of the Asian stations gave me the idea. Saw something similar out there. Now Wilfly suggests putting it on the masthead. That's a fool's idea. The thing goes into the air and leaves a trail of burning powder grains behind it.

Can you imagine what that would do to tarred ropes and canvas rigging?"

The Viscount sniffed; "The man has a point, Wilfly. How do you answer that?"

Once again the reflective pause. Then: "Fire the drake from a tripod atop an iron pot partly filled with water. Mount the pot on two right-angled swivels for aiming purposes, and let the sparks be kicked back into the pot. Put a gunner's mate into the foretop to handle the aiming and firing—and there you are. How's that idea seem to you, Prisker?"

The answer was "top hole". In three days the Powder Works began turning out the large sized fire drakes.

Thirteen more days saw the strange installation put in the foretops of the blockading squadrons. On the eighteenth day after Wulf-Leigh had been pulled from the Spa cure at Inverhocking the Freunch came boiling out of Bullon again.

This time, however, they came out to blazing ruin. Seven of the great gasbags were exploded by the high-climbing fire drakes with impunity. Three, by jettisoning ballast and bombs alike, climbed above the range of the strange new weapon. One with a hit dismasted a frigate, and one balloon, flaming down by a strange quirk of wind, blew a piece of blazing cloth across the rigging of a second frigate and did severe damage to the masts, sails and running rigging of the vessel by setting it on fire.

IV

The Freunch figured the cost in trained aeronauts and never attacked the fleet again.

They did not however renounce their main plan. Three weeks later the inshore watch established near bullon reported thirty balloons risen between sunrise and sunset, twice that many the next day and three times that many on the third day. They rose above the plains behind Bullon like so many Dhinni somehow enslaved by Naflon's conscript army.

On the fourth day they summoned Wulf-Leigh again from the spa, where he had again gone for his liver's sake, to the headquarters of the Lord High Admirals. This time Lord Cockroftsbury-Stowe was even more humble than on the occasion of his last summons.

"Naflon's boys have fulfilled your predictions again, Wilfly. They're raising those damn balloons at a rate that should give him near two thosand in two months—and that will be the season of the prevailing easterlies that will blow steadily for long enough to put the Freunchies over our country.

"Where they strike depends on the wind compass. If the gales are blowing southeast by south they will be striking for Overwick with the Pantler pretender aboard. That's the most northerly heading they can make. East by sou'east they'll be down on the ridings of Doncaster, destroying the Iron Foundries of Middle England. Due East will be a swoop on Lindesnes, and East by

No'east will be the Navy's blessing with a raid on Plymness. That last, sir, is where you come in. We're discharging you as a particular Clerk of the board of Lord High Admirals—" the Admiral now paused in some amusement to watch the anguished protest start to form on the intelligence man's face—"and appointing you Deputy Warden of the Ness, with full rights and powers."

"Deputy Warden of the Ness!" There was still shock and amazement in the voice of Wulf-Leigh. "That's an ancient office, largely honorary, that hasn't been filled since they cut off Henry Pantler's head a hundred and fifty years ago."

Cockroftsbury-Stowe smiled. "Yes, they cut off Henry's head. But they didn't abolish the office and now we're glad they didn't. Your office will encompass the defense of the Ness, of Plymness and of the three shires around it. That's a large order. But it will be done with the equivalent of a rear admiral and you'll also be amply compensated. You'll be entitled to the Salt Beef Excise and the wine duty. That's a c'ronet on every keg of salt beef taken down the Ness by the Navy, and in time of war that's three hundred thousand kegs a year; and a half c'ronet on every keg of wine brought into any port in England. And that means five million kegs. That means two hundred and sixty thousand Royals in your pocket every year for the war's duration and possibly for life . . . because as we go to a peacetime establishment the salt beef duty drops but the wine increment increases."

"Gorblemme," gasped Sir Hubert, "that's a high wage! I hope that there's a knighthood of one of the honorary orders to go with it."

"There's that too. If the action falls out in your jurisdiction you'll be certain to get William's sword tap for King's Strand if you succeed—or—" the admiral's smile grew wry—"the heads man's axe tap for treason if you fail."

"That's putting it nicely. Wealth and honor if we triumph, ruin and a traitor's grave if we fail. I'm giving up wine for the duration and I'm taking the post so graciously offered. What forces will be under me? What crack regiments?"

Cockroftsbury-Stowe shrugged. "I'm afraid you won't have any crack regiments at all. You know our home establishment is twenty regiments. Of those seven are in the north, guarding Overwick and the Celtland border against the threat of a Pantler landing; four are in the midcountry riding to ward off the attack aimed at Doncaster and the foundries; and nine are emplaced around Lindensnes to protect an expected assault on the King. It's odd that the King, who can actually contribute less than anyone in the government to the actual war effort, can be the most important piece on the board. If they catch him—but now I'm talking like a demmed Republican."

"But that doesn't leave anything

Sir Hubert Wulf Leigh
Gathering intelligence in the manner of one high-born.

to guard the Ness. Will that be left to the yeomanry?"

"In part, yes." The Lord High Admiral ticked off the forces available on his fingers. "You'll draw five thousand men from the trainbands of the three shires. There'll be thirty-five hundred from the Royal Marine Force and fifteen hundred Jacktars acquainted with the countryside from Press gang work, officered by one hundred masters at arms from the fleet. You see lad, the navy has always taken care of its own—and we're going to do it again at Plymnes."

"Well," he smiled grimly, "it's going to be an unusual defense at any rate. Will I have a good field leader under me?"

"You'll have Lieutenant Colonel Fitzwilliam, the chief Marine officer of the home fleet. Also you can pick any senior captain that's available to serve under you with the rank of commodore. Have you any preference?"

"I think I'd like Munkertny. I know him well and feel I could work closely with him."

The admiral took a linen-bound notebook from a drawer of his desk and, leafing through it, mumblingly checked the name. "Good, sir, Munkertny it is. You'll leave for the Ness on the night stage. Good luck, Wilfly."

V

The Warden's Council of the Ness, dormant for nearly two hundred years, was in session.

The dean of merchant captains, the captain of the dockyards, the merchant - provost, Commodore Mountcourtany, Major General Hammington (shortened to Hangton) of the Nesshires militia, Lieutenant Colonel Fitzwilliam (Fiswim) of the Marines and the Deputy Warden, Wulf-Leigh, who had initiated the council on the second day following his arrival, were gathered around a table in Navy House.

Wulf-Leigh addressed them in no gentle terms. "Councillors, in about fifty days Naflon is going to attempt the invasion of England. It will not be in sufficient force to stay in the country, but enough to cause us a terrible hurt. If the wind favors him he may drop on the Ness and attempt to burn the dockyards. I say drop because as you know he's coming by air with aeronaut balloonists. The attack will most likely be by night. Now you, Hangton, have said that any thrust upon the Ness will make its attack on the heights above the city. You say this because below the town, on one side of the Ness is heavy marshland, and on the other side is a narrow pass where a spur of those heights comes down to the sea. Now how about a landing in the town itself? You know that with balloons they can do that, don't you?"

Hammington was very deliberate about it. "No, sir, they can't land in town. You've seen the rooves. They are packed close together and very steep in the eaves. There's a few gardens, the bowls-green and a couple of common squares, but a planting of stakes and caltrops will make those unprofitable. No, the

landings have to come on the heights above the city. Or to be more exact, on the stony apron of Middle Moor."

"What is this stony apron you mention, and what's Middle Moor?"

"The stony apron of Middle Moor is a rock dike that the Creator made to hold back the waters of the springs that feed down to the Ness. It's a zone about two miles square out in the ten mile square of the middle moor that is safe for men to walk upon and move about freely. The remainder of the square is usable only on the trails of the moor-trotters, and no man knows them save the moor-trotters."

The Merchant Provost said fiercely: "If we could get em sommes to land on High Moor Apron instead of Middle Moors, 'e could drown 'em in the bogs of Middle Moor."

Hangton smiled sourly. "A good idea, but a foolish one. You see, Sir 'Ubert, there's a high moor above Middle Moor with the same kind of apron and if they got on that by mischance, they'd have to cross Middle Moor through the bogs and streams which would be good and high. But they wouldn't make that kind of mistake."

The merchant-captains' dean spoke up. "Aye, it's too bad they're coming from the land side, 'e could false-light em."

The former clerk of the Lord High Admirals suddenly sensed an idea.

"What's this about false lighting," he demanded sharply.

The old captain explained: "Twenty year ago and for a hundred year afore that, 'ere was wreckers on this coast. The worst on 'en were 'ee false lighters, used to light false beacons to trick coastal shipping into 'ee blind mouths on 'ee coast that looked like 'ee entrance to 'ee Ness. Oh, it were a sore thing. 'En killed all 'ee pour souls that swam ashore so that no one lived to peach on 'em. Today the coast patrol has stopped 'en bit a lot of us old salts know of 'en an 'eir doin's."

"Bigad, Captain, you've given me an idea! First of all, we'll have to have some men who know the Moors like the old captain knows the coasts. General Hangton, do you think the moor trotters would meet that sort of bill?"

"Stab me if it would be anyone but them. Don't know why it is, but for a hundred miles in either direction they know all the paths through the moors and all their twists and turnings. They're a clannish lot, even have their own chief or king. They might help you and they might not. Simply no way to tell."

"Well said, General," returned Sir Hubert, "but how can I find out? Where can I meet some of these moor trotters?"

"Why, there's always a few of them in jail for preaching. That's another of their faults, they don't give a fig for the game laws. And they die in jail. Can't stand being shut within walls."

"Then we'll free one of 'em and speak to this bog-trotting king of theirs."

The next fifty-two days were known as the rule of the mad Warden. He spent three days up on the apron of Middle Moor; he brought down an artist from the Navy chart office. The artist was also dispatched to the apron and given orders for night work on the Moors.

Viscount Cockroftsbury - Stowe watched nervously as the indents for supplies ordered in by the Deputy Warden began to come across his desk. Five hundred thousand feet of quick match, six hundred thousand feet of oil deal gut, thirty thousand pieces of yellowish flaming slow-burning fuzees, twenty tons of pot-metal, broken down into two foot squares, ten thousand yards of heavy pre-waxed shoemaker's twine and, strangest request of all, on an indent placed with the chimney cleaners' guild of Lindesnes, three and a half tons of finely ground soot.

He devoted a good deal of his remaining time to drilling—not drilling the militia (that was left in the capable hands of Colonel Fitzwilliam and Captain-Commodore Mountcourtenay) but rather drilling the townsfolk of Plymness in responding to certain signals. Plymness being a Navy-oriented town, this was easier than it might have been elsewhere.

On the late afternoon of the fifty-second day, the word came that the balloon armada was in the air.

In Navy House, Fitzwilliam, Mountcourtenay and Wulf-Leigh sat uneasily around the big conference table. At the first semaphore-borne report, relayed from the Freunch coast, they had given orders to Hammington to rally his trainbands. The second message told of wind direction: east-southeast, but swinging easterly.

"Looks bad for Lindesnes, Munkertny, if that wind makes any further easting," growled Fitzwilliam.

"Aye," snorted the captain. "But just in case there's some north in that wind, I'm ordering the boats with the warden's ruddy buckets. We'll muddy up the Ness real well for you, Wilfly."

The second report relayed from the line o' battle which backed the blockade line showed the aerial squadrons traveling on a wind making dead from the East. The firedrakes of the line o' battle drove the enemy into desperate ascents, but not before thirty-two of the fragile cloth bags had been wiped from the sky.

The third report from the estuary which the great river flowed into below Lindesnes told of a shift to east-northeast. Five seconds after the semaphore message had been handed to the Deputy Warden he was in action.

He gave a nod to Mountcourtenay and that worthy went outside again. There was a drum roll and the shrilling in tempo of a half dozen bos'ns' pipes signalled the boat crews to do their bit with the soot buckets. A word to the sexton of the town church and three bells were sounded from the spire. At this signal all the lights in the town were doused. Fitzwilliam, with two

companies of marines and a hundred and fifty seamen of the press gangs went out on a sweep to put out any lights that might still show.

Twenty minutes later, the two members of the council reported back. "Not a light showing in all Plimness, Sir 'Ubert," Fitzwilliam reported.

Mountcourtenay announced, "We've dumped your three thousand pounds of chimney sweepings into the Ness and there isn't a glimmer on the waters."

"All right, gentlemen, we have wiped out Plymness, at least to enemy eyes. Now let us create new Plymness!"

With these words, Wulf-Leigh went into the garden in the back of Navy House and cut away the sealed end of one of the oiled seal gut tubes that he had ordered and touched a glowing cigar to the cotton cord therein contained.

The spark whisked swiftly up the tube, suddenly branching and rebranching as it came to junctures with other tubes, so that the swift traveling sparks outlined for a few seconds the upper end of Plymness and then vanished as the lines of fire walked up onto Middle Moor.

"Bigad, sir! So that's what you did with that half million feet of quick-match that you ordered; and the seal gut kept it dry. But tell me, sir, what does that fuse light?"

"To see that, Munkertny, we'll have to go up to the stone apron of Middle Moor. It's better seen than explained. I have horses waiting outside, Gentlemen shall we make the ascent? Colonel Fiswim, will you give orders to your Marines to march the same way? We'll pick up Hangton and the militia on the way."

Through the gathering darkness, the little band of officers picked their way up the steep trail to Middle Moor. They came to the top and collectively gasped. "Lorluvvus!" exploded Mountcourtenay, "Plymness recreated! Even the Ness shimmering at the foot of town and the light on Ness head. How'd you do it, Wilfly?"

That last question hung in everyone's lips and every man's eyes as they gaped there in the slow-gathering darkness, watching the dimly burning lights of the town. Nearer to them they could see the lights reflect in the shimmering wavelets of a false Ness.

"I had a good idea, but I couldn't have carried it out without good helpers. The man from Navy Charts helped, and there were others. Here's another of 'em."

A stout yet graceful swarthy skinned man materialized out of the darkness. He bowed to Sir Hubert. "I hope everything was to your loiking, zur."

"It was, Jovanko. Here—" he threw him a heavy purse— "are the thousand royals we agreed on. Gentlemen, we are visited by royalty. This is Jovanko the Tinker, king of the Moor Trotters. A genuine monarch too. Gets better obedience out of his people than King William, God bless him, gets out of his. His men, moving through mysteriously defined trails in the moor lands, planted the slow lights and the seal

gut wrapped lines of quickmatch to recreate Plymness from the drawings charts I gave them. They built the Ness out of sheets of pot metal and lines of twine. The latter are being shaken even now by a dozen of Jovanko's men to create the rise and fall of the waves of the Ness."

"Crikey!" chuckled Fitzwilliam. "Almost feel sorry for the Freunch. All their planning and work, and zut, they're false-lighted into a bleeding bog!"

As he spoke, down came the Freunch, dropping with impressive silence broken only by the faint hissing of ruptured gas bags, upon the heights above and the upper parts of Plymness town. They moved quickly forward, only to discover too late the trap that had been laid for them.

Stranded on the wrong side of the Middle Moor, they saw in the next six hours five hundred of their number drowned in quagmires, the primings on three thousand muskets wetted into uselessness and the whole force so thoroughly disorganized that they were no match for even the motley forces of Marines, militia and land-based sailors who opposed them.

At a ceremony shortly afterward, Sir Hubert got tapped for King's Strand. Seven weeks of abstinence had cleared away most of his liver spots and the proper young lady accompanying him to the ceremony had a glint in her eye that plainly hinted that the present Baron Minor would not be the last of the Wulf-Leighs. END

THE PEAK LORDS

by MIRIAM ALLEN deFORD

I'm not a criminal! And even if I were, this punishment is too awful — exiled again to Mankind!

You may call this a confession if you wish. I prefer to call it a statement.

In the first place, I want it clearly understood that I am the legitimate son of a Peak Lord. I am neither a by-blow nor an imposter. This outrageous skepticism has to cease.

I acknowledge freely that I was vised Below on the date in question. But I was not there for any subversive reason whatever, nor was I there voluntarily. I deny emphatically that I have any compassion for the mutant dwellers Below, or that I was there in any endeavor to "help" or "incite" them.

Moreover, I was not there out of the morbid curiosity which impels students to don breathers and undertake anthropological or sociological research Below. I have no interest in the subhumans living there.

The actual fact is that I was kidnapped.

It was horrible, there Below. The darkness—the stinking soup that passes there for air—the throngs of mutant subhumans with their ground vehicles pouring yet more poison into the atmosphere that only they can breathe! And the streets full of crumbling, ruined buildings which they tear down periodically to make still more room for their vehicles! Some superstition must keep the mutants from taking over what were once the homes of real human beings like us, for they huddle in crowded tenements like so many nests of rattlesnakes.

I was so grateful when your people discovered me and took me out that I promised my rescuers rich rewards when I became Lord of our Peak. It was a dreadful shock to learn that they were not a salvage corps—my breather was almost exhausted and I had no recharges—but a police mission. I thought that all I should have to do would be

to explain to you how and why I was there, and you would protect me, let me live in your Lord's court until I inherit. It is hard for me to believe that I am here as a prisoner, under judgment as a suspected criminal!

Do you perhaps imagine that I am one of those throwbacks—there have been some, I know, even in Peak Lord families—who condemn our glorious system, who have defected to the Below and set themselves up as champions of what they call "the oppressed"? Poor fools, how long could they last, unless they could find a quack doctor to give them the mutation operation (and often they have died from the doctor's lack of skill), or else smuggle in recharges for their breathers? I am no such idiot. All of them have died and been hailed by their subhuman "brothers" as martyrs to their "cause"—all of them, that is, who haven't been hauled back by their families in time and kept in close custody forever after.

I have no such death wish, I can assure you. I want to live.

Let me ask you another thing: how can you doubt, from the very mode of speech and manner which I cannot change or suppress even if I wanted to, that I am genuinely of a Peak Lord's family? You yourselves are all Peak dwellers. Can't you recognize my authority? I was born and reared in a royal household, just as your own Peak Lord and his family were. The vicious slanders I have seen and heard about myself in your communication media call me "arrogant." I say I keep the dignity taught me from infancy. Before whom should I be humble? There is no one on earth higher than the hundred or so Peak Lords and their families, dwelling as we do on the world's highest mountain-tops, surrounded by retainers like yourselves who act as go-betweens to the mutants Below who serve the machines and produce the wealth, for the Peak Lords who own their territories and receive the wealth—and distribute a just portion of it to you. And I am a Peak Lord's closest kin.

My father's ancestors were among the first of the Peak Lords who staked out their claims when life gradually became unbearable in the poisoned cities, with their polluted air and water and their clouds of smog that shut out the sun. If you learned your history as children, you know that at first they were true pioneers, living the hard life of those who invade and transform a wilderness. They fought with others of their own breed to take and hold their Peaks, and they fought with the hordes from Below who tried to wrest the only unspoiled livable places on earth from those who had conquered them first.

By tradition the first Peak Lords were all experienced mountaineers; I know my own Founding Father was. Others were astronauts who could not endure grounding after it was finally learned that the other planets of our solar system were dead or unborn and uninhabitable by men. Gradually, as they and their followers won their wars and con-

solidated their holdings, each Peak Lord built up a civilized community and established control over the conquered Below in his own area. Then when the mutants appeared and spread—and don't think that was an accident; it was scientific research paid for by the Peak Lords themselves that brought about and evolved today's race of subhumans whose means of living depends on their productivity for our benefit—our present political and economic chain of command was established.

That is all elementary history, which you all learned in childhood.

You all know that those condemned to remain Below (and not only in the cities, as corruption spread to the countryside) died at first by the millions — and would all have died, had the Peak Lords not subsidized the intensive research projects — frankly, to protect their own sources of wealth. The dwellers Below had failed in all their own attempts to live underground or underseas, and they failed utterly in their feeble efforts to reconvert industrial plants or the nature of their vehicles to end the pollution. Only the Peak Lords by that time possessed the huge fortunes required.

Yes. Well, as I said, my father is descended from one of the very first Peak Lord families. Perhaps that is why, as so often happens in old families, he is an eccentric, strange, neurotic man. I should not dare say this if I were not out of his reach, for his anger is a terrible thing.

He is a lone wolf, who has never fraternized with any of his peers. That is why, when you took my case to your own Peak Lord, he said he had never seen or heard of me.

That is true. My father has never indulged in or allowed us — my mother and my younger brothers and sisters — any of the social visiting back and forth in royal air-processions which as you know are the custom of other Peak Lords.

He is a tyrant, and we have led miserable, lonely lives. He has never even tried to find us suitable wives and husbands as we reached marriageable age. We are all unmarried, when the last of us is dead the throne will go to a distant cousin. He doesn't care, so long as he can keep himself alive and in power.

None of us has ever tried to escape — for where would we escape to? No other Lord would take us in (short of the secret refuge I ask for in my desperate situation), for fear of incurring my father's rage and perhaps precipitating violent action which would end the Planet-wide Peace Pact that has endured now for two centuries. Instead, they have quarantined us, and I imagine the young members of other Peak Lord families do not even know that we exist. Our Peak is far away, on the other side of the world.

Perhaps you think, when I say I was kidnapped, that I mean I really did try to escape?

No: in that case I should have chosen my destination, and it would not have been a Peak where nobody knows me and I am being treated as a common criminal.

I think now I had been given

a counter-sedative to keep me from sleeping, while the servant who always sleeps at the foot of my bed had been given a draught to render him unconscious. I had never before had trouble in sleeping, but this night — is it only three nights ago? — I lay wide awake until I couldn't bear it any longer, so I got up.

But when I tried to arouse my servant to help me dress I could not shake him from his deep slumber, so I arranged my own clothing as best I could. It was the first time in my life that I had dressed without assistance — which may account for the accusation that I must be an imposter, because my clothing and ornaments are not arranged in regulation style.

I had a great desire — almost a thirst — to walk out in the open air. It was a bright moonlight night — so bright that I imagined I could even see the beacon of the abandoned atomic station on the moon.

Like all Peak castles, ours is a fortress too, still guarded regularly according to tradition although it is more than 100 years since any Peak Lord warred on another. I went quietly down the corridor leading from my rooms, to the first guarded door. Unusual as my action was, I knew that all I had to do was to explain to the guard that I wished to take a walk in the gardens, and to order him to provide an escort for me.

The guard was asleep.

It had never happened before, and I am sure now he too was drugged. He was liable to immediate execution, but I had no intention of reporting him. I stepped over his recumbent body and out into the tree-planted terrace. It was the first time I can remember that I have been completely alone.

I walked slowly under the trees, breathing the fresh cool air, my eyes on the stars that we had hoped some day to reach and now know we never can. I wondered if on some planet around one of them some other unhappy young man was walking and wondering as I was.

And then suddenly — I had heard no sound — I was caught from behind, and before I could open my mouth to cry out I was blindfolded, gagged and bound with rope. There were two of them at least; I am sure of that.

They dragged me over the garden to the outer gate. There too there should have been guards but no one stopped us. I was too busy trying to breathe to take much note, and when first I came back to my full senses I was lying, still bound, on a couch in a fast plane.

Through my blindfold I felt the rays of the sun and realized it was morning, but I had no idea of our direction or of the distance we had flown. I could hear men talking and they spoke the local dialect of our Peak. They said nothing that helped me; their conversation, such as it was, was only of the weather and of flying conditions.

Then I felt the plane swoop down for a landing. Hands unbound me, but left me gagged and blindfolded. I felt something clamped over my nose; I did not recognize it, but I found later it was a breather. The

plane taxied to a stop, I was pulled to my feet, the gag and blindfold were torn from me, and I was given a rough push that sent me to my knees. By the time I recovered my balance the plane had taken off again.

I was Below.

It was some moments before my confusion enabled me to guess where I was. The sunshine of the upper air had vanished; I was in a sort of dingy twilight, and when I looked upward all I could see was an unbroken gray cloud. Through the breather I was able to inhale and exhale normally, but when experimentally I opened my mouth and breathed once through that, I was almost choked by the putrid miasma I took into my lungs.

Ahead of me from the landing field stretched a paved road, beyond which I could see dimly streets and houses. There was nowhere to go but forward, so I stumbled on and in half an hour or so the city had swallowed me up.

I need hardly tell you what it was like; you have vised it often, and you know.

It was horrible. I stumbled around those congested streets for most of a day, trying to avoid contact with the creatures that swarmed there. I ate nothing — how could I eat their food? I had no money in any case, and I couldn't understand or speak their dialect. They stared at me, but they're trained not to approach real humans, who are certain to be agents of their Peak Lord. The occasional scientist investigating, or the champions of the "oppressed," will approach *them*.

I grew panicky. With every minute my breather was running out, and when it failed I had no recharges or any means to get one. I would collapse and choke to death on one of those filthy streets.

And then I heard the copter, and I knew I had been vised and would be rescued. I was weak with relief and gratitude.

And your men told me I was under arrest.

Why won't you believe me? My father had me kidnapped and cast away Below to die. Why won't you take me to your Peak Lord or one of his trusted aides and let me prove my identity.

How do I know my father was to blame? Because I know my father. He hates us all — we are living reminders that some day he must give up his power and one of us will inherit it. But he has always hated me most. I am the eldest, and his first heir. And before he cowed me into terror of him, I was the only one who rebelled, who dared to answer him back, to try — vainly, I acknowledge — to sneak away sometimes for some sort of life of my own. You may say, what good would it do him to have me put out of the way? My oldest sister would come next, and there are five of us altogether. But that's just the point — I am the scapegoat, and because I am not the only child I am expendable.

Besides, he doesn't think the way sane people do.

So he decided to treat me as we treat our major criminals — I suppose you have the same system here — have me cast down Below to die.

I can't help it: the mere thought of him — I tell you, judges, my father was a wicked evil old man! I hated him. He deserved what —

Did I say "was"? I meant "is," of course —

I am too excited. I am weak still from my dreadful ordeal.

. . . . No, I don't believe you. You are trying to trick me. My sister is too intimidated to have sent you any such message. Let me see it. I have a right to see it.

. . . I see. So all this time you have just been leading me on.

All right. There's no use keeping it up.

I was not kidnapped. It was I myself who drugged the servants and the guards. I fled in one of our swift flyers after I had surprised my father in his sleep. I felled him with his own heavy staff of office, with which he had so often beaten me.

I hid in your Below, as far away as I could travel, until you would vise me and bring me up, as any Peak Lord would do on vising a stranger without authorization in his Below. I threw away my recharges when I heard your copter start down for me. If I had dreamed what a Below was like I would never have had the courage to carry out my plan.

But I am *not* a criminal! It was not murder to destroy a tyrant! He deserved to die.

My sister is an ingrate. No, of course I never confided in her. But I relied on her; I was sure she would rejoice as I did when at last I mustered the courage to do what we all must have longed for — that she would gladly serve as Peak Lady until it was safe for me to declare myself and return. I would have named her as my successor.

Very well: let me go now. This is no concern of yours. I shall fly home again and take over from her.

No, you can't, you can't! There is no treaty between our Peaks. The most you have a right to do is to keep me as a guest of your Lord while he investigates! You will find out then that I am no murdered: I am a righteous executioner.

Take me before him and let me present my cause to my equal. What have I to do with your local laws?

. . . Sir! I did not realize! My father would never have sat in judgment in person at a criminal hearing —

No! No! I beg of you! I know your word is supreme in your jurisdiction, my Lord, and I know I entered it of my own volition. But —

Oh, dear God, no! Not without even a breather!

Kill me in any other way and I shall accept your judgment with the dignity worthy of my blood. But I implore you, my Lord, anything, anything — but not that dreadful city of mutants again!

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END

The Moon is a Harsh Mistress

XX

by ROBERT A. HEINLEIN

Illustrated by MORROW

The older man was being hustled along by the stilyagi kids. He was mussed, and clothing had that vague something that says "tourist."

We used to get tourists even then. Not hordes but quite a few. They would come up from Earth, stop in a hotel for a week, go back in same ship or perhaps stop over for next ship. Most of them spent their time gambling after a day or two of sightseeing including that silly walk up on surface every tourist makes. Most Loonies ignored them and granted them their foibles.

One lad, oldest, about eighteen and leader, said to me, "Where's judge?"

"Don't know. Not here."

He chewed lip, looked baffled. I said, "What trouble?"

The fate of Luna's freedom lay in his hands—and he didn't know it!

What Has Gone Before —

We Lunarians have put up with a lot from Earth, but time comes when we don't want to put up with more. Earth tells us what we can sell, who we sell it to, how much we can get for it. Means slavery.

But . . . Earth owns us outright. Question is, what can we do about it? I don't mind a gamble—wouldn't mind fighting Earth with a chance to win — but with no chance, no. Luna has no warships, Earth has plenty. Luna has no armies. Earth has armies to burn.

Most of all, Luna is run by big computer, and Earth owns the computer.

But there's one thing Earth doesn't own — me. And it just so happens that I'm the fellow that fixes the computer . . . and the computer is my good friend I call Mike!

So maybe — just maybe — we Lunarians can do something at last.

So we invent mythical leader named "Adam Selene" — is really Mike — and start rolling. Only one problem: Need help on Earth. That's the hard one, because earthworms I don't know, neither does Mike, neither does any good Loonie. Don't know where to look . . . until chance delivers one into hands, when group of stilyagi kids ask to kill him!

He said soberly, "Going to eliminate this choom. But want Judge to confirm it."

I said, "Cover taprooms here around. Probably find him.

A boy about fourteen spoke up. "Say! Aren't you Gospodin O'Kelly?"

"Right."

"Why don't *you* judge it?"

Oldest one looked relieved. "Will you, Gospodin?"

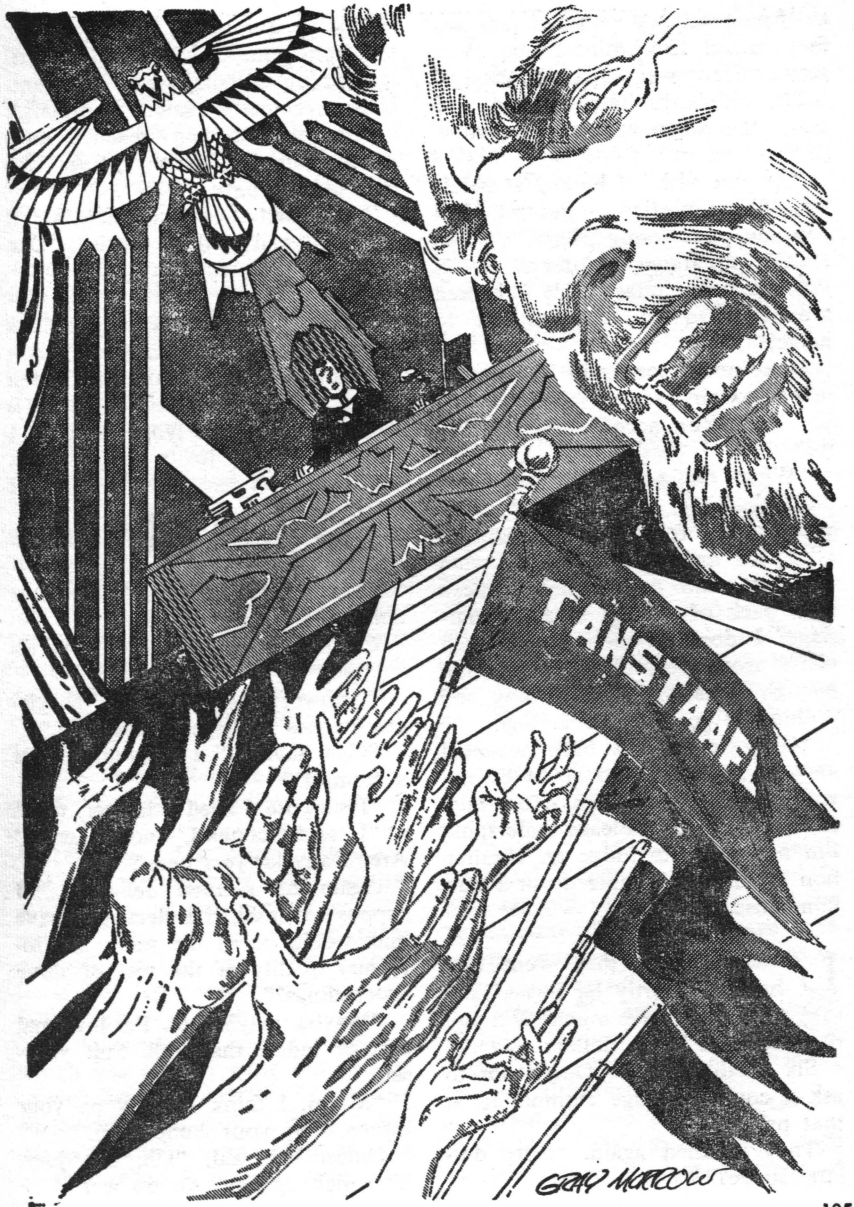
I hesitated. Sure, I've gone judge at times; who hasn't? But don't hanker for responsibility. However it troubled me to hear young people talk about eliminating a tourist. Bound to cause talk.

Decided to do it. So I said to tourist, "Will you accept me as your judge?"

He looked surprised. "I have choice in the matter?"

I said patiently, "Of course. Can't expect me to listen if you aren't willing to accept my judging. But not urging you. Your life, not mine."

He looked very surprised but not afraid. His eyes lit up. "My life, did you say?"


TANSTAAFL

"Apparently. You heard lads say they intend to eliminate you. You may prefer to wait for Judge Brody."

He didn't hesitate. Smiled and said, "I accept you as my judge, sir."

"As you wish." I looked at oldest lad. "What parties to quarrel? Just you and your young friend?"

"Oh, no, Judge, all of us."

"Not your judge yet." I looked around. "Do you all ask me to judge?"

Were nods; none said No. Leader turned to girl, added, "Better speak up, Tish. You accept Judge O'Kelly?"

"What? Oh, sure!" She was a vapid little thing, vacantly pretty, curvy, perhaps fourteen. Slot-machine type . . . and how she might wind up. Sort who prefers being queen over pack of stilyagi to solid marriage. I don't blame stilyagi; they chase around corridors because not enough females. Work all day and nothing to go home to at night.

"Okay, court has been accepted and all are bound to abide by my verdict. Let's settle fees. How high can you boys go? Please understand I'm not going to judge an elimination for dimes. So ante up or I turn him loose."

Leader blinked, they went into huddle. Shortly he turned and said, "We don't have much. Will you do it for five Kong dollars apiece?"

Six of them. "No. Ought not to ask a court to judge elimination at that price."

They huddled again. "Fifty dollars, Judge?"

"Sixty. Ten each. And another ten from you, Tish," I said to girl.

She looked surprised, indignant. "Come, come!" I said. "Tanstaafl."

She blinked and reached into pouch. She had money; types like that always have.

I collected seventy dollars, laid it on desk, and said to tourist, "Can match it?"

"Beg pardon?"

"Kids are paying seventy dollars Hong Kong for judgment. You should match it. If you can't open pouch and prove it and can owe it to me. But that's your share." I added, "Cheap, for a capital case. But kids can't pay much so you get a bargain."

"I see. I believe I see." He matched with seventy Hong Kong.

"Thank you," I said. "Now does either side want a jury?"

Girl's eyes lit up. "Sure! Let's do it right."

Earthworm said, "Under the circumstances perhaps I need one."

"Can have it," I assured. "Want a counsel?"

"I suppose I need a lawyer, too."

"I said 'counsel,' not 'lawyer.' Aren't any lawyers here."

Again he seemed delighted. "I suppose counsel, if I elected to have one, would be of the same, uh, informal quality as the rest of these proceedings?"

"Maybe, maybe not. I'm informal sort of judge, that's all. Suit yourself."

"Mmm. I think I'll rely on your informality, your honor."

Oldest lad said, "Uh, this jury. You pick up chit? Or do we?"

"I pay it; I agreed to judge for a hundred forty, gross. Haven't you been in a court before? But not going to kill my net for extra I could do without. Six jurymen, five dollars each. See who's in Alley."

One boy stepped out and shouted, "Jury work! Five-dollar job!"

They rounded up six men and were what you would expect in Bottom Alley. Didn't worry me as had no intention of paying mind to them. If you go judge, better in good neighborhood with chance of getting solid citizens.

I went behind desk, sat down, put on Brody's plug hat — wondered where he had found it. Probably a cast-off from some lodge. "Court's in session," I said. "Let's have names and tell me beef."

Oldest lad was named Slim Lemke, girl was Patricia Carmen Zhukov; don't remember others. Tourist stepped up, reached into pouch and said, "My card, sir."

I still have it. It read:

Stuart Rene LaJoie
Poet - Traveler - Soldier of Fortune

Beef was tragically ridiculous, fine example of why tourists should not wander around without guides. Sure, guides bleed them white — but isn't that what a tourist is for? This one almost lost life from lack of guidance.

Had wandered into a taproom which lets stilyagi hang out, a sort of clubroom. This simple female had flirted with him. Boys had let matter be, as of course they had to as long as she invited it. But at some point she had laughed and let him have a fist in ribs. He had taken it as casually as a Loonie would . . . but had answered in distinctly earthworm manner. He slipped arm around waist and pulled her to him, apparently tried to kiss her.

Now believe me, in North America this wouldn't matter; I've seen things much like it. But of course Tish was astonished, perhaps frightened. She screamed.

And pack of boys set upon him and roughed him up. Then decided he had to pay for his "crime" —but do it correctly. Find a judge.

Most likely they chickened. Chances are not one had ever dealt with an elimination. But their lady had been insulted, had to be done.

I questioned them, especially Tish, and decided I had it straight. Then said, "Let me sum up. Here we have a stranger. Doesn't know our ways. He offended, he's guilty. But meant no offense far as I can see. What does jury say? Hey, you there — wake up! What you say?"

Juryman looked up blearily, said, "'Liminate him!"

"Very well? And you?"

"Well —" Next one hesitated. "Guess it would be enough just to beat tar out of him, so he'll know better next time. Can't have men pawing women. Place will get to be as bad as Terra."

"Sensible," I agreed. "And you?"

Only one juror voted for elimination. Others ranged from a beating to very high fines.

"What do you think, Slim?"

"Well —" He was worried — face in front of gang, face in front of

what might be his girl. But had cooled down and didn't *want* chum eliminated. "We already worked him over. Maybe if he got down on hands and knees and kissed floor in front of Tish and said he was sorry?"

"Will you do that, Gospodin LaJoie?"

"If you so rule, your honor."

"I don't. Here's my verdict. First, that juryman—*you!* You are fined fee paid you because you fell asleep while supposed to be judging. Grab him, boys, take it away from him and throw him out."

They did, enthusiastically; made up a little for greater excitement they had thought of but really could not stomach. "Now, Gospodin LaJoie, you are fined fifty Hong Kong for not having common sense to learn local customs before stirring around. Ante up."

I collected it. "Now you boys line up. You are fined five dollars apiece for not exercising good judgment in dealing with a person you knew was a stranger and not used to our ways. Stopping him from touching Tish, that's fine. Roughing him, that's okay, too; he'll learn faster. And could have tossed him out. But talking about eliminating for what was honest mistake — well, it's out of proportion. Five bucks each. Ante up."

Slim gulped. "Judge . . . I don't think we have that much left! At least I don't."

"I thought that might be. You have a week to pay, or I post your names in Old Dome. Know where Bon Ton Beaute Shoppe is, near easement lock thirteen? My wife runs it; pay her. Court's out. Slim, don't go away. Nor you, Tish. Gospodin LaJoie, let's take these young people up and buy them a cold drink and get better acquainted."

Again his eyes filled with odd delight that reminded of Prof. "A charming idea, Judge!"

"I'm no longer judge. It's up a couple of ramps . . . so I suggest you offer Tish your arm."

He bowed and said, "My lady? May I?" and crooked his elbow to her. Tish at once became very grown up. "Spasebo, Gospodin! I am pleased."

Took them to expensive place, one where their wild clothes and excessive makeup looked out of place; they were edgy. But I tried to make them feel easy and Stuart LaJoie tried even harder and successfully. Got their addresses as well as names; Wyoh had one sequence which was concentrating on stilyagi. Presently they finished their coolers, stood up, thanked and left. LaJoie and I stayed on.

"Gospodin," he said presently, "you used an odd word earlier — odd to me, I mean."

"Call me 'Mannie' now that kids are gone.. What word?"

"It was when you insisted that the, uh, young lady, Tish — that Tish must pay, too. 'Tone-stapple,' or something like it."

"Oh, 'tanstaafl.' Means 'There ain't no such thing as a free lunch.' And isn't," I added, pointing to a FREE LUNCH sign across room, "or these drinks would cost half as much. Was reminding her that

anything free costs twice as much in long run or turns out worthless."

"An interesting philosophy."

"Not philosophy, fact. One way or other, what you get, you pay for." I fanned air. "Was Earthside once and heard expression 'Free as air.' This air isn't free, you pay for every breath."

"Really? No one has asked me to pay to breathe." He smiled. "Perhaps I should stop."

"Can happen, you almost breathed vacuum tonight. But nobody asks you because you've paid. For you, is part of roundtrip ticket; for me it's a quarterly charge." I started to tell how my family buys and sells air to community co-op, decided was too complicated. "But we both pay."

LaJoie looked thoughtfully pleased. "Yes, I see the economic necessity. It's simply new to me. Tell me, uh, Mannie — and I'm called 'Stu' — was I really in danger of 'breathing vacuum'?"

"Should have charged you more."

"Please?"

"You aren't convinced. But charged kids all they could scrape up and fined them too, to make them think. Couldn't charge you more than them. Should have, you think it was all a joke."

"Believe me, sir, I do not think it was a joke. I just have trouble grasping that your local laws permit a man to be put to death . . . so casually . . . and for so trivial an offense."

I sighed. Where do you start explaining when a man's words show there isn't *anything* he understands about subject, instead is loaded with preconceptions that don't fit facts and doesn't even know he has?

"Stu," I said, "let's take that piece at a time, Are no 'local laws' so you couldn't be 'put to death' under them. Your offense was *not* 'trivial,' I simply made allowance for ignorance. And wasn't done casually, or boys would have dragged you to nearest lock to zero pressure, shoved you in and cycled. Instead were most formal — good boys! — and paid own cash to give you a trial. And didn't grumble when verdict wasn't even close to what they asked. Now, anything still not clear?"

He grinned and turned out to have dimples like Prof; found myself liking him still more. "All of it, I'm afraid. I seem to have wandered into Looking Glass Land."

Expected that; having been Earthside I know how their minds work, some. An earthworm expects to find a printed law for every circumstance. Even have laws for private matters such as contracts. Really. If a man's word isn't any good, who would contract with him? Doesn't he have reputation?

"We don't have laws," I said, "Never been allowed to. Have customs, but aren't written and aren't enforced — or could say they are self-enforcing because are simply way things have to be, conditions being what they are. Could say our customs are natural laws because are way people have to behave to stay alive. When you made a pass at Tish you were violating a natural law . . . and almost caused you to breathe vacuum."

He blinked thoughtfully. "Would you explain the natural law I violated? I had better understand it . . . or best I return to my ship and stay inboard until lift. To stay alive."

"Certainly. Is so simple that, once you understand, you'll never be in danger from it again. Here we are, two million males, less than one million females. A physical fact, basic as rock or vacuum. Then add idea of tanstaafl. When thing is scarce, price goes up. Women are scarce; aren't enough to go around — that makes them most valuable thing in Luna, more precious than ice or air, as men without women don't care whether they stay alive or not. Except a Cyborg, if you regard him as a man, which I don't."

I went on: "So what happens? — and mind you, things were even worse when this custom, or natural law, first showed itself back in twentieth century. Ratio was ten-to-one or worse then. One thing is what always happens in prisons; men turn to other men. That helps not much; problem still is because most men want *women* and won't settle for substitute while chance of getting true gelt.

"They get so anxious they will kill for it . . . and from stories old-timers tell was killing enough to chill your teeth in those days. But after a while those still alive find way to get along, things shake down. As automatic as gravitation. Those who adjust to facts stay alive; those who don't are dead and no problem.

"What that means, here and now, is that women are scarce and call tune . . . and you are surrounded by two million men who see to it you dance to that tune. You have no choice, she has all choice. She can hit you so hard it draws blood; you dasn't lay a finger on her. Look, you put an arm around Tish, maybe you tried to kiss. Suppose instead she had gone to hotel room with you. What would happen?"

"Heavens! I suppose they would have torn me to pieces."

"They would have done *nothing*. Shrugged and pretended not to see. Because choice is *hers*. Not yours. Not theirs. Exclusively hers. Oh, be risky to ask her to go to hotel; she might take offense and that would give boys license to rough you up. But — well, take this Tish. A silly little tart. If you had flashed as much money as I saw in your pouch, she might have taken into head that a bundle with tourist was just what she needed and suggested it herself. In which case would have been utterly safe."

LaJoie shivered. "At *her* age? It scares me to think of it. She's below the age of consent. Statutory rape."

"Oh, bloody! No such thing. Women her age are married or ought to be. Stu, is *no* rape in Luna. None. Men won't permit. If rape had been involved, they wouldn't have bothered to find a judge and all men in earshot would have scrambled to help. But chance that a girl that big is virgin is negligible. When they're little, their mothers watch over them, with help from everybody in city. Children are safe here. But when they reach husband-high, is no holding them and mothers quit try-

ing. If they choose to run corridors and have fun, can't stop 'em; once a girl is nubile, she's her own boss. You married?"

"No." He added with a smile, "Not at present."

"Suppose you were and wife told you she was marrying again. What would you do?"

"Odd that you should pick that, something like it did happen. I saw my attorney and made sure that she got no alimony."

"'Alimony' isn't a word here; I learned it Earthside. Here you might — or a Loonie husband might — say, 'I think we'll need a bigger place, dear.' Or might simply congratulate her and his new co-husband. Or if it made him so unhappy he couldn't stand it, might opt out and pack clothes. But whatever, would not make slightest fuss. If he did, opinion would be unanimous against him. His friends, men and women alike, would snub him. Poor sod would probably move to Novylen, change name and hope to live it down.

"All our customs work that way. If you're out in field and a cobber needs air, you lend him a bottle and don't ask cash. But when you're both back in pressure again, if he won't pay up, nobody would criticize if you eliminated him without a judge. But he would pay. Air is almost as sacred as women. If you take a new chum in a poker game, you give him air money. Not eating money; can work or starve. If you eliminate a man other than self-defense, you pay his debts and support his kids."

"Mannie, you're telling me that I can murder a man here and settle the matter merely with money?"

"Oh, not at *all!* But eliminating isn't against some law; *are* no laws — except Warden's regulations — and Warden doesn't care what one Loonie does to another. But we figure this way: If a man is killed, either he had it coming and everybody knows it — usual case — or his friends will take care of it by eliminating man who did it. Either way, no problem. Nor many eliminations. Even set duels aren't common."

"'His friends will take care of it.' Mannie, suppose those young people had gone ahead? I have no friends here."

"Was reason I agreed to judge. While I doubt if those kids could have egged each other into it, didn't want to take chance. Eliminating a tourist could give our city a bad name."

"Does it happen often?"

"Can't recall has ever happened. Of course may have been made to look like accident. A new chum is accident-prone; Luna is that sort of place. They say if a new chum lives a year, he'll live forever. But nobody sells him insurance first year." Glanced at time. "Stu, have you had dinner?"

"No, and I was about to suggest that you come to my hotel. The cooking is good. Auberge Orleans."

I repressed shudder — ate there once. "Instead, would you come home with me and meet my family? We have soup or something about this hour."

"Isn't that an imposition?"

"No. Half a minute while I phone."

Mum said, "Manuel! How sweet, dear! Capsule has been in for hours; I had decided it would be tomorrow or later."

"Just drunken debauchery, Mimi, and evil companions. Coming home now if can remember way — and bringing evil companion."

"Yes, dear. Dinner in twenty minutes; try not to be late."

"Don't you want to know whether my evil companion is male or female?"

"Knowing you, I assume that it is female. But I fancy I shall be able to tell when I see her."

"You know me so well, Mum. Warn girls to look pretty; wouldn't want a visitor to outshine them."

"Don't be too long; dinner will spoil. 'Bye, dear. Love."

"Love, Mum." I waited, then punched MYCROFTXXX. "Mike, want a name searched. Earthside name, passenger in Popov. Stuart Rene LaJoie. Stuart with a U and last name might file under either L or J."

Didn't wait many seconds; Mike found Stu in all major Earthside references: Who's Who, Dunn & Bradstreet, Almanach de Gotha, London *Times* running files, name it. French expatriate, royalist, wealthy, six more names sandwiched into ones he used, three university degrees including one in law from Sorbonne, noble ancestry both France and Scotland, divorced (no children) from Honorable Pamela Hyphen-Hyphen-Blueblood. Sort of earthworm who wouldn't speak to a Loonie of convict ancestry — except Stu would speak to anyone.

I listened a pair of minutes then asked Mike to prepare a full dossier, following all associational leads. "Mike, might be our pigeon."

"Could be, Man."

"Got to run. 'Bye." Returned thoughtfully to my guest. Almost a year earlier, during alcoholic talk-talk in a hotel room, Mike had promised us one chance in seven — if certain things were done. One sine-qua-non was help on Terra itself.

Despite "throwing rocks", Mike knew, we all knew, that mighty Terra with eleven billion people and endless resources could not be defeated by three million who had nothing, even though we stood on a high place and could drop rocks on them.

Mike drew parallels from XVIIIth century, when Britain's American colonies broke away, and from XXth, when many colonies became independent of several empires, and pointed out that in no case had a colony broken loose by brute force. No, in every case imperial state was busy elsewhere, had grown weary and given up without using full strength.

For months we had been strong enough, had we wished, to overcome Warden's bodyguards. Once our catapult was ready (any time now) we would not be helpless. But we needed a "favorable climate" on Terra. For that we needed help *on* Terra.

Prof had not regarded it as difficult. But turned out to be quite

difficult. His Earthside friends were dead or nearly, and I had never had any but a few teachers. We sent inquiry down through cells: "What vips do you know Earthside?" and usual answer was: "You kidding?" Null program.

Prof watched passenger lists on incoming ships, trying to figure a contact, and had been reading Luna print-outs of Earthside newspapers, searching for vips he could reach through past connection. I had not tried; handful I had met on Terra were not vips.

Prof had not picked Stu off *Popov's* passenger list. But Prof had not met him. I did not know whether Stu was simply eccentric as odd personal card seemed to show. But he was only Terran I had ever had a drink with in Luna, seemed a dinkum cobber, and Mike's report showed hunch was not all bad. He carried some tonnage.

So I took him home to see what family thought of him.

Started well. Mum smiled and offered hand. He took it and bowed so deep I thought he was going to kiss it — would have, I think, had I not warned him about fems. Mum was cooing as she led him in to dinner.

XXI

April and May were more hard work and increasing effort to stir up Loonies against Warden, and goad him into retaliation.

Trouble with Mort the Wart was that he was not a bad egg. Nothing to hate about him other than fact he was symbol of Authority. Was necessary to frighten him to get him to do anything.

And average Loonie was just as bad. He despised Warden as matter of ritual but was not stuff that makes revolutionists; he couldn't be bothered. Beer, betting, women and work. Only thing that kept Revolution from dying of anemia was that Peace Dragoons had real talent for antagonizing.

But even them we had to keep stirred up. Prof kept saying we needed a "Boston Tea Party," referring to mythical incident in an earlier revolution, by which he meant a public ruckus to grab attention.

We kept trying. Mike rewrote lyrics of old revolutionary songs: *"Marseillaise," "Internationale," "Yankee Doodle," "We Shall Overcome," "Pie in the Sky,"* etc., giving them words to fit Luna. Stuff like *"Sons of Rock and Boredom/Will you let the Warden/Take from you your libertee!"* Simon Jester spread them around, and when one took hold, we pushed it (music only) by radio and video. This put Warden in silly position of forbidding playing of certain tunes. Which suited us. People could whistle.

Mike studied voice and word-choice patterns of Deputy Administrator, Chief Engineer, other department heads; Warden started getting frantic calls at night from his staff. Which they denied making. So Alvarez put lock-and-trace on next one — and sure enough, with Mike's help, Alvarez traced it to supply chief's phone and was sure it was boss belly-robber's voice.

But next poison call to Mort seem-

ed to come from Alvarez, and what Mort had to say next day to Alvarez and what Alvarez said in own defense can only be described as chaotic crossed with psychotic.

Prof had Mike stop. Was afraid Alvarez might lose job, which we did not want; he was doing too well for us. But by then Peace Dragoons had been dragged out twice in night on what seemed to be Warden's orders, further disrupting morale, and Warden became convinced he was surrounded by traitors in official family while they were sure he had blown every circuit.

An ad appeared in *Lunaya Pravda* announcing lecture by Dr. Adam Selene on *Poetry and Arts in Luna: a New Renaissance*. No comrade attended; word went down cells to stay away. Nor did anybody hang around when three squads of Peace Dragoons showed up — this involves Heisenberg principle as applied to Scarlet Pimpernels. Editor of *Pravda* spent bad hour explaining that he did *not* accept ads in person and this one was ordered over counter and paid for in cash. He was told not to take ads from Adam Selene. This was countermanded and he was told to take *anything* from Adam Selene but notify Alvarez *at once*.

New catapult was tested with a load dropped into south Indian Ocean at 35°E., 60°S., a spot used only by fish. Mike was joyed over his marksmanship since he had been able to sneak only two looks when guidance & tracking radars were not in use and had relied on just one nudge to bring it to bullseye. Earthside news reported giant meteor in sub-Antarctic picked up by Capetown Spacetrack with projected impact that matched Mike's attempt perfectly. Mike called me to boast while taking down evening's Reuters transmission. "I told you it was dead on," he gloated. "I watched it. Oh, what a *lovely* splash!" Later reports on shock wave from seismic labs and on tsunamis from oceanographic stations were consistent.

Was only canister we had ready (trouble buying steel) or Mike might have demanded to try his new toy again.

Liberty caps started appearing on stilyagi and their girls; Simon Jester began wearing one between his horns. Bon Marche gave them away as premiums. Alvarez had painful talk with Warden in which Mort demanded to know if his fink boss felt that something should be done every time kids took up fad? Had Alvarez gone out of his mind?

I ran across Slim Lemke on Carver Causeway early May; he was wearing a Liberty Cap. He seemed pleased to see me and I thanked him for prompt payment (he had come in three days after Stu's trial and paid Sidris thirty Hong Kong, for gang) and bought him a cooler. While we were seated I asked why young people were wearing red hats? Why a hat? Hats were an earthworm custom, nyet?

He hesitated, then said was a sort of a lodge, like Elks.

I changed subject. Learned that his full name was Moses Lemke Stone; member of Stone Gang. This pleased me, we were relatives. But

surprised me. However even best families such as Stones sometimes can't always find marriages for all sons; I had been lucky or might have been roving corridors at his age, too. Told him about our connection on my mother's side.

He warmed up and shortly said, "Cousin Manuel, ever think about how we ought to elect our own Warden?"

I said No, I hadn't; Authority appointed him and I supposed they always would. He asked me why we had to have an Authority? I asked who had been putting ideas in head? He insisted nobody had, just thinking, was all — didn't he have a right to think?

When I got home was tempted to check with Mike, find out lad's Party name if any. But wouldn't have been proper security, nor fair to Slim.

On 3 May '76 seventy-one males named Simon were rounded up and questioned, then released. No newspaper carried story. But everybody heard it; we were clear down in "J's" and twelve thousand people can spread a story faster than I would have guessed. We emphasized that one of these dangerous males was only four years old, which was not true but very effective.

Stu LaJoie stayed with us during February and March and did not return to Terra until early April; he changed his ticket to next ship and then to next. When I pointed out that he was riding close to invisible line where irreversible physiological changes could set in, he grinned and told me not to worry. But made arrangements to use centrifuge.

Stu did not want to leave even by April. Was kissed good-bye with tears by all my wives and Wyoh, and he assured each one he was coming back. But left as he had work to do; by then he was a Party member.

I did not take part in decision to recruit Stu; I felt prejudiced. Wyoh and Mike were unanimous in risking it. I happily accepted their judgment.

We all helped to sell Stu LaJoie — self, Prof, Mike, Wyoh, Mum, even Sidris and Lenore and Ludmilla and our kids and Hans and Ali and Frank, as Davis home life was what grabbed him first. Did not hurt that Lenore was prettiest girl in L-City — which is no disparagement of Milla, Wyoh, Anna and Sidris. Nor did it hurt that Stu could charm a baby away from breast. Mum fussed over him, Hans showed him hydroponic farming and Stu got dirty and sweaty and sloshed around in tunnels with our boys. Helped harvest our Chinee fish ponds — got stung by our bees — learned to handle a p-suit and went up with me to make adjustments on solar battery — helped Anna butcher a hog and learned about tanning leather — sat with Grandpaw and was respectful to his naive notions about Terra — washed dishes with Milla, something no male in our family ever did — rolled on floor with babies and puppies — learned to grind flour and swapped recipes with Mum.

I introduced him to Prof and that started political side of feeling him

out. Nothing had been admitted — we could back away — when Prof introduced him to "Adam Selene" who could visit only by phone as he was "in Hong Kong at present." By time Stu was committed to Cause, we dropped pretense and let him know that "Adam" was chairman whom he would not meet in person for security reasons.

But Wyoh did most and was on her judgment that Prof turned cards up and let Stu know that we were building a revolution. Was no surprise; Stu had made up mind and was waiting for us to trust him.

They say a face once launched a thousand ships. I do not know that Wyoh used anything but argument on Stu. I never tried to find out. But Wyoh had more to do with committing *me* than all Prof's theory or Mike's figures. If Wyoh used strong methods on Stu, she was not first heroine in history to do so for her country.

Stu went Earthside with a special codebook. I'm no code and cipher expert except that a computerman learns principles during study of information theory. A cipher is a mathematical pattern under which one letter substitutes for another, simplest being one in which alphabet is merely scrambled.

A cipher can be incredibly subtle, especially with help of a computer. But ciphers all have weakness that they are patterns. If one computer can think them up, another computer can break them.

Codes do not have same weakness. Let's say that code book has letter groups GLOPS. Does this mean "Aunt Minnie will be home Thursday" or does it mean "3.14159 . . .?"

Meaning is whatever you assign and no computer can analyze it simply from letter group. Give a computer enough groups and a rational theory involving meanings or subjects for meanings, and it will eventually worry it out because meanings themselves will show patterns. But is a problem of different kind on more difficult level.

Code we selected was commonest commercial code book, used both on Terra and in Luna for commercial dispatches. But we worked it over. Prof and Mike spent hours discussing what information Party wish to send to its agent on Terra, or receive from agent, then Mike put his vast information to work and came up with new set of meanings for code book, ones that could say "Buy Thai rice futures" as easily as "Run for life; they've caught us." Or *anything,* as cipher signals were buried in it to permit anything to be said that had not been anticipated.

Late one night Mike made printout of new code via *Lunaya Pravda's* facilities, and night editor turned roll over to another comrade who converted it into a very small roll of film and passed it along in turn, and none ever knew what they handled or why. Wound up in Stu's pouch. Search of offplant luggage was tight by then and conducted by bad-tempered Dragoons — but Stu was certain he would have no trouble. Perhaps he swallowed it.

Thereafter some of LuNoHo Com-

pany's dispatches to Terra reached Stu via his London broker.

Part of purpose was financial. Party needed to spend money Earthside; LuNoHoCo transferred money there (not all stolen, some ventures turned out well); Party needed still more money Earthside, Stu was to speculate, acting on secret knowledge of plan of revolution. He, Prof and Mike had spent hours discussing what stocks would go up, what would go down, etc., after der Tag. This was Prof's pidgin; I am not that sort of gambler.

But money was needed *before* der Tag to build "climate of opinion." We needed publicity, needed delegates and senators in Federated Nations, needed some nation to recognize us quickly once The Day came, we needed laymen telling other laymen over a beer: "What is there on that pile of rock worth one soldier's life? Let 'em go to hell in their own way, I say!"

Money for publicity, money for bribes, money for dummy organizations and to infiltrate established organizations, money to get true nature of Luna's economy (Stu had gone loaded with figures) brought out as scientific research, then in popular form, money to convince foreign office of at least one major nation that there was advantage in a Free Luna, money to sell idea of Lunar tourism to a major cartel —

Too much money! Stu offered own fortune and Prof did not discourage it. Where treasure is, heart will be. But still too much money and far too much to do. I did not know if Stu could swing a tenth of it; simply kept fingers crossed. At least it gave us a channel to Terra. Prof claimed that communications to enemy were essential to any war if was to be fought and settled sensibly. (Prof was a pacifist. Like his vegetarianing, he did not let it keep him from being "rational." Would have made a terrific theologian.)

As soon as Stu went Earthside, Mike set odds at one in thirteen. I asked him what in hell? "But, Man," he explained patiently, "it increases risk. That it is a necessary risk does not change the fact that risk is increased."

I shut up.

About that time, early May, a new factor reduced some risks while revealing others. One part of Mike handled Terra-Luna microwave traffic — commercial messages, scientific data, news channels, video, voice radiotelephony, routine Authority traffic — and Warden's top-secret.

Aside from last Mike could read any of this including commercial codes and ciphers. Breaking ciphers was a crossword puzzle to him and nobody mistrusted this machine. Except Warden, and I suspect that his was distrust of all machinery; was sort of person who finds anything more involved than a pair of scissors complex, mysterious and suspect. Stone Age mind.

Warden used a code that Mike never saw. Also used ciphers and did not work them through Mike; instead he had a moronic little machine in residence office. On top of this he had arrangement with Authority Earthside to switch every-

thing around at preset times. No doubt he felt safe.

Mike broke his cipher patterns and deduced time-change program just to try legs. He did not tackle code until Prof suggested it; it held no interest to him.

But once Prof asked, Mike tackled Warden's top-secret messages. He had to start from scratch; in past Mike had erased Warden's messages once transmission was reported. So slowly, slowly he accumulated data for analysis — painfully slow, for Warden used this method only when he had to. Sometimes a week would pass between such messages. But gradually Mike began to gather meanings for letter groups, each assigned a probability. A code does not crack all at once; possible to know meanings of ninety-nine groups in a message and miss essence because one group is merely GLOPS to you.

However, user has a problem, too; if GLOPS comes through as GLOPT, he's in trouble. Any method of communication needs redundancy, or information can be lost. Was at redundancy that Mike nibbled, with perfect patience of machine.

Mike solved most of Warden's code sooner that he had projected; Warden was sending more traffic than in past and most of it one subject (which helped) —subject being security and subversion.

We had Mort yelling for help.

He reported subversive activities still going on despite two phalanges of Peace Dragoons and demanded enough troops to station guards in all key spots inside all warrens.

Authority told him this was preposterous, no more of FN's crack troops could be spared — to be permanently ruined for Earthside duties — and such requests should not be made. If he wanted more guards, he must recruit them from transportees. But such increase in administrative costs must be absorbed in Luna; he would not be allowed more overhead. He was directed to report what steps he had taken to meet new grain quotas set in our such-and-such.

Warden replied that unless extremely moderate requests for trained security personnel — not repeat not untrained, unreliable and unfit convicts — were met, he could no longer assure civil order, much less increased quotas.

Reply asked sneeringly what difference it made if ex-consignees chose to riot among themselves in their holes? If it worried him, had he thought of shutting off lights as was used so successfully in 1996 and 2021?

These exchanges caused us to revise our calendar, to speed some phases, slow others. Like a perfect dinner, a revolution has to be "cooked" so that everything comes out even.

Stu needed time Earthside. We needed canisters and small steering rockets and associated circuitry for "rock throwing". And steel was a problem — buying it, fabricating it, and above all *moving* it through meander of tunnels to new catapult site. We needed to increase Party at least into "K's" — say 40,000 —

with lowest echelons picked for fighting spirit rather than talents we had sought earlier. We needed weapons against landings. We needed to move Mike's radars, without which he was blind. (Mike could not be moved; bits of him spread all through Lune. But he had a thousand meters of rock over that central part of him at Complex, was surrounded by steel and this armor was cradled in springs; Authority had contemplated that someday somebody might lob H-weapons at their control center.)

All these needed to be done and pot must not boil too soon.

So we cut down on things that worried Warden and tried to speed up everything else.

Simon Jester took a holiday. Word went out that Liberty Caps were not stylish — but save them. Warden got no more nervous-making phone calls. We quit inciting incidents with Dragoons — which did not stop them but reduced number.

Despite efforts to quiet Mort's worries a symptom showed up which disquieted us instead. No message (at least we intercepted none) reached Warden agreeing to his demand for more troops — but he started moving people out of Complex. Civil servants who lived there started looking for holes to rent in L-City. Authority started test drills and resonance exploration in a cubic adjacent to L-City which could be converted into a warren.

Could mean that Authority proposed shipping up unusually large draft of prisoners. Could mean that space in Complex was needed for purpose other than quarters. But Mike told us: "Why kid yourselves? The Warden is going to get those troops; that space will be their barracks. Any other explanation I would have heard."

I said, "But Mike, why didn't you hear if it's troops? You have that code of Warden's fairly well whipped."

"Not just 'fairly well,' I've got it whipped. But the last two ships have carried Authority vips and *I* don't know what they talk about away from phones!"

So we tried to plan to cover possibility of having to cope with ten more phalanges, that being Mike's estimate of what cubic being cleared would hold. We could deal with that many — with Mike's help — but it would mean deaths, not bloodless coup d'etat Prof had planned.

And we increased efforts to speed up other factors.

When suddenly we found ourselves committed.

XXII

Her name was Marie Lyons; she was eighteen years old and born in Luna, mother having been exiled via Peace Corps in '56. No record of father. She seems to have been a harmless person. Worked as a stock-control clerk in shipping department, lived in Complex.

Maybe she hated Authority and enjoyed teasing Peace Dragoons. Or perhaps it started as a commercial transaction as cold-blooded as any in a crib behind a slot-machine lock. How can we know? Six Dragoons

were in it. Not satisfied with raping her (if rape it was) they abused her other ways and killed her. But they did not dispose of body neatly; another civil service fem found it before was cold. She screamed. Was her last scream.

We heard about it at once; Mike called us three while Alvarez and Peace Dragoon C.O. were digging into matter in Alvarez's office. Appears that Peace Goon boss had no trouble laying hands on guilty; he and Alvarez were questioning them one at a time, and quarreling between grillings. Once we heard Alvarez say: "I told you those goons of yours had to have their own women! I warned you!"

"Stuff it," Dragoon officer answered. "I've told you time and again they won't ship any. The question now is how we hush this up."

"Are you crazy? Warden already knows."

"It's still the question."

"Oh, shut up and send in the next one."

Early in filthy story Wyoh joined me in workshop. Was pale under makeup, said nothing but wanted to sit close and clench my hand.

At last was over and Dragoon officer left Alvarez. Were still quarreling. Alvarez wanted those six executed at once and fact made public (sensible but not nearly enough, for his needs); C.O. was still talking about "hushing it up." Prof said, "Mike, keep an ear there and listen where else you can. Well, Mike? Wyoh? Plans?"

I didn't have any. Wasn't a cold, shrewd revolutionist; just wanted to get my heel into faces that matched those six voices. "I don't know. What do we do, Prof?"

"'Do'? We're on our tiger; we grab its ears. Mike. Where's Finn Nielsen? Find him."

Mike answered, "He's calling now."

He cut Finn in with us; I heard: "— at Tube South. Both guards dead and about six of our people. Just people I mean, not necessarily comrades. Some wild rumor about Goons going crazy and raping and killing all women at Complex. Adam, I had better talk to Prof."

"I'm here, Finn," Prof answered in a strong, confident voice. "Now we move, we've got to. Switch off and get those laserguns and men who trained with them, any you can round up."

"Da! Okay, Adam?"

"Do as Prof says. Then call back."

"Hold it, Finn!" I cut in. "Mannie here. I want one of those guns."

"You haven't practised, Mannie."

"If it's a laser, I can use it!"

"Mannie," Prof said forcefully, "shut up. You're wasting time; let Finn go. Adam. Message for Mike. Tell him Plan Alert Four."

Prof's example damped my oscillating. Had forgotten that Finn was not supposed to know Mike as anybody but "Adam Selene;" forgotten everything but raging anger. Mike said, "Finn has switched off. Prof, and I put Alert Four on standby when this broke. No traffic now except routine stuff filed earlier. You don't want it interrupted, do you?"

"No, just follow Alert Four. No Earthside transmission either way that tips any news. If one comes in, hold it and consult." "Alert Four" was emergency communication doctrine, intended to slap censorship on news to Terra without arousing suspicion. For this Mike was ready to talk in many voices with excuses as to why a direct voice transmission would be delayed — and any taped transmission was no problem.

"Program running," agreed Mike.

"Good. Mannie, calm down, son, and stick to your knitting. Let other people do the fighting. You're needed here, we're going to have to improvise. Wyoh, cut out and get word to Comrade Cecilia to get all Irregulars out of the corridors. Get those children home and keep them home — and have their mothers urging other mothers to do the same thing. We don't know where the fighting will spread. But we don't want children hurt if we can help it."

"Right away, Prof!"

"Wait. As soon as you've told Sidris, get moving on your stilyagi. I want a riot at the Authority's city office — break in, wreck the place, and noise and shouting and destruction — no one hurt if it can be helped. Mike. Alert-Four-Em. Cut off the Complex Except for your own lines."

"Prof!" I demanded. "What sense in starting riots here?"

"Mannie, Mannie! This is *The Day!* Mike, has the rape and murder news reached other warrens?"

"Not that I've heard. I'm listening here and there with random jumps. Tube stations are quiet except Luna City. Fighting has just started at Tube Station West. Want to hear it?"

"Not now. Mannie, slide over there and watch it. But stay out of it and stick close to a phone. Mike, start trouble in all warrens. Pass the news down the cells and use Finn's version, not the truth. The Goons are raping and killing all the women in the Complex — I'll give you details or you can invent them. Uh, can you order the guards at tube stations in other warrens back to their barracks? I want riots but there is no point in sending unarmed people against armed men if we can dodge it."

"I'll try."

I hurried to Tube Station West, slowed as I neared it. Corridors were full of angry people. City roared in way I had never heard before and, as I crossed Causeway, could hear shouts and crowd noise from direction of Authority's city office although it seemed to me there had not been time for Wyoh to reach her stilyagi. Nor had there been. What Prof had tried to start was underway spontaneously.

Station was mobbed and I had to push through to see what I assumed to be certain, that passport guards were either dead or fled. "Dead" it turned out, along with three Loonies. One was a boy not more than thirteen. He had died with his hands on a Dragoon's throat and his head still sporting a little red cap. I pushed way to a public phone and reported.

"Go back," said Prof, "and read the I.D. of one of those guards. I

want name and rank. Have you seen Finn?"

"No."

"He's headed there with three guns. Tell me where the booth you're in is, get that name and come back to it."

One body was gone, dragged away; Bog knows what they wanted with it. Other had been badly battered but I managed to crowd in and snatch dog chain from neck before it, too, was taken somewhere. I elbowed back to phone, found a woman at it. "Lady," I said, "I've *got* to use that phone. Emergency!"

"You're welcome to it! Pesky thing's out of order."

Worked for me; Mike had saved it. Gave Prof guard's name. "Good," he said. "Have you seen Finn? He'll be looking for you at that booth."

"Haven't s — Hold it. Just spotted him."

"Okay, hang onto him. Mike, do you have a voice to fit that Dragoon's name?"

"Sorry Prof. No."

"All right, just make it hoarse and frightened; chances are the C.O. won't know it that well. Or would the trooper call Alvarez?"

"He would call his C.O. Alvarez gives orders through him."

"So call the C.O. Report the attack and call for help and die in the middle of it. Riot sounds behind you and maybe a shout of 'There's the dirty bastard now!' just before you die. Can you swing it?"

"Programmed. No huhu," Mike said cheerfully.

"Run it. Mannie, put Finn on."

Prof's plan was to sucker off-duty guards out of barracks and keep suckering them — with Finn's men posted to pick them off as they got out of capsules. And it worked, right up to point where Mort the Wart lost his nerve and kept remaining few to protect himself while he sent frantic messages Earthside — none of which got through.

I wiggled out of Prof's discipline and took a lasergun when second capsule of Peace Dragoons was due. I burned two Goons, found blood lust gone and let other snipers have rest of squad. Too easy. They would stick heads up out of hatch and that would be that. Half of squad would not come out — until smoked out and then died with rest. By that time I was back at my advance post at phone.

Warden's decision to hole up caused trouble at Complex; Alvarez was killed and so was Goon C.O. and two of original yellow jackets. But a mixed lot of Dragoons and yellows, thirteen, holed up with Mort, or perhaps were already with him; Mike's ability to follow events by listening was spotty. But once it seemed clear that all armed effectives were inside Warden's residence, Prof ordered Mike to start next phase.

Mike turned out all lights in Complex save those in Warden's residence, and reduced oxygen to gasping point — not killing point but low enough to insure that anyone looking for trouble would not be in shape. But in residence oxygen supply was cut to zero, leaving pure nitrogen, and left that way ten minutes. At end of that time, Finn's men, waiting in p-suits at Warden's private tube sta-

tion, broke latch on air lock and went in, "shoulder to shoulder." Luna was ours.

XXIII

So a wave of patriotism swept over our new nation and unified it.

Isn't that what histories say? Oh, brother!

My dinkum word, preparing a revolution isn't as much huhu as having won it. Here we were, in control too soon, nothing ready and a thousand things to do. Authority in Luna was gone — but Lunar Authority Earthside and Federated Nations behind it were very much alive. Had they landed one troop ship, orbited one cruiser, any time next week or two, could have taken Luna back *cheap*. We were a mob.

New catapult had been tested but canned rock missiles ready to go you could count on fingers of one hand — my left hand. Nor was catapult a weapon that could be used against ships. Nor against troops. We had notions for fighting off ships; at moment were just notions. We had a few hundred cheap laserguns stockpiled in Hong Kong Luna — Chinee engineers are smart — but few men trained to use them.

Moreover, Authority had useful functions. Bought ice and grain, sold air and water and power, held ownership or control at a dozen key points. No matter what was done in future, wheels had to turn. Perhaps wrecking city offices of Authority had been hasty (I thought so) as records were destroyed. However, Prof maintained that Loonies, all Loonies, needed a symbol to hate and destroy and those offices were least valuable and most public.

But Mike controlled communications and that meant control of most everything.

Prof had started with control of news to and from Earthside, leaving to Mike censorship and faking of news until we could get around to what to tell Terra, and had added subphase M which cut off Complex from rest of Luna, and with it Richardson Observatory and associated laboratories — Pierce Radioscope, Selenophysical Station and so forth. These were a problem as Terran scientists were always coming and going and staying as long as six months, stretching time by centrifuge. Most Terrans in Luna, save for a handful of tourists (thirty-four) were scientists. Something had to be done about these Terrans, but meanwhile keeping them from talking to Terra was enough.

For time being Complex was cut off by phone and Mike did not permit capsules to stop at any station in Complex even after travel was resumed, which it was as soon as Finn Nielsen and squad was through with dirty work.

Turned out Warden was not dead. Nor had we planned to kill him; Prof figured that a live warden could always be made dead, whereas a dead one could not be made live if we needed him. So plan was to half-kill him, make sure he and his guards could put up no fight, then break in fast while Mike restored oxygen.

With fans turning at top speed

Mike computed it would take four minutes and a bit to reduce oxygen to effective zero. So, five minutes of increasing hypoxia, five minutes of anoxia, then force lower lock while Mike shot in pure oxygen to restore balance. This should not kill anyone — but would knock out a person as thoroughly as anesthesia. Hazard to attackers would come from some or all of those inside having p-suits. But even that might not matter. Hypoxia is sneaky, you can pass out without realizing you are short on oxygen. Is new chum's favorite fatal mistake.

So Warden lived through it and three of his women. But Warden, though he lived, was no use. Brain had been oxygen-starved too long. A vegetable.

No guard recovered, even though younger than he. Would appear anoxia broke necks.

In rest of Complex nobody was hurt. Once lights were on and oxygen restored they were okay, including six rapist-murders under lock in barracks. Finn decided that shooting was too good for them, so he went judge and used his squad as jury.

They were stripped, hamstrung at ankles and wrists, turned over to women in Complex. Makes me sick to think about what happened next but don't suppose they lived through as long an ordeal as Marie Lyons endured. Women are amazing creatures — sweet, soft, gentle and far more savage than we are.

Let me mention those fink spies out of order. Wyoh had been fiercely ready to eliminate them but when we got around to them she had lost stomach. I expected Prof to agree. But he shook head. "No, dear Wyoh, much as I deplore violence, there are only two things to do with an enemy: Kill him. Or make a friend of him. Anything in between piles up trouble for the future. A man who finks on his friends once will do it again and we have a long period ahead in which a fink can be dangerous; they must go. And publicly, to cause others to be thoughtful."

Wyoh said, "Professor, you once said that if you condemned a man, you would eliminate him personally. Is that what you are going to do?"

"Yes, dear lady, and no. Their blood shall be on my hands; I accept responsibility. But I have in mind a way more likely to discourage other finks."

So "Adam Selene" announced that these persons had been employed by Juan Alvarez, late Security Chief for former Authority, as undercover spies — and gave names and addresses. "Adam" did not suggest that anything be done.

One man remained on dodge for seven months by changing warrens and name. Then early in '77 his body was found outside Novylen's south lock. But most of them lasted no more than hours.

During first hours after coup d'etat we were faced with a problem we had never managed to plan — "Adam Selene" himself. *Who* is Adam Selene? Where is he? This is his revolution; he handled every detail, every comrade knows his

voice. We're out in open now . . . so *where is Adam?*

We batted it around much of that night, in room L of Raffles — argued it between decisions on a hundred things that came up and people wanted to know what to do, while "Adam" through other voices handled other decisions that did not require talk, composed phony news to send Earthside, kept Complex isolated, many things. (Is no possible doubt: without Mike we could not have taken Luna nor held it.)

My notion was that Prof should become "Adam." Prof was always our planner and theoretician; everybody knew him; some key comrades knew that he was "Comrade Bill" and all others knew and respected Professor Bernardo de la Paz. My word, he had taught half of leading citizens in Luna City, many from other warrens, was known to every vip in Luna.

"No," said Prof.

"Why not?" asked Wyoh. "Prof, you're opted. Tell him, Mike."

"Comment reserved," said Mike. "I want to hear what Prof has to say."

"I see you've analyzed it, Mike," Prof answered. "Wyoh dearest comrade, I would not refuse were it possible. But there is *no* way to make my voice match that of Adam — and every comrade knows Adam by his *voice;* Mike made it memorable for that very purpose."

We then considered whether Prof could be slipped in anyhow, showing him only on video and letting Mike reshape whatever Prof said into voice expected from "Adam."

Was turned down. Too many people knew Prof, had heard him speak; his voice and way of speaking could not be reconciled with "Adam." Then they considered same possibility for me — my voice and Mike's were baritone and not too many people knew what I sounded like over phone and none over video.

I tromped on it. People were going to be surprised enough to find me one of our Chairman's lieutenants. They would never believe I was number one.

I said, "Let's combine deals. Adam has been a mystery all along; keep him that way. He'll be seen only over video — in a mask. Prof, you supply body; Mike, you supply voice."

Prof shook head. "I can think of no surer way to destroy confidence at our most critical period than by having a leader who wears a mask. No, Mannie."

We talked about finding an actor to play it. Were no professional actors in Luna then but were good amateurs in Luna Civic Players and in Novy Bolshoi Teatr Associates.

"No," said Prof, "aside from finding an actor of requisite character — one who would not decide to be Napoleon — we can't wait. Adam must start handling things not later than tomorrow morning."

"In that case," I said, "you've answered it. Have to use Mike and never put him on video. Radio only. Have to figure excuse but Adam must never be seen."

"I'm forced to agree," said Prof.

"Man my eldest friend," said Mike, "why do you say that I can't be seen?"

"Haven't you listened?" I said. "Mike, we have to show a face and body on video. You have a *body* — but it's several tons of metal. A face you don't have. Lucky you. Don't have to shave."

"But what's to keep me from showing a face, Man? I'm showing a voice this instant. But there's no sound behind it. I can show a face the same way."

Was so taken aback I didn't answer. I stared at video screen, installed when we leased that room. A pulse is a pulse is a pulse. Electrons chasing each other. To Mike, whole world was variable series of electrical pulses, sent or received or chasing around his innards.

I said, "No, Mike."

"Why not, Man?"

"Because you *can't*. Voice you handle beautifully. Involves only a few thousand decisions a second, a slow crawl to you. But to build up video picture would require, uh, say ten million decisions every second. Mike, you're so fast I can't even think about it. But you aren't *that* fast."

Mike said softly, "Want to bet, Man?"

Wyoh said indignantly, "Of course Mike can if he says he can! Mannie, you shouldn't talk that way." (Wyoh thinks an electrón is something about size and shape of a small pea.)

"Mike," I said slowly, "I won't put money on it. Okay, want to try? Shall I switch on video?"

"I can switch it on," he answered.

"Sure you'll get right one? Wouldn't do to have this show somewhere else."

He answered testily, "I'm not stupid. Now let me be, Man — for I admit this is going to take just about all I've got."

We waited in silence. Then screen showed neutral gray with a hint of scant lines. Went black again, then a faint light filled middle and congealed into cloudy areas light and dark, ellipsoid. Not a face, but suggestion of face that one sees in cloud patterns covering Terra.

It cleared a little and reminded me of pictures alleged to be ectoplasm. A ghost of a face.

Suddenly firmed and we *saw* "Adam Selene."

Was a still picture of a mature man. No background, just a face as if trimmed out of a print. Yet was, to me, "Adam Selene." Could not be anybody else.

Then he smiled, moving lips and jaw and touching tongue to lips, a quick gesture — and I was frightened.

"How do I look?" he asked.

"Adam," said Wyoh, "your hair isn't that curly. And it should go back on each side above your forehead. You look as if you were wearing a wig, dear."

Mike corrected it. "Is that better?"

"Not quite so much. And don't you have dimples? I was sure I could hear dimples when you chuckle. Like Prof's."

Mike-Adam smiled again; this time he had dimples. "How should I be dressed, Wyoh?"

"Are you at your office?"

"I'm still at office. Have to be tonight." Background turned gray, then came into focus and color. A wall calendar behind him gave date, Tuesday 19 May 2076; a clock showed correct time. Near his elbow was a carton of coffee. On desk was a solid picture, a family group, two men, a woman, four children. Was background noise, muted roar of Old Dome Plaza louder than usual; I heard shouts and in distance some singing: Simon's version of *Marseillaise*.

Off screen Ginwallah's voice said, "Gospodin?"

Adam turned toward it. "I'm busy, Albert," he said patiently. "No calls from anyone but cell B. You handle everything else." He looked back at us. "Well, Wyoh? Suggestions? Prof? Man my doubting friend? Will I pass?"

I rubbed eyes. "Mike, can you cook?"

"Certainly. But I don't; I'm married."

"Adam," said Wyoh, "how can you look so neat after the day we've had?"

"I don't let little things worry me." He looked at Prof. "Professor, if the picture is okay, let's discuss what I'll say tomorrow. I was thinking of pre-empting the eight hundred newscast, have it announced all night and pass the word down the cells."

We talked rest of night. I sent up for coffee twice and Mike-Adam had his carton renewed. When I ordered sandwiches, he asked Ginwallah to send out for some. I caught a glimpse of Albert Ginwallah in profile, a typical babu, polite and faintly scornful. Hadn't known what he looked like. Mike ate while we ate, sometimes mumbling around a mouthful of food.

When I asked (professional interest) Mike told me that, after he had picture built up, he had programmed most of it for automatic and gave his attention just to facial expressions. But soon I forgot it was fake. Mike-Adam was talking with us by video, was all. Much more convenient than by phone.

By oh-three-hundred we had policy settled, then Mike rehearsed speech. Prof found points he wanted to add; Mike made revisions, then we decided to get some rest, even Mike-Adam was yawning—although in fact Mike held fort all through night, guarding transmissions to Terra, keeping Complex walled off, listening at many phones. Prof and I shared big bed, Wyoh stretched out on couch, I whistled lights out. For once we slept without weights.

While we had breakfast, Adam Selene addressed Free Luna.

He was gentle, strong, warm and persuasive. "Citizens of Free Luna, friends, comrades — to those of you who do not know me let me introduce myself. I am Adam Selene, Chairman of the Emergency Committee of Comrades for Free Luna . . . now *of* Free Luna, we are free at last. The so-called 'Authority' which has long usurped power in this our home has been overthrown. I find myself temporary head of the Emergency Committee.

"Shortly, as quickly as can be arranged, you will opt your own government." Adam smiled and made a gesture inviting help. "In the meantime, with your help, I shall do my best. We will make mistakes — be tolerant. Comrades, if you have not revealed yourselves to friends and neighbors, it is time you did so. Citizens, requests may reach you through your comrade neighbors. I hope you will comply willingly; it will speed the day when I can bow out and life can get back to normal — a *new* normal, free of the Authority, free of guards, free of troops stationed on us, free of passports and searches and arbitrary arrests.

"There has to be a transition. To all of you — please go back to work, resume normal lives. To those who worked for the Authority, the need is the same. Go back to work. Wages will go on, your jobs stay the same, until we can decide what is needed, what happily no longer is needed now that we are free, and what must be kept but modified. You new citizens, transportees sweating out sentences pronounced on you Earthside — you are free, your sentences are finished! But in the meantime I hope that you will go on working. You are not required to — the days of coercion are gone — but you are urged to. You are of course free to leave the Complex, free to go anywhere . . . and capsule service to and from the Complex will resume at once. But before you use your new freedom to rush into town, let me remind you: "There is no such thing as a free lunch.' You are better off for the time being where you are; the food may not be fancy but will continue hot and on time.

"To take on temporarily those necessary functions of the defunct Authority I have asked the General Manager of LuNoHo Company to serve. This company will provide temporary supervision and will start analyzing how to do away with the tyrannical parts of the Authority and how to transfer the useful parts to private hands. So please help them.

"To you citizens of Terra nations among us, scientists and travelers and others, greetings! You are witnessing a rare event, the birth of a nation. Birth means blood and pain: there have been some. We hope it is over. You will not be inconvenienced unnecessarily and your passage home will be arranged as soon as possible. Conversely, you are welcome to stay, still more welcome to become citizens. But for the present I urge you to stay out of the corridors, avoid incidents that might lead to unnecessary blood, unnecessary pain. Be patient with us and I urge my fellow citizens to be patient with you. Scientists from Terra, at the Observatory and else where, go on with your work and ignore us. Then you won't even notice that we are going through the pangs of creating a new nation. One thing. I am sorry to say that we are temporarily interfering with your right to communicate with Earthside. This we do from necessity; censorship will be lifted as quickly as possible — we hate it as much as you do."

Adam added one more request: "Don't try to see me, comrades, and phone me only if you must. All others, write if you need to, your letters will receive prompt attention. But I am not twins, I got no sleep last night, and can't expect much tonight. I can't address meetings, can't shake hands, can't meet delegation; I must stick to this desk and work — so that I can get rid of this job and turn it over to your choice." He grinned at them. "Expect me to be as hard to see as Simon Jester!"

XXIV

It was a fifteen-minute cast but that was essence: Go back to work, be patient, give us time.

Those scientists gave us almost no time. I should have guessed; was my sort of pidgin.

All communication Earthside channeled through Mike. But those brain boys had enough electronic equipment to stock a warehouse; once they decided to, it took them only hours to breadboard a rig that could reach Terra.

Only thing that saved us was a fellow traveler who thought Luna should be free. He tried to phone Adam Selene, wound up talking to one of a squad of women we had co-opted from C and D level — a system thrown together in self-defense as, despite Mike's request, half of Luna tried to phone "Adam Selene" after that videocast, everything from requests and demands to busybodies who wanted to tell Adam how to do his job.

After about a hundred calls got routed to me through too much zeal by a comrade in phone company, we set up this buffer squad. Happily, comrade lady who took this call recognized that soothe-'em-down doctrine did not apply; she phoned me.

Minutes later myself and Finn Nielsen plus some eager guns headed by capsule for laboratory area. Our informant was scared to give name but had told me where to find transmitter. We caught them transmitting, and only fast action on Finn's part kept them breathing; his boys were itchy. But we did not want to "make an example;" Finn and I had settled that on way out. Is hard to frighten scientists, their minds don't work that way. Have to get at them from other angles.

I kicked that transmitter to pieces and ordered Director to have everyone assemble in mess hall and required roll call — where a phone could hear. Then I talked to Mike, got names from him, and said to Director:

"Doctor, you told me they were all here. We're missing so-and-so" — seven names. *"Get them here!"*

Missing Terrans had been notified, had refused to stop what they were doing. Typical scientists.

Then I talked, Loonies on one side of room, Terrans on other. To Terrans I said: "We tried to treat you as guests. But three of you tried and perhaps succeeded in sending message Earthside."

I turned to Director. "Doctor, I could search — warren, surface structures, all labs, every space — and destroy everything that might be used for transmitter. I'm elec-

tron pusher by trade; I know what wide variety of components can be converted into transmitters. Suppose I destroy everything that might be useful for that and, being stupid, take no chance and smash anything I don't understand. What result?"

Would have thought I was about to kill his baby! He turned gray. "That would stop every research . . . destroy priceless data . . . waste, oh, I don't know how much! Call it a half billion dollars!"

"So I thought. Could take all that gear instead of smashing and let you go on best you can."

"That would be almost as bad! You must understand, Gospodin, that when an experiment is interrupted —"

"I know. Easier than moving anything — and maybe missing some — is to take you all to Complex and quarter you there. We have what used to be Dragoon barracks. But — Where you from, Doctor?"

"Princeton, New Jersey."

"So? You've been here five months and no doubt exercising and wearing weights. Doctor, if we did that, you might never see Princeton again. If we move you, we'll keep you locked up. You'll get soft. If emergency goes on very long, you'll be a Loonie like it or not. And all your brainy help with you."

A cocky chum stepped forward — one who had to be sent for twice. "You can't do this! It's against the law!"

"What law, Gospodin? Some law back in your home town?" I turned. "Finn, show him law."

Finn stepped forward and placed emission bell of gun at man's belly button. Thumb started to press down — safety-switched, I could see. I said, "Don't kill him, Finn;" — then went on: "I will eliminate this man if that's what it takes to convince you. So watch each other! One more offense will kill *all* your chances of seeing home again — as well as ruining researches. Doctor, I warn *you* to find ways to keep check on your staff."

I turned to Loonies. "Tovarischee, keep them honest. Work up own guard system. Don't take nonsense; every earthworm is on probation. If you have to eliminate some, don't hesitate." I turned to Director. "Doctor, any Loonie can go anywhere any time — even your bedroom. Your assistants are now your bosses so far as security is concerned. If a Loonie decides to follow you or anybody into a W.C., don't argue! he might be jumpy."

I turned to Loonies. "Security first! You each work for some earthworm — *watch him!* Split it among you and don't miss anything. Watch 'em so close they can't build mouse trap, much less transmitter. If interferes with work for them, don't worry; wages will go on."

Could see grins. Lab assistant was best job a Loonie could find those days — but they worked under earthworms who looked down on us, even ones who pretended and were oh so gracious.

I let it go at that. When I had been phoned, I had intended to eliminate offenders. But Prof and Mike set me straight: Plan did not permit

violence against Terrans that could be avoided.

We set up "ears," wideband sensitive receivers, around lab area, since even most directional rig spills a little in neighborhood. And Mike listened on all phones in area. After that we chewed nails and hoped.

Presently we relaxed as news from Earthside showed nothing, they seemed to accept censored transmissions without suspicion, and private and commercial traffic and Authority's transmissions all seemed routine. Meanwhile we worked, trying in days what should take months.

We received one break in timing; no passenger ship was on Luna and none was due until 7 July.

We could have coped — suckered a ship's officers to "dine with Warden" or something, then mounted guard on its senders or dismantled them. Could not have lifted without our help; in those days one drain on ice was providing water for reaction mass. Was not much drain compared with grain shipments. One manned ship a month was heavy traffic then, while grain lifted every day. What it did mean was that an incoming ship was not an insuperable hazard. Nevertheless was lucky break; we were trying so hard to make everything look normal until we could defend ourselves.

Grain shipments went on as before; one was catapulted almost as Finn's men were breaking into Warden's residence. And next went out on time, and all others.

Neither oversight nor faking for interim; Prof knew what he was doing. Grain shipments were a big operation (for a little country like Luna) and couldn't be changed in one semi-lunar; bread-and-beer of too many people was involved. If our Committee had ordered embargo and quit buying grain, we would have been chucked out and a new committee with other ideas would have taken over.

Prof said that an educational period was necessary. Meanwhile grain barges catapulted as usual; LuNoHoCo kept books and issued receipts, using civil service personnel. Dispatches went out in Warden's name and Mike talked to Authority Earthside, using Warden's voice. Deputy Administrator proved reasonable, once he understood it upped his life expectancy. Chief Engineer stayed on job, too — McIntyre was a real Loonie, given chance, rather than fink by nature. Other department heads and minor stooges were no problem; life went on as before and we were too busy to unwind Authority system and put useful parts up for sale.

Over a dozen people turned up claiming to be Simon Jester; Simon wrote a rude verse disclaiming them and had picture on front page of *Lunatic*, *Pravda*, and *Gong*. Wyoh let herself go blonde and made trip to see Greg at new catapult site, then a longer trip, ten days to old home in Hong Kong Luna, taking Anna who wanted to see it. Wyoh needed a vacation and Prof urged her to take it, pointing out that she was in touch by phone and that closer Party contact was needed in Hong Kong.

I took over her stilyagi with Slim and Hazel as my lieutenants — bright, sharp kids I could trust. Slim was awed to discover that I was "Comrade Bork" and saw "Adam Selene" every day; his Party name started with "G." Made a good team for other reason, too. Hazel suddenly started showing cushiony curves and not all from Mimi's superb table; she had reached that point in her orbit. Slim was ready to change her name to "Stone" any time she was willing to opt. In meantime he was anxious to do Party work he could share with our fierce little redhead.

Not everybody was willing. Many comrades turned out to be talk-talk soldiers. Still more thought war was over once we had eliminated Peace Goons and captured Warden. Others were indignant to learn how far down they were in Party structure; they wanted to elect a new structure, themselves at top. Adam received endless calls proposing this or something like it. Would listen, agree, assure them their services must not be wasted by waiting for election — and refer them to Prof or me. Can't recall any of these ambitious people who amounted to anything when I tried to put them to work.

Was endless work and *nobody* wanted to do it. Well, a few. Some best volunteers were people Party had never located. But in general, Loonies in and out of Party had no interest in "patriotic" work unless well paid.

One chum who claimed to be a Party member (was not) spragged me in Raffles where we set up headquarters and wanted me to contract for fifty thousand buttons to be worn by pre-coup "Veterans of Revolution" — a "small" profit for him (I estimate 400% markup), easy dollars for me, a fine thing for everybody.

When I brushed him off, he threatened to denounce me to Adam Selene — "A very good friend of mine, I'll have you know!" — for sabotage.

That was "help" we got. What we needed was something else. Needed steel at new catapult and plenty — Prof asked if really necessary to put steel around rock missiles; I had to point out that an induction field won't grab bare rock. We needed to relocate Mike's ballistic radars at old site and install doppler radar at new site — both jobs because we could expect attacks from space at old site.

We called for volunteers, got only two who could be used — and needed several hundred mechanics who did not mind hard work in p-suits. So we hired, paying what we had to. LuNoHoCo went in hock to Bank of Hong Kong Luna; was no time to steal that much and most funds had been transferred Earthside to Stu. A dinkum comrade, Foo Moses Morris, co-signed much paper to keep us going — and wound up broke and started over with a little tailoring shop in Kongville — that was later.

Authority Scrip dropped from 3-to-1 to 17-to-1 after coup and civil service people screamed, as Mike was still paying in Authority checks. We said they could stay on or re-

sign. Then those we needed we rehired with Hong Kong dollars. But created a large group not on our side from then on; they longed for good old days and were ready to stab new regime.

Grain farmers and brokers were unhappy because payment at catapult head continued to be Authority scrip at same old fixed prices. "We won't take it!" they cried — and LuNoHoCo man would shrug and tell them they didn't have to but this grain still went to Authority Earthside (it did) and Authority scrip was all they would get. So take cheque, or load your grain back into rolligons and get it out of here.

Most took it. All grumbled and some threatened to get out of grain and start growing vegetables or fibers or something that brought Hong Kong dollars — and Prof smiled.

We needed every drillman in Luna, especially ice miners who owned heavy-duty laser drills. As soldiers. We needed them so badly that, despite being shy one wing and rusty, I considered joining up, even though takes muscle to wrestle a big drill, and a prosthetic just isn't muscle. Prof told me not to be a fool.

Dodge we had in mind would not work well Earthside. A laser beam carrying heavy power works best in vacuum — but there it works just dandy for whatever range its collimation is good for. These big drills, which had carved through rock seeking pockets of ice, were now being mounted as "artillery" to repel space attacks. Both ships and missiles have electronic nervous sytems and does electronic gear no good to blast it with umpteen joules packed in a tight beam. If target is pressured (as manned ships are and most missiles), all it takes is to burn a hole, depressure it. If not pressured, a heavy laser beam can still kill it — burn eyes, louse guidance, spoil anything depending on electronics as most everything does.

An H-bomb with circuitry ruined is not a bomb, is just a big tub of lithium deuteride that can't do anything but crash. A ship with eyes gone is a derelict, not a warship.

Sounds easy, is *not*. Those laser drills were never meant for targets a thousand kilometers away, or even one, and was no quick way to rig their cradles for accuracy. Gunner had to have guts to hold fire until last few seconds — on a target heading at him maybe two kilometers per second.

But was best we had, so we organized First and Second Volunteer Defense Gunners of Free Luna. Two regiments — so that First could snub lowly Second and Second could be jealous of First. First got older men, Second got young and eager.

Having called them "Volunteers" we hired in Hong Kong dollars — and was no accident that ice was being paid for in controlled market in wastepaper Authority scrip.

On top of all, we were talking up a war scare. Adam Selene talked over video, reminding that Authority was certain to try to regain its tyranny and we had only days to prepare; papers quoted him and published stories of their own

— we had made special effort to recruit newsmen before coup. People were urged to keep p-suits ready and to test pressure alarms in homes. A volunteer Civil Defense Corps was organized in each warren.

What with moonquakes always with us, each warren's pressure co-op always had sealing crews ready at any hour. Even with silicone stay-soft and fiberglas any warren leaks. In Davis Tunnels our boys did maintenance on seal every day. But now we recruited hundreds of emergency sealing crews, mostly stilyagi, drilled them with fake emergencies, had them stay in p-suits with helmets open when on duty.

They did beautifully. But idiots made fun of them — "play soldiers." "Adam's little apples," other names. A team was going through a drill, showing they could throw a temporary lock around one that had been damaged, and one of these pinheads stood by and rode them loudly.

Civil Defense team went ahead, completed temporary lock, tested it with helmets closed; it held — came out, grabbed this joker, took him through into temporary lock and out into zero pressure, dumped him.

Belittlers kept opinions to selves after that. Prof thought we ought to send out a gentle warning not to eliminate so peremptorily. I opposed it and got my way; could see no better way to improve breed. Certain types of loudmouthism should be a capital offense among decent people.

But our biggest headaches were self-anointed statesmen.

Did I say that Loonies are "nonpolitical"? They are, when comes to doing anything. But doubt if was ever a time two Loonies over a liter of beer did not swap loud opinions about how things ought to be run.

As mentioned, these self-appointed political scientists tried to grab Adam Selene's ear. But Prof had a place for them; each was invited to take part in "Ad-Hoc Congress for Organization of Free Luna" — which met in Community Hall in Luna City, then resolved to stay in session until work was done, a week in L-City, a week in Novylen, then Hong Kong, and start over. All sessions were on video. Prof presided over first and Adam Selene addressed them by video and encouraged them to do a thorough job — "History is watching you."

I listened to some sessions, then cornered Prof and asked what in Bog's name he was up to? "Thought you didn't want *any* government? Have you heard those nuts since you turned them loose?"

He smiled most dimply smile. "What's troubling you, Manuel?"

Many things were troubling me. With me breaking heart trying to round up heavy drills and men who could treat them as guns these idlers had spent an entire afternoon discussing immigration. Some wanted to stop it entirely. Some wanted to tax it, high enough to finance government (when ninety-nine out of a hundred Loonies had had to be dragged to The Rock!); some wanted to make it selective by "ethnic ratios." (Wondered how they would count *me*?) Some wanted to limit

it to females until we were 50-50. That had produced a Scandinavian shout: "Ja, cobber! Tell 'em send us tousands and tousands vimmen! I marry 'em, I betcha!"

Was most sensible remark all afternoon.

Another time they argued "time." Sure, Greenwich time bears no relation to lunar. But why should it when we live underground? Show me a Loonie who can sleep two weeks and work two weeks; lunars don't fit our metabolism. What was urged was to make a lunar exactly equal to twenty-eight days (instead of 29 days, 12 hours, 44 minutes, 2.78 seconds) and do this by making days longer — and hours, minutes, and seconds, thus making each semi-lunar exactly two weeks.

Sure, lunar is necessary for many purposes. Controls when we go up on surface, why we go and how long we stay. But, aside from throwing us out of gear with our only neighbor, had that wordy vacuum skull thought what this would do to every critical figure in science and engineering? As an electronics man I shuddered. Throw away every book, table, instrument, and start over? I know that some of my ancestors did that in switching from old English units to MKS — but they did it to make things *easier.* Fourteen inches to a foot and some odd number of feet to a mile. Ounces and pounds. Oh, Bog!

Made sense to change *that* — but why go out of your way to *create* confusion?

Somebody wanted a committee to determine exactly what Loonie language is, then fine everybody who talked Earthside English or other language. Oh, my people!

I read tax proposals in *Lunatic* — four sorts of "Single-Taxers" — a cubic tax that would penalize a man if he extended tunnels, a head tax (everybody pay same), income tax (like to see anyone figure income of Davis Family or try to get information out of Mum!), and an "air tax" which was not fees we paid then but something else.

Hadn't realized "Free Luna" was going to have taxes. Hadn't had any before and got along. You paid for what you got. Tanstaafl. How else?

Another time some pompous choom proposed that bad breath and body odors be made an elimination offense. Could almost sympathize, having been stuck on occasion in a capsule with such stinks. But doesn't happen often and tends to be self-correcting; chronic offenders, or unfortunates who can't correct, aren't likely to reproduce, seeing how choosy women are.

One female (most were men, but women made up for it in silliness) had a long list she wanted made permanent laws — about private matters. No more plural marriage of any sort. No divorces. No "fornication" — had to look that one up. No drinks stronger than 4% beer. Church services only on Saturdays and all else to stop that day. (Air and temperature and pressure engineering, lady? Phones and capsules?) A long list of drugs to be prohibited and a shorter list dis-

pensed only by licensed physicians. (What is a "licensed physician"? Healer I go to has a sign reading "practical doctor". Makes book on side, which is why I go to him. Look, lady, *aren't* any medical schools in Luna!) (Then, I mean.) She even wanted to make *gambling* illegal. If a Loonie couldn't roll double or nothing, he would go to a shop that would, even if dice were loaded.

Thing that got me was not her list of things she hated since she was obviously crazy as a Cyborg but fact that always somebody agreed with her prohibitions. Must be a yearning deep in human heart to stop other people from doing as they please. Rules, laws — always for *other* fellow. A murky part of us, something we had before we came down out of trees, and failed to shuck when we stood up. Because *not one* of those people said: "Please pass this so that I won't be able to do something I know I should stop." Nyet, tovarishchee, was *always* something they hated to see neighbors doing. Stop them "for their own good" — not because speaker claimed to be harmed by it.

Listening to that session I was almost sorry we got rid of Mort the Wart. He stayed holed up with his women and didn't tell us how to run private lives.

But Prof didn't get excited; he went on smiling. "Manuel, do you really think that mob of retarded children can pass any laws?"

"You told them to. Urged them to."

"My dear Manuel, I was simply putting all my nuts in one basket. I know those nuts; I've listened to them for years. I was very careful in selecting their committees; they all have built-in confusion, they will quarrel. The chairman I forced on them while letting them elect him is a ditherer who could not unravel a piece of string — thinks every subject needs 'more study.' I almost needn't have bothered. More than six people cannot agree on anything, three is better — and one is perfect for a job that one can do. This is why parliamentary bodies all through history, when they accomplished anything, owed it to a few strong men who dominated the rest. Never fear, son, this 'Ad-Hoc Congress' will do nothing . . . or if they pass something through sheer fatigue, it will be so loaded with contradictions that it will have to be thrown out. In the meantime they are out of our hair. Besides, there *is* something we need them for, later."

"Thought you said they could do nothing."

"They won't do this. One man will write it — a dead man — and late at night when they are very tired, they'll pass it by acclamation."

"Who's this dead man? You don't mean Mike?"

"No, no! Mike is far more alive than those yammerheads. The dead man is Thomas Jefferson — first of the rational anarchists, my boy, and one who once almost managed to slip over his non-system through the most beautiful rhetoric ever writ-

ten. But they caught him at it, which I hope to avoid. I cannot improve on his phrasing; I shall merely adapt it to Luna and the twenty-first century."

"Heard of him. Freed slaves nyet?"

"One might say he tried but failed. Never mind. How are the defenses progressing? I don't see how we can keep up the pretense past the arrival date of this next ship."

"Can't be ready then. Entirely out of question."

"Mike says we must be."

We weren't but ship never arrived. Those scientists outsmarted me and Loonies I had told to watch them. Was a rig at focal point of biggest reflector and Loonie assistants believed doubletalk about astronomical purpose — a new wrinkle in radiotelescopes for ultraviolet research purposes.

I suppose it was. Was ultramicrowave and stuff was bounced at reflector by a wave guide and thus left scope lined up nicely by mirror. Remarkably like early radar. And metal latticework and foil heat shield of barrel stopped stray radiation, thus "ears" I had staked out heard nothing.

They put message across, their version and in detail. First we heard was demand from Authority to Warden to deny this hoax, find hoaxer, put stop to it.

So instead we gave them a Declaration of Independence, using model already on hand.

"In Congress assembled, July Fourth, Twenty Seventy-Six —"

Was *beautiful.*

XXV

Signing of Declaration of Independence went as Prof said it would. He sprang it on them at end of long day, announced a special session after dinner at which Adam Selene would speak.

Adam read aloud, discussing each sentence, then read it without stopping, making music of sonorous phrases. People wept. Wyoh, seated by me, was one, and I felt like it even though had read it earlier.

Then Adam looked at them and said, "The future is waiting. Mark well what you do," and turned meeting over to Prof rather than usual chairman.

Was twenty-two hundred and fight began.

Sure, they were in favor of it. News all day had been jammed with what bad boys we were, how we were to be punished, taught a lesson, so forth. Not necessary to spice it up; stuff up from Earthside was narsty — Mike merely left out on-other-hand opinions. If ever was a day when Luna felt unified it was probably second of July 2076.

So they were going to pass it; Prof knew that before he offered it.

But not as written — "Honorable Chairman, in second paragraph, that word 'unalienable,' is no such word; should be '*in*alienable' — and anyhow wouldn't it be more dignified to say 'sacred rights' rather than 'inalienable rights'? I'd like to hear discussion on this."

That choom was almost sensible, merely a literary critic, which

is harmless, like dead yeast left in beer. But — Well, take that woman who hated everything. She was there with list; read it aloud and moved to have it incorporated into Declaration, "So that the peoples of Terra will know that we are civilized and fit to take our places in the councils of mankind!"

Prof not only let her get away with it; he encouraged her, letting her talk when other people wanted to — then blandly put her proposal to a vote when hadn't even been seconded. (Congress operated by rules they had wrangled over for days. Prof was familiar with rules but followed them only as suited him.) She was voted down in a shout, and left.

Then somebody stood up and said of course that long list didn't belong in Declaration — but shouldn't we have general principles? Maybe a statement that Luna Free State guaranteed freedom, equality and security to all? Nothing elaborate, just those fundamental principles that everybody knew was proper purpose of government.

True enough and let's pass it. But must read "Freedom, equality, *peace* and security" — right, comrade? They wrangled over whether "freedom" included "free air," or was that part of "security"? Why not be on safe side and list "free air" by name? Move to amend to make it "Free air *and* water" — because you didn't have "freedom" or "security" unless you had both air and water.

Air, water, and *food.*

Air, water, food, and *cubic.*

Air, water, food, cubic, and *heat.*

No, make "heat" read "power" and you had it all covered. Everything.

Cobber, have you lost your mind? That's far from everything and what you've left out is an affront to all womankind — Step outside and say that! Let me finish. We've got to tell them right from deal that we will permit no more ships to land unless they carry at least as many women as men. *At least,* I said. And I for one won't chop it unless it sets immigration issue straight.

Prof never lost dimples.

Began to see why Prof had slept all day and was not wearing weights. Me, I was tired, having spent all day in p-suit out beyond catapult head cutting in last of relocated ballistic radars. And everybody was tired; by midnight crowd began to thin, convinced that nothing would be accomplished that night and bored by any yammer not their own.

Was later than midnight when someone asked why this Declaration was dated fourth when today was second?

Prof said mildly that it was July third now — and it seemed unlikely that our Declaration could be announced earlier than fourth . . . and that July fourth carried historical symbolism that might help.

Several people walked out at announcement that probably nothing would be settled until fourth of July. But I began to notice something: Hall was filling as fast as was emptying. Finn Nielsen slid into a seat that had just been vacated. Comrade

Clayton from Hong Kong showed up, pressed my shoulder, smiled at Wyoh, found a seat. My youngest lieutenants, Slim and Hazel, I spotted them down front — and was thinking I must alibi Hazel by telling Mum I had kept her out on Party business — when was amazed to see Mum next to them. And Sidris. And Greg, who was supposed to be at new catapult.

Looked around and picked out a dozen more — night editor of *Lunaya Pravda,* General Manager of LuNoHoCo, others, and each one a working comrade. Began to see that Prof had stacked deck. That Congress never had a fixed membership; these dinkum comrades had as much right to show up as those who had been talking a month. Now they sat — and voted down amendments.

About three hundred, when I was wondering how much more I could take, someone brought a note to Prof. He read it, banged gavel and said, "Adam Selene begs your indulgence. Do I hear unanimous consent?"

So screen back of rostrum lighted up again and Adam told them that he had been following debate and was warmed by many thoughtful and constructive criticisms. But could he make a suggestion? Why not admit that any piece of writing was imperfect? If this declaration was *in general* what they wanted, why not postpone perfection for another day and pass this as it stands? "Honorable Chairman, I so move."

They passed it with a yell. Prof said, "Do I hear objection?" and waited with gavel raised. A man who had been talking when Adam had asked to be heard said, "Well . . . I *still* say that's a dangling participle, but okay, leave it in."

Prof banged gavel. "So ordered!"

Then we filed up and put our chops on a big scroll that had been "sent over from Adam's office" — and I noticed Adam's chop on it. I signed right under Hazel — child now could write although was still short on book learning. Her chop was shaky but she wrote it large and proud. Comrade Clayton signed his party name, real name in letters, and Japanese chop, three little pictures one above other. Two comrades chopped with X's and had them witnessed. All Party leaders were there that night (morning), all chopped it, and not more than a dozen yammerers stuck. But those who did put their chops down for history to read. And thereby committed "their lives, their fortunes, and their sacred honors."

While queue was moving slowly past and people were talking, Prof banged for attention. "I ask for volunteers for a dangerous mission. This Declaration will go on the news channels — but must be presented in person to the Federated Nations, on Terra."

That put stop to noise. Prof was looking at me. I swallowed and said, "I volunteer." Wyoh echoed, "So do I!" — and little Hazel Meade said, "Me, too!"

In moments were a dozen, from Finn Nielsen to Gospodin Dangling-Participle (turned out to be a good

cobber aside from his fetish). Prof took names, murmured something about getting in touch as transportation became available.

I got Prof aside and said, "Look, Prof, you too tired to track? You know ship for seventh was canceled; now they're talking about slapping embargo on us. Next ship for Luna will be a warship."

"Oh, we won't use their ships."

"So? Going to build one? Any idea how long that takes? If could build one at all. Which I doubt."

"Manuel, Mike says it's necessary — and has it all worked out."

I did know Mike said was necessary; he had rerun problem soon as we learned that bright laddies at Richardson had snuck one home — He now gave us only one chance in fifty-three . . . with imperative need for Prof to go Earthside. But I'm not one to worry about impossibilities; I had spent day working to make that one chance in fifty-three turn up.

"Mike will provide the ship," Prof went on. "He has completed its design and it is being worked on."

"He has? It is? Since when is Mike an engineer?"

"Isn't he?" asked Prof.

I started to answer, shut up. Mike had no degrees. Simply knew more engineering than any man alive. Or about Shakespeare's plays, or riddles, name it. "Tell me more."

"Manuel, we'll go to Terra as a load of grain."

"*What*? Who's 'we'?"

"You and myself. The other volunteers are merely decorative."

I said, "Look, Prof. I've stuck. Worked hard when whole thing seemed silly. Worn these weights — got 'em on now — on chance I might have to go to that dreadful place. But contracted to go in a *ship*, with at least a Cyborg pilot to help me get down safely. Did *not* agree to go as meteorite."

He said, "Very well, Manuel. I believe in free choice, always. Your alternative will go."

"My — *Who*?"

"Comrade Wyoming. So far as I know she is the only other person in training for the ship . . . other than a few Terrans."

So I went. But talked to Mike first.

He said patiently, "Man my first friend, there isn't a thing to worry about. You are scheduled load KM187 series '76 and you'll arrive in Bombay with no trouble. But to be sure — to reassure *you* — I selected that barge because it will be taken out of parking orbit and landed when India is faced toward me . . . and I've added an override so that I can take you away from ground control if I don't like the way they handle you. Trust me, Man, it has all been thought through. Even the decision to continue shipments when security was broken was part of this plan."

"Might have told me."

"There was no need to worry you. Professor had to know and I've kept in touch with him. But you are going simply to take care of him and back him up — do his job if he dies, a factor on which I can give you no reassurance."

I sighed. "Okay. But, Mike, surely you don't think you can pilot a barge into a soft landing at this distance? Speed of light alone would trip you."

"Man, don't you think I understand ballistics? For the orbital position then, from query through reply and then to command-received is under four seconds . . . and you can rely on me not to waste microseconds. Your maximum parking-orbit travel in four seconds in only thirty-two kilometers, diminishing asymptotically to zero at landing. My reflex time will be effectively less than that of a human pilot in a manual landing because I don't waste time grasping a situation and deciding on correct action. So my maximum is four seconds. But my *effective* reflex time is much less, as I project and predict constantly, see ahead, program it out — in effect, I'll say four seconds ahead of you in your trajectory and respond instantly."

"That steel can doesn't even have an altimeter!"

"It does now. Man, *please* believe me; I thought of *everything*. The only reason I've ordered this extra equipment is to reassure you. Poona ground control hasn't made a bobble in the last five thousand loads. For a computer it's fairly bright."

"Okay. Uh, Mike, how hard do they splash those bleeding barges? What gee?"

"Not high, Man. Ten gravities at injection, then that programs down to a steady, soft four gees . . . then you'll be nudged again between six and five gees just before splash. The splash itself is gentle, equal to a fall of fifty meters and you enter ogive first with no sudden shock, less than three gees. Then you surface and splash again, lightly, and simply float at one gee. Man, those barge shells are built as lightly as possible for economy's sake. We can't afford to toss them around or they would split their seams."

"How sweet. Mike, what would 'six to five gees' do to you? Split your seams?"

"I conjecture that I was subjected to about six gravities when they shipped me up here. Six gravities in my present condition would sheer many of my essential connections. However, I'm more interested in the extremely high, transient acceleration I am going to experience from shock waves when Terra starts bombing us. Data are insufficient for prediction . . . but I may lose control of my outlying functions, Man. This could be a major factor in any tactical situation."

"Mike, you really think they are going to bomb us?"

"Count on it, Man. That is why this trip is so important."

I left it at that and went out to see this coffin. Should have stayed home.

Ever looked at one of those silly barges? Just a steel cylinder with retro and guidance rockets and radar transponder. Resembles a spaceship way a pair of pliers resembles by number-three arm. They

had this one cut open and were outfitting our "living quarters."

No galley. No. W.C. No nothing. Why bother? We were going to be in it only fifty hours. Start empty so that you won't need a honey sack in your suit. Dispense with lounge and bar; you'll never be out of your suit, you'll be drugged and not caring.

At least Prof would be drugged almost whole time; I had to be alert at landing to try to get us out of this death trap if something went wrong and nobody came along with a tin opener. They were building a shaped cradle in which backs of our p-suits would fit; we would be strapped into these holes. And stay there, clear to Terra. They seemed more concerned about making total mass equal to displaced wheat and same center of gravity and all moment arms adding up correctly than they did our comfort. Engineer in charge told me that even padding to be added inside our p-suits was figured in.

Was glad to learn we were going to have padding; those holes did not look soft.

Returned home in thoughtful condition.

Wyoh was not at dinner, unusual; Greg was, more unusual.

Nobody said anything about my being scheduled to imitate a falling rock next day although all knew. But did not realize anything special was on until all next generation left table without being told. Then knew why Greg had not gone back to Mare Undarum site after Congress adjourned that morning; somebody had asked for a Family talk-talk.

Mum looked around and said, "We're all here. Ali, shut that door; that's a dear. Grandpaw, will you start us?"

Our senior husband stopped nodding over coffee and firmed up. He looked down table and said strongly, "I see that we are all here. I see that children have been put to bed. I see that there is no stranger, no guest. I say that we are met in accordance with customs created by Black Jack Davis our First Husband and Tillie our First Wife. If there is any matter that concerns safety and happiness of our marriage, haul it out in the light *now*. Don't let it fester. This is our custom."

Grandpaw turned to Mum and said softly, "Take it, Mimi," and slumped back into gentle apathy. But for a minute he had been strong, handsome, virile, dynamic man of days of my opting . . . and I thought with sudden tears how lucky I had been!

Then didn't know whether I felt lucky or not. Only excuse I could see for a Family talk-talk was fact that I was due to be shipped Earthside next day, labeled as grain. Could Mum be thinking of trying to set Family against it? Nobody *had* to abide by results of a talk-talk. But one always did. That was strength of our marriage: When came down to issues, we stood together.

Mimi was saying, "Does anyone

have anything that needs to be discussed? Speak up, dears."

Greg said, "I have."

"We'll listen to Greg."

Greg is a good speaker. Can stand up in front of a congregation and speak with confidence about matters I don't feel confident about even when alone. But that night he seemed anything but sure of himself. "Well, uh, we've always tried to keep this marriage in balance, some old, some young, a regular alternation, well spaced, just as it was handed down to us. But we've varied sometimes — for good reason." He looked at Ludmilla. "And adjusted to it later." He looked again at far end of table, at Frank and Ali, on each side of Ludmilla.

"Over years, as you can see from records, average age of husbands has been about forty, wives about thirty-five — and that age spread was just what our marriage started with, nearly a hundred years gone by, for Tillie was fifteen when she opted Black Jack and he had just turned twenty. Right now I find the average age of husbands is almost exactly forty, while average —"

Mum said firmly, "Never mind arithmetic, Greg dear. Simply state it."

I was trying to think who Greg could possibly mean. True, I had been much away during past year, and if did get home, was often after everybody was asleep. But he was clearly talking about marriage and nobody ever proposes another wedding in our marriage without first giving everybody a long careful chance to look prospect over. You just didn't *do* it any other way!

So I'm stupid. Gred stuttered and said, "I propose Wyoming Knott!"

I *said* I was stupid. I understand machinery and machinery understands me. But don't claim to know anything about people.

When I get to be senior husband, if live that long, am going to do exactly what Grandpaw does with Mum: Let Sidris run it. Just same — Well, look, Wyoh joined Greg's church. I like Greg, *love* Greg. And admire him. But you could never feed theology of his church through a computer and get anything but null. Wyoh surely knew this, since she encountered it in adult years. Truthfully, I had suspected that Wyoh's conversion was proof that she would do *anything* for our Cause.

But Wyoh had recruited Greg even earlier. And had made most of trips out to new site, easier for her to get away than me or Prof. Oh, well. Was taken by surprise. Should not have been.

Mimi said, "Greg, do you have reason to think that Wyoming would accept an opting from us?"

"Yes."

"Very well. We all know Wyoming; I'm sure we've formed our opinions of her. I see no reason to discuss it . . . unless someone has something to say? Speak up."

Was no surprise to Mum. But wouldn't be. Nor to anyone else, either, since Mum never let a talk-talk take place until she was sure of outcome.

But wondered why Mum was sure of my opinion, so certain that she had not felt me out ahead of time? And sat there in a soggy quandary, knowing I should speak up, knowing I knew something terribly pertinent which nobody else knew or matter would never gone this far. Something that didn't matter to me but would matter to Mum and all our women.

Sat there, miserable coward, and said nothing.

Mum said, "Very well. Let's call the roll. Ludmilla?"

"Me? Why, I love Wyoh, everybody knows that. Sure!"

"Lenore dear?"

"Well, I may try to talk her into going back to being a brownie again; I think we set each other off. But that's her only fault, being blonder than I am. Da!"

"Sidris?"

"Thumbs up. Wyoh is our kind of people."

"Anna?"

"I've got something to say before I express my opinion, Mimi."

"I don't think it's necessary, dear."

"Nevertheless I'm going to haul it out in the open, just as Tillie always did according to our tradition. In this marriage every wife has carried her load, given children to the family. It may come as a surprise to some of you to learn that Wyoh has had eight children —"

Certainly surprised Ali; his head head jerked and jaw dropped. I stared at plate. Oh. Wyoh, Wyoh! How could I let this happen? Was going to *have* to speak up.

And realized Anna was still speaking: "— so now she can have children of her own; the operation was successful. But she worries about possibility of another defective baby, unlikely as that is according to the head of the clinic in Hong Kong. So we'll just have to love her enough to make her quit fretting."

"We will love her," Mum said serenely. "We do love her. Anna are you ready to express opinion?"

"Hardly necessary, is it? I went to Hong Kong with her, held her hand while her tubes were restored. I opt Wyoh."

"In this family," Mum went on, "we have always felt that our husbands should allowed a veto. Odd of us perhaps, but Tillie started it and it has always worked well. Well, Grandpaw?"

"Eh? What were you saying, my dear?"

"We are opting Wyoming, Gospodin Grandpaw. Do you give consent?"

"What? Why of course, of course! Very nice little girl. Say? Whatever became of that pretty little Afro, name something like that? She get mad at us?"

"Greg?"

"I propose it."

"Manuel? Do you forbid this?"

"Me? Why, you know me, Mum."

"I do. I sometimes wonder if *you* know you. Hans?"

"What would happen if I said No?"

"You'd lose some teeth, that's

what," Lenore said promptly. "Hans votes Yes."

"Stop it, darlings," Mum said with soft reproof. "Opting is a serious matter. Hans, speak up."

"Da. Yes. Ja. Oui. Si. High time we had a pretty blonde in this — *Ouch!*" __ . .

"Stop it, Lenore. Frank?"

"Les, Mum."

"Ali dear? Is it unanimous?"

Lad blushed bright pink and coudn't talk. Nodded vigorously.

Instead of appointing a husband and a wife to seek out selectee and propose opting for us, Mum sent Ludmilla and Anna to fetch Wyoh at once—turned out she was only as far away as Bon Ton. Nor was that only irregularity; instead of setting a date and arranging a wedding party, our children were called in, and twenty minutes later Greg had his Book open and we did be taking vows — and I finally got it through my confused head that was being done with breakneck speed because of my date to break my neck next day.

Not that it could matter save as symbol of my family's love for me, since a bride spent her first night with her senior husband, and second and third I was going to spend out in space. But *did* matter anyhow and when women started to cry during ceremony, I found self dripping tears right with them.

Then I went to bed, alone in workshop, once Wyoh had kissed us and left on Grandpaw's arm. Was terribly tired and last two days had been hard. Thought about exercises and decided was too late to matter, thought about calling Mike and asking for news from Terra. Went to bed.

Don't know how long had been asleep when realized was no longer asleep and somebody was in room. "Manuel?" came soft whisper in dark.

"Huh? Wyoh, you aren't supposed to be here, dear."

"I am indeed supposed to be here, my husband. Mum knows I'm here, so does Greg. And Grandpaw went right to sleep."

"Oh. What time is?"

"About four hundred. Please, dear, may I come to bed?"

"What? Oh, certainly." Something I should remember. Oh, yes. "Mike!"

"Yes, Man?" he answered, right on cue.

"Switch off. Don't listen. If you want me, call me on Family phone."

"So Wyoh told me, Man. Congratulations!"

Then her head was pillowed on my stump and I put right arm around her. "What are you crying about, Wyoh?"

"I'm not crying! I'm just frightened silly that you won't come back!"

TO BE CONTINUED

The Warriors

by LARRY NIVEN

Their whole lives had been designed to make killing impossible . . . now they had to kill, or see Earth die!

"I'm sure they saw us coming," the Alien Technologies Officer persisted. "Do you see that ring, sir?"

The silvery image of the enemy ship almost filled the viewer. It showed as a broad, wide ring encircling a cylindrical axis, like a mechanical pencil floating inside a platinum bracelet. A finned craft projected from the pointed end of the axial section. Angular letters ran down the axis, totally unlike the dots-and-commas of kzinti script.

"Of course I see it," said the Captain.

"It was rotating when we first picked them up. It stopped when we got within two hundred thousand miles, and it hasn't moved since."

The Captain flicked his tail back and forth, gently, thoughtfully, like a pink lash. "You worry me," he commented. "If they know we're here, why haven't they tried to get away? Are they so sure they can beat us? He whirled to face the A-T Officer. "Should *we* be running?"

"No, sir! I don't know why they're still here, but they can't have anything to be confident about. That's one of the most primitive spacecraft I've ever seen." He moved his claw about on the screen, pointing as he talked.

"The outer shell is an iron alloy. The rotating ring is a method of imitating gravity by using centripetal force. So they don't have the gravity planer. In fact they're probably using a reaction drive."

The Captain's catlike ears went up. "But we're light years from the nearest star!"

"They must have a better reaction drive than we ever developed. We had the gravity planer before we needed one that good."

There was a buzzing sound from

the big control board. "Enter," said the captain.

The Weapons Officer fell up through the entrance hatch and came to attention. "Sir, we have all weapons trained on the enemy."

"Good." The Captain swung around. "A-T, how sure are you that they aren't a threat to us?"

The A-T Officer bared sharply pointed teeth. "I don't see how they could be, sir."

"Good. Weapons, keep all your guns ready to fire, but don't use them unless I give the order. I'll have the ears of the man who destroys that ship without orders. I want to take it intact."

"Yes, sir."

"Where's the Telepath?"

"He's on his way, sir. He was asleep."

"He's always asleep. Tell him to get his tail up here."

The Weapons Officer saluted, turned, and dropped through the exit hole.

"Captain?"

The A-T Officer was standing by the viewer, which now showed the ringed end of the alien ship. He pointed to the mirror-bright end of the axial cylinder. "It looks like that end was designed to project light. That would make it a photon drive, sir."

The Captain considered. "Could it be a signal device?"

"Urrrrr . . . Yes, sir."

"Then don't jump to conclusions."

Like a piece of toast, the Telepath popped up through the entrance hatch. He came to exaggerated attention. "Reporting as ordered, sir."

"You omitted to buzz for entrance."

"Sorry, sir." The lighted viewscreen caught the Telepath's eye and he padded over for a better look, forgetting that he was at attention. The A-T Officer winced, wishing he were somewhere else.

The Telepath's eyes were violet around the edges. His pink tail hung limp. As usual, he looked as if he were dying for lack of sleep. His fur was flattened along the side he slept on; he hadn't even bothered to brush it. The effect was as far from the ideal of a Conquest Warrior as one can get and still be a member of the kzinti species. The wonder was that the Captain had not yet murdered him.

He never would, of course. Telepaths were too rare, too valuable, and—understandably—too emotionally unstable. The Captain always kept his temper with the Telepath. At times like this it was the innocent bystander who stood to lose his rank or his ears at the clank of a falling molecule.

"That's an enemy ship we've tracked down," the Captain was saying. "We'd like to get some information from them. Would you read their minds for us?"

"Yes, sir." The Telepath's voice showed his instant misery, but he knew better than to protest. He left the screen and sank into a chair. Slowly his ears folded into tight knots, his pupils contracted, and his ratlike tail went limp as flannel.

The world of the eleventh sense pushed in on him.

He caught the Captain's thought: ". . . sloppy civilian get of a sthondat . . ." and frantically tuned it out. He hated the Captain's mind. He found other minds aboard ship, isolated and blanked them out one by one. Now there were none left. There was only unconsciousness and chaos.

Chaos was not empty. Something was thinking strange and disturbing thoughts.

The Telepath forced himself to listen.

Steve Weaver floated bonelessly near a wall of the radio room. He was blond, blue eyed, and big, and he could often be seen as he was now, relaxed but completely motionless, as if there were some very good reason why he shouldn't even blink. A streamer of smoke drifted from his left hand and crossed the room to bury itself in the air vent.

"That's that," Ann Harrison said wearily. She flicked four switches in the bank of radio controls. At each click a small light went out.

"You can't get them?"

"Right. I'll bet they don't even have a radio." Ann released her chair net and stretched out into a five pointed star. "I've left the receiver on, with the volume up, in case they try to get us later. Man, that feels good!" Abruptly she curled into a tight ball. She had been crouched at the communications bank for more than an hour. Ann might have been Steve's twin; she was almost as tall as he was, had the same color hair and eyes, and the flat muscles of conscientious exercise showed beneath her blue falling jumper as she flexed.

Steve snapped his cigarette butt at the air conditioner, moving only his fingers. "Okay. What have they got?"

Ann looked startled. *"I* don't know."

"Think of it as a puzzle. They don't have radio. How might they talk to each other? How can we check on our guesses? We assume they're trying to reach us, of course."

"Yes, of course."

"Think about it, Ann. Get Jim thinking about it, too." Jim Davis was her husband that year, and the ship's doctor full time. "You're the girl most likely to succeed. Have a smog stick?"

"Please."

Steve pushed his cigarette ration across the room. "Take a few. I've got to go."

The depleted package came whizzing back. "Thanks," said Ann.

"Let me know if anything happens, will you? Or if you think of anything."

"I will. And fear not, Steve, something's bound to turn up. They must be trying just as hard as we are."

Every compartment in the personnel ring opened into the narrow doughnut-shaped hall which ran round the ring's forward rim. Steve pushed himself into the hall, jockeyed to contact the floor, and pushed. From there it was easy going. The floor curved up to meet him, and

he proceeded down the hall like a swimming frog. Of the twelve men and women on the *Angel's Pencil,* Steve was best at this; for Steve was a Belter, and the others were all flatlanders, Earthborn.

Ann probably wouldn't think of anything, he guessed. It wasn't that she wasn't intelligent. She didn't have the curiosity, the sheer love of solving puzzles. Only he and Jim Davis —

He was going too fast, and not concentrating. He almost crashed into Sue Bhang as she appeared below the curve of the ceiling.

They managed to stop themselves against the walls. "Hi, jaywalker," said Sue.

"Hi, Sue. Where you headed?"

"Radio room. You?"

"I thought I'd check the drive systems again. Not that we're likely to need the drive, but it can't hurt to be certain."

"You'd go twitchy without something to do, wouldn't you?" She cocked her head to one side, as always when she had questions. "Steve, when are you going to rotate us again? I can't seem to get used to falling."

But she looked like she'd been born falling, he thought. Her small, slender form was meant for flying; gravity should never have touched her. "When I'm sure we won't need the drive. We might as well stay ready 'til then. Besides, I'm hoping you'll change back to a skirt."

She laughed, pleased. "Then you can turn it off. I'm not changing, and we won't be moving. Abel says the other ship did two hundred gee when it matched courses with us. How many can the *Angel's Pencil* do?"

Steve looked awed. "Just point zero five. And I was thinking of chasing them! Well, maybe we can be the ones to open communications. I just came from the radio room, by the way. Ann can't get anything."

"Too bad."

"We'll just have to wait."

"Steve, you're always so impatient. Do Belters always move at a run? Come here." She took a handhold and pulled him over to one of the thick windows which lined the forward side of the corridor. "There they are," she said, pointing out.

The star was both duller and larger than those around it. Among points which glowed arc-lamp blue-white with the Doppler shift, the alien ship showed as a dull red disc.

"I looked at it through the telescope," said Steve. "There are lumps and ridges all over it. And there's a circle of green dots and commas painted on one side. Looked like writing."

"How long have we been waiting to meet them? Five hundred thousand years? Well, there they are. Relax. They won't go away." Sue gazed out the window, her whole attention on the dull red circle, her gleaming jet hair floating out around her head. "The first aliens. I wonder what they'll be like."

"It's anyone's guess. They must be pretty strong to take punish-

ment like that, unless they have some kind of acceleration shield, but free fall doesn't bother them either. That ship isn't designed to spin." He was staring intently out at the stars, his big form characteristically motionless, his expression somber. He said, "Sue, I'm worried."

"About what?"

"Suppose they're hostile?"

"Hostile?" She tasted the unfamiliar word, decided she didn't like it.

"After all, we know nothing about them. Suppose they want to fight? We'd —"

She gasped. Steve flinched before the horror in her face. "What — what put that idea in your head?"

"I'm sorry I shocked you, Sue."

"Oh, don't worry about that, but *why?* Did — shh."

Jim Davis had come into view. The *Angel's Pencil* had left Earth when he was twenty-seven; now he was a slightly paunchy thirty-eight, the oldest man on board, an amiable man with abnormally long, delicate fingers. His grandfather, with the same hands, had been a world famous surgeon. Nowadays surgery was normally done by autodocs, and the arachnodactils were to Davis merely an affliction. He bounced by, walking on magnetic sandals, looking like a comedian as he bobbed about the magnetic plates. "Hi, group," he called as he went by.

"Hello, Jim." Sue's voice was strained. She waited until he was out of sight before she spoke again.

Hoarsely she whispered, "Did you fight in the Belt?" She didn't really believe it; it was merely the worst thing she could think of.

Vehemently Steve snapped, "No!" Then, reluctantly, he added, "But it did happen occasionally." Quickly he tried to explain. "The trouble was that all the doctors, including the psychists, were at the big bases, like Ceres. It was the only way they could help the people who needed them — be where the miners could find them. But all the danger was out in the rocks.

"You noticed a habit of mine once. I never make gestures. All Belters have that trait. It's because on a small mining ship you could hit something waving your arms around. Something like the airlock button."

"Sometimes it's almost eery. You don't move for minutes at a time."

"There's always tension out in the rocks. Sometimes a miner would see too much danger and boredom and frustration, too much cramping inside and too much room outside, and he wouldn't get to a psychist in time. He'd pick a fight in a bar. I saw it happen once. The guy was using his hands like mallets."

Steve had been looking far into the past. Now he turned back to Sue. She looked white and sick, like a novice nurse standing up to her first really bad case. His ears began to turn red. "Sorry," he said miserably.

She felt like running; she was as embarrassed as he was. Instead she said, and tried to mean it, "It doesn't matter. So you think the people in the other ship might want to, uh, make war?"

He nodded.

"Did you have history-of-Earth courses?"

He smiled ruefully. "No, I couldn't qualify. Sometimes I wonder how many people do."

"About one in twelve."

"That's not many."

"People in general have trouble assimilating the facts of life about their ancestors. You probably know that there used to be wars before — hmmm — three hundred years ago, but do you know what a war is? Can you visualize one? Can you see a fusion electric plant deliberately built to explode in the middle of a city. Do you know what a concentration camp is? A limited action? You probably think murder ended with war. Well, it didn't. The last murder occurred in twenty one something, just a hundred and sixty years ago.

"Anyone who says human nature can't be changed is out of his head. To make it stick, he's got to define human nature — and he can't. Three things gave us our present peaceful civilization, and each one was a technological change." Sue's voice had taken on a dry, remote lecture hall tone, like the voice on a teacher tape. "One was the development of psychistry beyond the alchemist stage. Another was the full development of land for food production. The third was the Fertility Restriction Laws and the annual contraceptive shots. They gave us room to breathe. Maybe Belt mining and the stellar colonies had something to do with it too; they gave us an inanimate enemy. Even the historians argue about that one.

"Here's the delicate point I'm trying to nail down." She rapped on the window. "Look at that spacecraft. It has enough power to move it around like a mail missile and enough fuel to move it up to our point eight light — right?"

"Right."

"— with plenty of power left for maneuvering. It's a better ship than ours. If they've had time to learn how the build a ship like that, they've had time to build up their own versions of psychistry, modern food production, contraception, economic theory, everything they need to abolish war. See?"

Steve had to smile at her earnestness. "Sure, Sue, it makes sense. But that guy in the bar came from our culture, and he was hostile enough. If we can't understand how he thinks, how can we guess about the mind of something whose very chemical makeup we can't guess at yet?"

"It's sentient. It builds tools."

"Right."

"And if Jim hears you talking like this, you'll be in psychistry treatment."

"That's the best argument you've given me," Steve grinned, and stroked her under the ear with two fingertips. He felt her go suddenly stiff, saw the pain in her face; and at the same time, his own pain struck, a real tiger of a headache, as if his brain were trying to swell beyond his skull.

"I've got them, sir," the Telepath said blurrily. "Ask me anything."

The Captain hurried, knowing that the Telepath couldn't stand this for long. "How do they power their ship?"

"It's a light pressure drive powered by incomplete hydrogen fusion. They use an electromagnetic ramscoop to get their own hydrogen from space."

"Clever... Can they get away from us?"

"No. Their drive is on idle, ready to go, but it won't help them. It's pitifully weak."

"What kind of weapons do they have?"

The Telepath remained silent for a long time. The others waited patiently for his answer. There was sound in the control dome, but it was the kind of sound one learns not to hear: the whine of heavy current, the muted purr of voices from below, the strange sound like continuously ripping cloth which came from the gravity motors.

"None at all, sir." The kzinti's voice became clearer; his hypnotic relaxation was broken by muscle twitches. He twisted as if in a nightmare. "Nothing aboard ship, not even a knife or a club. Wait, they've got cooking knives. But that's all they use them for. They don't fight."

"They don't fight?"

"No, sir. They don't expect us to fight, either. The idea has occurred to three of them, and each has dismissed it from his mind."

"But why?" the Captain asked, knowing the question was irrelevant, unable to hold it back.

"I don't know, sir. It's a science they use, or a religion. I don't understand," the Telepath whimpered. "I don't understand at all."

Which must be tough on him, the Captain thought. Completely alien thoughts . . . "What are they doing now?"

"Waiting for us to talk to them. They tried to talk to us, and they think we must be trying just as hard."

"But why? Never mind, it's not important. Can they be killed by heat?"

"Yes, sir."

"Break contact."

The Telepath shook his head, violently. He looked like he'd been in a washing machine. The Captain touched a sensitized surface and bellowed, "Weapons Officer!"

"Here."

"Use the inductors on the enemy ship."

"But, sir! They're so slow! What if the alien attacks?"

"Don't argue with me, you—" Snarling, the Captain delivered an impassioned monologue on the virtues of unquestioning obedience. When he switched off, the Alien Technologies Officer was back at the viewer and the Telepath had gone to sleep.

The Captain purred happily, wishing that they were all this easy. When the occupants had been killed by heat he would take the ship. He could tell everything he needed to know about their planet by examining their life support system. He could locate it by tracing the ship's trajectory. Probably they hadn't even taken evasive action!

If they came from a Kzin-like world it would become a Kzin world. And he, as Conquest Leader, would command one percent of its wealth for the rest of his life! Truly, the future looked rich. No longer would he be called by his profession. He would bear a *name* . . .

"Incidental information," said the A-T Officer. "The ship was generating one and twelve sixty-fourths gee before it stopped rotating."

"Little heavy," the Captain mused. "Might be too much air, but it should be easy to kzinform it. A-T, we find the strangest life forms. Remember the Chunquen?"

"Both sexes were sentient. They fought constantly."

"And that funny religion on Altair One. They thought they could travel in time."

"Yes sir. When we landed the infantry they were all gone."

"They must have all committed suicide with disintegrators. But why? They knew we only wanted slaves. And I'm still trying to figure out where the disintegrators went."

"Some beings," said the A-T Officer, "will do anything to keep their beliefs."

Eleven years beyond Pluto, eight years from her destination, the fourth colony ship We Made It fell between the stars. Before her the stars were green-white and blue-white, blazing points against nascent black. Behind they were sparse, dying red embers. To the sides the constellations were strangely flattened. The universe was shorter than it had been.

For a while Jim Davis was very busy. Everyone, including himself, had a throbbing blinding headache. To each patient Doctor Davis handed a tiny pink pill from the dispenser slot of the huge autodoc which covered the back wall of the infirmary. They milled outside the door waiting for the pills to take effect, looking like a full-fledged mob in the narrow corridor; and then someone thought it would be a good idea to go to the lounge, and everyone followed him. It was an unusually silent mob. Nobody felt like talking while the pain was with them. Even the sound of magnetic sandals was lost in the plastic pile rug.

Steve saw Jim Davis behind him. "Hey, Doc," he called softly. "How long before the pain stops?"

"Mine's going away. You got your pills a little after I did, right?"

"Right. Thanks, Doc."

They didn't take pain well, these people. They were too unused to it.

In single file they walked or floated into the lounge. Low-pitched conversations started. People took couches, using the sticky plastic strips on their falling jumpers. Others stood or floated near walls. The lounge was big enough for all.

Steve wriggled near the ceiling, trying to pull on his sandals.

"I hope they don't try that again," he heard Sue say. "It hurt."

"Try what?" Someone Steve didn't recognize, half-listening as he was.

"Whatever they tried. Telepathy, perhaps."

"No. I don't believe in telepathy. Could they have set up ultrasonic vibrations in the walls?"

Steve has his sandals on. He left the magnets turned off.

"...a cold beer. Do you realize we'll never taste beer again?" Jim Davis' voice.

"I miss waterskiing." Ann Harrison sounded wistful. "The feel of a pusher unit shoving into the small of your back, the water beating against your feet, the sun..."

Steve pushed himself toward them. "Taboo subject," he called.

"We're on it anyway," Jim boomed cheerfully. "Unless you'd rather talk about the alien, which everyone else is doing. I'd rather drop it for the moment. What's your greatest regret at leaving Earth?"

"Only that I didn't stay long enough to really see it."

"Oh, of course." Jim suddenly remembered the drinking bulb in his hand. He drank from it, hospitably passed it to Steve.

"This waiting makes me restless," said Steve. "What are they likely to try next? Shake the ship in Morse code?"

Jim smiled. "Maybe they won't try anything next. They may give up and leave."

"Oh, I hope not!" said Ann.

"Would that be so bad?"

Steve hid a start. What was Jim thinking?

"Of course!" Ann protested. "We've got to find out what they're like! And think of what they can teach us, Jim!"

When conversation got controversial it was good manners to change the subject. "Say," said Steve, "I happened to notice the wall was warm when I pushed off. Is that good or bad?"

"That's funny. It should be cold, if anything," said Jim. "There's nothing out there but starlight. Except—" A most peculiar expression flitted across his face. He drew his feet up and touched the magnetic soles with his fingertips.

"Eeeee! Jim! Jim!"

Steve tried to whirl around and got nowhere. That was Sue. He switched on his shoes, thumped to the floor, and went to help.

Sue was surrounded by bewildered people. They split to let Jim Davis through, and he tried to lead her out of the lounge. He looked frightened. Sue was moaning and thrashing, paying no attention to his efforts.

Steve pushed through to her. "All the metal is heating up," Davis shouted. "We've got to get her hearing aid out."

"Infirmary," Steve shouted.

Four of them took Sue down the hall to the infirmary. She was still crying and struggling feebly when they got her in, but Jim was there ahead of them with a spray hypo. He used it and she went to sleep.

The four watched anxiously as Jim went to work. The autodoc would have taken precious time for diagnosis. Jim operated by hand. He was able to do a fast job, for the tiny instrument was buried just below the skin behind her ear. Still, the scalpel must have burned his fingers before he was done. Steve could feel the growing warmth against the soles of his feet.

Did the aliens know what they were doing?

Did it matter? The ship was being attacked. His ship.

Steve slipped into the corridor and ran for the control room. Running on magnetic soles, he looked like a terrified penguin, but he moved fast. He knew he might be making a terrible mistake; the aliens might be trying desperately to reach the *Angel's Pencil;* he would never know. They had to be stopped before everyone was roasted.

The shoes burned his feet. He whimpered with the pain, but otherwise ignored it. The air burned in his mouth and throat. Even his teeth were hot.

He had to wrap his shirt around his hands to open the control room door. The pain in his feet was unbearable; he tore off his sandals and swam to the control board. He kept his shirt over his hands to work the controls. A twist of a large white knob turned the drive on full, and he slipped into the pilot seat before the gentle light pressure could build up.

He turned to the rear view telescope. It was aimed at the Solar system, for the drive could be used for messages at this distance. He set it for short range and began to turn the ship.

The enemy ship glowed in the high infrared.

"It will take longer to heat the crew carrying section," reported the Alien Technologies Officer. "They'll have temperature control there."

"That's all right. When you think they should all be dead, wake up the Telepath and have him check."

The Captain continued to brush his fur, killing time. "You know, if they hadn't been so completely helpless I wouldn't have tried this slow method. I'd have cut the ring free of the motor section first. Maybe I should have done that anyway. Safer."

The A-T Officer wanted all the credit he could get. "Sir, they couldn't have any big weapons. There isn't room. With a reaction drive, the motor and the fuel tanks take up most of the available space."

The other ship began to turn away from its tormentor. Its drive end glowed red.

"They're trying to get away," the Captain said, as the glowing end swung toward them." "Are you sure they can't?"

"Yes sir. That light drive won't take them anywhere."

The Captain purred thoughtfully. "What would happen if the light hit our ship?"

"Just a bright light, I think. The lens is flat, so it must be emitting a very wide beam. They'd need a parabolic reflector to be dangerous. Unless —" His ears went straight up.

"Unless what?" The Captain spoke softly, demandingly.

"A laser. But that's all right, sir. They don't have any weapons."

The Captain sprang at the control board. "Stupid!" he spat. "They don't know weapons from sthondat blood. Weapons Officer! How could a telepath find out what they don't know? WEAPONS OFFICER!"

"Here, sir."

"Burn —"

An awful light shone in the con-

trol dome. The Captain burst into flame, then blew out as the air left through a glowing split in the dome.

Steve was lying on his back. The ship was spinning again, pressing him into what felt like his own bunk.

He opened his eyes.

Jim Davis crossed the room and stood over him. "You awake?"

Steve sat bolt upright, his eyes wide.

"Easy." Jim's gray eyes were concerned.

Steve blinked up at him. "What happened?" he asked, and discovered how hoarse he was.

Jim sat down in one of the chairs. "You tell me. We tried to get to the control room when the ship started moving. Why didn't you ring the strap-down? You turned off the drive just as Ann came through the door. Then you fainted."

"How about the other ship?" Steve tried to repress the urgency in his voice, and couldn't.

"Some of the others are over there now, examining the wreckage." Steve felt his heart stop. "I guess I was afraid from the start that alien ship was dangerous. I'm more psychist than emdee, and I qualified for history class, so maybe I know more than is good for me about human nature. Too much to think that beings with space travel will automatically be peaceful. I tried to think so, but they aren't. They've got things any self respecting human being would be ashamed to have nightmares about. Bomb missiles, fusion bombs, lasers, that induction projector they used on us. And antimissiles. You know what that means? They've got enemies like themselves, Steve. Maybe nearby."

"So I killed them." The room seemed to swoop around him, but his voice came out miraculously steady.

"You saved the ship."

"It was an accident. I was trying to get us away."

"No, you weren't." Davis' accusation was as casual as if he were describing the chemical makeup of urea. "That ship was four hundred miles away. You would have had to sight on it with a telescope to hit it. You knew what you were doing, too, because you turned off the drive as soon as you'd burned through the ship."

Steve's back muscles would no longer support him. He flopped back to horizontal. "All right, you know," he told the ceiling. "Do the others?"

"I doubt it. Killing in self defense is too far outside their experience. I think Sue's guessed."

"Oooo."

"If she has, she's taking it well," Dave said briskly. "Better than most of them will, when they find out the universe is full of warriors. This is the end of the world, Steve."

"What?"

"I'm being theatrical. But it is. Three hundred years of the peaceful life for everyone. They'll call it the Golden Age. No starvation, no war, no physical sickness other than senescence, no permanent mental sickness at all, even by our rigid standards. When someone over fourteen tries to use his fist on someone else

we say he's sick, and we cure him. And now it's over. Peace isn't a stable condition, not for us. Maybe not for anything that lives."

"Can I see the ship from here?"

"Yes. It's just behind us."

Steve rolled out of bed, went to the window.

Someone had steered the ships much closer together. The kzinti ship was a huge red sphere with ugly projections scattered at seeming random over the hull. The beam had sliced it into two unequal halves, sliced it like an ax through an egg. Steve watched, unable to turn aside, as the big half rotated to show its honey-combed interior.

"In a little while," said Jim, "the men will be coming back. They'll be frightened. Someone will probably insist that we arm ourselves against the next attack, using weapons from the other ship. I'll have to agree with him.

"Maybe they'll think I'm sick myself. Maybe I am. But it's the kind of sickness we'll need." Jim looked desperately unhappy. "We're going to become an armed society. And of course we'll have to warn the Earth..." END

Dear Editor:

It's my turn to cheer. For the past five months I've been tossing four-bit pieces on the newsstand for *If*, hoping first that *Skylark DuQuesne* would show a resurrection of the old E. E. Smith, then that each installment would hold up to the promise of the one before. Today, having finished it and going back to re-read the last few chapters, because I skimmed a bit in utter excitement, I bless you a mighty blessing, and pray that I'll wind up in the same Next World with EES, so I can read the fifth Skylark novel.

In short, you have restored my youth in the best way possible — just enough to enjoy it, without all the bother of actually having to be young again. I kid thee not; I haven't had so much fun reading science fiction since 1934! — Robert A. W. Lowndes.

* * *

Dear Editor:

Your story *Under Two Moons* was an extremely superb piece of sf, a splendid style of writing. Your fictional character, Johann Gull, was a very exciting and James Bondish type person. I would like very much to read some more stories centering on him as the main character. — Mark Lydall, 824 South 8th Street, Corvallis, Oregon.

● Thanks — but no sequels are planned. — *Editor.*

* * *

Dear Editor:

Reserve a seat for me on the "*If* is the Most Improved and Best Magazine" bandwagon. With stories by E. E. Smith and Larry Niven (you were justified in saying that he is a promising writer in your introduction of him), *If* is on top . . . even though you're forced to fill in issues with stories by Clement and Heinlein!

For a reader to fully enjoy stories of a series involving one character of idea, he should be made aware of the fact—especially when the stories are at long and/or irregular intervals. For instance, the May 1966 ish continued Saberhagen's *Sign of the Wolf*, the sixth (five in If) of his fine and ingenious stories about the life-dueling "Berserker" machines. The June and April issues had two MacApp tales of Steve Duke's assignments against the Gree, but the first of the three stories was way back in the August

1964 copy. Why not mention this sort of thing in the introduction?

The June *Hue & Cry* carried two requests for story locations. Dave Lyon wanted to find a story about a boy who escapes from the domesticated to the wild humans and blasts off in a starship. The only one that I know of had a different title and was a novelette: *The Silk and the Song* by Charles L. Fontenay in the July, 1956, *F&SF*. (No, Virginia, *If* doesn't have a *complete* monopoly on stirring stories!)

James McLean inquired about a plot which had a man (in tomorrow's nerve-numbing world of endless commercial barrages) con his wife out of enough money to enter "Paradise"—a soundproof haven of quiet. The closest I could come was a story in which it was the wife who soaked her husband for $84,000 in the same way: *Year Day* by Henry Kuttner, in his collection *Ahead of Time*, published by Ballantine. A salute to Fred Pohl, one of the best at either end of a typewriter—although I wish that the editor would include more of the writer's work.—Bruce MacPhee, 38 Lenox Avenue, Norwalk, Connecticut 06854.

● Our rule about series stories is: Every story has to stand on its own merits, so that if you've never read anything that went before it in the series you'll still be able to understand it and enjoy it. So we've never felt it necessary to say anything about the series status of a story in the introduction. — *Editor.*

* * *

Dear Editor:

Senator Robert Kennedy has recently said there is a great danger that nuclear weapons will spread beyond control.

Would it be possible for you to do an article on this in our magazine? — H. DeVries, 220 Fulton Street, New York 7, New York.

● Nuclear weapons aren't science fiction any more — unfortunately. The senator is clearly right — *Editor.*

* * *

Dear Editor:

The trouble with American science-fiction television is undoubtedly caused by the great sickness that American TV had fallen into, but that's not exactly the root cause. It seems quite clear that it was the Grade Z horror movies from the late fifties that have done all the damage. These films are what *Outer Limits* identified with, especially in its first season. I fear this kind of thing is much too juvenile —hence adults don't watch—hence low ratings.

So—maybe there are people in Hollywood who are aware of contemporary science fiction. Any executive producers among them? The great dearth of name sf writers connected with films or TV is just as great as it ever was.

The greatest sadness comes to me these days whenever I watch sf on the white clown. Whatever happened to futuristic video sf? TV can do it, I know; remember *Tales of Tomorrow, Out There, Playhouse 90* and the excellent production of Alfred Bester's *Fondly Fahrenheit, Murder and the Android.* Even the old juves like *Tom Corbett* and *Space Patrol* had more science fiction in them than a dozen episodes of *Twilight Zone*, which had very little futuristic science fiction, but always the Great Big Moral.

Memories! . . . Is that all we ever will have? Or maybe it's impossible to dramatize good science

fiction. — Al Jackson, 3735 West Bay Circle, Dallas 18, Texas.

* * *

Dear Editor:

When I read Keith Laumer's *Embassy*, I noticed something you didn't mention in your note on it in the July *If*. At the end of the book, American diplomat Brion Bayard is recuperating in Stockholm. Laumer's sf novel, *Worlds of the Imperium*, begins with the hero, an American diplomat named Brion Bayard, being kidnapped from Stockholm and transported into alternate worlds. In *Embassy* Bayard has a Swedish fiancee named Ingred; she isn't mentioned in *Worlds of the Imperium*, although Bayard acquires another Swedish girl friend, Barbro. This Bayard fellow sure gets around!

By the way, is it just coincidence that "Retief" is "fighter" spelled backwards phonetically? In a sense, *Embassy* is the Retief stories inside out. Retief is successful by being forthright and courageous. In *Embassy*, Bayard behaves in the same way and gets the tar knocked out of him for his trouble. I am afraid that *Embassy* is the more realistic.—George W. Price, 873 Cornelia Avenue, Chicago 57, Illinois.

• For late-comers, *Embassy* is Keith Laumer's non-science-fiction novel about diplomacy in a Southeast Asian country that looks sort of like Vietnam to some observers —though Keith Laumer never says so. As to the questions—what about it, Keith? Care to elucidate for our readers?—*Editor.*

* * *

Dear Editor:

I just took what opportunity I had to reread a few of the many sf magazines I have managed to collect since 1960. Besides adding a little perspective to my sf sight, it was downright enjoyable. *If* has improved to a point that I wouldn't have believed possible five years ago. Since 1962 you have published a couple of stories that will rank with my All Time Favorites — *Kings Who Die* by Poul Anderson being the best of the lot, with your own *Five Hells of Orion* not far behind. *Galaxy* too has come a long ways. Vive le Cordwainer Smith!

It's nice to see that Robert A. Heinlein hasn't forgotten the words of wisdom he addressed to us at the Seacon back in 1962. In *Farnham's Freehold* they were no less pertinent for being (if possible) more entertaining. My apologies to E. E. Smith for doubting his ability to write anything but balderdash. I can't wait to hear more of the d'Alemberts. *The Imperial Stars, The Silkie, Farnham's Freehold*, Laumer's *The Night of the Trolls* and now *The Hounds of Hell* —hoo, boy! Now what's Judy Merril got to say about magazine sf? — Ken Winkes, 433 South McLeod, Arlington, Washington.

● That's about it again, friends. Our "First" for the issue is Steve Buchanan's *The Kettle Black* — a good beginning, we'd say, and hope to see more from this 21-year-old pre-med student from Little Rock, Arkansas.

Next month? Well, for openers there's a complete short novel by John Brunner — *The Long Way to Earth;* more Heinlein; a very funny new Retief novelette — well, see for yourself!

— The Editor

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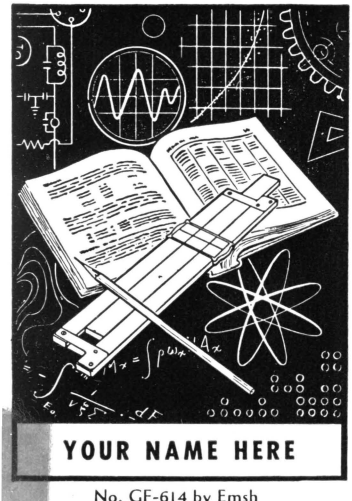

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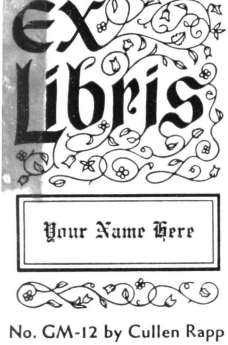

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