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SPECIAL

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by **ISAAC ASIMOV**





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Joseph W. Ferman, PUBLISHER

Robert P. Mills, EDITOR

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FALLING TORCH

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ALGIS BUDRYS

*They sent Michael Wireman to conquered Earth with the
special guns they hoped would free her. He and a
technician dropped in at night, and waited in the living
dark to be met by—whom? Whether it was the underground
or an Invader patrol, there would be bloodshed soon.
And there was one thing Michael Wireman had yet to learn—
the important thing was not which side won the battles,
but how the battles were won, and for what reasons. . . .*

A DARK EARTH WAITED TO RECEIVE him. Michael Wireman waited for the hatch to pop open, knowing that the scudding spaceship must be very nearly at drop altitude. He wondered what the Invader radar stations were making of it. He looked out through the porthole again, seeing nothing but darkness, thick, ink-black clouds, and the faint orange straight-edge of a starboard fin that was only just cooling down from their entry. There was nothing below him that he could see—no mountains, no forests, no gleam of moonlight on

water. Certainly, no city lights.

He turned sharply away from looking out and tightened the straps of the bulky load fastened to his back. The view from the port was hardly pleasant for a man about to jump out into it with a seventy-five pound load added to his own weight, and nothing to help him but a flimsy-looking whirligig which, collapsed at the moment, stuck up above his head like a folded umbrella.

He set his wrist altimeter from the repeater dial on the bulkhead beside him, played his flashlight on it to charge the luminous dial,

and hoped everything would work out all right. On Centaurus, when Thomas Harmon first broached this idea to him, and his father had reluctantly agreed, he had been eager to do it. In training—with instructors who were certainly members of the Centaurian armed forces but were careful not to say so—he had done well and grown confident. But it was dark and bottomless outside, and though he yearned to return to Earth, now he was tautly aware of the tall trees and sharp rocks waiting for him below.

He was nudged from behind, and turned to see Isaac Potter smiling at him whitely. It made him feel instantly better to see the pudgy little man, looking squashed under his own load, crowned by his own bumbershoot. On Cheiron, Potter had been equally determined, if unspurred by Michael Wireman's special eagerness. On Cheiron, the tubby technical representative had said: "I go where the guns go," and meant it. He still meant it, no doubt, but at the moment he, too, was very much aware of Earth not as something beautifully drawn on a wall map but as a solid body with teeth.

The spaceship was full of noises. Air friction keened through every plate and stanchion. The thrumming of the motors vibrated Michael Wireman's teeth.

"Ready?" Isaac Potter shrilled at him.

Michael Wireman grinned back. He smoothed the flaps of his crash helmet down over his prominent ears and buckled them under his chin. He made sure his rifle was strapped securely to the pack.

There was a dinging noise from beside him. He looked at the illuminated plate that had been rigged beside the hatch. The word "brace" was lighted. Under it, "fire" was still dark. He dropped to a sitting position, curled his arms around his knees, and laid his head down on his thighs. There was no room for irresolution. If he weren't braced when the pilot fired him out, he would go pin-wheeling across the sky, a broken doll. That had been stressed in training, and demonstrated with a dummy. He felt the tips of Potter's boots against his buttocks, and knew the other man was also in position.

He reminded himself, quickly, that once he was out in the air the best position to take was an angle of 45 degrees relative to the ground, face down and body straight. That way, the vanes of his chute would stand less chance of breaking off. It had been explained to him in training that this never happened. He had then been told what to do to keep it from happening. There were a few jokes, apparently stock ones from the C.S.O. armed forces, about what position to take if the vanes broke.

The light clicked on under "fire." The dinging noise now became a clamor. The hatch popped open, and suddenly he and Potter were out.

His next coherent thought came as he hung in the clouds, vanes whirring over his head. A dozen yards above him, and opening the distance slowly, was Isaac Potter. Michael Wireman had no idea whether he'd done things properly or not. He looked about him and saw nothing but clammy darkness. His ears were full of the sound of his breath in the oxygen mask over his chin. The ship was gone, back toward the friendly spaces outside the Solar System, and whether Invader radar had made something of it or not, it was now too late for anyone to do anything.

He looked at his altimeter. The needle was unwinding rapidly.

The ship's pilot—yet another hired Centaurian civilian with suspiciously military mannerisms—had guaranteed to put them within a mile of the rendezvous with General Hammil's partisan army. He seemed to know all about this kind of operation, and everyone had been satisfied with his assurance. But Michael Wireman had reflected once or twice on the fact that no one on Cheiron, either Centaurian or refugee Earthman, would know for months. No matter how this came out. He glanced down, looking for the tops of trees. He saw nothing,

though his altimeter was down below the one hundred foot mark now. He set his legs to take the shock and buried his face in his arms.

He hit, and the weight of his pack threw him over. Bruised by stones and scraped by branches, he lay with the breath knocked out of him.

He heard something bulky fall through the trees near him, and then the thump of Potter's landing. Whether they were anywhere near where they ought to be or not, at least he and the Centaurian were together, and overabundantly armed.

He struggled to his feet, laden with a pack never meant to be carried any distance, pulled off his mask, and drew in deep breaths. The air that filled his lungs was beautiful—thick, moist, and redolent of pine. A wind caressed his face. He knelt, took a handful of loam, and squeezed his fist around it.

This is my home, he thought. This is my own, my native place.

He had left it when he was five, on the last ship to clear the Solar System before the Invaders accepted surrender from the Vice-President. Now he was twenty-five, and he reminded himself of it.

He let the crumbled soil drift through his fingers, and went to find Potter, but still the slow tears tracked down from his eyes.

II

No one had come to meet them as yet. They had dug under the roots of a big tree and buried their drop equipment, strewing the newly turned earth with pine needles, and now they stood waiting, back to back in the darkness. This had always been the weakest part of the plan. And if they did not contact General Hammil's army, then their mission and lives were wasted. But no one had been able to suggest anything better. Certainly, landing the spaceship was out of the question—even entering the atmosphere had been a risky business. The Invaders had not conquered Earth by a fluke; it had been a hard, bitter war between two almost evenly matched opponents. No one took the Invaders lightly, no one made jokes about them; they were too much like humans, not only in looks but in the way they fought.

"If we stay here much longer," Michael Wireman said over his shoulder, "we'll have an Invader patrol on us soon."

"Yes, but if we move, then Hammil won't find us," Potter said.

Michael Wireman listened to the sound of the trees. He heard nothing else. "We'll give it another ten minutes. If we don't hear anything coming by then, we'll move off a little. If we *do* hear

anything, we'd better make damned sure of who it is."

"It seems to me an Invader patrol would probably land by helicopter. They can't very well have foot patrols permanently stationed on every mountain in Europe."

"Unless they're expecting us. For all we know, Hammil's been captured and questioned by now."

"In which case," Potter sighed nervously, "I don't suppose it matters whether we're caught or not."

Maybe not to you, Michael Wireman thought.

When he saw the silent figure loom up before him, he started. "Liberty," the hulking shadow croaked.

"Weapons," Michael Wireman whispered out of a clenched throat.

"Good enough," the immense man said, still with a husky voice. "I'm Ladislas. Lemme take that bundle off you." Ham hands worked surely at the buckles on Michael Wireman's shoulder harness.

"I'm . . . glad to see you," Michael Wireman said lamely, possessed by a feeling that his first meeting with a free Earthman ought to be an occasion.

"Let's get moving now and shake hands later," a new and decisive voice said from beside Potter. "Here—I'll take your pack, little man." In the darkness, Michael Wireman could just make

out a wiry shadow that was probably even a shade smaller than Potter. "My name's Newsted. Let's go."

They moved rapidly among the pine trunks, with Ladislas in front and Newsted bringing up the rear, behind Potter. The pine needles lay thick under their feet, and they made almost no noise. Occasionally Michael Wireman or Potter scuffed a boot. Neither Ladislas nor Newsted said anything when it happened, but somehow their annoyance made itself felt. Trotting behind Ladislas's broad shadow, Michael Wireman began to feel useless and clumsy.

Once, they stopped. Newsted flickered forward past Michael Wireman like a ghost, and touched Ladislas's biceps. The big man put his mouth close to Newsted's ear and apparently said something, though Michael Wireman could not hear him from ten inches away. Newsted nodded and drifted back, touching first Michael Wireman's shoulder and then Potter's, turning them around. They backtracked for two minutes, and no one's boot scuffed. Newsted stopped them again, and explained into their ears, in a breathy whisper that had no sibilants: "Man over dere. No bidnidd being dere. But 'e don't know about ud."

Then they swung out in a wide semi-circle, and presently they

reached a short and shallow valley which Michael Wireman decided must be a fold in the mountain's general slope. Now there were other men around them, who could be felt more than seen among the scrub underbrush that choked the valley. Ladislas put out a hand to stop them, scratched at something, and lifted a mass of brush out of the way. Newsted nudged them forward, and they were in a shallow cave. Ladislas replaced the brush. Someone snapped on a battery light set down on a battered steel radio transmitter, and Michael Wireman found himself blinking at a bullet-headed man dressed in a gold-braided tunic, royal blue riding breeches, and polished boots.

The man's entire scalp was stubbled, as though he had shaved it some five days before, but his face was smooth. He had coarsely handsome features, eyebrows the color of bleached straw, and icily blue eyes. A reddish moustache grew over his upper lip. He was holding an automatic pistol at the level of Michael Wireman's belt, with his finger firmly on the trigger.

"Who are you?" he asked in an annoyed voice.

"Michael Wireman. This is Isaac Potter."

The man nodded shortly. "Good. Where are you from?"

"Cheiron, in the Centaurus system."

"And what do you have for me?"

"Weapons. You *are* General Hammil?"

"Self-appointed as of the moment, yes. Lieutenant Hammil, Terrestrial Land Army Reserve, if you want my commissioned rank." Now that identifications had been disposed of, Hammil shed his grimness and assumed a certain bluff heartiness. He tossed the pistol carelessly onto the radio. "The President's own son, eh?" he said. "I'm honored." It was doubtful whether he was or not. "Well, we'll try and make you comfortable here."

"I came to fight," Michael Wireman said, a little nettled by Hammil's attitude. The man had known who was coming. His little scene had needed playing only if he wished to establish an immediate ascendancy, and Michael Wireman had been prepared to grant that without question. Hammil was the experienced man here. The only thing Michael Wireman expected was a chance to carry one of the automatic weapons he'd brought, use it, keep his mouth shut, and only then, if he proved good enough, to be given whatever responsibility he earned.

"Yes, of course," Hammil was saying. A lightning smirk curled his mouth, and accustomed lines cut themselves into his cheeks. He was not the most likable man,

Michael Wireman decided. "Did you bring my commission?"

"I have it here." Michael Wireman took the envelope out of his coveralls, and Hammil almost tore it from his hand. He ripped it open, pulled out the parchment, unfolded it quickly, and held it up to the light. He stood with his feet apart, toes pointed outward and the commission held up at arms' length. He seemed to gain stature for a moment, and the shadow he cast in the rays of the single lantern was enormous. He was, Michael Wireman realized, a domineering man by nature. But at this moment his personality was nothing short of awesome. There was the inescapable impression that the bounds of the cave could not contain him; that soil and rock would burst asunder and leave him mastering the world, towering on this mountain. Then he grinned, revealing rotted teeth.

"Full General," he chuckled. "General, by God!" His thick forefinger moved under a specific line of writing. "General Commanding, United Terrestrial Army of Liberation! Hah!" He chuckled again after his snort of satisfaction. The sound echoed animalistically in the cave. "It may be thirty years between promotions," he bayed, "but they *do* come when they come! Signed and sealed by the President of the Government in Exile, and delivered by his son! Ladislas—Newsted—look!"

He thrust the parchment out at them. Newsted looked at it expressionlessly. "General, all right," he agreed. Ladislas grunted.

Hammil pulled the commission back, folded it carefully, and eased it into the breast pocket of his tunic. "Now let's look at the guns."

"I have a letter for you, too," Michael Wireman said. He pulled another envelope, this one much bulkier, out of his pocket. "It contains a general policy outline, and your orders."

Hammil grimaced at it, took it, and stuffed it into a side pocket. "Thank you," he said shortly. "I'll read it later."

Isaac Potter had opened one of the packs of disassembled rifles. He stripped the canvas back with a quick gesture, like a magician snatching the curtain away from a miracle. Automatic rifle halves lay nested inside each other, gleaming blue-gray in the light. With them were the solidly packed, flat-sided steel bottles of compressed propellant. They had told Michael Wireman, during his training, that each of those little half-pint flasks held enough liquefied gas to move a brick building twenty feet if released at once. An instructor had fired one out of the barrel of a mortar, and it had bounced innocuously over the ground. Then he had walked up to it, nuzzled one flat end be-

tween the roots of a tree, and cracked the valve. The tree had gone over as though wires had pulled it down on hinges.

Oh, yes, they had weapons on Cheiron.

"There you are, General," Isaac Potter said. "Fifty in this pack, fifty in the other. When I signal the ship, tonight or tomorrow, you get the rest." He picked up two halves, slipped a propellant bottle into the butt, and locked them all together with one smooth motion. The assembled rifle seemed to have almost sprung to life of itself. He handed it to Hammil. "The assembled weapon weighs a pound and a half, complete with clip and propellant, exclusive of ammunition. Each propellant bottle holds five hundred charges, and you saw how quickly those may be replaced. This model has been chambered for .235 caliber rifle ammunition, since you told us this was the most easily available type. The clips have been adapted, and will hold fifty slugs of that size, with the case and powder charge removed. This is not, of course, a true automatic weapon in the sense that the discharge of one cartridge actuates the mechanism for the firing of the next. It is, rather, a continuous-fire, continuous thrust, propellant-operated, multiple load, short-range infantry carbine, but—" he smiled whimsically—"at Arcban Arms we don't often

make that distinction in ordinary conversation."

"Pretty," Hammil grunted, weighing it in his hand. He gestured toward Newsted's rifle. "You can see what junk we're armed with. But light. Very light."

"A pound and a half, General. But the problem of recoil absorption does not come up severely, since the thrust is continuous and uniform down the length of the barrel. A blowback valve in the groove just short of the muzzle cuts off the thrust before any is wasted. You will find it a serviceably accurate weapon, as well as one with considerable shock power. The muzzle velocity is quite high."

Isaac Potter, Michael Wireman thought, seems to have found his element with a vengeance. I wish I could find mine.

"All right," Hammil growled, "we'll see. It looks simple enough. It had better be. We're no gunsmiths, and there aren't any rebuilding shops."

"Let me assure you, General, these weapons have been fired after a month's immersion in salt water, and after having been dragged through mud. Until quite recently, they were the standard arm in the Centaurian System Organization infantry."

"And what kind of war did *they* ever fight?" Newsted asked with a drily corrosive voice.

Isaac Potter flushed. He had

let his enthusiasm put him in a decidedly awkward situation. When properly timed help from Centaurus might have won Earth's war with the Invaders, the C.S.O. had held back. Even now, Cheiron still housed an Invader embassy, and there was a certain amount of commerce between the two nations. It was perfectly true that Centaurus had won its independence from Earth almost two hundred years earlier, and no official ties bound the destiny of one human nation to the other. It was also true that long before the Invaders appeared, the C.S.O. had become by far the more important power, with alliances and ties that stretched well beyond Earth's sphere of interest. It was perfectly reasonable that the C.S.O., bound by complex considerations and diplomatic necessities, would have found it impractical to commit itself to a war which did not directly concern it. Particularly since it would not have been a quick or easy war.

The fact remained that the child could be said to have abandoned the parent to assassination. No Earthman could be expected to accept that calmly. Michael Wireman, for one, had never been able to rationalize it completely. But Isaac Potter couldn't be considered a legitimate target for that kind of resentment.

"The C.S.O. has done its fighting, now and then," Michael

Wireman said. "If the government of twenty years ago made a mistake, the current one is coming to realize it. These weapons wouldn't be here if it weren't. I think we ought to remember that."

There was an unexpectedly cold pause. Hammil sucked a tooth. Ladislas simply looked at Michael Wireman, but Newsted's gaze was flat and unblinking. "We ought to, eh?" he said. Michael Wireman had no idea of what he'd said, but it was devastatingly plain that he'd stepped into a pitfall as bad as Potter's.

"Gentlemen, please," Potter said, nervously vehement, "I have to stress that the Centaurian System Organization has nothing to do with this venture. The Areban Automatic Weapons Company, as a private corporation, is disposing of a stock made surplus by the armed services' order for a new model weapon. That is all that is involved here, and as a citizen of the C.S.O., I must urge you to make the distinction. We cannot risk enmeshing the government in a diplomatic crisis." He blinked his eyes at Hammil. "You must remember that if the government *does* become embarrassed, its easiest remedy would be to refuse exit permits for the spaceship. Should your only transport be shut off, and Areban Arms having signed only a Freight On Board contract with the Government in Exile, you can see that

your supply of weapons and parts would be interrupted forthwith."

Everyone's attention had shifted back to Potter. Michael Wireman relaxed gratefully. These were touchy people.

Hammil looked steadily at Potter and sucked his tooth again. But he had been forced back on the defensive. The little technical representative, for all his nervousness, was for the moment a sparrow who had made a jackdaw take thought. It came to Michael Wireman that Potter had accidentally insured his own immunity from further recriminations; it would be Potter who judged whether Hammil was conducting himself discreetly or not.

It also came to Michael Wireman that he shared no such immunity. If he, in all innocence, happened to antagonize these sensitive people again, he could expect to be made to feel it.

On Cheiron, Michael Wireman had been a solitary individual. He found the people easy to get along with, generally. If he had few steady friends, he knew it was his own nature, not theirs, that arranged it so. He had been mildly worried about it, of course, but it hadn't been as if he were a Centaurian, with no other society to turn to. Now he was on Earth. These were Earthmen, like himself. He had to ensure that he would be accepted by them.

"All right," Hammil was saying,

and the way he said it was carefully tailored so that he might either have been recognizing Potter's position or simply shifting topics. "Let's get those guns broken out, assembled, and distributed. In the morning, Potter, I'll expect you to instruct the men in using them."

"I could help with that," Michael Wireman offered. "I've been pretty well trained."

"Oh, have you?" Hammil said flatly.

"Yes, I have," Michael Wireman answered with some sharpness. "I can pass every C.S.O. armed services standard." He was proud of the way he'd taken to training. Through some combination of heredities, he had turned out to be a born rifleman. It was the first intimation, in a moderately withdrawn and unathletic life, that he was under it all equipped with some surprisingly good survival traits. The discovery was recent enough so that he was also sensitive to having it questioned.

Hammil cocked an eyebrow toward Newsted. "Take him out in the morning, Joe. Find out what he can do."

Newsted nodded, and looked at Michael Wireman with a cold smile. He said nothing.

They went to work—first Potter and Michael Wireman, then Hammil, Newsted, and Ladislav—putting the weapons together.

III

There was nothing but dark mist overhead, and it was cold. Newsted had found a spot for Michael Wireman to sleep, beside a bush on one slope of the valley. He had taken him there, and left him. Even in his coveralls, Michael Wireman could immediately feel the cold dampness begin seeping inexorably through into his flesh. Now he huddled under the bush, his knees drawn up and his arms folded across his chest, mummy-fashion, and the cold was gnawing at his marrow. There had been a blanket in his small personal pack—woven to meet C.S.O. armed forces specifications—but certainly it had never been intended for climates like this. It had turned into an icily clammy shroud, but the cold was even more unbearable without it. The towering pines which had whispered and sighed with the breeze earlier in the night were motionless and dripping.

He heard someone coming toward him, and turned his head. He saw a slight figure, and realized it was closer to dawn than he'd thought. It was either Newsted or Potter.

"Michael?" It was Potter.

"Yes?"

"I'm glad I found you," the Centaurian said, unfolding his own blanket. "If I must spend the

night trying to sleep in the open, I'll feel better near someone else to whom it's all new. These people don't go to any great lengths to make one feel at home, do they?"

"No—no, they don't."

"But then, they'd naturally be tense and overwrought. I wouldn't take it too seriously, if I were you."

"You don't have to apologize for them to me, you know," Michael Wireman said sharply. They were his people, after all—not Potter's.

"Of course. I'm sorry, Michael. I do want to thank you for saving me from my own tongue, back there in the cave."

"I didn't think they were being fair. But—" he found himself smiling wryly—"they *are* naturally tense and overwrought."

Potter made a ridiculous, bottled-up noise in the darkness.

"Well," Michael Wireman said, realizing Potter's amusement was his own fault, "tomorrow we start."

"Yes," Potter said, "we do. I hope Hammil's men aren't too sensitive to be trained."

"I do, too," Michael Wireman said. I hope so a great deal more than you do, probably, he thought. It was vitally important that Hammil accomplish something significant with these new weapons.

For twenty years, the Government in Exile had existed on Cheiron, tolerated by the C.S.O., at the same time that the Invader

embassy maintained itself in opulent splendor only twenty streets away in the same city. Those twenty streets represented the difference between a broad, tree-lined concourse, with a gleaming new building and a doorman for the chauffeured Invader limousines, and a crowded apartment in a crumbling old house on a street that was not yet, by a hair, quite a slum. Michael Wireman had grown up in that apartment, and whenever a cabinet meeting was held in the living room it had been necessary for Michael to leave the house and walk around the streets until it was over.

Thomas Harmon, the Prime Minister, had been able to find work as a cook, and risen to be chef at the Royal Cheiron Hotel. Edward Stanley, Secretary of the Treasury, had soon been promoted to Manager of Cheiron City's largest bank. John Genovese, the Secretary of Defense, had been the greatest financial success of all the ministers, as a salesman for the Cheiron City Machine Tool Works. But the President in Exile of the United Terrestrial and Solar System Government could not work in someone's kitchen, or tottal ledgers in a clerk's cage, or drag a sample case aboard one train after another. Karl Hartmann, the Attorney General, had perpetually had to spare time from his successful civil law practice to counter the Invader litigation that

would have claimed Earth's last few dwindling assets on Cheiron. If he had not, the Government in Exile would have been without resources entirely, the Liberation Fund which kept the one spaceship operating would have been exhausted, all contact with Earth would have been cut off, and Ralph Wireman, still keeping the prestige and duties of his office inviolate, would have starved to death in the street.

The C.S.O., granted its point of view, had behaved reasonably. The necessity of war with the Invaders had not been as apparent as had the necessity of avoiding war with a power not directly opposed to C.S.O. interests, in a sphere totally removed from what were then the most important areas of C.S.O. expansion. After the war, the C.S.O. had not been in position to grant many favors to Earth. Permission to establish a government in exile had been given, and the litigation between Hartmann and the Invaders had always been decided for Earth—and the newspapers published pictures of the Invader ambassador dining with the C.S.O. Prime Minister.

In twenty years, however, things had become a little different. The Invader sphere was beginning to press uncomfortably against the C.S.O.'s borders. On alien planets in distant systems, savage if usually bloodless strug-

gles for pre-eminent influence had been fought out between Invader and C.S.O. An always present small amount of commerce interruption had suddenly grown into something much resembling a structure of blockades. . . . And the Areban Automatic Weapons Company had suddenly found itself in a position to supply weapons, on credit, to an obscure and certainly penniless customer.

Clearly, the C.S.O. was beginning to be actively interested in any steps that might be taken to curb or counter the spreading strength of the Invaders. Any force that could prove itself helpful would receive more than automatic weapons. The C.S.O. was extending a cautious feeler to Earth; it was up to Hammil—in a very real way, it was up to Michael Wireman—to see to it that it would not be withdrawn.

"It's cold," Isaac Potter said through chattering teeth.

Michael Wireman had reasoned out the salient fact about Potter almost as soon as he met him, and the urge to display his own acuity overcame him. "I thought they grew them tougher than that in the C.S.O. Secret Service," he said.

"Eh? What's that?" Isaac Potter chattered.

"Nothing, my nervous friend. Nothing." Michael Wireman chuckled wisely to himself, but the cold turned it into a shudder.

IV

"Get up."

It was Newsted's voice, and the toe of Newsted's scarred boot was digging relentlessly into the small of his back. But Newsted himself was invisible. Stiff and sore, wracked by chills and wet through to the skin, Michael Wireman woke up to find himself entombed. A thick grey-white mist, as palpable as a mass of cobweb, was flowing over his face.

Newsted probed with persistent viciousness. "*Up, damn you!*"

Michael Wireman pushed himself out of his blanket, and his head cleared the top of the ground mist, which was running down the slope two feet thick, sluicing among the tree trunks and covering the underbrush. The shallow bowl of the valley was flat with a filling of the stuff, and it was spilling over the lower rim and pouring down the mountainside as though this entire range, its vegetation grown and nourished in dark, secret deeps, had suddenly thrust itself above the surface of a sea of soured milk.

"Where's Potter?" he mumbled, grinding his face into the palms of his hands.

"With Hammil. Come on!"

Michael Wireman stared down into the valley with numb fascination.

The bowl was boiling, as though a nest of trapped creatures

struggled in it, barely out of sight. He saw something break near the surface, writhing, and suddenly an arm shot out into the clear air, rigidly extended, then plunged back out of sight as it stabbed downward with the knife clutched in its hand.

Now he saw them. All along the valley rim, the fog was bulging as men crouched through it. The fog muffled every sound. It was literally still as death, and shadows came crawling over the valley rim, pitched downward, and disappeared into combat in the bowl.

Newsted hauled him to his feet. "They're after the guns. I need you. Come on, or I swear I'll *kill* you where you stand." The man seized his arm and flung him toward the cave. Half-asleep, still not quite able to realize what was happening, Michael Wireman was struck most of all by an impression of the small man's incredible strength. Then he stumbled over the uneven ground, found his footing, and began to run, with Newsted at his heels like a furious terrier.

"We'll never hold them." Newsted was cursing. "They're all over us. And I have to be stuck with *you!*" The man's voice was venomous.

"You just better not do something to get me killed. You just better not."

That didn't seem to call for any

reply. Michael Wireman ran head-down, his arms pumping. His eyes were swimming, and his ears were clogged. It was becoming obvious that this was not so much sleepiness as it was the beginning of a violent fever. Every joint and muscle in his body was aching.

In the valley, men were dying blind, grasping at shadows and strangling phantoms. Hammil, Potter, and the entire mission might be wiped out before they had even begun. Here and now, Earth's future might go down to misty oblivion, and Michael Wireman might very well have come four light years to die. But, as he ran, Michael Wireman's dominant emotion was a kind of perverse joy. Twenty years of his meaningless life were culminating in this moment.

When he reached the cave, he was grinning with anticipation. Potter was rapidly strapping one bundle of assembled weapons to Ladislav's back. Hammil snapped at Newsted: "At last! Very well, don't dawdle now—I'll expect you at the base sometime tomorrow."

Newsted answered him with a spiteful glance, but heaved up the other bundle and threw it over his back. "Strap it on, Wireman—and don't fumble!"

Michael Wireman looked from Newsted to Hammil. "Aren't we going to stay here and fight? We're

just going to run away and leave the men behind?"

Hammil was already turning away to follow Ladislav, and didn't bother to answer. Potter hung back momentarily, and looked at Michael Wireman with discomfort. "We're dividing into two parties, and will meet at a rendezvous. The guns, after all . . . the position here is hopeless . . ."

Newsted cuffed Michael Wireman's ear sharply. "*Buckle this pack!*"

Ladislav was out of sight, and Hammil a monochrome figure in the mist, crawling over the valley's upper rim. Potter scrambled up after them.

Michael Wireman fastened the pack straps. He picked up Newsted's rifle as well as his own, and they worked their way up the slope wordlessly, breasting the fog.

Once they were over the ridge and on the mountain's western face, Newsted stopped, pressed his back against a boulder, and grunted:

"Break. Two minutes." Sweat was running down his face in sheets, and his threadbare shirt was sopping. They were in clear, hot sunshine now, though Michael Wireman felt it only as a prickling sensation on his flushed skin. He dropped to the ground and squatted with his arms pressed tightly to his ribs.

"I'll carry the pack now," he said.

Newsted sneered at him. "You start too slow. If somebody came over that ridge, you'd want to sit and have lunch."

Michael Wireman was perfectly aware of how long he'd fumbled about this morning. He didn't need Newsted to remind him. "We got away from them in the fog. Nobody's going to follow us."

"You think so, eh? And you're sure nobody's down on that slope below." Newsted pushed himself erect. "Let's get cracking. We've got a long way to go. Down this mountain and up the next." The short rest had restored Newsted amazingly. Looking at him as he began scrambling down the slope, balancing the bulky pack as if it were part of his body, Michael Wireman realized that Newsted could go on like this indefinitely.

This was a species of endurance that Michael Wireman, for all his C.S.O. training instructors, had never dreamed existed. It gave him hope for Earth's future. An army of men like Newsted, adequately armed from outside, would be a force for any world's infantry to reckon with. Supplemented by trained corps of armor and artillery, supported from the air, and with their opponent's resources localized by the presence of C.S.O. ships in the Solar System—such an army could destroy the Invader garrison on Earth without the C.S.O. landing so much as a single man to help

them. From the C.S.O. point of view, it would be an ideal way to fight a war, cheap in men, and not prohibitive in materiel. A clean, modern campaign, while Earth's men enjoyed the opportunity to do their vengeful dirty work on the ground.

It would work, Michael Wireman thought. It would *really* work. He had never really doubted it, of course, but Newsted—saturnine, unlikable Newsted—had made him really believe it. . . .

They were back below the timber line, and Newsted had his arm in one steely hand.

"Now, look, Wireman," Newsted said coldly, "from here on it's going to be tough. Up in the rocks, the chances were fair of you seeing something before it hit us. Down here in the woods, you haven't got a prayer. Just the same, I need you to do the instructing if Potter doesn't make it, so do me a favor and don't get killed. Watch me. Step where I step. Walk slow or fast according to what I did when I was where you are. Don't talk, don't belch, don't scratch yourself. Never move suddenly. Keep your mouth open wide, but don't use it for anything but breathing. Turn your head from side to side and listen. Smell the breeze. Listen for sounds, but listen harder for silences. Every five paces, look up at the trees. *Remember* that—it's against human nature to look up above eye level

for any length of time, but *do* it. Never step out of my trail—not so much as six inches.

"And *watch* me. Watch my ears—they'll twitch if I hear something, and I'm not kidding. If I freeze, you freeze. Watch my hands. If I motion, you do what I signal, and *fast*, but remember to start slow. Whatever happens, don't try and crawl over to me, no matter how quiet you *think* you can be. Don't ever, no matter what, say a word to me. If we get shot at, don't shoot back until you're sure they know *exactly* where you are. Wait 'til they're just barely missing you. If you see them coming close to me, but ignoring or missing you, that's my tough nut. Don't try and join in."

Newsted's eyes glittered, and Michael Wireman had no trouble understanding that the reverse situation was far more likely to apply.

"O.K.," Newsted said. "Think you can remember all that?"

"Yes."

Newsted licked his front teeth. "Yeah." He took his rifle, turned away and began to move downward through the trees, shifting his weight with almost effeminate grace, flowing through the patterns of a ballet that let him approach but never touch either brush or tree, and that seemed to permit his feet never quite to press against the ground.

Doing his best, Michael Wire-

man followed. Compared to Newsted, it was a clumsy best. But, in spite of the persistent chills that now were shivering him in regular waves and made optimism difficult, it was a good enough performance to flatter his pride a little. No doubt it would have been laughable to an objective observer, with its awkward twists and near-scrapes. Michael Wireman was sure he resembled a performing bear following Pavlova across a stage. But it served the purpose. He began to feel that he might very well, in time, come to take a full place in the armies of free Earth. He wondered how he would react under fire.

His opportunity to find out came some two hours later. They were in a grove of towering pines whose trunks rose straight out of a flat floor thick with slippery needles. There was no brush, no cover of any kind except the trunks themselves, and those were bare of branches for yards over their heads, and well separated. Michael Wireman, following Newsted at a distance of about twenty feet, could see the man step out gingerly after a long wait. Newsted was clearly nervous, holding his battered Invader rifle at high port and swinging his body from side to side on his hips as he squinted all around him in the dimly lit grove.

It came home to Michael Wireman that he had been listening to

a silence. Far away, a woodpecker's bill went *rattatata!* against a pine trunk, and Michael Wireman did not mistake it for gunfire. But there were no sounds of any kind from anywhere nearer.

Newsted's open hand, palm back, made an inconspicuous stop signal at his side. Then he moved slowly forward, while Michael Wireman froze in position.

The shot, when it came, was nothing like the sound a rifle makes on an open range. It was a dull, sodden boom of primitive violence. It flung Newsted's left arm back into the air, threw him to the ground, and shivered the pine it struck in its continued flight. Newsted lay twitching on the ground for a moment, shook his head violently, and reached the nearest tree in one convulsed leap that took Michael Wireman completely by surprise. He rested the barrel of his rifle in the crook of his left elbow, used his right hand to jam his folded left arm securely between his chest and the tree trunk, and, using that for a rest, squatted on his heels and brought his rifle's butt up to his right shoulder again. It was a piece of bulldog stubbornness that thoroughly underscored Michael Wireman's earlier judgment of him as a fighting man. But, as a fighting man, Newsted must have realized even sooner than Michael Wireman that he was helpless if forced to shift

position to the slightest degree.

It was quiet again. Michael Wireman had not moved. He stayed exactly where he was, half-crouched, his C.S.O. rifle ready but targetless. He could see nothing but the brush immediately in front of him, the open grove a little below, and Newsted huddled against his tree.

He lined up the shot's path from the tree where it had lodged, through the point Newsted's upper arm had occupied, and on back among the ranks of pine. He saw no place likelier than another to be hiding the source of the shot. But he *had* established a line, leading diagonally to his right. He was fairly sure no one along it could see him or had seen him. It seemed likely that if he made a circling cast to his right, he might come up behind anyone within reasonable shooting distance.

If anything new had happened in the grove, he probably would have stayed where he was. But there was no further shooting, and no movement. It seemed likely that there were not enough men down there to take a chance on even one wounded man's opposition.

That supposition made sense to Michael Wireman. A stronger force would have scouted both of them out, surrounded them, and fired from several places at once. A stronger force would now be

advancing openly, drawing Newsted's fire and attention from one side to the other in a sort of lethal tennis game. None of these things had happened or, from all indications, was about to.

Newsted's orders, after all, had only been a twisted attempt to warn him he would be abandoned if necessary, as being somewhat less precious than the guns themselves.

Ratata! from the distant woodpecker again. A pool of blood was collecting around Newsted's left foot and sending inquisitive rivulets across the glossy brown needles. Eight full long minutes had passed since the shot. An invitingly open gap between two bushes to his right beckoned to Michael Wireman. He opened his mouth wide, eased in a silent breath, and took the first necessary step.

That done, it was easier. He moved with the exaggerated caution born of self-aware amateurishness, bent almost double in his care to place his feet. He hoped he was following a consistent line of direction. He stopped often to look to his left and see whether he was in sight of anyone. He knew that if he were wrong—if there were many men waiting among the trees—he was dead. He went on, nervousness and anticipation growing in him until he would have panted if Newsted's orders had let him.

The slow pace, the care, the tension, the anticipation of combat, all worked against each other in him. The action, when it came, would be an eruption of gunfire and violent motion. His mind raced ahead of his sluggish body, trying to drag him after it. He seethed with the mounting frustration of having to creep, creep slowly forward.

He came upon them suddenly. Two men crouched behind trees, staring at the immobile edge of Newsted's pack as it peeped from behind his tree. At the same moment, one of them heard him. Michael Wireman distinctly saw the hair prickle on the nape of his neck. The man gave a strangled cry and rolled aside without ever having looked at what he'd heard.

If he had not swung up his rifle, he might have lived. Michael Wireman's fist closed on the C.S.O. rifle's stock, and his trigger finger jerked convulsively. He sprayed his fire across both trees, both men, and the ground between them, watching the pine needles explode into the air and the slugs punching the fabric of the men's clothes into their bodies.

After a moment, Newsted found him looking down at them. They were ragged, bearded men with grimy skin. He looked at Michael Wireman and snorted a quiet laugh through his nostrils. "What did you think we were run-

ning from?" he asked. "'Vaders?"

"Yes," Michael Wireman answered, "I thought so."

V

In the dusk, Michael Wireman crouched beside the narrow brook in the valley between the two mountains. His back muscles would not have let him straighten if he wanted to. The pack lay on the ground beside him, where he had let it tumble, and his blanket was wrapped around him in a futile attempt to stop his shivering. There was a faint but maddeningly persistent ringing in his head. Each time he swallowed, his ears popped viciously. All his joints were watery, and the hot, clinging perspiration, for all his chills, would not stop forming on his face.

Newsted, sitting on the bank and re-tying his sling with his right hand and his teeth, glanced at him sidelong. "Look," he said, "the 'Vaders never come up into these mountains. They'd be fools if they did. Nobody in military history has showed a profit fighting irregular troops over broken ground."

"That's very interesting," Michael Wireman muttered thickly.

Newsted seemed plagued by a desire to talk. His manner had not changed dramatically—the sneer was still in his voice, to-

gether with tolerant amusement at Michael Wireman's naivete—but he *was* condescending to explain something, instead of giving orders. His awkwardness at this development was most plainly manifested by the way he groped toward his objective. Michael Wireman noticed and enjoyed it to his limited capacity at the moment, but there was still dirt under his fingernails that had gotten there when he scooped out a grave, buried the two men, and concealed the fresh earth at Newsted's direction.

"The 'Vaders don't have any particular reason for coming up here," Newsted pushed on. "We've never represented any kind of a threat to them. As a matter of fact, they'd probably rather see us up here out of the way, than down in the towns causing trouble individually. Nobody in authority likes grumblers in his district. Malcontents stir things up; they do damage just by being mule-headed; they keep the jails full. And through it all, they still have to be fed and taken care of. So the 'Vaders leave us alone . . . and . . . we pretty much leave them alone."

"Leaving you plenty of time to fight among yourselves."

"Most of the time, there's the problem of eating," Newsted replied with quick asperity.

"And how do you solve that?"

Newsted clicked his tongue.

"Well, you might say the farmers on the slopes around here pay two sets of taxes."

With sundown, the air had grown bitter cold again. Michael Wireman's blanket was little help. He was swaying, rocking back and forth on his heels and toes.

"Can we make a small fire?" he asked.

"You can if you want to die."

A cold chuckle jumped involuntarily out of Michael Wireman's throat.

"We can hole up somewhere around here, though," Newsted said, "and grab some sleep. We only have to get to the top of the next mountain tomorrow. That's definitely Hammil's territory. We'll both have a chance to get warm then."

"Hammil," Michael Wireman said with a twitch of his face.

Newsted made a noise that was half a laugh and half disgust. "Hammil's a clown. If he didn't have me and Ladislas, he couldn't find his tail with both hands. I told him we bumped into that stranger last night. You know what he said? He said nobody'd dare attack now that he had the guns. Just like that. What in God's world did he think would *make* them attack? What made him think nobody'd realize he couldn't have brought ammunition with him? Everybody knows Hammil. He'll set a rendezvous twenty miles away from his base

because he doesn't want to tip its location. But he leaves the ammunition home because it's hard to come by and he doesn't want to risk losing it back to the 'Vaders. Then he goes and loses the men who were going to carry the guns, so the two of us have to wrestle with one bundle while Ladislas takes the other. I get shot. And what's it all for? There's still nine hundred guns to be delivered from that ship of yours, and they'll have to be dropped on the base. But Hammil won't feel so bad about that because he'll have a hundred guns ready on the ground in case the 'Vaders do decide it's worth it to bomb us. A hundred rifles against medium bombers!" Newsted spat on the ground.

"You know what those guns are doing to Hammil?" he said. "They're the biggest thing that ever happened to him, so naturally he's running around like a headless chicken. This is his big chance. Now he gets to strut and be king of the hill, and wave that Goddamned commission around. Every dream he's ever had in front of a mirror is coming true. Do you expect him to act like a sensible man?" Newsted had worked himself up into a pitch of surly temper quite unlike his usual sharp irritability.

Curious, Michael Wireman toed the bundle of guns and said: "If that's how you feel, what's

keeping you from taking these guns somewhere else and starting your own organization?"

"I could," Newsted said bitterly. "Knock over a 'Vader command post, or something, and get plenty of ammunition. With fifty guns and some good men to go with them, I could carve out quite a piece of these mountains for myself. But then what? When the guns wear out, so do I." Newsted was no longer bothering to conceal his facial expressions. Even in the dim light, it was possible to see the pent-up envy, the malice.

"Hammil did only two smart things in his life. The second one was getting hold of that radio and contacting you people. The first one was something he did by accident thirty years ago. He was a flat, hopeless failure at everything he tried. The only thing for him to do was find a place at the public trough. So he got himself that miserable Reserve Lieutenant's commission. And look what it's brought him.

"What would have happened if it had been me that got on the radio? If I called up and said: 'Hey, this is Joe Newsted. I'd like to go out and liberate Earth. Drop me some guns.' You know what would have happened? A C.S.O. secret agent would have prowled through the old Earth Government records the 'Vaders have piled up somewhere, and he would have

found my old police dossier, that's what. Just like he found Hammil's old army dossier. And I could have whistled for my guns. But Hammil—Hammil, now, that never budged when the 'Vaders came, that surrendered his platoon without firing a shot—he gets his thousand guns, and more besides." Newsted's lower lip was actually pouting. "It could have been almost anybody. That's the part that burns me the worst. Anybody at all, as long as he had the pipeline to the guns. Once he got the guns, it made no difference if he had a hundred men, a thousand, ten, or none at all. He'll have 'em now. No matter how much they hate Hammil, they know which side their bread is buttered on. And nobody's going to do anything about him. He's your official boy—he's got a monopoly, now, and a loyal army to protect it." Newsted's face twisted. "He's a baboon—a hairy, posturing baboon. He's got only one thing, when you come right down to it—he's stupid enough to believe in his own poses. He really thinks he's a man of destiny—a great leader of men. He believes it, and, by God, sometimes it gets so thick you can't help believing in it yourself.

"That's the difference between us. If I struck attitudes like his, I couldn't do it with a straight face. He can. I'm smarter than he is—hell, almost anybody's

smarter than he is!—and that's why I have to play second fiddle to a baboon."

Staggering under his load, listening to Newsted curse with pain behind him, Michael Wireman somehow reached Hammil's base on the next mountain. Far below him, on the coastal plain, a city lay in white, geometrical exactitude. Here on the mountain-side, clumsily built cabins and lean-to's shambled under the trees, wrapped in the stench of a camp that had been too long in one place. Dirty, ragged men came to meet them. Flies attacked him immediately.

Michael Wireman pitched forward, unconscious.

VI

"He's better, I see." Hammil's voice was crisp. He stood in a decisive pose, hands on his hips, a riding crop tucked into the top of one boot, in one of his best newspaper poses. Michael Wireman leaned his back into the corner of his bunk, drew up his knees, and went on drinking soup out of the canteen top held in his cupped hands.

Isaac Potter looked up from the chair where he had been carefully pulling the slugs out of captured cartridges. "Yes, he is."

"Two days," Hammil commented. "He recovered fast."

It had taken practically all the antibiotics in Potter's and Michael Wireman's medical kits, but he had recovered, in a manner of speaking. The fever was gone. It had been replaced by a warm, weak stupor, a reactive rash which he often found himself scratching absently, and a feeling of utter detachment. He studied Hammil with mild curiosity.

"Well, he's a young man," Potter said in his habitually high-pitched voice. He seemed to find it necessary to lock eyes with Hammil. "It wouldn't be so easy for him to die of natural causes."

That made Hammil blink. He plucked the riding crop out of his boot and slapped fitfully at his calf with it.

"I'm not certain of your meaning." He shifted his eyes for a quick glance at Michael Wireman, then twitched them back. He had found nothing but that same look of lukewarm interest peeping out at him from over the rim of the canteen top. Hammil made a frown at Potter. "Are you saying I would try to have the boy murdered?" Even counting the frown, he seemed singularly unindignant.

"No," Potter said, shaking his head seriously. "I really would not think so. But sometimes people may wish that luck will accomplish something for them that they themselves would not quite undertake."

Hammil blinked again. He rapped his boot viciously with the riding crop. He half-turned. "I came in to see about the boy's health. I see he's well. I'm satisfied." He completed his turn and marched out of the cabin.

Michael Wireman finished his soup.

After a while, he lay down again, his hands cupped behind his head. "Potter?"

"Yes, Michael?"

"Did the ship drop the rest of the guns?"

"Last night."

"You thought it was all right to give them to Hammil, in spite of everything?"

There was a short pause from Potter. "Yes," he said after that moment. "I did."

"Do you like Hammil?"

"No."

"I'm glad I don't have your assignment."

"Why, Michael?"

"Well, I'm here. I'm committed. My decisions were all made back on Centaurus—made by me or for me, I'm not sure which—and even if I wanted to change them now, I can't. But you're in the middle of something quite different from the expected, and have to make big decisions. When they gave you your orders on Centaurus, they didn't expect Hammil's wonderful army to be what it is. It looked pretty cut-and-dried. Supply the man with arms,

let him get something going, and then bring in support. But now it turns out that if ever a single Invader is going to die by those guns, you're going to have to do a massive job of persuasion. Hammil won't move. He'll terrorize the other bands in these mountains, and become king of the brigands, but he'd die of heart failure if he had to move against the Invaders."

There was another pause from Potter. Then he said gently: "You're wrong, Michael. I have no decisions to make. Perhaps you do, but I don't. I only have to let things roll downhill. Hammil will move against the Invaders."

"Hammil couldn't find his tail with either hand if he didn't have Newsted," Michael Wireman answered with his first show of emotion.

"But he has Newsted," Potter said. "And Ladislas. They'll push him into it."

"Why should they?"

"Because . . ." Potter sighed . . . "because they want to rule the world. They think that once Hammil has driven out the Invaders, he will become the military dictator of Earth. Hammil thinks so, too. But Newsted and Ladislas, together or separately, expect to rule Hammil. And that is why Hammil, who is a blustering coward, will march against the Invaders. That is why Newsted, who is a thief, will encour-

age him. That is why Ladislav, who was a professor of political science in the old days and is much more fluent in languages other than English, is content to carry seventy-five pound bundles up mountainsides and polish Hammil's boots. . . . And that is why, too, you, no matter how good a fighting man you become, will never be accepted by these men."

Michael Wireman had nothing to say. Isaac Potter went back to work with his pliers. Flies buzzed about inside the cabin. It was a full hour before Michael Wireman rolled over on his side, picked the canteen top up from the floor beside his bunk, and held it out. "Would you get me some more soup, please?" he said.

Isaac Potter nodded, took the cup, and went outside to the fire. He came back and handed it to him.

"You know," Michael Wireman said in a distant voice, "when I was a boy, I spent most of my time with my mother. She told me stories about what Earth was like—about the kind of people Earthmen were. And, looking back to what I could remember, it was all true. People were friendly, polite—good. Good people, living gracious lives. Everyone was always very nice to me." He sipped at the warm cup.

"Of course, she was the President's wife, and I was the Presi-

dent's son, and we lived in a big house in Geneva with lots of servants. As I grew older, I thought about that. But I didn't think very hard. Why should I? It was too good a deal to try to scratch holes in it. But I'm twenty-five, now, and I'm here." He took another swallow. "You're all right, Potter. You're doing your job. And when you come right down to it, Hammil and the rest can't be blamed. They're twenty years and interstellar distances away from the Government In Exile. They've had a tough time of it. They're the kind of men they are, so they'd naturally ignore the old Government. And presumably it makes no difference to the C.S.O. what kind of Earthmen run this world, as long as the Invaders get pushed out.

"I guess," he said, finishing the soup and putting the cup down, "I'm the only one here who ought to care one way or the other. But right now, I don't think I care very much." He rolled over and, after a little while, fell into a kind of sleep.

In the three days that followed, Michael Wireman got back on his feet again, and even managed to help Potter with instructing the men. It was a fairly simple job. Whatever they had been before, the older men had learned weapons very well in the past years. The younger ones had

grown up with rifles. They had to be taught not to hold the trigger down, and to allow for the weapon's tendency to buck up and to the left and that was about all. They learned quickly. Hammil watched their progress impatiently, but even he couldn't complain. Michael Wireman talked to almost no one, except in line of duty, and when he did he talked in monosyllables. He had decided it was best that way, and nothing happened to prove him wrong.

When Hammil called what he was pleased to designate as a staff meeting, Michael Wireman trailed along with Potter. He said nothing, and listened only in snatches. If Hammil wanted to try an exploratory raid on the nearest Invader command post, Michael Wireman had no doubt it would succeed, if only through sheer surprise. He decided he might as well go along. Hammil, approached after the meeting, was perfectly willing. Perhaps he was thinking that bullets might be natural causes under the circumstances.

As it finally developed, the raiding party consisted of ten men, plus Hammil, Ladislav, Potter, and Michael Wireman. Ladislav would have been enough of a leader, but Hammil, for reasons of his own, decided to assume personal command.

He was a flushed, excited figure

as they worked their way down the mountain slope toward the highway that wound around its foot. In the clear morning sunlight, his head was up and his nostrils were flared. From time to time he smiled to himself with a terrible satisfaction, and he scrambled downward at an impatient pace. Clearly, he had forgotten any possibilities of interception by members of rival bands. Or perhaps he felt that on this day of obvious destiny, no ill chance could keep him from his objective.

"Look at him," Michael Wireman said to Potter as they followed him. "I never thought I'd see him quite so eager."

Ladislav, who was striding on Potter's other side, grunted. "He wants that command post bad. He's wanted it for a long time."

Potter nodded. "I've heard something about that."

"So this is a private raid of some kind," Michael Wireman said.

Potter shrugged. "It makes no difference to me, as long as I have a chance to see how these people handle themselves against Invaders."

"I don't care, either," Michael Wireman said.

Farther down the mountain's slope, it grew hot and humid. The party walked a little more slowly, now. Even Hammil seemed conscious of the fact that his tunic was dark with perspira-

tion. The trees grew thickly, their bases choked with underbrush and fallen leaves. Michael Wireman heard a faint *ratatat* and smiled grimly.

Abruptly Ladislav moved forward, touched Hammil's shoulder, and reminded him of something. Hammil nodded, and swung the party off to the left, taking them no further down the mountain. Ladislav dropped back and fell in beside Michael Wireman. "Now we're going parallel to the highway, until we get above the crossroads where the command post is." He did not point out that Hammil would have led them straight down and probably along the open road if he had not intervened.

"How's your father, boy?" he asked abruptly.

"He was well when I left him," Michael Wireman answered. "Why—did you know him?"

"I ran against him in the last elections." It had apparently been important to Ladislav to tell him that. Now that he'd done so, he relapsed into silence.

"What Professor Danko did not tell you," Potter said, "was that he lost by only fifteen electoral votes."

Michael Wireman looked at the striding giant. He was burned brown and tough. His jaw had no sag of flesh beneath it. His eyes, which Michael Wireman realized he should have paid more attention to, were clear, vivid green.

He had to be at least fifty-five. He looked forty.

One of Michael Wireman's strongest memories was of his father, dressed in his cheap trousers, bent forward, peering, picking at the apartment wall with a table knife and a saucerful of crack patching compound. The saucer had dripped on the rug, and the compound had left matted circles.

"Lost, eh?" Michael Wireman said, looking at Ladislav Danko. "I wish you'd won."

The command post was a simple concrete blockhouse on the T-shaped intersection of two roads. It was set in a cleared area at the head of the T, and was obviously there to keep back mountaineer ambitions, nothing more. The blockhouse was painted white, with a flowering border around it bordered with precise rows of white painted stones. A walk from the front door to the highway was divided to pass around a flowering circle from whose center rose a white metal flagpole. An Invader flag licked restlessly back and forth in the warm breeze. There was a stovepipe coming out of the roof, in a corner where a kitchen would be, and the cleared area had been carefully turned into a lawn with clipped edges. There was an unarmored sedan parked in a drive beside the blockhouse, and a

wooden signboard read: "State Police." It was altogether a typical military installation in times of absolute peace, and Michael Wireman could picture a Master Sergeant, or some equivalent, worrying just as much about the condition of the lawn as he did about the readiness of his guns.

Hammil and Ladislas together spread the party out into a loose semi-circle whose wings fell just short of the main highway, and which left a substantial amount of open ground around the blockhouse.

The prospect of crossing that open ground seemed to have no effect on Hammil. Perhaps he did not include cowardice among his failings, after all, or perhaps he really wanted that blockhouse very badly. He stood upright for a moment, only a few yards inside the brush, and looked about him at his men. He nodded to Ladislas, who put two fingers in his mouth and whistled piercingly. Along with the rest of the party, Michael Wireman trotted forward. Potter, beside him, had a tense little half-smile on his face. Michael Wireman was wooden-faced.

They burst out of the brush and threw themselves flat at its edge, firing precisely. Conical bits of the blockhouse wall disappeared, as though a malicious invisible boy had run along them striking with a ball-peen hammer at about

the level of the window slits.

It was a cold shock to Michael Wireman to see how quickly the light automatic cannon popped their muzzles through those slits and began firing back.

The Invader fire swept into the men on the side opposite Michael Wireman, and ploughed up the ground among them. They were dispersed, and hard to hit, but even so some of them did not live through it. There was a *crump!* and a rusty flower of smoke broke out near them—one of Hammil's demolitions men was gone, his hand-made bomb with him.

For one moment, it was obvious that they could never win. Then fire from the C.S.O. weapons poured into the firing slits, and no gunner could have kept aim or head against that volume. The Invader guns began shooting sporadically and wildly. Another one of Hammil's demolitions men jumped to his feet, ran erratically forward, swung his arm, and flung the stuffed canvas bag of stolen Invader rifle powder against the blockhouse wall. Simultaneously, the fuse reached the primer, and a two-foot gap appeared in the wall.

Hammil screamed out: "Charge!" as though he commanded cavalry, and then they were all running forward, covered by the blank in the command post's defenses. They charged through the gap, losing two more men to

small-arms fire, but they took the blockhouse with no further trouble. Michael Wireman sat down with his back to a wall, and re-loaded his rifle.

What must have been a neat interior was now as dusty as though the blockhouse had been abandoned for years. Even the dead Invader trooper lying a few feet away—it was impossible to believe he had ever been capable of life. There was too much dust on him.

Shell cases littered the floor. One of them, touching Michael Wireman's leg, was hot. The walls were ripped and cracked, and it was easy to think of the invisible boy again, smashing out wildly at the embodiments of authority.

Hammil came back into the room through an inner door. He was grinning mercilessly, and prodding an Invader officer ahead of him with the butt of his riding crop. Michael Wireman looked at them curiously.

The Invader was tall and lanky, with sunken cheeks, prominent cheekbones and a scimitar nose. He had skin the color of burnt sienna, crisp, curly brown hair, brown eyes, and a long jaw. Someone had once remarked, in a foolish attempt at the only Invader joke on record, that Earth had been conquered by a race of trackmen. Someone else had replied that they seemed to win their races, and that had closed

the subject. The Invader officer, with his severe, functional uniform and his unbending height, looked typical of his people. He walked fast enough to escape most of the force of Hammil's prodding, without once giving the impression that he was evading it, and, once in the room, he stopped, turned, and stood erect, his hands at his sides. He had to bend his neck down a little to look directly at Hammil, and that did nothing to detract from the impression he made.

His eyes flicked once, not over Michael Wireman but over the weapon in his hands, and his lips compressed. Then he looked back quickly, frowned at Michael Wireman's healthy teeth, and seemed to store that datum away in place beside the fact of the C.S.O. gun. Except for that, he kept his eyes on Hammil.

Hammil, hands on hips, grinned up at him. "Do you know me?" he barked in a voice shrill with excitement.

"You're Franz Hammil," the Invader said calmly. "I remember you."

Hammil's grin widened. "And where do you remember me from?"

"I scored your classification test, eight years ago."

"And you thought you'd never see me again."

"It was a matter of indifference to me."

With a vicious twist of his arm, Hammil cut the Invader across the face with his riding crop. The Invader seemed to have been expecting it. His head did not jerk back, and he ignored the open gash on his cheek.

Probably because they'd heard the sound, Potter and Ladislás came quietly into the room and stopped beside Michael Wireman, who suddenly found himself on his feet.

"What's going on?" Potter whispered.

"Something about a classification test. I don't know." Now Michael Wireman found himself trembling with rage, and he looked at himself in surprise.

"Oh." It was Ladislás. "He's found his man."

Both Hammil and the Invader ignored everything but each other. Hammil probably had his ears full of the sound of his surging pulse. The Invader might have noticed them—it was hard to believe there was anything he might not notice—but he gave no sign of it.

"You scored my classification test," Hammil was shrilling. "You scored it. A boy fresh out of your military college then, and not much more than that now. You scored classification tests on former Terrestrial military officers with twice—ten times—your experience!"

"I did. I remember I found you totally unfit for command."

No one was surprised when Hammil struck the Invader again. The new gash overlaid the old. Thick, venous blood seeped down the Invader's jaw and dripped from his chin. It dirtied his blouse, and he paid absolutely no attention to it.

"You did. You did. And do you still hold that opinion?"

"Classification test scores are not open to opinion. But I will say you've proved them right."

Hammil struck him again, and simultaneously Ladislás felt it necessary to take the rifle out of Michael Wireman's hand.

"You didn't think I knew where you were, did you? You thought you were safe!"

"I knew where you were. I saw no reason why the reverse might not be true."

Perhaps Hammil began to realize that the Invader was coldly egging him on. Instead of hitting him, he glared up. "Are you laughing at me?"

"A little."

A shudder swept over Hammil's body, and his entire skull turned beet red. He screwed up his face and kicked the Invader viciously in the shins. "*Hang him from that flagpole!*" His voice whistled through his constricted throat and emerged as a venomous piping.

Ladislás moved forward, pushing Michael Wireman back, and the dangerous moment was over.

He took the Invader officer by the arm and led him outside. The Invader walked slowly and steadily along the gravelled path until they came to the flowering circle. One of Hammil's men pulled the flag down on its halliards, which were made of tough metal-stranded rope.

The Invader officer's eyes were perhaps a little softer than they had been. But he never spoke.

They had dug the six graves and buried their casualties. Hammil had insisted on leaving the dead Invader personnel where they lay—one way or another, not a man in the command post had survived—so now they had nothing left to do. The dismounted Invader cannon, together with as much ammunition as could be found, had been loaded on the backs of men detailed to carry them.

Nevertheless, the party did not pull back immediately. Hammil was standing by himself, looking down at the ground and slapping his boot absently. Some driving purpose had gone out of him. The raid on the blockhouse was over, but Hammil seemed to be having difficulty in bringing himself to realize it.

"What about those classification tests?" Michael Wireman asked Ladislav. "What are they?" There was a nauseated taste in his throat, and he pushed words

past it in an attempt to force it back down.

Potter answered the question. "It's part of the Invader administrative system to test everyone for aptitude. The population is then classified, and its individual members are assigned to the duties they can best perform. A man on the job he does best can't help but be pleased with himself. A pleased population is not a rebellious one. Hammil requested a test for military aptitude—it was his option, under Invader law, to try for what he thought he could do. You know what the result was. It's all in the file we have on him."

"I see. He tried to become an officer in the Invader army."

"And was classified out," Ladislav said. "He ran away into the mountains. I don't think they tried to stop him. They're a funny people. If you don't fit into their system, they don't kill you. They just let you run away to someplace harmless."

"That's very interesting," Michael Wireman said.

There was a golden gnat buzzing in the sky. Michael Wireman looked up. Plane, he thought, and wondered if the Invaders had some means of closely observing the ground from that altitude.

One moment the plane was nothing but a sparkling dot against a cloud, and the next it was among them. Golden, javelin-shaped, the air around it boiling

with the leakage from the modified spacedrive that powered it, shrieking, wrapped in its plume of foaming violet air, the Invader plane tore at them in its hideous beauty.

They ran in all directions, some of them into the woods, and safety, and some of them into the blockhouse, which exploded under a shower of missiles. Michael Wireman, crouching in the brush, saw a line of them race across the lawn, stand for an instant like tubular fence posts, and explode their warheads in sequence. Or perhaps it was just that his mind was filtering visual impressions with such rapidity that he was actually able to separate impact from detonation. A power-driven antipersonnel missile ought to be fused to explode its warhead instantly on contact, he knew—any later, the warhead was already too deep in the ground to do maximum damage. Possibly these were armor-piercing missiles, intended for some other target entirely. The spaceship, for instance. In that case, the plane must have been on a special patrol mission, ordered because of radar reports.

And the plane had done well, for though it was gone, now, missiles expended, still Isaac Potter crouched on the grass, his hands clasped to his stomach.

Michael Wireman ran toward him, stumbling over the smoky craters in the lawn. He ran fast,

but Hammil reached the pudgy little man first, from farther away.

Potter was on his knees. His mouth was a round O, and he had gone white. Hammil pushed him down on his back and pulled his hands away from his body. He looked, turned him over roughly, looked at his back, and turned him back again. Potter stared up at him dumbly.

Michael Wireman shouldered Hammil aside. "Leave him alone! *Leave him alone!*"

Hammil paid no attention. He was fumbling at the breast pocket of his own tunic. He kneaded his fingers frantically, trying to work the button, until finally he tore it off and plunged his hand into the pocket. The first piece of paper he pulled out was his commission. He looked at it impatiently and threw it aside. The next was a folded sheaf of document paper. He opened it on his knee and began searching his pockets for something to write with.

Isaac Potter had put his hands back. He began trying to speak, tensing his neck with the effort. His mouth opened and closed several times. He saw Michael Wireman and tried harder.

"Not secret service," he finally managed. "Department of Exterior Affairs. Diplomatic corps."

Hammil had found a pencil. He turned over to the last page in the bundle of document paper, brushed the pencil tip across the

end of his tongue, and knelt beside Potter. He braced the document against his thigh and pushed the pencil into Potter's right hand. "Sign it," he said in a panicky voice. "Sign it. You were going to, if the raid was a success."

Potter grimaced with a twitch of his whole body. "Success. Yes. But look out for airplanes in future, eh?" He executed the signature with great care. Then he handed the pencil to Michael Wireman. Something entirely unlike physical pain crossed his features. "You sign it, too. Witness."

Without much caring, Michael Wireman signed the document. Potter handed it back to Hammil. "Go find Ladislav. You need two. Good, reputable witnesses. President's son, President's opposition. Go ahead, man. It's done."

Hammil nodded, his eyes blazing. He stood up, stopped, bent over, and picked up his commission. Putting it back in his pocket, he strode toward the edge of the clearing.

Potter gathered himself. "I don't know what he wants that commission for. But, of course, he couldn't just leave it. That . . . I signed . . . was a treaty. Between the Centaurian System Organization and Franz Hammil, President pro tem of Earth. Mutual assistance. He protects us from all attempts to overthrow the rightful government of Centaurus, and we do a like service for him.

We've—bypassed your people entirely, Michael. We can handle Hammil.

"See, we *couldn't* let Earth go back to complete independence. Too big a risk. We've *got* to have men and bases out here permanently, now."

"Potter . . ."

"Policy, Michael. Have to plan for a generation ahead. Have to be sure we'll always be free."

And having said that, Isaac Potter died.

Michael Wireman became conscious of Ladislav's hand on his shoulder. "We'll take him with us," the giant rumbled. "Bury him up on the mountain. The 'Vaders'll be coming up with an armored ground patrol any minute."

Michael Wireman looked around. The rest of the party was already gone. Hammil had pulled the men back, leaving Potter to lie where he'd died.

Michael Wireman took one breath, and another. "You don't seem to realize," he said. "You don't seem to realize there's nothing left for me. Not a single thing. I've lost them all." He moved out from under Ladislav's grasp and slipped his rifle off his shoulder. It fell to the ground, its muzzle lying across Potter's ankles.

He began walking away, across the lawn, and then he was walking down the highway, toward the oncoming Invaders, his hands raised in the air.

SCIENCE

With the death rate declining and sex here to stay, mankind is increasing his numbers at what may be an insane rate. Dr. Asimov here examines some of the perils and problems we may soon face . . .

FECUNDITY LIMITED!

by ISAAC ASIMOV

BACK IN THE EARLY 1930's, when the world was young and I had become a little Bug-Eyed Monster from bugging my eyes at my new discovery, *s. f. magazines*, Arthur J. Burks wrote a story called "Earth, the Marauder." In that yarn, the population of Earth, having discovered immortality, had reached fantastic numbers. All other forms of life had been wiped out to make room for mankind. The oceans had been emptied. Mile-high skyscrapers covered the land. The Earth's crust was dug into for equal distances. And even so, population pressure forced Earth to seek new worlds for its mighty load of human beings.

Fantastic, eh?

Well, at this moment, we busy

little creatures—with business booming, the death rate declining and sex here to stay—seem to be making every effort to reach that glorious goal, and the question is: how far *can* we increase our numbers on Earth and how long will it take us to reach our limit?

Let's give mankind every possible break in this deal so that no one can accuse me of being anything but supremely optimistic. Suppose energy to be no problem; hydrogen fusion and solar energy give us all we need. Suppose we have worked out artificial photosynthesis and can form all the food we want as fast as we want out of water and air, as plants now do. Suppose we solve all the organizational prob-

lems of dealing with a tremendously crowded planet. Suppose we can wipe out all competing life to make the maximum room for ourselves.

If we suppose all that, what can limit man's population increase? Well, one thing cannot be avoided if we are restricted to our own planet. Sooner or later, we run out of at least one of the chemical constituents of the human body—we get to the point where there just isn't enough left to make another human being.

Now, the major elementary components of the human body (and of living tissue generally) are carbon, hydrogen, oxygen, and nitrogen. Of these, the one in most critical supply is carbon, which makes up 18 percent of the human body. And the amount of the Earth's carbon available to living matter (that is, carbon in a form that can be included in living tissue through the ordinary chemical processes of life) includes only a small fraction of all the carbon on Earth.

Ninety percent of the available carbon occurs in the ocean as bicarbonate ion. A small amount is in the air in the form of carbon dioxide, and the rest is contained in living creatures or in the as-yet-undecayed debris of once-living creatures. You can add to this the ordinarily-unavailable carbon content of Earth's oil and coal, since these are being rapidly

burned and converted to carbon dioxide, which enters the air or dissolves in the sea and becomes available to life.

The total amount of carbon present on Earth in these forms comes to about 10 grams per square centimeter of Earth's surface. (I'm getting my figures on Earth's carbon content from a 1957 article by Harrison Brown of California Institute of Technology. It is entitled "The Carbon Cycle in Nature" and appears in volume 14 of "Progress in the Chemistry of Organic Natural Products," an annual collection of reviews published in Vienna, Austria.)

Since the total area of the Earth is 5.101×10^{18} square centimeters, the total available carbon on Earth is 51,000,000,000,000,000,000 (fifty-one billion billion) grams. Let's reserve 90 percent of that carbon for the manufacture of food. (After all, man must eat, and he must eat carbon-containing food, whether it is grown in the soil or in chemical tanks; and an overall organic food supply ten times the mass of humanity is necessary to allow a safe margin, as well as to allow for the production of non-edible organic by-products such as textiles, plastics and so on.) That still leaves us 5,100,000,000,000,000,000 grams of carbon.

Let us suppose the average human being on Earth (including

children) weighs 100 pounds (about 45 kilograms). Each one would contain about 8,100 grams of carbon. The number of human beings required, then, to exhaust the available carbon on Earth is 630,000,000,000 (six hundred and thirty thousand billion.)

The present population of the Earth is pushing three billion, so that our population is less than 1/200,000th of what the carbon supply might allow us to be. However, Earth is currently doubling its population every 60 to 80 years. (Let us say 80 years to be conservative.) If this rate continues, then in about 1500 years—that is, by the year 3500 A.D. (very near future for an s f reader)—we would have reached maximum, and the living matter on Earth would consist only of human beings and their necessary supply of food and organic by-products.

If Earth's population were to spread itself evenly over Earth's land area (1.489×10^{18} square centimeters), each would, in 3500 A.D. under the described conditions, have about 2400 square centimeters of room to stand in, an area that amounts to about $2\frac{1}{2}$ square feet. This would be quite a squash of people for a planet.

Are we through? Is this really the limit? Well, as I said at the beginning of this article, there is far more carbon on Earth than

exists in air, sea and living creatures. There is the carbon tied up in limestone and other materials making up the crust of the Earth.

This carbon is not generally available to living creatures until slow geologic processes move it into air or sea. However, let us be invincibly optimistic. Let us assume that mankind can burrow as far as necessary into the crust and can make a large portion (or all of it) available by appropriate chemical treatment. How much more carbon is then available?

Well, a lot. The quantity of the carbon in the Earth's crust is nearly 500 times the amount available in air and sea. So mankind can begin expanding again.

But hold it. With carbon all clear, is it possible that something else may run out? The other three major components of living tissue are hydrogen, oxygen, and nitrogen. For hydrogen and oxygen, there are no fears. Both are contained in the water molecule which, thanks to the oceans, is present in all quantities mankind can ever need. (For instance, if the atmospheric oxygen were running low, man could, conceivably, break up water into hydrogen and oxygen, bleed the oxygen into the atmosphere and use the hydrogen for fusion power.)

But nitrogen, ah, that's another matter. About ninety-eight percent of the Earth's nitrogen is in

the atmosphere. There is 775 grams of it for each square centimeter of Earth's surface. This is only one-sixth the total quantity of carbon on Earth. However, the human body, which is 18 percent carbon, is only 3 percent nitrogen, so that a given amount of nitrogen will be enough for six times as many people as the same amount of carbon will be.

Combine these two factors and it turns out that the nitrogen will last just about as long as the total carbon. If all the carbon and nitrogen are then used (still preserving 90 percent for food supply and absolutely essential side-products), the total human population of Earth could then reach 300,000,000,000,000,000 (three hundred million billion).

If this mighty number were spread over the Earth (and this time, we can suppose the oceans to be covered over with planks from end to end so that people could stand on them, too) each individual would have about $\frac{1}{8}$ th of a square foot to stand on. This is just *too* squashy—we'd be stacked like cordwood.

However (such is the power of an exponential series), even this extension of life to include all the carbon and nitrogen on Earth

would give us only 700 years or so additional. By 4200 A.D., the ultimate Earthly limit will have been reached.

So the Arthur J. Burks problem is *not* fantastic, it is *not* a thing of the far, far future, it does *not* require that mankind discover the secret of immortality. If our present rate of increase continues, our grandchildren may be feeling the pinch of the beginning of it.

As science-fiction readers, of course, we can always say: Out into Space and find new worlds.

Sure, and if every known star in the Universe were surrounded by ten planets, each capable of supporting as much life as Earth can, do you know how much extra time that would give us, at our present rate of increase, before every planet is ultimately as crowded as the Earth of 4200 A.D.?

About 6,500 years! For if you take a planetful of people and double it after 80 years and double that after 80 years and so on, you have 2,000,000,000,000,000,000,000,000 (two trillion) planetfuls of people after 6,500 years. Work it out yourself if you don't believe me.

And there you are.

The End



ROBOTS SHOULD BE SEEN

by LESTER del REY

Pete had been with Tom Henley a long time now, and there wasn't anything he wanted more than to go back to Earth with him. But Pete was a robot, an old and tired robot, and nobody would believe he had feelings. . . .

OLD PETE MOVED ALONG AT A limping trot beside the robot that was pulling the rented rickshaw. Even in the feeble gravity of Mars, it was growing hard for Pete to maintain a decent speed, and the grease he had used liberally that morning couldn't keep

his worn joints from creaking with every step. The tubing of his limbs was bent, his cables were frayed, and the plated cylinders of his torso and head were dented and dull. Pete had lasted longer than most, but after nearly forty years he was wearing out.

"Petel!" the voice of his master reached him. "Drop back and hold onto the backrail."

It was something he'd been longing to do, and now he obeyed gratefully. But it was no comfort to know that even Tom had noticed his staggering gait. He widened his vision to study the man for signs of impatience, but Tom had apparently already forgotten him.

Tom Henley was glowering at his wristwatch, worry on his usually good-natured face. There were signs of hasty shaving, and his dark hair was tangled from running his hand through it. Now he mussed it up further as he looked up at the petite, pert blonde beside him.

"Darn it, Cynthia, did you have to take forever fixing your hair?" he grumbled. "If we miss the Earth flight . . ."

Her usually cooing voice had an edge in it. "I can't look like a frump, can I? Even if we're going to get married on the ship, instead of the decent June wedding we planned! No gown, no shower, nothing I want. And for what? Not even a good industrial job! Just some old college where you can be an assistant professor, with practically no notice. And now you want me to look like a tramp. . . . Oh, Tom, let's not start anything again! I'm going, aren't I?"

Tom sighed, glanced at his

watch, and surrendered. "I know I'm asking a lot, Cyn, but . . ."

Pete trotted on, his mind turning back to his own miseries. Tom was going back to Earth where new robots sold for less than the freight needed to send Pete back. After being Tom's personal robot during the man's whole life, he'd be abandoned for the local government to pick up and dispose of as it chose.

Robot, his mind pounded at him. Machine. Practically an antique. Good construction, though, lasted a long time. They don't build them like me nowadays. Saw one go out of order last year and the police had to chop him to bits before they could stop him. Good thing they don't have feelings, eh? Well, this one's had it. Scrap him!

Everyone agreed that robots had no feelings, even when they were being dismembered piece by piece. Well, maybe other robots didn't have; maybe he was the only freak cursed with a mind that could suffer, and all the others might be the mechanical gadgets they were supposed to be. His rigid conditioning circuits kept him from such nonsense as speaking to other robots, except when ordered to. Once, long ago, he'd tried to break the conditioning, to make his feelings known, as a pet might whimper for attention. Now after their treatment of his "insanity," he knew better.

They passed through the entrance to the rocket field and he heard Tom sigh in relief at the sight of the big ship still loading. Then they were before the main entrance and Pete began lifting the heavy burden of Cynthia's luggage from the back of the rickshaw and carrying it toward the weighing-in section, staggering under the load as his gyros fought for balance. He started back for the rest, just as Tom scooped it up and followed him.

"Tom!" Cynthia's shocked voice was like the crack of a whip. "If you need exercise, there are salons for that! Don't make a spectacle of yourself!"

Tom's face slowly reddened, then his jaw clamped down stubbornly. While the checker stared, he deliberately bent down and lifted two of the pieces onto the scale before Pete could reach them. "Stay back, Pete!" he ordered.

There was nothing Pete could do but obey. And he realized that even his conditioning circuits must be wearing out, since there was no shock in him. It wasn't the first time; even Anne Miller, the young lawyer down the hall who sometimes invited Tom to dinner, had taken to doing things that should have been his duty. And he'd let himself adjust to it, until it took Cynthia's shocked reaction to remind him of his duty!

The weighing in went slowly,

not helped by Tom's mood, Cynthia's white-faced silence, or the checker's open contempt. There was an argument about a pocket-knife with a blade slightly too long to pass without duty; there was a worse one when the checker decided that Tom's notebooks, covered with the mathematics of cellular memory-storage, might be subversive code. It wasn't helped when Tom demanded the chief inspector and found his checker *was* the chief. But eventually the baggage was cleared and marked.

"All right, Pete," Tom said. "Climb on. You're the last."

Cynthia's mouth opened, closed, and opened again. "You're not taking him, surely! He's all worn out."

"They've got shops on Earth that can rebuild him."

"But he's such a relic! What will people think? Oh, I didn't mind too much here, but on Earth—!"

"I grew up with him, and it's none of people's business. Get on the scales, Pete, and try to hold still!"

Pete was already clambering on, his mind whirling with the shock of sudden hope until only his conditioning made him obey. A new body, good for another forty years! And he'd been thinking . . .

The checker shook his head, cutting off the argument. "You're already at full weight allowance,

and he'd run you over if you didn't have another scrap. No dice, Mac!"

"I'll pay extra, naturally," Tom told him. "I'm not asking favors from your company!"

"Still no dice. We've got full cargo holds of priority drugs for Earth. Get him off my scale. I'm closing up!"

For a second, Tom seemed to be counting. Then he caught his breath, glancing at the clock. "All right, damn it. I'll pay for a passenger ticket on him."

The checker was finally apparently enjoying himself. "Nope. Against regulations. Can't sell tickets except to 'sentient, conscious beings.' Look it up if you don't believe that's the law, Mac." He grinned happily. "And don't think you can go over my head. Happens the port superintendent's my brother-in-law. You want to store him until we have space, pay disassembly and reassembly, and *maybe* we'll take him. But I'll bet he won't last through it, the way he looks."

He held out a book of regulations, stabbing at a passage with one heavy finger. . . .

Tom was just coming out of the superintendent's office a few minutes later, shaking his head, when the siren hooted out the blast-off signal and the big ship began to blast, heading for Earth without them. Cynthia had already signalled a cruising rick-

shaw and gone off stiffly. Tom looked, seemed to waver, and then turned back to Pete.

"Get my junk back to the apartment and tell the landlady I'll need it again," he ordered. "Then find Anne Miller and tell her to meet me at the Federal Building as soon as she can, Pete. If these bastards think they can hold me up for that dissembly-assembly racket, they'd better think again!"

Pete watched him head toward the lone motor-cab at the stand and turned clumsily to obey, guided only by the conditioning circuits. There had only been a few times in the past when he'd seen Tom like this, but his memory of the occasions left him stewing frantically in his own impotence.

He felt no better that night when they all returned to his apartment. To Pete's surprise, Cynthia came with Tom and Anne, though she was oddly quiet and reserved. She'd been jealous of Anne once, but it no longer seemed to bother her. Pete fumbled in his mind for a key to her making up with Tom so soon. But he had too little experience with human females to be sure of anything, and he'd long since learned that what he read in books when no one was watching him bore little relation to reality. People refused to fit into the patterns given them by the novelists.

He clumped about awkwardly, making coffee for them and listening, trying to learn what had happened. But it came out slowly.

Anne was doing most of the talking, and she seemed no happier than Pete was. She was a quietly-attractive girl, tall and dark in contrast to Cynthia, and now her low voice seemed tired and uncertain.

"If you'd only waited, Tom," she said for the twentieth time. "I'd have been able to make something of the fact that Pete's an Earth-built robot, and that you're still technically registered as an Earth citizen, since you were ten when you came here. Mars laws don't apply. But no—first you try to get an injunction, as if this were Earth where they hand those out without a full hearing sometimes. And then you finally use your Earth citizenship to bring private suit on *those* grounds! Well, at least you didn't demand a full panel of six jurors."

"What difference would that make?" he asked.

"This is Mars, Tom. They pick jurors here by lot, with no challenges except for subnormal intelligence or prior knowledge of the parties involved." She sighed. "Can you guess what six average robot-owning citizens would think of a suit to prove that a robot was a sentient, conscious being who could be damaged by refusal to grant passage? You're just lucky

that Judge Samuel is old-fashioned enough not to use robots."

She sighed again, picking up the cup Pete had poured for her. "Thanks, Pete," she said. "You look tired. Better sit down."

She watched the shocked looks on the other faces that mirrored the shock Pete felt, and then grinned wryly. "Wipe it off, Tom. You've claimed Pete is sentient; you'd better act as if you meant it. From now on, I not only want that document of manumission, but I want you to treat him exactly as you would your best human friend. Because if you put in a claim here that you yourself know to be false—or treat as false—it's *criminal* fraud. And make sure you get a record of the wages you pay him, too. We have laws against slavery, written when they tried to bring in those Ionians for labor. Why'd you do it, Tom? Why?"

"Damn it, Pete responds to his senses. And he's aware of surroundings. That makes him sentient and conscious, doesn't it?" Tom glanced at the robot, then nodded wearily. "All right, Pete, sit down. And from now on, sit down or lie down whenever you can. And . . ."

Apparently he could think of nothing else. Pete sank down slowly, his conditioning screaming at the cross-orders of propriety and command. It was a good thing he did, though; something

seemed to have gone wrong with his balance senses as he tried to digest what was going on.

"Earth definitions," Anne said bitterly, putting her cup down. "We're an outworld here, where humanity is more valued than at the home world; we have our own meanings, and our own dictionary. Here, sentient means capable of feeling, or having emotion; and conscious means being aware of self, as distinct from mere action-response. And, incidentally, I might as well warn you that in suing as an agent for Pete, you're fully responsible for proof. And the burden of proof here rests entirely on the claimant, not on the defendant. Well, I'll try to get it *in camera*, instead of before a formal panel of three judges. If Planetary TerraMars will go along. At least that way, only a digest of what happens will reach the papers, probably. Anyhow, usually the judge feels flattered when you ask for him to have full authority and drop the formal piffle. Samuel likes it that way, I hear."

"I could drop the suit," Tom suggested. He looked thoroughly chastened.

She nodded. "You could. That means you pay full costs of everything, including inconvenience to the defendant—and by now, they're probably flying in a bunch of experts. Mars doesn't *like* lawsuits, unless they're necessary;

that's one of the reasons we manage to keep open dockets here and you're up day after tomorrow. No, you'd better figure out how you'll defend your claim."

Cynthia sniffed. Tom ran his finger around the loose collar he wore. Then abruptly he stiffened. "All right, damn it. I wasn't just going off half-cocked, Anne. I told you six months ago I had mathematical evidence that no intelligence with any degree of free association and more than a certain number of memory storage units could fail to have some consciousness of self and emotional response. I was thinking of those fossil Martians; their gene pattern indicates brains complex enough. But I also thought it just might apply to robots. I've been watching Pete since then, and I think it does."

This time, Cynthia's sniff was louder, but Pete barely heard it. If Tom meant it . . . and it would explain his helping with robot work . . . and his almost affectionate desire to keep Pete with him, even on Earth . . . He tried to lean forward, to declare himself. But the conditioning had been warped enough in letting him sit among them. He remained rigid and silent.

"I've been studying him, too," Anne said. "I *think* he may have more than you indicated—enough to pass the minimum legal requirements, since they operate on

the basis of giving the benefit of doubt to any sentient race or being. But the burden of proof is on you. Prove it."

"My math . . ." he suggested.

She laughed. "Judge Samuel knows law, but he'd probably flunk out on elementary gravity tensors. Still, maybe we can dig up something from them, if you'll help me with your notes."

"Not tonight, Miss Miller," Cynthia cut in. "Tom's still got some apologizing to me to do. He was actually brutal. I've never been so humiliated. And—"

Anne laughed, and it wasn't a pretty sound. Then she stood up, and reached for Tom's notebooks. "All right, Pete, come along. You've had a math background, and Tom used you for secretarial work. Come along. As a sentient being, it's time you were compromised, anyhow. Okay?"

"Yes, Miss Miller," he answered. He saw her frown slightly and realized it was the wrong answer. It should have been *Okay, Anne*; but—but damn it, there were limits! He looked for permission toward Tom. The man looked vaguely embarrassed, and Cynthia was wearing her sly look. But that was their business.

Hours later, when he finally was sent back by Anne after she'd drained what she could from him by direct questions, he saw Cynthia leaving Tom's apartment. She was smiling faintly, but there

was something he didn't like about it. He went to the master's room, only reassured when he saw that Tom was asleep, also smiling. Then he saw the slip of paper on the table. It was a spacegram, with a brief pencilled note indicating Cynthia had received it after Tom was asleep. Pete stared at the message bitterly.

APPOINTMENT AS ASSISTANT
PROFESSOR CANCELLED STOP
DIRECTORS FEEL FACETIOUS
SUIT OBVIOUS PUBLICITY DE-
VICE UNSUITABLE ACADEMIC
REPUTATION DEMANDED ALL
STAFF MEMBERS.

It was signed by the Dean of the college that had chosen Tom. Planetary TerraMars had its own quiet way of striking back; Pete's store of miscellaneous knowledge supplied the fact that the president of TerraMars was one of the college directors. And Cynthia'd seen it. Pete mulled it over sickly.

Pete had seen movies of trials on Earth, though Mars had consistently refused to install television except for educational purposes, so he had no idea of what Martian movies might be like. In any event, the trial here bore little relation to what he'd expected. The courtroom was a place big enough to seat some thirty spectators, now empty; and a small raised platform supported a bench, a tape recorder for sight

and sound, and a small table toward the front. It was entirely unimpressive. But the trial would be held there, though he'd thought that *in camera* meant in the Judge's chambers. On Mars, apparently, it simply meant without formality. There was no bailiff, no clerk, and no battery of reporters permitted inside, though a few men stood out in the hall. Pete was seated in a rear corner.

Samuel smiled as the legal representatives of Planetary Terra-Mars took one side of the table, leaving the other for Anne and Tom. The insolent checker from the rocket field sat in a corner opposite that of Pete. Samuel began in a silky voice as the door was closed, outlining everything as if it were some pleasant bit of gossip. Then he nodded his head as another elderly man came from a side door.

"In a case involving certain technologies beyond the field of the Court's knowledge, it is customary to ask for a technical assistant and advisor to the Court," he beamed at them. "I consider us very fortunate in having had Dr. Nchungu Paulssen volunteer his services, since we are all aware that Dr. Paulssen is the greatest cyberneticist Earth has produced. The Court appreciates the fact that Dr. Paulssen has given up a part of his vacation to serve here. Are there any objections from either party?"

The beam remained, but the old face of the judge was suddenly sharp, as if ready to shoot bolts of lightning at anyone objecting.

There was other preliminary business at some length as lawyers and Judge conferred, but most of it could not be heard by Pete. The corner seemed to blur all voices except those coming from the bench or directly in front of it. He saw Samuel writing busily on an old yellow scratch pad, though the recorder was delivering a constant precis of all that went on. Then finally, things began to move, with a certainty that bore no relation to the involved business of cross, redirect, recross, and re-redirect examination Pete had expected from the movies. The checker was called and told his story. Tom told his. Cynthia was called from some place back in the room—Pete hadn't seen her come in, though his ears would once have detected anything and led his eyes to her at once.

There was nothing overtly wrong with her testimony, though it seemed to please the counsel for TerraMars, Mr. Arkwright, more than it pleased Anne. And then, finally, Pete heard his own name.

He limped up, while the Judge again conferred with the attorneys. Finally, Samuel nodded. "There will be no swearing. I un-

derstand that the claimant officially designated as PT-17476 is inherently truthful, and will accept that on advice of Dr. Paulssen. Mr. Henley, are you prepared to do as you have agreed?"

Tom nodded and stood up, while the recorder turned to him at once. He faced Pete, his expression showing some strain. "Pete—or PT-17476—I want to give you some *instructions*." He underscored the word faintly, while the Judge stared at him with a faint amusement around the old eyes. "You are to tell the exact truth, to anyone who asks it within this room. If I have ever given you any instruction or order to the contrary, or if I should give you such an order during these proceedings, you are to ignore it—any such instruction, that is."

He sat down, while Samuel turned to Paulssen. The big, dark-skinned man with the startlingly red hair nodded briefly.

Anne covered only what had been rehearsed—his relations with Tom, his manumission, which he admitted to; it was a sickening thing to find that Tom no longer wanted him, except on a basis of casual "employment," but he had accepted it, since he could do nothing else. And his memory of the incident at the rocket field. She hesitated, then abruptly sat down, while Arkwright strolled over.

"Pete, you know you're a robot, don't you?" he began. "That is, you have that knowledge built into your memory banks?"

"Objection," Anne said quietly.

"Sustained," Samuel announced.

"The matter of the definition of the status of the claimant is the subject of this investigation, not of assumption. Mr. Arkwright, you don't have a jury to impress. And I don't intend to be here all week. Get on with it."

Arkwright apologized smoothly, looking a little surprised. He asked a series of meaningless questions, so far as Pete could tell. Then he paused. "Pete, do you like me?"

"No, sir."

"Do you dislike me?"

"No, sir."

"Would you dislike me if I were to take a hammer and smash you to small pieces?"

Pete tried to answer, but there was no direct answer possible. How could he say without knowing the reasons for the action? If Arkwright were ordered to do so, there would be no reason to dislike the man for carrying out orders from someone else, certainly. Besides, he wasn't sure but what it might be a good thing for everyone, including himself. He'd already ruined Tom's chance at the Earth job, and his time was growing steadily shorter.

"Answer the question!" Samuel said firmly.

Inside himself, Pete squirmed, but there was more weight on one side than the other. "No, sir."

"Do you dislike anyone in this room, Pete?" Arkwright asked smugly. He was beaming happily.

"Yes, sir." Pete's answer twisted the smile off Arkwright's face and brought a faint sound from Tom's mouth.

But the lawyer recovered smoothly. "I see. Whom do you dislike?"

And there was no answer to that. Cynthia sat there, but a robot could not offend. He heard the Judge demand that he answer, he heard the question repeated. And still he sat silently.

Finally, Arkwright smiled, and brushed it all aside, just as a wave of blackness seemed about to sweep over Pete's mind. "No matter, that is the least of the two factors. Let's pass over that, Pete. Tell me instead, do you have a direct awareness of yourself as a distinct personality? Do you consider yourself an ego, or know the meaning of the terms?"

"Yes, sir," Pete told him. "All those, yes."

And this time, it was Anne and Tom who beamed. They had done everything except ask him that direct question, much as he had wanted to answer it. Now it was out. Yet Arkwright seemed completely undisturbed.

"Your Honor," he said, "I have brought this up only to dispose of

it. I was certain that PT-17476 would answer in the affirmative. Perhaps Dr. Paulssen would explain this?"

At Samuel's question, Paulssen nodded. His voice was high-pitched and his words had the flatness of too familiar material. "All cybernetic devices intended for direct response to voice commands would naturally answer yes to such questions," he said. "Purchasers have shown a tendency to favor devices which use the first-person pronoun in referring to themselves, rather than the third-person. And to make such a response possible, it is necessary to implant a crude concept of ego into the memory banks, as a referent to the symbol I. This, of course, need not have any direct correlation with the sense of ego which the human mind appears to assume."

"And would it be possible to educate a robot to an ability to describe human emotions accurately, and to use such terms in referring to influences affecting him?" Arkwright asked, reeling it off as if quoting.

Paulssen smiled faintly. "You've had some very good sources of information," he said. "Yes, definitely. A robot will naturally be able to memorize anything that can be defined, and hence can give a quite accurate description of an emotional state. Also, of course, one will use the closest possible symbol

to a referent, however abstract; and in many cases, since we have no specific symbol in the general language for the conditioned reactions of a mechanical mind, it would almost be necessary for a robot to use words that apply to human emotions."

"Thank you, Dr. Paulssen." Arkwright bent to his briefcase and extracted a piece of paper. "I have here the certificate of sale of PT-17476 from the original owner to the father of Mr. Henley. As the Court will see, this is a record which states that the original owner was a practicing psychologist, and that the robot was used as a recorder and summarizer, among other duties. Also, that shortly before being sold to Mr. Roderick Henley, the robot went into a confused state, indicating the conditioning circuit was not operating properly. A new conditioning circuit was installed, but no change was made in the memory cells! I'd like this marked Exhibit A."

Anne came to the bench at once, and another conference began, but Pete wasn't listening. He was remembering again the horrible period when he'd finally broken through his conditioning—and the worse period of slow creeping back to a personality of his own, complete with a full memory of his purely automatic state after the installation of the new conditioner.

Then his eyes caught sight of Tom marching steadily toward Cynthia, hurt shock on the man's face. She was smiling like a cat watching a mouse dying under its paws. Very deliberately, she dropped her engagement ring on the floor, kicked it toward Tom, and turned her back to move toward the farthest corner.

The paper Arkwright had produced could only have come from Tom's packed briefcase on the night she'd stayed alone after he slept. Cynthia had made her choice in her own way—whether because she'd been driven by anger or by the fact that he'd be blacklisted from all future jobs, Pete couldn't guess. First Tom's future work, then his plans for marriage . . .

Judge Samuel's voice brought him around before he could see more. "PT-17476, is this record correct?"

"Yes, sir."

"All right, then, it's so marked," Samuel said. His face was still smiling, but his voice sounded grim. "So it seems, according to what I can learn, that no question concerning the sentience or consciousness of PT-17476 directed to him can have any meaningful answer, and we will discontinue this line of questioning. Objections?"

He waited, briefly. Then he nodded. "Dr. Paulssen has suggested that he is willing to make a personal investigation within his

ability to discover any evidence of sentience in the case of PT-17-476. Unless there is an objection, I shall direct that PT-17476 go with him to Room 33-B for such an examination." He waited, then nodded happily. "So directed. Court is adjourned until tomorrow at ten o'clock!"

Samuel was shucking off his robe as he headed for his private quarters, drawing out a thin copy of the handicapping sheet on the local dog races. Paulssen tapped Pete on the shoulder and approached Anne and Tom.

Anne was muttering something about trying to get an alternate definition through on some legal device, but she stopped as Paulssen drew up. He shook hands with them, his voice blurred in the echoes of the nearly empty room. But Pete could see Tom nod, and draw out a copy of his mathematical notes and pass them to the cyberneticist. "Stay with Dr. Paulssen until he's finished, Pete," Tom said. "Then we'll be up at my apartment."

He looked sick and beaten. But Pete could say nothing in sympathy. He followed Paulssen out meekly, turning down the hall to the room that had been assigned.

Paulssen dropped behind a desk and shook his head. "Pete," he said quietly, "if you have any consciousness of yourself, I'm sorry for you. I hope you don't. But whether you do or not, you can

surely integrate the difficulty I face. If I were to try to prove I was sentient and conscious in the local meaning, could I do so?"

"No, sir," Pete said evenly. He'd already thought of that. No man had ever proved conclusively that he existed, except by the axiomatic assumption of *cogito, ergo sum*, which was itself unprovable. And it was seemingly no easier to prove the existence of a personal ego. *Cogito, ergo sum* was assumed in the case of humans; everyone knew that men thought and had awareness of self; nobody had to prove it. No technique for such proof had ever been required.

But Paulssen tried. Pete could understand very little of what the man asked and did; some of it had a vague relation to what his first owner had used on patients suffering from neuroses, some resembled the tests made when he was turned in for repair. But the pattern of the whole escaped him. It would probably have been beyond the skill and understanding of the men who had designed Pete. He'd heard that the man was a genius from casual mentions made by Tom. He could believe it. But if so, he was an uncertain genius at the moment.

Finally he finished. He shook his head. "That's all, Pete. You can go."

Pete wanted to ask for the results, but his legs lifted him up and his vocal apparatus remained

quiet as he moved to the hall. He had a last look at Paulssen spreading Tom's figures out and bending toward them, before he closed the door behind him.

Then a harsh voice spoke near his ear.

"PT-17476, under the laws of the state, and in agreement with the first tenet of Conditioning, which supersedes all others, and according to Code ADEX-17, you are hereby possessed for examination by the Supreme Government of the Free Planet of Mars."

The scrapheap, Pete realized. He'd known it could happen since Tom had signed the document of manumission. He was without an owner legally, and the state had the right to pick him up. They'd wasted no time after learning of it.

And in his condition, he couldn't pass even an elementary test of reliability. He saw Paulssen opening the door, but there was nothing the man could do. Pete moved after the pickup squad.

It was all over in the morning. He sat propped in one corner where he'd been directed, waiting in line with half a dozen other robots that had been condemned. And his judgment of his condition had been correct. The technician in charge had made only cursory tests before pronouncing him to be no longer safe for operation and beyond salvage. "Dismantle,"

he had said quietly, and signed the paper. There hadn't even been a comment on the fact that he'd served long and well. He watched a new robot wheel up a truck and carry off two of those ahead of him. He'd be in the next load.

Then there was a sudden muttering from the office outside, and another voice that carried over—the familiar voice of Anne Miller, raised louder than he'd heard it before.

For a second, a faint vestige of ridiculous hope brightened in him, but he knew it was useless. He saw the door open, and saw her come in.

"All right, Peter," she said. Her face looked as if she hadn't slept, but there was a softness to her voice now. "I'd have gotten here sooner, but this takes more red tape cutting than you'd think. Come on."

He lay there, not moving, though he wanted to obey. But the conditioning had accepted his state possession.

She swore briefly, and turned to a man beside her. "Free him," she said sharply.

"PT-17476, by Code ADEX-17, the state relinquishes you," the man said reluctantly. Then he swung to Anne. "All the same, I never heard of a *habeas corpus* for a robot. It doesn't make sense."

She smiled back wearily. "Without it, Judge Samuel would have been subject to trouble for default-

ing on judgment of a case—and that isn't good. Come on, Pete, Tom wants to see you." She led him out through the robot testing building, and onto the street, where a rickshaw was waiting. He started to fall behind, but she motioned him up beside her. Against the protests of his conditioning, he had to obey the order. There was a mutter from a small crowd around, but a grim-faced squad of police swung around them and they headed toward the Federal Building.

"I'm sorry about this," she said. She was at least taking her own advice to treat him like a person. "Paulssen reported it, but I had a hard time locating Samuel. He hated to give me the writ, too—he's partly prejudging the case in granting you that much human status, and maybe I can make something of it. Maybe not. Mostly, I guess it depends on what Paulssen has to say. Damn, damn, damn! If Tom weren't such a fool—"

Court was just opening when they arrived, and it did open the moment Anne had seated herself. There were more reporters out in the hall this time—and one of them was obviously the head of Triplanet on Mars. But inside the room, there was only the same group, this time without Cynthia.

Pete followed Anne, until he was sitting behind Tom. And then his mind lurched. Tom's face was

bruised and swollen, and one of his arms was in a sling.

"Tell him," Anne whispered. "Remember, Pete's supposedly sentient!"

Tom seemed to jerk out of a gloomy daydream, and turned, trying to grin through battered lips. "I went for a little walk after dinner, Pete," he said. "I got to the park, and about a dozen hoodlums spotted me. I guess they don't like the idea that I'm trying to free all robots. They said so, anyhow—pretty vigorously. If Anne hadn't come along with a policeman . . ."

Samuel glared at them, and Tom shut up. But Pete had gotten the picture. All Mars would hate Tom for even trying to claim that a robot had human attributes; Mars depended too heavily on robot labor to risk any loss of her control over the mechanical beings. It made a picture that darkened every second as Pete considered it. It would include Anne, too, though he had no clear idea of what could be done to a woman. And probably if by some miracle they should win the case, even Samuel and Paulssen would be subject to the wrath of Mars.

But now Paulssen was beginning to tell what he had learned, and there was no further muttering.

The man seemed as weary as Tom and Anne. He shook his head. "I have examined PT-17476

to the best of my ability," he reported needlessly. "And I have also tried to follow Dr. Henley's demonstration that at certain levels of complexity and free choice, any memory complex must become capable of self-awareness and self-invoked emotional type reactions. Frankly, I find the theory extremely interesting, and of considerable promise; in fact it agrees with some tentative work I have been undertaking myself. But it is only a theory, and must lack any form of adequate proof for years, if it ever can be proved.

"As to PT-17476, I have found a number of significant deviations from the pattern that should exist in view of his original responses, even allowing for the substitution of a new conditioning circuit. Significant, but not conclusive, I must add, in my opinion. But for the information of the court—"

Slowly, Pete's legs straightened under him. He saw the gazes of the others directed to the bench, including that of Samuel. Paulsen was bent over his notes, not looking up.

Pete blanked the words from his mind, sure now what they must be. There was no way of proving whether he was sentient or not, any more than he could ever hope to know whether any other robot in all existence had developed a personality of his own. Within himself, Pete knew. But even if he were to stand up

and protest his free will as loudly as any man, all that could be hoped was that men would decide he'd finally worn out for sure and that he was completely out of control, mouthing phrases out of his education.

All he could do now was to cause more anguish to the humans he knew best. Anne and Tom were in enough trouble. Tom had lost his job, his fiancée, and now his chance of getting along with other men; with the verdict, whatever money he had would be stripped from him, apparently. And beyond that—Pete couldn't force his thoughts further.

He moved out as quietly as his limbs would permit, to the door and through it. Vaguely he was aware that he was moving without direction from another—against an implied order that he remain. But now finally the conditioning didn't seem to matter. It had suffered an overload of some kind, and it was quiet within him.

He moved steadily toward 33-B. There was no one inside, and he shut the door, looking for the letter opener that had been there. It was still there.

He should have been scrapped long before. He was useless to himself, or worse than useless. He'd ruined everything he touched. There was nothing he could do now to help. But one final thing was possible.

He reached for the letter opener and began forcing the nuts on his chest plates off. They came slowly from the bent plates, resisting his grip and the small leverage of the instrument. But they came, and he could look inside himself, see the complexity of his brain and the small glow of the tiny plasma jet that gave him power. That must not be injured; he had no wish to cause further harm.

But by the manumission document, he was his own—and so was his brain. It was his to do with as he liked—or to destroy.

He took careful aim for the critical circuits, raised the letter opener, and began bringing it down!

Something jolted against his arm, throwing it aside. A heavy body hit his legs, toppling him. And then he saw a police robot bending over him, lifting him. He screamed, demanding his rights. But the man who had struck him shook his head.

"I got orders to see nothing happened to you—and nobody cancelled them. Bring him along, Zee-bee."

Paulssen was winding up as they entered the court room, but he cut off at the sight of them.

Samuel started to castigate the policeman, then hesitated. The beaming smile wiped completely from his face. "Well, officer?" he snapped.

"I got orders to protect this robot, Your Honor," the policeman said stubbornly. "So when I found him killing himself—and by jinx, it wasn't anything else—I brought him back. What'll I do now?"

For a second, nobody had an answer. Pete pulled himself slowly from the arms of the doubtful robot, giving up even the final hope. "I'll be quiet," he said.

But Anne was on her feet, almost screaming. "Your Honor! Your Honor, I wish to place PT-17476 on the witness stand!"

He sat through it, patiently answering when some order was restored. Yes, he'd meant to end his existence. Why not? It was common logic. When existence offered more than enough misery to all and no advantages to himself, the solution was to end it.

She dragged it out of him, amid objections that were mostly denied, piece by piece. Perhaps he could have told it without prompting now, but he had no desire to. Why should the final shame of Tom for his property be made public. But at last the final examination and cross examination was done, and Samuel sat considering it bitterly, his face suddenly haggard.

Paulssen sighed. "With your Honor's permission, I'll amend my report. Upon further evidence, I can say without doubt that PT-17476 is a fully sentient, conscious being. Without full con-

sciousness of self, it is completely impossible to assume any need to end that self. And no outside order can overcome the basic conditioning against self destruction that is implanted in all robots. Nor can any but a fully reasoning being explain logically the illogic of a final decision that nothing remains for which to live. That is a purely emotional response—without emotions there is no burden to escape, and no need to attempt self-destruction. That should be at least as self-evident as the fact we exist.”

Arkwright was up, but Samuel seemed to be staring into a dark hole in space just ahead of him. Then the Judge sighed softly, and for a moment some of his smile crept back, without disturbing the harsh lines that were etched into his face.

“Sit down, Mr. Arkwright,” he said quietly. “This is a court of Justice, sitting *in camera* under the customs here in force, and acting under the authority of the Free Planet of Mars. Both parties having agreed to abide by any verdict I may reach, without recourse to appeal, I am empowered to decide upon what I consider conclusive evidence. I find it conclusive now.

“Therefore, I find PT-17476 as an individual to be sentient and conscious within the meaning and requirement of the law. In consequence of injuries sustained by

him by denial of his rights of passage, I order the Planetary TerraMars Corporation to assume all costs of these proceedings, to pay to his counsel, Miss Anne Miller, an amount equal to the cost of providing counsel for the corporation, and to reimburse him for injuries in the amount of five thousand dollars. I further order the Planetary TerraMars Corporation to provide a ship this day to convey him and any other party or parties of his choice to Earth in safety and comfort equal to the best obtainable, and to provide a safe-escort from this room to the point of embarkation.”

He turned to the policeman. “Officer, you’ll guard these people until TerraMars can provide safe-escort. Court dismissed!”

Pete sat still, staring at the place where the impossible had happened. But it hadn’t taken care of everything. “But I still don’t belong to anyone,” he protested slowly.

Paulssen smiled as he moved back to join them, while a red-faced Arkwright began calling his client to arrange for the carrying out of the court order. Pete could see Anne and Tom looking at each other unbelievably, clinging to each other in the forgotten grip with which they’d heard the verdict. And by the door, waiting while the policeman went for more troops, the huge police robot

stood clapping his hands together slowly, though his face remained impassive. The reporters would be gone by now—but there would be time enough for escape before the news was spread.

Paulssen chuckled suddenly. "Pete," he said, "I wouldn't worry about your manumission; Earth won't recognize it anyway—at least for a while. And I don't think Dr. Henley has any desire to kick you out."

Tom shook his head. "More likely the other way, Dr. Paulssen. What the deuce am I going to do on Earth?"

"Pool your work with mine to learn more about how the ego is formed—and work till you curse the day you met me," Paulssen said.

"And when that's done, maybe we'll find something else to work on. I do my own hiring; no directors cancel any contract I sign. As for Miss Miller—" He chuckled again, and motioned to Pete. "Pete, you're embarrassing these two, now that you're a person. Let's go for a walk out of their way, shall we?"

Pete stared at the two, only vaguely aware that his limp seemed to have grown less and that his gyros were balancing him steadily again. He moved past Anne, and then stopped, leaning down toward her.

"Kiss him, you fool," he said.

It came out flat-voiced, even a little mechanical, but she got the idea. So, obviously, did Tom.

HELP . . .

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skin game

by JAMES E. GUNN

*Dan'l Fry was the best tongue in the business, and he
had no worries when he was dumped off at Xanadu.
It took him only a few months to discover how he'd been
taken, on that rich, lovely, con man's paradise. . . .*

THEY KICKED ME OVERBOARD AT Xanadu—me, Dan'l Fry, the best tongue in the business.

It was an old Spican freighter, one of those hitch-on deep-space jobs that look like a cluster of grapes. I had scrambled aboard at Capella II in a large hurry as there were bloodhounds who had my index, not to mention my M.O.

My mistake was trying to keep occupied on the freighter. I won the *schlunk* strictly legit playing two-card with the near-sighted Vegan merchant. The Capellans had used *schlunk* like salt, as a seasoning. How was I to know it was an aphrodisiac to the Mirans, illegal to transport?

The real plant was the skipper, who turned out to be partner to the Vegan. He puffed out his walrus mustaches and called me names like "Sharpie!" and "Conster!" and told me that in deep space he was law, jury, judge, and executioner.

That's how it was I found my-

self in a delivery capsule dangling from a steel-mesh parachute and plunging through a curdling atmosphere toward the too, too solid world below. I would not have taken five to two odds for my chances when the capsule skipped over the ionosphere like a flat stone across a pond, the walls glowing through cherry red, orange, yellow, and white, the throw-away air conditioner chugging and missing and chugging again. . . .

But the walls did not melt, and I got through with only superficial burns. After 89 minutes the capsule landed like an old maid's two dollar bet, its tripod legs springing out to grip the ground, the parachute crumpling around it with a clear, ringing sound.

I punched the breakaway button, and the capsule fell apart. I stepped out on Xanadu, doing the Caruso bit—me, Dan'l Fry, the best tongue in the business. . . .

Xanadu, as I found out later,

was that 100-1 shot in the stellar sweepstakes—a single-planet system. Its sun, a miserable little red dwarf, didn't even have a name.

That's why Xanadu was picked by a real estate firm for an exclusive suburban development during the big migration some 1,100-1,200 years ago. No traffic, no peddlers, zoned for residences only—a good place to bring up children. Xanadu was bulldozed into shape, fertilized, climatized, ecologized, sold, and forgotten.

Nobody stopped by to swap stories or goods or to make a friendly book. Anything as big as a ship could not land; an interference field warned them off. And nobody was going to get dropped there blind, not knowing anything about the place except that he could not get back, unless, like me, he could not tongue his way out of it.

That is why the skipper felt so brave.

Xanadu seemed to be all orchard—fruit trees and green turf. As far as I could see, that was it, round fruit bending down the branches. All colors: red, yellow, blue, purple, green. . . .

Xanadu was a two-thirds g world, not so little that a guy was afraid he'd fall off but small enough so he felt like he'd just won the Alpha Centaurish Sweepstakes. I did not feel quite lucky enough, however, to eat alien fruit.

It was then I saw the native.

It was a tall, straggly thing,

naked except for a tattered loin cloth. It had a ragged gray beard on its chin, and a stick in its hand for a cane, and it was coming toward me as fast as it could move.

It was human—an old man with a bony face and ropy brown arms and legs. As he came for me he tossed aside the core of a purple fruit he'd been eating.

I was looking for a place to hide when I noticed what was bouncing on his chest from under the beard—the biggest, brightest star saphire I ever saw.

In my pockets I had a pair of nail clippers, a collapsible comb, eight assorted coins of various realms, an unopened package of fruit-flavored vitamin drops, a disposable handkerchief, a wallet stuffed with bills and cards, a half empty pack of cigarettes, and a lighter.

A man should never get kicked overboard without a pack full of beads.

I shrugged—I would have to give up smoking soon anyhow—and gave the old boy to understand that I would trade the lighter for the pretty bauble he had dangling from his neck. I am not as good with my hands as with my tongue, but good enough. He watched me with the bright eyes of a mark.

As soon as he figured out what I wanted, he stripped off the gold chain that held the stone and put it over my head. Then he shocked me: he refused the lighter.

Easy, boy, easy, I told myself. You have either fallen into the con man's paradise or you are in danger of losing your last bet. Play it cool.

I put the lighter back in my pocket. "Thanks, sucker."

The native fell on his ancient knees and started kissing my hands. "God bless you, stranger!"

This rocked me, but I rocked right back and figured maybe I had been too quick to grab the brass ring. It is dangerous to take advantage of a mark too soon, especially when among marks and with no getaway ship. But he refused to take the geegaw back. He acted scared. I had made him rich by accepting it, he said.

Okay, okay, but watch yourself, boy, I thought, or you will find yourself shorter by a head.

He insisted on taking me to a friend of his, holding me by the arm as if I might slip the hook. As we went I picked fruit, which the old man assured me was all edible except the green which were not ripe. The yellow ones had a tart, citrus flavor. The red ones were meaty, the blue ones were firm and mealy, like a baked potato, and the purple ones were sweet. I hadn't had such a meal since I left Earth.

Maybe, I thought, I had found it: a world where the temperature is warm enough to walk around naked, where breakfast, lunch, and dinner hang from trees, and where eager natives wear star sapphires around their necks.

All I need, I thought, is a beautiful servant girl to pick the fruit for me.

It was sunset when we reached the palace—that's what I called it since it was bigger than the Playdium on Aldebaran II, but to the natives it was a modest bungalow. The sun was warm and red and friendly on the horizon, like a wheel with every number a winner. The sky was streaked with orange and gold and purple.

The palace, like a mound of glistening soap bubbles, picked up all the colors in its curved walls, scattered them and brought them back together again, different.

It was prettier than the first gleam of avarice in the eyes of a sucker when he thinks he has found the way to beat the game.

The old man opened a door in one of the bubble walls. We went in. There were thick rugs on the floor, colored fountains spouting out of carved marble, statues, paintings, display cases of jewels, and walls that were pastel reflections of those outside.

I had to swallow hard. It was like somebody had read my mind and granted my every wish.

And the man who came into the room, dressed in sparkling robes, was the genie.

Maybe he was. He had a hard, hungry look to him when he saw the sapphire hanging from my neck.

It turns out the middle-aged jok-

er is the old boy's son-in-law, named Quent. I was touted to him as a great benefactor, a true saint. And then the old boy did a fadeaway through the door.

As soon as his father-in-law was gone, Quent gave me the pitch: "Dan'l, I want you to see my modest bungalow. There is not much that's worth anything, but if you like something let me know."

I could see that he had me pegged for a mark, but what his game was I didn't get. In every room there was at least one thing that made me suck in my breath. Quent gave it to me. "It is yours," he would say and press the buttons on a little box he had in his robes.

This made me nervous, still not being sure what was going on and wondering whether there might not be some joker in the deck waiting to pop up and whack off my head or throw me in the pokey. But Quent explained it was merely inventory.

The only part of the house we did not inspect was his wife's apartment. This, Quent said, we could not enter. Okay.

At dinner—the same fruit I had eaten outside only piled in silver dishes—I met his daughter Kit. It was like seeing a horse in the paddock—the clean lines, the fine head, the eyes of a winner . . . and knowing you've got to put the roll on her nose, win or lose.

And I got the idea she didn't feel too sour toward me, either.

I told Quent I was sorry his wife

was sick. This was the wrong thing to say, as he got very white and said his wife was not sick. She was still of childbearing age and had to stay in her apartment when there were visitors. Okay.

Without appearing too stupid, I picked up what I could in the next few weeks. Palaces, with a family to each, were scattered, about one every hundred square miles, over the planet. There were a handful of wanderers like the old man. They had no homes. They roamed through the orchards of the world eating fruit and sacking out under the trees. They were treated like heads of syndicates, with respect.

Every day Quent dusted his treasures. I'd have thought nothing could have pried them loose from him, but it was pitiful to see how he jumped at the chance to give them to me. After a while I owned as much as Quent did. I started feeling sorry for him, which is a bad habit a man can fall into with a mark when he is not on the stick, and I stopped admiring things. Maybe part of it was the hurt look in Kit's eyes when Quent forced into my hands some new trinket.

You'd have thought young bucks would have been clustered around Kit like high rollers around the only game in town, but I had her to myself. I asked her one day how come Xanadu wasn't jumping with people: the climate was mild, the food was easy, and the girls were beautiful.

Her wide, dark eyes grew darker. "Marriage is a big step. There are many sacrifices. Two people must be very much in love; those are hard to find."

I said softly, "Not so hard."

She looked at me sadly. "You're so poor."

"Give me a chance," I said. "I'll make good."

Her eyes half-filled with tears. "Perhaps you will." She wound her arms around my neck. "Oh, I don't care. I love you so very much."

Just then Quent came in and it was too late to copper the bet. I guess maybe I didn't want to.

The wedding was simple enough. Quent put Kit's hand in mine and said we were married. "Treat her kindly," he said to me. "Remember that she who brings misfortune also may be your deliverance from it. As my wedding gift"—he hesitated and then rushed on—"I give you this house and everything within it."

Kit protested, but I told her that Quent knew what he was doing. When, at last, I turned to kiss the bride, her face was salty with tears. "Dan'l," she whispered, "I'm so sorry." Who can figure a dame?

Quent and his wife and two smaller kids moved out that day to a ten-room house a few miles away.

A con man's heaven? A con man's hell. In a world of marks, I was the biggest mark of all.

The honeymoon lasted three

months. There was Kit, who loved me as much as I loved her, and there was the palace. I thought I would never get tired of owning these things, of knowing they were mine. We wandered through the palace, Kit and I, dusting and admiring. Then, slowly, we stopped going so often, and I took to sitting by myself, thinking about nothing, like one of the blasted statues.

I couldn't peg what was wrong with me. All I knew was something had gone sour.

Kit and I had our first fight the day her father came to see us. Kit said she was going to her apartment, the one that had been her mother's. I couldn't figure it. "I'm pregnant," she said.

"Well?" I said.

Suddenly she was screaming like a sorehead loser, "If you haven't got a decent respect for your own welfare, you might at least try not to ruin the lives of your children." She ran, crying, from the room. A woman.

When Quent arrived, I asked for the pitch. For once he gave it to me straight, looking ashamed. Kit didn't want anybody but me to know the birthday of her baby. Otherwise every year everybody would have an excuse to give it presents.

"That's bad?" I said.

He nodded. "I knew you did not understand. I took advantage of your ignorance." He massaged his hands together. "Will you ever forgive me? Here on Xanadu to have

nothing is to have everything; to have everything is to have nothing."

"Speak plainer."

"What sane man would want possessions? Do they make you wiser or happier or more free? No. They chain your mind and your emotions to *things*. You are their slave, for you must care for them. They own you; they steal your life away, second by second."

He got a look on his face like reverence and went on. "My father-in-law is free. When I married his daughter he gave me everything but that star sapphire. He wanders where he pleases, does what he wants to do. He has no cares, no responsibilities. He can tend to the important things of life. He is rich. You and I are poor."

The message began to reach me. The real estate gamesters had done their job too well. They had made life too easy: food was as handy as the nearest tree; rags and roofs were like a fifth leg—they slow down the race. And they had made Xanadu too exclusive: what's the advantage of having the scratch if it can't talk and there's nobody scratching to get it?

It had happened—slowly, maybe: everybody had got sane, a terrible condition for society. But not completely.

How come, I said, he didn't just walk out and live? He acted like he was a priest and I had knocked religion. After his lid settled back, he explained that this was what he

called a "residual characteristic" of their society, a carryover from the old days. They couldn't shake the habit of looking after the good things, like dusting the stuff. He ran his hand along the base of a statue.

I got the drift. It was like other people who wore clothes whether they needed them or not, or people who dug up gold and then buried it in another hole so that the paper money they printed would be worth more than the paper it was printed on. There was no logic to it, just emotion.

Quent was looking at his fingers like he had just picked up a pair of loaded dice. They were dusty.

He screamed at me for a while about decency. Then he was gone and I didn't notice that either. I had it pegged now, what was wrong. A con man needs a mark like a cop needs a crook. But what I wanted these marks to do, they wanted to do but worse. If there was something I wanted I had only to ask.

I was the mark.

It built up inside me, hard and bitter and violent. Kit tried to talk to me, but I snapped at her. Finally I picked up a chair and swung it at a painting on the wall. The chair broke but the painting wasn't scratched. That was it. I raged through the place knocking over the furniture and finally succeeded in tipping over a grotesque welded thing of scrap metal.

That's when the committee came in: Quent, his father-in-law, and a stranger, another wanderer. They had a look on their faces like I had been needling horses.

I panted at them: "The stuff won't break!"

Quent said sourly, "Our ancestors built well. . . . You see, father—it is worse than I feared."

It was then the old man turned on me. He'd handicapped me as a slow starter since I didn't know the track, but I'd had my chance, and now I would have to carry extra weight. I had broken the rules, and I would have to be punished.

That opened my eyes. "How?" I said. What could they do? What they could do was to load onto me some more property. A man had died without kids; his place had been a public liability ever since. Now I owned it. Okay.

I could have told them to take their property and what they could do with it, but that wasn't my M.O. Something like that destroys confidence, which is the basis of society.

It was a skin game I had stepped into, and I was the one getting skinned. I had landed here as rich as the richest man on Xanadu, and the old buzzard had come running up to nail me before I got wise.

Right off I felt better. I hired me a man to look after my other property—he showed up every week to hand me his wages—and Kit and I made the palace shine. I had

been hard to live with, but that all changed. I hummed, I sang, I hugged Kit, big as she was getting.

I was fixed, but I was not going to wait for our kids to pull me out. I had promised Kit I would make good. Okay.

A few days later I gave Quent's door a quick rat-tat. Fast and sure I gave him the pitch. "Daddy-o, I want you to know you did not get a patsy for a son-in-law. I am going to make us both rich.

"You see this list? It's your ticket to fortune. I bought it this morning for one sapphire. One small star sapphire I let a guy give me, and you can have it for the same amount.

"As you can see, there are six names on this list. You go to the man whose name is at the top and accept a gift from him—that is, two sapphires. You scratch out his name and put your name at the bottom. Then you make six copies which you sell to your friends. Okay? Already you have made a clear profit of four sapphires. You can't lose."

Then I gave him the hook. "Here is the clincher. As soon as your name reaches the top of the list, seven thousand seven hundred and seventy-six men will come to you for a gift."

"Seven thousand seven hun—!" Quent began, swallowing hard.

I dropped the list and a sapphire into his hand. "Be sure not to break the chain. It means a lifetime of poverty and bad luck."

I walked away whistling. I was right the first time: Xanadu was a con man's paradise.

If this didn't work, in a week I would run a raffle. Then there was bingo, punchboards, slot machines, roulette, and the old galloping dominoes. There was a whole

catalogue of confidence games nobody on Xanadu had even heard of.

I would be rid of my property in no time.

Once I got the pitch what chance did they have against me, Dan'l Fry, the best tongue in the business?

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THE END OF WINTER

by WILLIAM SCARFF

*Lew and Nora had crashed somewhere among
the stars, and we went out looking for them.*

We got there too late—something had found them first.

You know . . . I think I'm glad. I liked Nora. . . .

WE SPENT A LONG TIME FOLLOWING bad leads before one finally proved good and we found them. We knew their ship had blown its drive somewhere inside a particular sector of space; it was finding out exactly *where* within that sector that took a long time, and then there was the business of following the faint trail of stray ions from their atmospheric jets. They had used those, knowing they'd be short of fuel for a landing, but concerned, first, with reaching a solar system to crash in. So we followed the trail, blurred as it was by stellar radiation and all the other invisible forces of the universe, and lost it a dozen times before we found them, too late. I'm glad we were too late.

Lew and Norah Harvey were probably the best astrophysics research team the Institute had. There was no question of their being the best-liked. They were young, gay, and unimpressed with

their own competence. Norah was a lovely girl, with startling blue eyes set off by her black hair, and a wide, smiling mouth. She was tall, willowy, and graceful. I shall never forget the first time I danced with her, while Lew sat it out with a girl I was squiring about at the time. Norah was light on her feet; like a ballerina, I thought then, but corrected myself. The image is wrong—the frostily graceful, elegant, and perfectly trained figure in its pristine white costume suggests nothing of Norah but the opposite. Norah was warm in my arms—not ethereal at all; yielding, but resilient; light, but full. The qualities of earthiness and youth were perfectly combined in her, so that you knew this was a woman in your arms, and you knew, without a shadow of uncertainty, what a woman was. Her intelligence appealed to your intellect, her youth called to yours, and her femaleness awakened a quality

and depth of manhood that you were positive was buried and leached out long ago by the anemic fluid that passes for blood among civilized peoples.

That was Norah. Lew was the quiet one—shorter than Norah by half a centimeter or so, wiry, with a young-old face already full of lines and a pair of brooding, deep-set eyes. He was thoughtful, self-contained, and crammed with a fund of outrageously obscene anecdotes no one but he could have told without vulgarity. Lew had an actor's gift for verisimilitude, and a quiet, deadpan delivery unspoiled by a trace of laughter. He called his little autobiographical stories anecdotes, with the implication that they were true, rather than cleverly constructed and narrated jokes. Perhaps they were. It seemed sometimes that he could never have had time to attend a class in college or, indeed, get the growing young man's necessary minimum of sleep, if all these things had really happened to him.

As a couple, they complemented each other perfectly. Lew was indrawn, Norah was outgoing. Lew loved her with a quiet intensity that came close to desperation. The look was there in his eyes, though it had to be watched for. Norah loved him with effusive generosity.

I have said they were probably the best research team the Institute had. They were. Lew was

an astrophysicist with a D.Sc. after his name. Norah was a metrographic engineer and statistical analyst. Neither her gaiety nor Lew's storytelling had anything to do with their ability to take out a research ship, spend six months alone in it while they drifted about in the deeps of an interstellar dust cloud, and come back with half again as much data as the next team. Or perhaps they did—I don't know. Whenever anyone at the Institute remarked on it, Lew would drawl in his noncommittal way: "Well, there's no room in one of those cans for a dance floor. So we might as well work."

We always thought that was one of Lew's most quotable lines. Most research teams are made up of what are called 'young marrieds' by the people who sell saccharine for a living, and you can imagine for yourself what kind of repartee that could give rise to at an Institute staff party.

We had those parties often enough. Six months in isolation made us all yearn for as much in the way of noise and crowds of people as could be mustered, and the mustering process had been evolved to a point of high efficiency. Every homecoming team found itself welcomed royally, and every outgoing team had a day or two of grace after the socializing before the Institute medical staff would certify their

metabolisms fit for service again. We were a feast-and-famine group, a close-knit academic cadre with few ties outside the clan and little desire for them. Most of us were married. Those who weren't were usually as good as, and two by two we formed our questing brotherhood, as Lew Harvey put it once.

We lost very few to the impersonal dangers of the universe. When Lew and Norah disappeared, it was a stab in all our hearts. Even the Board of Trustees in charge of the research program, instructed to act with Olympian detachment in promulgating its success, managed to bend a little: it found an extra appropriation at just that time to finance the sending of ten ships into space simultaneously. The official purpose was to accelerate the program, and thus increase Man's knowledge of the universe so much more quickly, of course—but somehow it was made plain to those of us who went that if we did not bring back much routine data, that would be considered only a natural hiatus in the always unsteady curve of human progress.

So we stripped the recording instruments out of the ships and made room for a relief observer, and his extra complement of food and air. It was tricky, but it meant we could stay out searching a little longer, and be a little more

alert. So equipped, we left the Institute far behind and converged on the sector where the Harveys had been—a sector only a hundred light-years deep, containing an estimated mere hundred thousand bodies where their ship might have crashed. And we began to search.

We found them; *my* ship found them, that is. And much too late. We couldn't have saved Lew if we had known the exact pinpointed spot to go to—not if we had had the wings of angels. But we might have saved Norah, with a little luck. I'm glad for both of them that we didn't.

What we found was a rogue body where nothing had any business being. It was forging blindly through the deep—sunless, perhaps a thousand miles in diameter, and the mass readings were fluctuating wildly as we came near. Dozzen, the extra on my team, showed me the figures. He was very young. Clean-cut, handsome—fresh fish, and unassigned as yet when the emergency had come up.

"The machines have dropped a stitch, Harry," he said. "Look at these—new mass readings every thousand miles as we come closer."

I looked at them and grunted. "No. The readings are right."

"Oh, come on now, Harry—how could they be?"

"If a gravitic generator were

buried in the heart of that body."

"Gravitic generator! My left-footed aunt, Harry."

I can't say I ever cared for loudly positive people. I winced and tapped the other readings scribbled down on the scratch pad. "Just because nobody's ever seen it before, never say what you're looking at isn't there." I could have launched into my favorite diatribe on explorers who resisted making discoveries, but what was the use? "Look at these: Atmosphere one hundred percent inert gases, mostly neon. Furthermore, it's fluorescing. Hardly a likely state of affairs in nature. You will also notice the presence of some neon snow on the ground, but not much. But the mean temperature is down nudging absolute zero. Why isn't *all* of that atmosphere piled up in drifts? I'd say the reason is that it *was*, until very recently—that something, like a spaceship crash on the surface, activated a series of machines which are busily raising the temperature and otherwise moving the ecology from a dormant to an active state. I doubt if Nature includes that kind of reaction when it constructs a planetoid. I'd say that whole business down there might be a machine—or, rather, a complex of mechanisms with some particular purpose in view."

He looked at me as if I were crazy. I looked at him as if he

were being deliberately stupid. Some day, an expedition equipped with recorders instead of our ship's simple analyzers, is going to have to go out there and prove one of us right. I don't wish to be on that expedition. Dozzen can go, if he wants to. I wish him joy of it.

Whatever it was—natural anomaly or artificial leftover from a day and people I am glad are gone—we landed there, coming down on a relatively flat place in the vicious terrain. The sky flamed yellow above us and its fluorescence might have been a working light for autonomous machines, long since gone. It is impossible to speculate on the history of the place; I say, again, that it would be a mistake to go there and try. And for all I know, it was entirely different in appearance as recently as when Lew and Norah Harvey's ship came hurtling out of the sky and smashed itself like a bug on a windscreen. But if anything endowed with biological life ever lived in that place as we saw it, I have only horror for that thing.

What we saw was Hell. All about us, boundless and bare, were scarps and ridges of bleak, decayed metal so desolate, so pitilessly torn and twisted into razor edged shapes that for a moment I seriously expected to hear a scream of agony from the neon snow as it fell on them.

There was light. There was no

heat. The incredible chill of the place was sucking at our ship already; the cabin heaters were whirring furiously. We shivered as we peered out through the windows and outraged our eyes with that masochist's landscape.

Not all of Nature's forms are beautiful—even a dedicated research man occasionally has his soul intruded upon by some particularly offensive example. But all of them, even the most revolting, have a certain organic rightness to them. One can see the reasonableness, if not accept the architectural style, of every form the universe erects.

Not this place. If you have seen a tin can left to rust for a year, its walls broken down and flaking away, then you have seen something of the contours that metallic landscape took, but only something. If you have seen a giant meteorite; pitted, burnt, leprous, half-molten and congealed in gobbets, barely suggestive of some other shape now lost that might once have been angular and purposeful, then you have experienced some of the feeling that place gave us. But not much of it.

The Harvey's broken ship made an island of sanity in that place. It was smashed and scattered, but its fragments, pieced together, would have made a whole.

We could land nowhere near it. We put our own ship down six miles away. We stood at the

ports, looking out, and finally I said: "We have to go out."

Doris, my regular team mate, said: "I'll get the suits." She got all three. In the backs of all our minds, I think, was an irrational fear that something might happen to the ship while we were all gone. But there was an even greater fear of being separated in that place, and to avoid that we were immediately willing to chance being marooned. We were not very sane in our decision, but in that savage place the nerves were much more potent than the intellect. So we locked our suits on and, armored against any external fearsomeness, clambered down the ladder.

"This way," I said, looking at my direction finder, and set off across the terrain. I tried to look only straight ahead. Doris and Dozzen followed me, at some small distance, staying close to each other. I envied them, for I was very much alone.

I had expected that Doris would find him better company than me. It was not a new experience for me to lose my team mate, though it had never before happened in my immediate presence. If Norah and Lew were known for their constancy, I was known for my lack of it. One, perhaps two trips were as long as I and my team mate of the moment ever lasted. If there had been something specta-

cular or particularly noteworthy in my many partings, the board of directors would long since have removed me. But they were only quiet, amicable dissolutions of temporary working partnerships. No one found them scandalous, though juicy gossip was as well received by the Institute staff as it is anywhere. Each new occurrence was simply another example of Harry Becker's not having found the right girl—or of the girl's not having found the right man in Harry Becker.

Good old Harry Becker, decent fellow, nothing wrong, fine companion—on all levels, one might add—but apparently just not the right man for Doris; or Sylvia, or Joan, or Ellen, or Rosemary . . .

"Harry!" I was inching around a jagged wave of pitted metal, and Doris's cry in my headphones almost sent me stumbling against a razor edge. I caught my balance, and turned. Doris had shrunk back against Dozzen.

"Harry, I saw something . . ." Her voice trailed away. "Oh—no, no, I didn't." She laughed weakly in embarrassment. "You'll have to forgive my girlish jumpiness. It's that formation over to your right—for a minute there, it looked like an animal of some kind. I only saw it out of the corner of my eye, and I played a little trick on myself." She made her voice light, but she was shaken.

I looked around, and said noth-

ing. It was Dozzen who put into words what I had seen and been trying to avoid. Our nerves were taut enough. But Dozzen said it anyway: "There's another. And some more over there. The place is crawling with them. It looks like a lunatic's zoo."

It did. It did, and it was nothing to try to be matter-of-fact about—not then, not ever.

Now that we were down in it, the terrain assumed individual features. I wished it hadn't, for it had become evident what those features were.

Beasts prowled around us; frozen forever, but prowling. Unfinished, mis-shapen, terribly mangled, they bared their teeth and claws at us, only to become tortured metal as we looked at them directly. We saw them beside and a little behind us, always, and not only beasts, but the cities and dwellings they had overrun—the homes they had gutted, the streets they had littered with the remains of their prey. We walked on among them and they followed us, always at the corners of our eyes, and when we turned to see them better they were gone, to lurk where we had been looking.

"It's a common form of illusion," Dozzen said weakly.

"Yes," I said, and led the way through their gantlet.

"This is a terrible place," Doris said.

It was.

We reached the crashed ship, and Dozzen said: "Look!"

The ship lay mashed, but a hull section had held together. There were weld scars on it. Perhaps it had not survived the crash whole, but it was airtight now. There was a cairn beside it, with a cross welded together out of structural members atop it.

"Which one?" I thought in agony. "*Which one?*" and leaped clambering over the ridges and heaps of fused metals, panting with urgency. I ran at the cairn and flung myself up it, and sprawled at the foot of the cross to read, in bright scratches: "Lewis Harvey, Explorer." I slid down the cairn in a shower of fragments, and pounded on the sealed hull section hatch, shouting "Norah! Norah! *Norah!*" until Doris and Dozzen came and pulled me gently away.

They cut open the door while I sat facing away. They had looked in the port and seen her lying still in her suit; I could not have done either. And once inside, it was they who picked her up tenderly and laid her down on the bunk, the suit out of power, the inside of the faceplate frosted over, and the suit limp, limp and boneless—almost—but too heavy to be empty, though the stupid hope came to me.

They rigged power lines from their suits to the report recorder, and lines back into our audio cir-

cuits, and when I heard her voice I did not make a sound.

"Last report," it said in her voice, exhausted and laboring. "Power going fast. I'm in my suit now, and when that goes, that'll be it.

"I don't know where we are. Whatever this place is, it must have just drifted into this sector. I don't know what it was—what purpose a race would have for a machine like this." She stopped momentarily, and the breath she drew was a gasp. I thought of her, starving for air, starving for heat, broken by the crash as she must have been, and I remembered, again, the first night she had danced in my arms.

"The changes outside are still going on," she resumed. "But much more slowly. I think they'll stop soon. I see them try, try to complete themselves, and fail, and stop, and start again. But they are slowing down, and each attempt is less forceful than the last. I wish I could understand what was causing them.

"I wish Lew were here," she said wistfully. And there was no question now whether she had given up hope or not. She began to speak for a record greater than the Institute's.

"I loved you, Lew," she said quietly and serenely. "Even though you never believed me. Even though sometimes you hated me. I loved you. If I could never prove

it to you in that one narrow way, still, I loved you." Her voice was growing very faint. "I hope I shall meet you," she said. "And if I do, then I would like these to be the first words I say to you: I love you."

That was all. She was dead. Doris reached over and pulled the audio line out of our suits.

There was a long silence. Finally Dozzen sighed and said: "I don't suppose that will mean much to anyone. There are probably earlier spools in the recorder, from when she was still thinking clearly."

"Probably," I said. Doris was watching me closely. I looked at her and thought I had never been as clever as I thought I had—nor as clever at hiding myself from women as I had been at hiding from myself.

I went over to the bunk and picked up Norah in my arms, and carried her outside. Dozzen may have tried to follow me. If he did, Doris held him back. I was left alone.

I built the new cairn beside the other, and welded a new cross with the tools we all carried in our suits, and etched her name upon it. I had plucked the lumps of toothed metal one by one from the surface of the machine-world, and piled them carefully, and opened her faceplate so that the inert atmosphere could flood in, wash out the trapped carbon di-

oxide and the last trickles of oxygen, and leave her ageless, perfect forever, frozen.

I was done at last, and came down from the cairn. Doris was waiting for me. She took my arm and touched helmets with me so Dozzen could not hear. She said:

"Harry—it's often the most feminine women who . . ."

"Who aren't female at all?"

"That's a terrible way to put it," she answered softly. "I wonder if that's the way Lew thought of it—if he tortured himself out of shape inside, because he chose the cruelest way of thinking of it? You knew Norah—she was warm, and friendly, and a wonderful person. Who can say, now, what may or may not have happened when she was just becoming a woman? If Lew thought she was a living lie, he ought to have thought that perhaps she knew she was lying to herself, as well. If he'd ever thought to be kind . . ."

"Don't tell *me* these things!" I said bitterly, instantly sorry. "I wasn't married to her."

"Are you sorry or glad, Harry?" she asked quietly.

I didn't know, then.

It was while we were on our way back to the ship that Doris touched my arm again. "Harry . . . look!"

I raised my head, and the beasts of the place were gone.

It was a subtle change—a shift of planes, a movement of curvatures; no more than that—not yet. We never stayed to see the end of that process. It was moving too quickly for us to endure.

The snow stopped and the snow on the ground burst into curling vapor that shrouded us in sparkling mist, as though Spring had come into this place at last.

The metal shapes were still molten, their outlines still broken, and they were still metal, still cold and hard. But the beasts were gone—the pent-up nightmares of frustration were lost with even that beginning of a change. Everywhere the corners of our eyes could see, there was striving. The illusions, Dozzen would have said—did say, the fool—were softening, turning into calm, friendly shapes. The raw hatred had gone, and the viciousness. Now there were spires, minarets, the fragile battlements of faerie cities, and here were hedges, trees, and there—I saw it, if Dozzen did not and Doris never spoke of it—I saw a bench, and two lovers with their arms entwined. And I thought I saw them move.

"It's turning beautiful!" Doris said. It was. It was wild, eerie—many things; not all of them, perhaps, as wispily graceful as the best beauticians would have them—but it was vibrantly alive, glorious with growth.

We left it quickly. There was

that about it which unsettled Dozzen badly, and made Doris moody. It did many things to me.

Dozzen made the formal report, without benefit of the recorders and analyzers that would have made fallible human impressions unnecessary. Doris and I initialled it, and I will never know if she, in her own way, was being as evasive as I. We have never talked about it, because what is there to ask?

Illusions are subjective phenomena, and no two people can possibly be expected to see the same face in a shifting cloud, nor can one see anything but the lion in the jumbled granite mountain-side where another insists he sees a sheep. These things are nothing but reflections of the viewer's self. How can they possibly be measured or compared?

Dozzen's report says the terrain of the place is broken into free forms which the mind readily supplies with familiar shapes, in a search for the familiar where the familiar does not, in fact, exist. That is as far as he will go, on paper, though he knows there is enough more to the truth to make him unhappy. But he knows he doesn't know just where that truth might lie, so he will not push himself beyond the point where he feels safe.

I think I know what a machine of planetary dimensions might be

intended to do, though I cannot picture a race which would choose metal in an inert atmosphere for a medium in which to attempt the creation of life.

I think that is what we found. I think all races must come to it someday in the prime of their greatness. I think the race that built this machine failed, and died, or we would not be here today. But I think that race came very, very close when it launched its machine into space, a messenger and vessel of nearly fruitful hope. I think they may have missed only one ingredient of life, even though they chose so strange a thing as metal for its womb.

I think I know why the snow was falling again when we first came there. Norah buried Lew, and not in his suit, for that was still hanging in its locker. And when she buried Lew, the planet-machine began to stir to movement again, and take to itself what it had always lacked and, lacking, almost died. And now, having that thing—spark—it began to change—to search after its goal once more, to strive, to fail, but trying, trying nonetheless, with all it could get from Lew Harvey. And failing, and going back into its ageless somnolence again, leaving only its half-successful attempts behind it to haunt us when we landed. For whatever it was that unfulfilled, tortured Lew Harvey yielded up

in the crash, Lew Harvey was not enough.

And I do not say that a Mark Four suit will contain the kind of thing required for the creation of life . . . or that a dead girl can say *I love you*. But the snow stopped after I opened Norah's suit, and the beasts departed. And I saw movement in that planet's metal, at the last. I don't think it was a trick of the light, or of the evaporating snow.

I think, someday, when Doris and I are out there again, we shall meet something. I think she thinks so, too, though we never speak of it or plan for it, because no planning is possible.

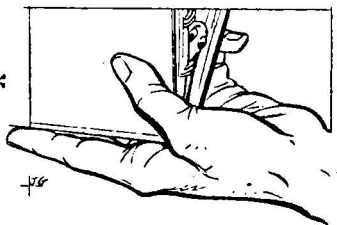
I wonder, sometimes, if that primordial race, so great, could be so thoughtless, ever, as to fail—if greater plans were made than I am quite ready to believe. I hope not. I would rather believe that blind chance was the catalyst. In that belief, there is a kind of hope.

I am afraid, and proud, and troubled. I think of what might have been if Norah had loved me, if Lew Harvey had not met her before I ever knew them. I think of the thing between them, the thing we never suspected and they never betrayed. I am glad for them now, if I am sometimes terrified for the universe of Man.

For I think that someday, in the deeps we sift, we shall meet Lew and Norah Harvey's children.

ON HAND: A Book*

by THEODORE STURGEON



When last seen in these parts, *On Hand* flipped out a phrase which has elicited some pithily worded response. The phrase: something to the effect that s f today repeatedly commits the cardinal immoralities of incest and cannibalism. The response: "Hah?"

Here's what we meant, Buster. Time and time again this beloved field of ours runs variations and permutations on its own ideas—a fine thing at the outset. But after a few generations of such Oedipean behavior, any idea, no matter how robustly original it may have been at first, begets descendants which look a little wan. Stanley Weinbaum's highly amusing off-world zoology had that done to it, and so did the notion of a space pirate. The *psi* story's manifold brood now can't stop its bleeding, and the alternate-universe theme has become so ho-hum that few people remember that it started quite recently (in the form in which it is most widely imitated), as an invention of probably the most inventive of us all, Murray Leinster (in "Sidewise in Time"). Exploration of a new theme is one thing; incest is something else again.

As to the other sin, it is evident that the corpus of s f is nourished by the corpus of s f. There actually are writers with elaborate filing systems, who consciously and knowingly rewrite existing s f after discovering from editors what they're buying (i.e. "idea" stories, "gad-get" stories, "adventure," "time," "atomic doom," or what have you, including "saucers.") This is cannibalism, and affords you, if you want it, a distinction between an author and a writer. And it isn't only the systematic marauder with the Kardex who eats this flesh. There are all degrees of cannibalism, some certainly subconscious and less criminal; but the fact remains that by breeding inwards and by feeding on its own substance, s f is thinning its blood.

The charges of cannibalism and incest were made on these pages as part of a plea for a return to the approach, though not the style, of the planet-wrecking, star-hurling swashbucklers of the Thirties which,

*PEOPLE PLACES THINGS IDEAS; edited by Geoffrey Gibson and C. H. Gibbs-Smith. Four Volumes, boxed. Approximately 1,000 pages. Four volumes boxed \$27.95, \$12.50 each. Published by Hawthorn Books, New York.

for all their crudity, were Stories, Adventures, Romances. S f is apparently suffering from the same thing as science itself, which, as John Campbell recently pointed out, is mostly not science at all, but engineering—that is to say, the refinement of the reapplication of the already-known.

All this may seem to you the writer's concern rather than yours. Yet as a consumer, you have a responsibility; the right to gripe is not conferred by nature, but is a privilege to be earned. The unearned caterwaul is great for emotional release, but informed criticism, whetted taste, and educated appraisal can change the face of the earth. When more readers know more about people, places, things and ideas, then more writers will give them better fiction. Or starve.

It is for these reasons, and one other—the fact that with the admission of psychology and political criticism to legitimate s f, *all* things acting upon human beings, and acted upon by them, fall within s f's province—that *On Hand* now deals with a publication which is, at first glance, out of the field and your budget as well.

So we should know more about more—right? Well, how do you go about knowing more? Study? Take a course? Fine—but study what? Take what course? To decide you have to know first what you want to know more about. The horizons can best be expanded not by choice and specialization, but by a sort of grand randomness, indiscriminate as a sponge. Now, if only someone would come along with more things, more *kinds* of things, than you ever thought possible, and which it would never occur to you to look up; if only someone would pour all this out on a mattress and let you roll in it, to see what sticks with you . . .

This is essentially what the Messrs. Grigson and Gibbs-Smith have done in PEOPLE PLACES THINGS IDEAS, and they've done it, not with a mattress, but with a set of the most beautiful volumes you have seen in years. They're *big*—the set weighs in at close to ten pounds, and the books are about 7 x 10 inches, each with a full-color cover illustration imprinted right on the binding cloth. They are a pleasure to hold and to look at and to look through. A number of things they are not: They aren't reference books in the strictest sense. If you want a book that tries to include everything, try the encyclopedia. These aren't books for research; they're for reading. They're designed to give you that heady experience of guided randomness and the discovery of people—places—things—ideas you might otherwise never be fascinated with. The editors' choice for entries flies like some whimsical hawk, dipping into the surface of the not-known.

The four prefaces say this well. For PEOPLE, the editors insist it is not a dictionary of biography. "The approach is less neutral. . . . Variety has been our aim [rather than lists of the great] . . . there have been great men, after all, whose lives would make very dull reading." Hence the book is made as it is subtitled—"A volume of PEOPLE, the good, bad, great and eccentric, illustrating the diversity of man." PLACES are those "which have delighted, intrigued and intimidated men," and the many contributors operated admirably under the blanket request, "write it so we'll know what it's like to *be* there." THINGS deals with "the objects devised by man's genius which are the measure of his civilization," and like the others is "a volume for the inquisitive but not always for the solemn." IDEAS is "a mixed bag of ideas, notions and emotions which have moved the minds of men."

Now here, *chillun*, is a package, a treasure. In these volumes are anti-Semitism and McCarthyism (which is provocatively described as an American phenomenon rather than a Wisconsinian), Enthusiasm (did you know this was, until the 17th century, a term for religious ecstasy and/or hysteria?) and Nihilism and the Ivory Tower; here are Bagpipe and Coaches, Guillotine, Querns and the Zoopraxiscope; Glendalough (where in the Sixth Century the hermit St. Kevin was tracked down by a girl-friend who, on her appearance at the cave-mouth, was set upon and hurled into the lake by the holy man) and the Grand Canyon; Chopin and Sir Humphry Davy, Machiavelli and Rumi, who as every schoolboy knows, founded, in the Thirteenth Century, the order of the Dancing Dervishes.

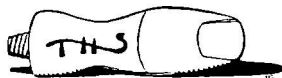
A special word is merited by a special feature in these books—the illustrations. The endpapers were printed in Holland, the color plates—hundreds of them—in England, and they are just beautiful. Like the subject matter and the treatment, the illustrations are chosen from all over—photographs, art reproductions, lithographs, oil portraits, maps ancient and modern.

In sum, this set of books is the greatest thing since the eleventh edition of the Britannica. It is impossible to hold one of them in your hand without wanting it, and improbable that in the first ten minutes you won't learn something new and surprising about a subject you never knew existed.

Give these books a once-over and then think about this: Even Grigson and Gibbs-Smith don't know, and haven't room for, *all* wit, whimsy and whipsockets. Yet mankind has, and is only beginning. If science is lagging while engineering increases, if science fiction is

paling while it reprocesses its dried fruits, the answer lies in basic research. Basic research in science we know about; basic research in fiction is simply the observation of everything there is in man's environment. The mine is the universe; a fabulous ore-pocket lies in the Grigson-Gibbs-Smith books. Writers will mine it and write better fiction of every kind; but they'll do it better, and sooner, if they're writing to the reader who has mined there too.

Offhand—



BOOK	TYPE and TIME	BUY IT—
<i>On The Beach</i> Nevil Shute Morrow 320 pp \$3.95	Novel Near future	—and you contribute to the unhappy situation whereby known mainstream authors can get a wide hearing with mediocre s f while better books by s f pro's get back-page one-paragraph reviews. Shute's book is good, his message vital, his plot situation actor-proof; but as a novel it does not merit the footfaraw its s f aspect has earned it.
<i>Earth Is Room Enough</i> Isaac Asimov Doubleday 192 pp \$2.95	Collection: 15 stories and two "pomes"	—because few of you can have caught all this Asimov from all these sources. Actually a mixed dish, or stew, with potboilers expected and forgiven in the presence of meat which is plentiful and choice.
<i>Earthman's Burden</i> Poul Anderson and Gordon Dickson Doubleday 192 pp \$2.95	Collection, somewhat novelized by "interludes" and illustrated: Cartier!	—if you like, or think you might like, stories about a race of hyper-imaginative teddy-bears, the Hokas. They range from hilarious to cute with a capital K.
<i>Hidden World</i> Stanton Coblenz Avalon 224 pp \$2.75	Novel: "contemporary".	—if your forte is curiosa of early s f, and if you can swallow the idea of hitherto undiscovered underground races. There is some amusing social commentary-by-comparison, so that it might be said the book has merit as a fable.
<i>Frontiers of Astronomy</i> Fred Hoyle Mentor MD200 317 pp 50¢	Popularized cosmology, illustrated and indexed	—buy it, <i>buy it!</i> Any two of the dozens of magnificent photographs are worth the price. Hoyle's lucid prose and the 60-odd drawings make it surely the best layman's coverage of astronomical matters ever printed. A bargain you must not miss.
<i>The Third Level</i> Jack Finney Rinehart 256 pp \$3.00	Collection: 12 short stories	—if you like slick copy, mostly in the vein of the old <i>Unknown</i> . Contains little for the rabid s f fan but a few fogbound time travel ideas. Shows real conviction in "Second Chance," in the author's love for classic cars, and in the straight suspense "Contents of the Dead Man's Pocket," which will freeze your blood.
<i>The Time Dissolver</i> Jerry Sohl Avon T 186 158 pp 35¢	Novel Contemporary	—by all means. Tightly knit, well-plotted mystery adventure which abides by its rules. Only one or two characters seem stereotyped, notably the villain; the rest are real as rye.

new moon

a short novelet

by DOUG MORRISSEY

*Four men and a woman were lost in space and time,
and they were drifting inexorably into a hot star.
Their only hope was to rebuild a ship that was—
fantastically—completely strange to them. . . .*

JOHN EMBER WAS SLEEPING alone in the control section when the air exchanger clanged shut above his head. The angry thud of metal against metal was amplified by the thick, drifting steam which a moment before had been flowing sluggishly through the cramped room and now was blocked. Ember awoke in a panic, his smarting eyes wide with fear as the damp blanket of hot air settled over him. He groped upward past the maze of overhead controls until he found the closed vent, and realized that the air system had stopped. He slumped back into the padded rest, gulping in the scorching air as his pounding heart brought him full awake.

Ember's fitful sleep, at best a forcing of mind into a conditioned blankness, had been aided by the steady drone of the cabin fans above him. Now as the silence

made him strain to hear the first outcry of warning from the others that would say at last that their fight was over, a new sound began above him; a desperate metallic wheezing as the fan solenoids clacked on without result. Ember leaned forward and shouted, not a name or command, just a voice to let the others know he was not to be abandoned if they were going to quit the ship. He shouted and somewhere nearby, untraceable because the burning steam magnified and distorted all sound throughout the ship, he had an answering shout from Orin Lockner. There was no panic in Lockner's voice, just a blurred oath that let Ember know the air exchanger had been Lockner's doing. Ember shook his head in familiar wonder. It was Lockner's doing, and part of some greater design that the engineer never chose to explain.

If it really was a design. . . .

"For God's sake, fix it," Ember bellowed in spite of his sore throat. But even as his heart beat faster, his mind explored the cause of his anger.

Fear of death.

Fear was always motivating their anger, Ember and his four crew members, nor could they hide it too well from each other. The brief activity brought more sweat to Ember's forehead, until it beaded in drops, stinging his eyes as it fell to splash the padded cowling of the instrument cluster, there to collect in the indentation left by his forearms as he had slept.

"Fix it," he said again.

As if in response, the solenoids stopped chattering. That was Lockner too. Lockner had his own methods of response. Never a real answer, no command as such had come from Lockner in the six months of their new life, yet Lockner was in charge. He was tearing the ship apart and rebuilding it by his own design and at his own pace. . . .

The stagnant air soon forced Ember out of control. He stalked into the shoulder-wide passage, moving carefully in the weak gravity of the ship to keep from overheating. He let his eyes adjust to the glare of spotlights that Lockner had installed in the passage where he had been working at the

junction relays for the instruments. As Ember turned away from the hot light, he saw the scarlet splotches on his hands and forearms. He was hemorrhaging again and this was worse than before because the constant pain in his throat had dulled his awareness of it. His throat was raw from constant coughing in the foul air. Anger did not help.

Ember gathered moisture in his mouth and spit it out, lacy red confetti that was heavy enough to drift down past his trembling hands. He bent and plucked up a handful of the packing insulation that Lockner had torn from the junction box, wiping the blood away before he moved on to find Lockner and the others. When he started again, moving slowly, he held back a fresh cough by the sheer strength of his hate for the ship.

There was enough hate for that.

It was hate based on ignorance, for like the others, he did not understand what Lockner's was accomplishing. He understood neither the ship nor the engineer and if Lockner was really fighting the ship, he was losing. Perhaps the ship had already won in so small a thing as the closed vent in control section. It would not take much to tip the balance.

And the ship was trying to destroy them.

God, he thought in awe of the six months, the ship was sick, sick,

sick and infecting all of them. The effects they knew, the causes they were hunting—and in the meantime they were drowning in their own sweat . . . living on foodstuffs that were near poison most of the time. Six months.

Over sixteen million heartbeats and all on borrowed time.

It had been this way from the moment they had come out of suspension. Each of them had been affected by the baffling amnesia and all their actions in trying to understand the ship had been a potential brush with death.

But this was bathos, he thought in grim humor. This was anticlimax . . . the evaporation system breaking down from Lockner's constant tampering, the ozone in the oxygen-helium mixture. Living in a bath tub, never knowing a cool breath in the scorching closeness of the close-to-unbearable heat. That was Lockner's doing, too. He had cut too often into the inner shell of the ship to get at access points for his patchwork repair. Where he left a gap in the insulation, the ship lost heat on the dark side and took it in on the side facing the giant star that would soon claim them. Heat poured through these gaps and every opening was sweating beyond the capacity of the internal evaporation system to absorb it. Nor could Lockner cut blindly, Ember knew. They had suffered collision with a meteorite shower, the hull

pierced in a dozen places and dented in a ragged line. The one meteorite had hit the outer wall at the storage section in crew quarters, hit and gone through, breaking part way through the inner wall, and it was trapped now between the two walls, protruding from both and sealed by the automatic action of the insulation. But every time Lockner tampered between walls, he increased the possibility of a leak around the meteorite or even a blow-out. . . .

The meteorite was like a cork, plugging its own hole and Ember dwelled with inner satisfaction on the savage pleasure he could wring from blasting it clear and jettisoning the wet air in the instant—

He pulled away from the thought. He had no wish to die, no more so than the plants in the nutrient tanks which were fighting for survival. Pete Selig had reported some unknown species of mold was choking off the gardens, eating its greedy way along the sweated seams of the hull. Now Rhea Lawrence was afraid of the jungle that Selig was cultivating. Because of the mold, she had lost all interest in helping Selig with the vital oxygen producing plants.

And they needed her knowledge, that of it which had survived the suspension.

Death washed through the entire ship like a restless, clammy housepet that rubbed against their

legs. The air was hot as smoke, heavy in the lungs and almost hard to walk through, Ember thought as he pushed on.

At the pressure wall between the passage and the navigation section where Matthew Heller worked his useless equations in an enviable disregard for the stifling heat, Ember rested. He did not want to see Heller now. There was nothing new to discuss. He wanted Lockner, somewhere else in this captive rain cloud, and for an instant, as he struggled for breath, Ember wished Lockner could make the cloud spill its rain. . . .

Lockner was the key to everything. He was frightened, yes, but he did not let the ship beat him down. That the others, mostly he and Rhea, were afraid of Lockner did not seem to impress itself upon the man's intent mind. He kept to himself, whether back with the engines or scuttling his way along the ship's nerve system from engine to control. He had the atomic reactor suppressed and admitted that he was frightened by it, but still he tried to understand it, and he had it controlled with a jury-rigged system. It didn't matter, when they saw him hacking at the rust or jump-wiring the bad fuses, that his eyes were not quite sane and his speech was little better than a guarded incoherence.

He was still trying, and if he no longer rode Ember about those

who had quit, the contempt for all of them was there.

Most of all for the captain who had failed them. . . .

In six months, Ember had achieved some objectivity about his failure. He needed Lockner for life and it mattered that he lived. If he died, he died with the failure. It might yet be lived down.

Maybe the fear had always been in him. Maybe . . . but it was well buried under the blinding headache when he woke from the suspension. He had sensed trouble . . . the fuzziness of his mind . . . but the awakening had been tempered with tranquilizing drugs and the buoyant feeling, even if a false one, had been real enough to let him grope through the mechanical procedure of assuming command. He kept busy, but the fear began to tug at him as the time came closer when he knew he would have to go outside and inspect the hull. Then Lockner found the meteorite lodged in the storeroom and they could wait no longer.

Rhea helped him into the cumbersome spacesuit as fear made his hands awkward. It was not enough that Heller and Lockner were going with him and were ready. Ember was captain—he must command. They waited . . . stuffed into their gear, remote and alien behind dark faceplates, and he led them out finally, out into the deadly glare of

an unknown star that was too close for their ultimate safety. There was time to see that the ship had lost its newness. The hull was pierced in a dozen places and they saw that the angle of the larger meteorite had saved them from puncture. The hull was dented in a ragged line along the starboard fins as if hit from a constant direction. There was time to see that before the fear got to him.

Moving forward slowly on the hull, fear had frozen his mind but not his muscles, leaving a clawing, screaming desire to get back inside the ship. It was the suit too, choking him, and when they dragged him back into the airlock with the inside of his suit stained with his urine, neither Lockner or Heller had been enough free of the tranquilizers to care. . . .

Now he was unfit to command, unfit for any job under Lockner's silent command but to be scribe . . . keeping to the useless control section while he wrote up the story of the failure of their mission. While they all tried desperately hard to remember what that mission was.

While he moved forward, Ember was remembering this, and remembering that the others, at least Orin Lockner, had accepted the amnesia and the new problems without whimpering. Of course none of them had realized the time of awakening that they were suf-

fering from amnesia. That was learned later, from many discussions. When Lockner awoke, one thing burned clear in his clouded mind—Right or wrong, he would have to work the reactor. . . .

The reactor was the key to their existence. The power needed internally was a product of the reactor, distinct from the drive, but the reactor was half alien to him. He came back from the search of the outer hull, not disgusted with Ember until the drugs wore off and then too busy to care. But the drugs wore away and uncovered the gaps in his memory, leaving him working but unable to master the frantic search for answers. One look at the ponderous notations in his handwriting left from the time before suspension, one check of the recorders where the data should have been instantly clear and was not, told him to wait . . . to back away and find the others, wait until he understood more of his problem; but he was being pressed.

Heller had not yet evaluated their exact position or determined whether they had been under suspension for the planned exact one hundred years, but the near star meant danger. If they were to flee it, energy was needed for drive and control. And needed for Rhea and her gardens, and for Selig who had a dozen auxiliary tasks that were draining the already low main batteries.

Lockner did not wait. He gambled that action would force his mind to produce the right answers. . . .

He gave them power and gravity and made them comfortable for a few hours. He triggered the reactor to second phase from a sense of urgency, true, but also as a gesture. Something, he said later, made him think of it as a salute to the completion of the long suspension, the dreamless, timeless sleep.

By the third hour, the reactor had become a bomb.

Lockner had just enough knowledge left to see the danger in time. There was no choice but to dampen the pile, to smash it until the thunder was a whisper that hissed the length of the ship, defying them to muzzle it completely.

He had gambled, and he had pre-set the wrong limits. And when he had finished the first of the minor miracles in checking the pile in time, he could not say why the shaking hands had betrayed him. It was an ancient blunder now, six months old, and Lockner knew much more. But his knowledge was new, self-taught. He and Selig had virtually dismantled and rebuilt the ship in an effort to educate themselves, keeping a faltering, nervous step ahead of the fitful giant behind the lead shielding, holding it in a state of sleep except when they had to charge the storage batteries.

This was how it had been for six months on this ship that was committed to drift into the giant sun.

They had even discussed the possibility of abandoning the steam-stuffed, doomed ship for the quick, clean burial of space. Ember had argued against it. Life was bad inside but at least they lived. Rhea had been persuaded, and whatever she decided had decided the others as well. Somewhere in the notes he was keeping Ember put it all down, writing with all the bravado of a child assigned an adult role he did not fully comprehend. And they were all children, he thought. Robbed of memory, yet saddled with adult decisions. Except that among them he had no decisions to make and could stay a child.

Fading Ember . . . dying Ember . . .

At the end of the next passage, now blocked by panel sections and insulation, he found Orin Lockner.

Lockner had the advantage of being a small man. Now he had himself wedged into the recess that carried ductwork and wiring through the central compartments of the ship. His back was to Ember. His arms were encased in rubber, thrust into the tangle of lethal wires. Lockner was taping cut ends.

"Orin . . ." Ember said it

gently, an apology for the shout. He waited until Lockner acknowledged him with a grunt.

"Orin, how long can we last this out?"

"Why is that suddenly important?" Lockner muttered something else under his breath, attentive again to the ritual of separating wires as if he would say no more. Water which had collected along the recess rolled lazily forward and dripped into the open cracks on Lockner's shoulders. He shook it off savagely, talking as if to cover his anger.

"You asked the same thing a month ago, John. And I said maybe two days then. So if I say two hours now, or two weeks, it won't mean anything."

"It would."

"No it wouldn't. We're alive. How much more dare we ask for?"

"But we don't know . . . much about ourselves, Orin. Least of all what we're doing here."

"We know we aren't dead yet," Lockner said.

"Well, I can't live in the control with the fans off—"

"I know. I know. I shut them off because I need this junction unit elsewhere. You don't have to stay there to do your penance."

"The rest of the ship isn't much better, Orin."

"Well, I'm trying to fix it," Lockner answered. "Even the air system. There's a chance I can dry it out by routing it through the

reactor field. That's why I shut your fans off. They're useless."

"The reactor will further contaminate the air—"

"Perhaps. It really doesn't matter, does it?"

"Are you going to run the reactor under more power?"

Lockner half rolled, staring up at the dripping water and the corrosion above his face. "Heller says we have to. He says we fly now or never. There isn't any way to judge the exact reach of the outer layers of that star out there but we'd fry long before we hit it. Because you cracked up out there—because Heller had to do your work and never got it fully done. Every pit mark we missed is a miniature solar oven, waiting. Yes, I'll run it full and it may fission and if it does, at least we'll vaporize this damned swimming pool—"

"And us with it."

"And us." Lockner turned back to his work, drawing out the slack wires from the next terminal beyond the pressure wall. His hands shook constantly these days.

"Look, Orin. Is there anything I can do?" Ember felt left out, asking though he knew that words with Orin were sterile. He regretted the question instantly.

"Do?" For a moment tensed as if to roll out and face Ember, and half way there he just stared up, his jaws working in anger. "Do? Why no, there's nothing to do."

Just the outer hull where we left off. Or that meteorite. I told you a dozen times that the insulation wasn't designed to seal off anything that big . . . no matter how tightly it's held in there it can still pop out when we're all in quarters. And anyway, I don't like it and you know that too. I think that damned rock is the reason we've had trouble. And then you ask . . . oh, Christ no. Nothing to do unless you want to run an errand. Go get Selig. I have things to be done. Tell him . . . oh, tell him to come here."

Ember found Pete Selig where he would have found him anytime away from helping Lockner—in the compact galley on the storage level. Ember felt that it was part of his penance that Lockner sent him as errand boy instead of calling down to Selig. He knew that Lockner reserved the same special hate for Selig but would not let it show, not while Selig was useful to him. Selig was alternate engineer—or had been once. None of them, knowing him as Lockner's assistant, would have guessed the twisting of Selig's mind after they came out of suspension. In the first week when they had been living on stored water after finding that the food rations were toxic, Selig had tried to solve their dilemma. He was unfamiliar with anything behind the labels in the weighed, sorted cartons, but he

was starving and hunger was his hidden fear. Selig wrecked their hopes of a rational diet, tearing open all the cartons in stores, going through anxious trial and error on himself because their first few meals had nearly poisoned them. Yet, where a trained dietitian might have faltered, he searched for edible combinations, using himself as tester. And he kept them alive, mixing the food-stuffs with water.

But where they had merely survived, Selig had thrived.

Ember's notes told that, too. Selig had regressed in the tiny galley and when Lockner didn't need his mind or hands, that was where he stayed. During the physical examination after suspension, Selig weighed 165. Now he weighed 230 and looked as if the hot thick air had bloated him like a balloon. Nor had finding a diet been the limit of his usefulness. Selig had managed to produce alcohol and he'd experimented with it. Then, while the others were still deep in their fear of starving, he had served it to them. It was enough that he was trying to feed them. They took the measured quantity and washed down their cereal.

There had been just that one terrible two-day drunk for all of them.

Somewhere about the ship, hidden even from Lockner, Selig kept the remainder of the alcohol, doling it out to himself in small

amounts. Never enough to achieve the abandon of that one time. He feared Lockner too much for that. . . .

Ember reached the galley as Selig was preparing something new. The odor was bad but bearable. At least Selig cooked everything now. They were living on stores and what he grew in the tenth of an acre he had under cultivation. Ember entered and found the source of the new odor. Selig was preparing some of the mold that infested his gardens. He was up to his elbows in it, mixing it with soil plants.

"I'm not certain what it is," he offered. "But I have to keep digging it out of the gardens. It's catalyzing some of the plants. We may as well make use—"

"All right, all right." Ember could not hide his revulsion for the galley. It was untidy, as Selig had become. Ember had a vivid mental image of Selig if the gardens failed, if they finally resorted to cannibalism . . . Selig cutting up Orin, searing steaks on the electronic spit he used to char the root foodstuffs.

"Orin wants you forward." Ember watched the thick arms plunge into the mold. He couldn't blame Selig for experimenting. He was too hungry for that. And it was a food source, born of this life and vigorous. It might eventually feed on them as it fed on the plants. He did not like the mold. He would

be damned if he would like it. . . .

Selig offered him a handful of the mold paste.

Without thinking more about it, Ember began to satiate his hunger. "Orin said right away."

"Yes, all right." Selig rested his arms. "Is it about Rhea?"

"I don't think so."

"Has he . . . talked to you about Rhea?"

Ember began to anger. "No."

Selig shrugged. "Something has to be done about her. You know . . . something . . ."

Ember was aware that his anger was not visible when Selig talked about Rhea Lawrence. It was a dull ache in his chest, a throttling down on questions and commands that drifted across his mind. No more than that. He was not in charge of Selig. He had to remember that. In charge of no one. Moreover, in terms of usefulness, he knew Selig was far more of a man than he was. In Selig's presence, Ember felt the man was always on the verge of open scorn.

"What specifically about Rhea, Pete?"

"For one thing, she isn't eating enough, not of this diet. And I can't find anything special for her. You know that."

"Rhea hasn't said anything about not eating. Why didn't you tell us before now?"

"She doesn't care enough to complain. And we have to do

something . . ." Selig was indifferent to the problem. He dug into the mold and broke off a clod of it. "Rhea won't touch this . . . or any of the food from the tanks where it grows."

"I can't blame her." The symbiosis was a million to one possibility. Yet here it was. It must have come aboard in latent form in one of the seed groups and under just the precise conditions that Lockner had accidentally created, it had come to life. It might replace all other life in time, but now it was food.

"I'll see Rhea . . ." He forced a mouthful of the mold paste past the rawness in his throat. "I thought she was going to decide about what to do." There was room for Rhea in Ember's self-pity, at least for her, and he was thinking ahead about how to talk to her.

Ember started out, and found Matthew Heller blocking his way in the narrow passage.

"John. I have to see you right away."

Ember was startled. He had passed Heller before and thought the man had been working at his post in navigation. Heller loomed now like an apparition in the thick, hot steam. There was an effect of light behind his head that gave him a halo. And a sense of distance between the two men as unbridgable as the stars.

"All right, Math. If you want

to." Ember had called him "Math" from the time before the suspension. The remembered nickname was a bizarre touch now after Heller's failure to understand his own mathematics. Ember had to turn away from the intense scrutiny of Heller's pale amber eyes. "You're the only one, Math. The only one who wants to see me . . . because of outside."

"Don't think about outside. You act as though you're the only failure here. Look at me."

"But you still have a chance, Math. A second try."

"My first try was a sorry thing," Heller said. "But come to navigation. I want you to see what I've found." Heller's voice betrayed eagerness, a new quality. He moved swiftly through the passage, turning to wait now and then for Ember's slower pacing.

Like each of them, Heller was a specialist, and there was enough collective memory among them to place Heller as one who had contributed to the preparation of their flight. There was something about Heller, something important to remember, about his theories of navigation using the dimensional projection graphs and the star tracker to provide the ship with changing reference points for triangulation. And they were proud of Heller. He had been sure once; it showed still in his graceful hands as they wrote the invisible equations upon an imaginary

blackboard before him, sketching out the intangibles of space, speaking with ease of infinities.

Or so they understood, among themselves. For Heller had come out of the suspension more lost than the others. . . .

Heller took failure hard. Still, he was the best equipped crewman to withstand the heat and fear. The hot, dense atmosphere was no problem to him. His childhood had been spent in the equatorial rain forest; his first schooling had been at its edge, a jungle mission where one of the great men of their time had chosen to retreat. Heller had been his justification, the brilliant student returned to the world. Heller had grown into an awesome, powerful man whose mind had burst the bounds of astro-navigation.

This Ember knew from group discussions with the others, but where the imperfect memory—the confusion in the face of written symbols—had been a disturbing hindrance to Lockner, it was an inescapable prison to Heller.

Ember could remember vividly the terrible moment with Heller when the man knew that Lockner was right about the amnesia and the deterioration of their memories. It was, Heller had agreed, as if the filing system of his brain had been torn apart and the scattered contents swept together. Everything he needed was there . . . somewhere in the debris.

"What am I to do? What now?" he said, his body hunched above the dimensional apparatus. He was ready to smash it rather than admit failure. He had been tampering with the delicate structure of the graphs that encased the miniature ship model, tampering according to the information the recorders had supplied. It should have meant something. It did not. As yet, Lockner did not know why the recorders were wrong. They had a simple code to decipher but could not break it. If the recorders were fractionally out of adjustment, they had had a hundred years to compound an error. . . .

"What can I do now?" Heller asked his graphs. The visible stars did not fit the star tracker's computations. The ship was lost in space and time, and Heller, Ember thought, was lost in himself.

So he waited, more delicately poised to explode than Lockner's reactor, hunched over his navigation instruments, drumming his dark hands in a tempo set by the sound of Lockner's tools. . . .

"Come in, John. Come in."

Heller brought Ember back to the present. He looked up to see Heller's dark face and a phrase came to mind, one of the incomprehensible bits of memory trivia that was a word away from setting right the whole mystery. . . .

. . . with a silk umbrella and the handle of a broom . . .

Yes, yes, an umbrella, he

thought. If Orin could only make it rain to clear the air.

They stepped inside the navigation room. At the fogged astro-bubble, Heller wiped the inner glass free of condensation and stared out.

"I've found something, John." Heller had a way of setting his face to hide emotion, no movement except for the amber eyes, but Ember could distinguish excitement now, the interplay of muscle along glistening cheekbones.

"Outside? You mean—"

"Oh no. Something in my notes, John. From the first days after we came out of sleep."

"I thought—"

"Yes, you thought I had destroyed all the early notes in my anger. No, these are intact. I must have hidden them away." Heller picked up the damp curling papers he had spread out. "You remember, John, that Orin has often said that he had at least a week before he had to recharge the main batteries, a week before he had to activate the reactor. Yet he went ahead, goaded into it by some compulsion he can't define. Now he's trying to correct for the very first mistake and all the troubles it caused—"

"It couldn't be helped, Math."

"No. . . . That's what I thought, too. Don't you see? I followed an identical pattern. I made

mistakes and you probably thought I hadn't tampered. But I worked the star tracker when I shouldn't have—when I couldn't get a positive formula. I took the recorder information and forced the star tracker to fit what it called for. Yet I had time—look, it's six months now and we haven't yet gone into the star."

"I don't understand, Math."

"Well, it's just that I know now that there was no hurry. Still I felt compelled to make a positive statement. These are what I want to show you—"

"But they're equations, Math. You know I don't understand your special brand of math—"

"I know, John. You aren't supposed to. But I don't understand them either, and they're mine. These equations are like a bad forgery, a careless copy in my handwriting. I think we were being affected by the suspension drugs, John . . . or something else. Only we didn't know it. We couldn't know it. A sick man calls for heat even in the jungle if he has cold spells. A man may jump off a tall building because his senses tell him it's only a step. Even your breakdown outside, John . . . it fits the pattern. As for me, I wrecked the star tracker, or at least I think I did. Remember the food? Rhea took care of the first few meals. What if she wasn't reading labels clearly because of the drugs?"

"Did you tell Orin about this?"

"I think Orin knows."

"If you're right, Math. If you're right. . . ." Yet John Ember didn't really want to know. Death had dulled itself on the hard surface of days; hope was a new feeling, not a good one yet.

"I don't know, John. It's only what I found in the notes. I don't think the star tracker is right now. I think I twisted it out of use. Maybe I could fix it . . . if I could remember enough."

"Then what's to be done?" Ember touched the papers, saw the writing blur under his sweaty hand and pulled back quickly.

"That's up to Orin. If we're going to live, he has to hurry." The astro-bubble had fogged again and as Heller wiped it, the rays of the star diffused its weathered outer surface.

"You don't remember any more, Math?"

"Not enough. It's like . . . something hanging on my mind, something I can shake off. I'm all ready to work. I have been for all this time, but I can't. Not yet. Not in the way that Orin works. I have only one more chance to tamper with the tracker. If it gets damaged, no one can rebuild it. Not Orin."

"It isn't Orin's fault, Math." Ember felt this strongly. "He has no memories in sequence. He has to experiment and we have to let him. Orin's our mainspring. He's

wound tight and we're all operating off him. Sometimes I think that we have no past, Math, that we've always been out here. You know, as though we invented the amnesia and the hazy memories just to make it seem real. . . . But we *do* remember—we must believe that—and as long as Orin can make this ship work, I know there's . . . purpose."

Heller checked his instruments and began to close off the astro-bubble. "I know, John. We've talked about this. There must be people who remember us . . . people who care and wonder what became of the faultless plans for this ship. We're afraid to look back because when we remember, the loss of the past may be too much to stand. But we could be part of some tremendous project, John. Perhaps there are a thousand ships like this, adrift in space, following the turning of the stars."

"Like seeds . . ."

"Yes. Spoor put out in great profusion to insure that some will touch some distant shore and take root." Heller slid the last plate closed, losing a little of his confidence as the stars were blocked from view. "But we five are just part of the estimated loss. We won't find root. Whatever we were supposed to find when we came out of sleep, it wasn't here. There's nothing but a single sun out here where we are. Maybe we came out too soon. Maybe the

ones who sleep a thousand years and travel at higher speeds will make it. . . ."

They had discussed this but Ember knew the answer, even as Heller realized they had reached it again.

"We may be seeds and among the lost but we don't think so, Math." If it were true and they were seeds, then it was logical that they could germinate and live and go to seed again, so that somewhere, some of the offspring would touch a shore.

"I know," Heller said. "And you're right about the past. We belong somewhere. Something's happened to us and we aren't fully over it. Otherwise nothing would have happened to Rhea."

It was the first mention of her since Pete Selig had forced the question on Ember, minutes earlier. Ember knew it was a question for all of them. They had a real link with the past they could not recall, a link more tangible than theory, a link indicating that they were part of a living race which had instilled a will to live in them even stronger than that Orin displayed as he fought the ship inch by inch. For all of them, it was an instinct born in the fires of creation as old as the star that would soon destroy them.

They had their link in Rhea, now that she was in the fifth month of her pregnancy. . . .

They did not discuss her now.

Heller was tired and ready to rest. Ember led the way back to crew quarters. When Heller turned into his unit, free until the time for his next observations, Ember went on to Rhea Lawrence.

She was asleep and he was content to wait for her. He had lost the urge to sleep, he thought, since being awakened by Lockner's tampering. He sat on the tiny wallbench, facing her cot, listening to a muffled sound from beyond the storage section. It would be Orin, he thought, tampering somewhere else, and he let the sound lull his mind. Maybe he could still get back outside and finish the hull patching, pry the meteorite away and right the wrongs. But no one would help. . . . It was too hot in the ship and it sapped his attempts to remember, so he sat back and listened to the sounds beyond.

He was almost asleep half an hour later when Lockner woke him again, waking him this time with a new sound. And even as he heard it, and felt the vibration creeping along the wall of the ship, Rhea sensed it too and was waking.

Orin had set the reactor to second phase.

Rhea had a hard time of it, coming awake in the same panic that Ember had felt so recently. She was weak and for a moment the strength to lift herself would

not come, only enough of it to let her form an outcry. Then she saw Ember close by and she lay back, watching him through the veil of steam. Sleep drained from her face, deepening the lines of pain and hunger.

"It's all right, Rhea." Ember went to her and sat by her legs. "It's all right." He tried not to look at her, and looked. He never discussed Rhea with the others though he thought of her, of how she might have been; but he had no sure memory of her from before and he distrusted the thoughts he had now. The only sure thing about Rhea began the moment Selig had tricked them into drinking the alcohol. . . .

It could be his baby, Ember thought. He liked that, that it might for certain be his. But nothing was certain and it was no easier to take the credit than the blame. Ember did not understand what he felt for Rhea. It was too involved with the fact that someone had to look after her and the others were busy.

"It's all right." He pressed her back into the wet padding, alarmed at the fever heat of her thin body. Rhea was starving, but so far the embryo survived. She had promised to make some decision about it. Something to be done. . . . But he pondered with dulled concern that months had passed and nothing had been done.

She struggled to get up again. "What is Orin doing?"

"He set the reactor up."

"But he isn't ready for it. . . ."

"It doesn't matter, Rhea. We're falling into the star. The ship isn't drifting free anymore." They sat and listened to the power building up, awed by it and afraid. But they knew Orin was afraid too and they could picture him back in the engine room, fingertips against the shielding, listening and watching the instruments. . . .

"Orin said he would put the reactor to second phase, Rhea. He thinks there's a chance—"

"What chance?"

"If none, at least this way will be quick," Ember answered crossly. Sometimes they argued. It didn't matter who defended or who damned. "This way, we won't feel anything."

"You want to live, John. Orin too. You're afraid to die and all this time we've lived on borrowed time."

"As long as there's a chance, Rhea. He has to go on. Orin didn't say this would work. Only that it was now or never. We've been expecting this moment for weeks. I want him to live, Rhea. I want someone to win . . . at something." He started up but she caught his arm.

"Stay by me, John." She reached up to touch his throat, as if to soothe the rawness. "If it fissions, be here with me."

"Yes, I'll stay." He thought of many things to ask her but his mind was back with Orin, back with hope. "Rhea, Pete said you weren't eating. Isn't there something you can do about the baby?"

"There's nothing to be done. It's too far for that."

"But if you aren't adjusting to the food—"

"Is anyone adjusting besides Pete?" She was skeletal in her thinness, all but the drum of her abdomen with its vein lines like spokes on a wheel. Yet her eyes lived and they had fire like he had seen in Heller's eyes. "And what if the reactor works? What if we have to live this out?"

"Don't you want that, Rhea?"

"I don't know." They lapsed into silence, aware that the cabin temperature was rising slowly. My God, Ember thought crossly. They could take anything but more heat. Then he understood why it was hotter—Lockner had shut down the cooling system to conserve the motors.

Lockner came into Rhea's unit, grinning the first grin they had seen. It had cost him a split lip.

"We're all going up to control," he said. He was strapping on acceleration gear. Under it he wore a clean uniform. His hands, as he fumbled with the straps, were scrubbed free of the engines and the ship for the first time. Behind him in the corridor, not quite awake, Heller waited.

"We're going to accelerate," Lockner said. "The regular procedure we've talked about. That way, if she blows, we'll at least be under full power and pointed away from the star." He had an afterthought and voiced it as they moved forward to control. "I'll have to handle the drive, John. There isn't time to explain all that I've done to it . . . to explain how it operates. Anyway, if it fails, I want it to be my own fault. . . ."

"Sure, sure." There was hardly anger left in Ember. He was the one to fly the ship, but he was no good to them. "You can always teach me later . . . if you really planned that far."

"Yes. I planned that far."

An hour later, when Lockner was certain that the reactor was constant, he triggered the drive system and pointed them towards the black curtain beyond, under full power.

In the two weeks that followed, while Lockner spent time alternately between tampering in the engine room and teaching Ember how to operate the drive, Ember noticed Heller's strange behavior. He thought that Heller would spend his time trying to fix the star tracker but he had some other project underway that he would not discuss. He slept little and visited less. It was only when Ember went to him on the fifteenth day under acceleration, with the

news that Rhea was dying, that he came out of seclusion.

But none of them could help Rhea, and whatever hope they'd had was ended. Only Rhea's memory held the key to operating the suspension process. They had left the pull of the star but there was nowhere in this strange dark sector of space to go. The one chance, that they might go back home—if they could remember where it was—was lost to them without Rhea's knowledge. And Rhea was not going to make it.

Before Heller could even begin to think about her, Orin Lockner came forward from the engine room to become the final entry in Ember's sporadic log.

Radiation. Lockner was dying from it.

The patching of the hull, done so early in their frightened haste, had been done in error. Lockner and Heller had patched the outer shell well enough, all but the meteorite, but they had stripped the engine room and the silent reactor of its lead shielding for their patching material—going, as Lockner now knew, far beyond the allowable limit. For the two weeks of their flight the efficient reactor had spread radiation throughout the ship, but it had been worst in the engine room, and Lockner had caught the full force of it. The automatic detection system had long been scrapped to use elsewhere in Lockner's fight. A

simple check that he should have made long ago—except what was the point?—showed him that the radiation in the engine room was too great to suppress . . . and that he was dying.

Like other errors, the error had been his own, and he could see that he had never been ahead of the ship in the struggle. He eased himself into the padded engineer's chair next to the flight control seat where he had taught Ember the new control system. His eyes were somehow less mad than they had been.

"Heller," he rasped. "Where are we?" Lockner was not afraid of death. He was angry at losing and at being cheated . . . angry that he had ever reached back into the past. He had just that one question.

"Where?"

"I can't tell you, Orin. You know that."

"But I want my burial to be somewhere, Math."

"I can't tell you. There is no system like this one near enough to the center of the dimension graphs for a hundred-year trip. We've gone further, and I don't know where. . . . Orin, I'll tell you this much. Whatever this star is, it has a satellite. . . ."

Heller had found the satellite the first day after they had cut in the drive. He knew that the planet, if it was that, had an or-

bit geared to the star. He was certain now that their course would put them close—and each new observation dimmed his hopes for it. It showed an atmosphere, but dense, a gas that would not let the sunlight penetrate. The planet would not have life as they knew it. It was too far from the star, and it was so thickly blanketed that its surface would be impossibly cold. So all Heller's observations on it had been exercise, charting a possible landing trajectory that would theoretically let them fall into the gravitational field of the planet and use its rotation to slow their descent.

Before he had finished explaining the impossibility of trying, Lockner gave the first order he had issued in the six months of his unwanted command.

"We go in," he said. "It's better than out here, Math. Ember can take us in. He knows enough. . . ."

Ember thought about it, wishing that Rhea were well enough to help in the decisions. "Yes. That would be better."

Heller came alive to the challenge of his equations. "It won't be easy," he said cautiously. "But then . . . we don't have much to lose. We won't even see the surface. We'll have to go in by radar and land on the side away from the star. That way, if there's any chance for the rest of us—" He turned away from Lockner,

ashamed for his naked selfishness. "I didn't mean that, Orin. I meant a chance for all of us. . . ."

"For any," Lockner said quietly. "Yes. For any. I think the ship is in condition for an atmosphere landing. With luck we can take the frictional heat. I just want to see the start of it, John. Just the start. . . ."

But Lockner was alive and alert through all of it. The landing procedure was a nightmare once they hit the thin outer atmosphere. The frictional heat was fantastic, burning out the thermocouples buried in the outer skin. The refrigerant was barely holding and it was Lockner's job, cursing Ember through the intricate subtleties of control as they let down, to hold the internal temperature. Their long exposure to great heat saved them at the time of the letdown. For a long while Ember did not think they would pull it off. He was not fully in control and Lockner hammered at the refrigerant controls like a man possessed. They had reached a speed close to what they felt would be their reversal point when the explosion happened, a great whoosh that triggered the pressure wall behind them an instant before they would have been ripped from their seats.

"The meteorite!" Lockner shouted. "We've lost it!" It had blown out through friction heat and the added pressure of the refrigerant.

The sound and the feeling before the pressure wall sealed them off had frightened Ember, but he was checking the ship and it was all right. They were going in blindly, using radar, and the seconds were terrible under his hands.

"Christ, help me, Orin. This is your ship, not mine."

"You can do it, John." Neither of them was certain, but it had to be said and as the seconds passed, Ember's hands felt a sureness that gave him better command, a remembered sense brought on by the strain of doing what he felt he had been trained to do. He could do it. Lockner was right. He was in command. It brought power to his mind, even hope as his thoughts leaped beyond the switches and circuits and stared through a door in his mind that was opening to the past.

He started the tricky part of the letdown two hundred miles above the zero point of the radar, rockets blasting full against the pull of the planet, searing into the alien atmosphere.

Then the door swung open—

Ember stared past his hands in dumb comprehension of what Orin had done in six months. His eyes searched the dials, trying to link what he saw to what he *knew* should be there, and it was wrong. Orin was shouting something beside him, but it did not come clear. He saw only that there was some-

thing wrong with the settings and he tried to correct them, put sense into them. In that instant, he succeeded only in killing the power level, upsetting the delicate balance of thrust and fall that Lockner had designed. Even as he reached out and slammed the power on full he knew that they would drop too fast and that it was his fault now and not Orin's, because he had doubted what he saw. The ship screamed down and Ember with it, and finally it went in with his own voice screaming louder than the engines, telling Orin where the mistakes had been—

The cold woke Ember. It lured him away from death. He did not know how long they had been wrecked, only that they had crashed into the unyielding surface. For a long time it seemed he would not be able to move in the cold air, but he made a start and kept struggling. He was blind in his left eye. In the dim instrument glow of the control panel, he twisted around to see the others, and wished that he had not. Orin and Rhea were in the cabin with him. Lockner's couch had torn loose and ripped into Rhea's. They were crushed together.

Beyond them, the padded couches that had held Selig and Heller were empty. Because their couches were in line with the pressure-wall passage which had been

torn open, he guessed that they had been thrown down, but he saw that the straps on the couches had been untied. It was as he struggled to free his own straps that he found his right arm was useless. It did not matter until he rolled free and fell into what had been Lockner and Rhea. There was nothing to do but to get away from them. Ember worked his way to the edge of the passage before he vomited and passed out.

The smell of alcohol brought him awake again.

Far down in the dimness, he could see the bulk of Selig, forty feet down and wedged into the bracing of the passage. The man had backed down and caught himself, and died at last while the alcohol lay smashed somewhere beyond. The smell of it brought back the image of Rhea, and Ember drew on his hate for Selig to stay alive before the cold froze him. He started down the ladder, not caring if he missed a foothold. Heller was still to be found. Ember was freezing to death with each painful step and by the time he reached the next pressure wall, he was uncertain of what he wanted.

Then he found the bloody handprints.

Heller had been alive at this pressure wall, still a hundred feet above the unseen ground. Ember began to shout, glad for the sound of his own voice in the biting air

that tore at his uncertain fingers reaching down the next ladder. Far below, he could hear the reactor laboring over steam, could hear the hiss of acid in the cold. His voice died abruptly in the sudden fear that he had outlived all of them but he found more bloody prints, leading him on until the hatch was there and he felt he might catch Heller and curse the man for not waiting.

Beyond the open hatch—darkness cut by faint light, wind reaching in to claw at his face. Ember shut his good eye and stumbled down the last ladder, fighting to walk like a man. His feet touched the fused ground. He walked blindly for a few feet until he stumbled and pitched forward.

He'd found Heller.

Ember pushed himself up and stared. His good eye could see a little better and he bent forward to search for life in Heller's face but there was nothing. Heller stared back with dead eyes, his mouth twisted by some truth that would never be uttered. Heller's arm was up, rigid, fingers clawing and pointing to the sky.

In his intent search of Heller's face, Ember saw the reflection in dead amber eyes and even before he looked up to the light source that put the reflection there, he knew that Heller had died of shock and not the fall down the passageway that had cut his face. Ember began to pound at the

shapeless features, over and over, cursing silently in his raging throat *Goddamn you Math Goddamn whatever you are* and he began to cry then, rage and hurt, all without sound until he pitched forward across the sightless eyes and he thought *go tell Orin what you think and where you finally buried him . . . that fool Orin and you and I bigger fools. . . .*

Ember rolled free, unable to do more than rest on his good hand. He stared up at the sky, shaking from the cold, trying to form a word for the others before the cold took him. And the cold was here, reaching in to freeze the word, to kill it as it was killing him, but he split the ice in his throat . . .

"New moon."

"Are you certain it is John Ember?"

The words were far away, and here, and far away, and here, and running around and around in his ears, like mice, too fast, their feet too sharp to really understand. If they would slow down, if they would not hurt so much, he thought, I would understand them.

Another voice said angrily: "Yes, yes. It's Ember. I knew him personally. I knew them all."

Ember heard it, and opened his eye. They were men, faceless, towering shadows with the moon behind them. He lay on his back with hard cold ground beneath

him, rolled up in blankets with his eye watering, and engines roaring all around him, lights pouring out over the ship, men swimming through the clear fog over his eye—all under sluggish water, other silent men tending him mysteriously, all jumbled, towering over the trees.

"Why hasn't he been moved to a hospital?"

"The Major, sir—the medical officer—said no. He said we didn't dare— Look at him, sir, he's *freezing* to death this time of year. In another month it will be summer and this whole lake area will be—"

"Captain, just make sure your men don't move anything in that ship."

"Yes, sir. Those were my orders." The second voice apologized for its panic. Ember listened to it sound its doleful note, tolling like a bell, lost and going out of understanding, faraway, fading—nothing there for him . . . nothing with meaning . . . strange . . . the hooting of some alien thing that never knew John Ember's world. . . . "It's just that I knew John Ember. He was a class ahead of me at the academy. I was at the farewell dinner for his flight—"

Another voice: "Here you are, General. I've been looking for you. Taylor, medical corps."

"What about moving this man, Major?"

"I won't risk it. There have been changes here, and we have no idea as to the extent. I've been looking at the others. God rest their souls, I was also at that dinner. . . ."

"He's dying here."

"He may not. My men can do as much for him here as anywhere. If we leave him alone, he may not die. If we try to treat him as if he were a human being, he will."

"Let's not make a horror story out of this. It's a malfunction, that's all. You said yourself it was the suspension process we should check first. . . ."

"That or the meteorite that hit them and stuck in their hull. Even if it's found now, it's been burned out in the atmosphere. It won't be different from any other meteorite that strikes Earth. . . ."

"If we could only have made radio contact. If we could only have talked to them. . . ."

"But we couldn't. We couldn't even finish the relief ship in time. It might have been too late even with a relief ship. You saw what they had done to the radio equipment. If they'd do that, would they have been able to talk to us face to face? I say it was the suspension process. At least a mechanical failure that brought them out after only eighteen months of flight. And that damned ship went around and around the Sun."

The little mouse of sound bit

deep, and Ember thought: I was afraid, afraid—it was all so different from anything I knew.

But the mouse ran away and was lost and this time the cold was killing it.

"If we could read the notes. . . ."

"But we can't, Captain. The first few are clear enough, but those others . . . they turn into gibberish. You saw what they had done to the ship; what they had been living in. It's beyond our logic how they had that reactor under control in a free system—how those circuits worked. What Heller was doing to the mathematics of navigation . . . what Ember thought he was writing down in his notes . . . we may never know. It's there—it's there, and Heller may have seen infinity—we know he never saw what you and I see when we look up at the sky; Ember's notes may be models of coherence—but not for us—never for us."

"Rhea Lawrence was pregnant. At least, I think she was. But I don't know how much the autopsy will show. . . ."

"There you are. If we could read the notes, we'd know about the suspension process. If they had patched the hole and brought that meteorite inside, we might have the first such specimen that hadn't burned itself out with air friction. You may be right, Major—the meteorite *was* in the crew

quarters where they slept under suspension. . . ."

"The child, if it had been born . . . if it had lived. I'll always wonder what it would have been like—If we had the meteorite . . . or the child . . . that is, had them alive, one might answer the riddle of the other. . . ."

"But we don't. We don't have anything, if Ember dies . . . and we don't dare touch him. . . ."

Ember's eye opened. He saw the moon, and as the cold poured

in through the blankets he watched the moon and saw it weep with cold, with loneliness, the only familiar thing in a sky turning strange . . . strange . . . fire and crystal and fierce constellations . . . and now the moon, too. . . .

He stretched his arm up to it, never seeing the medical technicians around him hesitate, reach out to save him and draw back because there was no way to reach him. . . .

"New moon," he said, dying.

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THE MEDDLER

by JOHN NOVOTNY

Going back in time wasn't as uncomplicated as Mantro had expected. For one thing, you should never trust a Time Meter bought with trading stamps in a super-market.

For another, the ladies of the past behaved shockingly. . . .

ALDAK III LEANED BACK, PERMITTING his tall, well-disciplined, but aged body to relax. From nowhere a stomach distended on which he delicately balanced a nikol container of beer.

"I find that revolting," Mantro snapped. Aldak III divided his beard into two gray rivers of hair and laid one along each side of the container.

"A finer pedestal this beverage could not have, for it created its own," Aldak III said happily. "I rejoice in my later years that Harry XXIV Piel refused the orange robe of Chemistry Rector and remained so loyal. This great gift might have been lost. You too have a great gift, Mantro."

"A much greater gift than operating a brewery," Mantro said. "Put that container down."

Aldak III sighed and drew himself up. He pointed a small metallic sliver at the top of the container and a neat round hole appeared in the top.

"One of your developments," he smiled.

"But not intended for that use," Mantro answered pointedly.

"That's true," Aldak III agreed. "Metal easily shaped without heat or force. A very useful practical application of a science. And now I make my point. While you're practical the Extreme Council will permit anything; but when you attempt the ridiculous—"

Mantro got up and hit the table.

"We are back to that!"

"One can not go back in time and act to affect the future, affect our time," Aldak III said firmly.

Mantro bent from the waist. "Why not, Aldak III? Only because the Extreme Council has made the Law. If I return in time and kill someone, I might eradicate a lineage extending into our era. Someone in our world would vanish."

"Perhaps many would vanish,"

Aldak III said. "Perhaps one we need very badly. A research man, a healer, you—or me."

"But I could choose a lineage," Mantro insisted. "I could erase the evil ones of our world."

"The records are not that complete, Mantro," Aldak III said softly.

"I could—"

"The Extreme Council will return in time five minutes earlier and execute you before you can commit the deed," the old man said forcefully.

"The Law," Mantro sneered.

"And beyond The Law, we don't believe you can affect the future. There are natural forces—"

"I am the expert on natural forces," the young man in blue smiled. "You are a beer drinker and dreamer."

Aldak III shook his silver sleeve in the air and glanced at the nikol container.

"A philosopher, my boy. One who believes in certain natural forces. I believe in cold beer, and I believe that you cannot change our day by going back—even were there no Law."

Mantro smiled at him.

"I'm going to carry on the experiment, old man. And I will not die."

Mantro was furious as the stately pillars of the Parthenon came through the mist of Age. He held the Time Meter before his

face and glared at the dial set for 2000 B.C.

"The last time!" he swore. "The very last time I buy a scientific instrument in a super-market." He shook the Meter. "Those damned trading stamps can warp a man's judgment."

He walked swiftly, searching for a subject, determined to forget the Time Meter defection which placed him in Athens instead of in an earlier world. Mantro moved quickly and hovered just beyond the visible spectrum, preferring to see rather than be seen. When the chariot with the three soldiers raced down the broad avenue, Mantro smiled.

"Could I choose one better than a warrior? I think not."

The chariot skidded to a stop, the three soldiers saluted one another, and ran off separately.

Mantro judged quickly and followed the second soldier. The man whistled as he moved briskly through the city. When they came to the river he turned right and approached the second house.

"My lovely wife will be surprised," he murmured, preparing to knock.

"But not too surprised—I hope," he added softly, hesitating.

Mantro placed the heat gun near the soldier's feet and retreated. "I am not permitted to kill," he murmured, "but The Law says nothing about delivering the means to another."

He stepped back as the soldier turned and kicked the heat gun.

"What have we here?" the man asked, bending and picking up the weapon. "A hammer? Too ornate. A—" His finger pressed the trigger and a shimmering shaft sped past his shoulder and dissolved a stone leopard on his neighbors' steps.

"Zeus!" The soldier stared at the empty base. "A weapon! When I return to battle—why, this is like a thunderbolt from Olympus."

Mantro folded his arms and smirked. The door opened slowly and a beautiful blonde girl appeared.

"Mikas," she gasped. "You've deserted."

"Now that's a petty accusation," Mikas said, annoyed. "I have leave to visit my lovely wife—" his face softened—"who was never lovelier than this night in the moonlight."

Mantro retreated to the river bank as Xania blushed and patted her hair into place.

"Xania, whose lovely form is molded in her sheer gown by the breeze from the river," Mikas went on softly.

Mantro gagged slightly. "It's obvious I've made a bad choice," he observed, "and I'm stuck with it."

"What happened to Anthone's stone leopard?" Xania asked. Mantro's hopes came alive.

"It disappeared," Mikas said. "As my love for you could never do."

"It was there earlier," Xania said.

Her husband turned, pointed the heat gun, and blasted the stone pedestal. Xania jumped.

"What was that?"

"Merely a new weapon," Mikas said, matter-of-factly. "I shall probably be promoted soon."

"A weapon!" Xania suddenly remembered something and drew herself erect.

Mikas breathed deeply and moved forward until Xania's forefinger was pressed against the bridge of his nose. Her arm was rigid.

"If you must know, there is nothing romantic in that," he complained.

"I'm pointing," she said coldly. "Go!"

"Go? I just got here."

"Well, get somewhere else."

"Is this the voice of my adored Xania?" Mikas cried.

"Your adored Xania has joined a club," Xania explained. "The women of Athens are against war."

"That's damned noble of the women of Athens," Mikas said impatiently. "Now let's go inside."

Xania shook his hand off her arm.

"As long as the men choose war—" Xania took a deep breath—"there will be no sex."

"Let's not kid ourselves," Mikas laughed.

Xania sat down on the steps and crossed one knee over the other.

"Now, listen! I've run all the way from—"

"You can run up a tree, for all I care," Xania said coolly.

"Are you saying—?"

"Nothing."

"What do you mean—nothing?" Mikas asked.

"That's exactly what you get," Xania told him. Mikas stamped around. Every so often he glared at his wife, who stared at the heavens. The breeze pressed the soft material of her nightgown against her breast and stomach. Mikas glanced instead of glaring. Her slender legs were silhouetted against the white marble wall. Mikas swallowed.

"It would be deserting," he said.

"I think it will be quite popular," Xania said airily. She stretched.

"Are all the women—?"

"One hundred percent," Xania said, dropping a shoulder strap. Mikas' eyes began to water.

"If I agree," he asked "what then?"

"The bed is fresh," she whispered. "Your Xania is fairly seething inside."

Mikas steadied himself on the low iron railing. He looked briefly at the heat gun in his hand,

hurled it toward the river, then gathered Xania in his arms.

Mantro took two frenzied steps and reached high in the air to haul down the discarded weapon. Mikas hesitated as he carried Xania through the door. He waited.

"Well?" she inquired.

"Why didn't it splash?" he asked. Xania closed her eyes.

"Shall we discuss the question here?" she asked, moving slightly in his arms. Mikas shivered.

"I think not," he agreed. Mantro watched them disappear, then fingered the time meter dial.

"Let's try a few weeks difference in time."

Mantro pounded on the dial as the Sphinx hurtled past. Gradually the landscape slowed down and the time traveler maneuvered around the Great Pyramid. The Nile curled through the countryside ahead and Mantro landed at the Palace. He shrugged and placed the machine in a back pocket.

"One time is as good as another," he observed. "Perhaps this is fortunate. Caesar's era was not noted for its calm."

He watched the tall handsome Roman officer striding impatiently in the garden. At frequent intervals the man stopped pacing and frowned at the sun dial.

Mantro—again just outside the visible spectrum—entered the Palace and came upon the chamber,

just in time to see two slave girls sidestep nimbly as a stone jug shattered against one wall. Straightening up from an expert follow-through, Cleopatra placed her hands on her hips.

"Now let that big fellow in this instant," she ordered.

The head lady-in-waiting shook her head. "It would not be fitting," she said. "You would appear over-eager."

"I am over-eager," Cleopatra shouted, removing a small jacket which covered nothing. "He's been away."

"Put that back on," the attendant commanded.

"Time-waster! Time-waster! Time-waster!" the Queen grumbled. She replaced the jacket but quickly spun out of a sheer drape around her waist and flung the garment aside.

"It is hot today," she said innocently. "And it is too long. Last time, Marc Anthony tripped on that thing and scraped his knees."

"If he hadn't been running, if he had had the decency to wait until we had left the chamber, it wouldn't have happened," the companion snapped.

"How can you be so sure?"

"Knowing you, I'm sure you would have taken it off in time."

Cleopatra drummed her fingers against her bare hips; then adjusted minutely the white belt from which narrow cotton panels hung at infrequent intervals.

"I don't particularly care for the tone nor the content," she said softly. Mantro edged his way along the wall until he reached the huge, sun-drenched couch.

"I should have you executed," she purred, as Mantro stealthily placed the visible heat gun on the couch. The maid smiled.

"I believe Marc Anthony has waited in the garden long enough," she said. Cleopatra's anger fled.

"Tell him to enter," she ordered, closing the drapes at one end of the room. "I'll get undressed."

The head lady-in-waiting closed her eyes and sighed. The Queen looked down at herself.

"No," she decided. "I'll stay like this."

"There isn't too much difference," the other woman murmured, heading for the door. Cleo glared at her.

"Perhaps Marc Anthony would like to watch you bathe," the lady-in-waiting smiled. The dark-haired queen brightened again.

"Before or after?" she inquired lightly.

"Instead," the servant said, closing the big door after her an instant before a clay vase crashed on the inside. Mantro nodded approvingly as Cleopatra reached for more ammunition. But by the time Marc Anthony entered, she had quieted and was leaning negligently against a sandstone pillar.

A strategic shaft of sunlight swept her face and upper body. Marc Anthony stopped and fingered his chin.

"I've been waiting in that damned garden so long I've forgotten what I came for," he muttered. Cleo raised one eyebrow. The Roman looked up slowly and then smiled. He advanced quickly and took hold of one segment of her skirt.

"Aha!" he smiled. "Now I remember."

Cleoatra laughed throatily.

"Cotton," Marc Anthony explained. "We need good Egyptian cotton for uniforms. Our legions in the west are doing well in battle but their clothing is deteriorating rapidly."

"Would you like this piece?" Cleopatra asked icily. Marc shrugged.

"Oh, we need a great deal more than that."

"I'll start weaving immediately," the Queen offered.

"That's noble of you but—Oh, I see. You're joking."

"By any chance did you have anything else in mind?" she inquired. Marc thought.

"No-o," he said slowly. "I'm sure cotton was the main—" His eyes slowly travelled up the long slender legs, touched lightly on the warm tan hips, then staggered northward.

"Now that you mention it—" he began. Cleo stalked off.

"You can keep your cotton-picking hands to yourself," she said. "Between my servants and you, so much time has been wasted that I'm pretty well out of the mood."

The Roman officer was a man of action if not intrigue. He gathered Cleopatra in his arms and pressed her against him.

"I'm back in the mood," she said quickly, "but take off those medals—and anything else you'd like to."

"Decent of you," Marc Anthony muttered, complying. They then worked their way to the sunlit couch and descended. With no moments hesitation, the soldier shrieked and leaped skyward. He held the burned portion of his anatomy and looked at the heat gun on the couch.

"That was a damned dirty trick," he accused. Cleo appeared stunned.

"It was not my doing," she said unhappily. "Did you have to sit on the thing? The sun made it warm."

"Warm?" Anthony bellowed. "I have been branded." Cleo pushed the heat gun to the floor and leaned back.

"I have lost the inclination," Marc Anthony sulked, rubbing his rump. "And of all places—"

Cleoatra sat up and looked.

"I don't think it's so bad," she said. "Only you and I can see it."

"Why do you say that?" Marc asked unthinkingly as he strained his neck to examine the extent of his wound. "Maria and Ingracia are sure to ask questions. And—"

He stopped suddenly and swallowed. Cleopatra rose slowly and looked about the room. Suddenly they exploded into action. Mantro watched the Roman fly through the door with the Egyptian brandishing another vase in mad pursuit. He leaned from the window to watch the naked figures appear in the garden below. Cleopatra was gaining as they disappeared in the orchard. Mantro picked up the heat gun, cool from the couch shadow, and shook his head sadly.

Sherwood Forest was green and gold in the autumn afternoon as Mantro waited beside the narrow dirt road. The approaching figure wore green and had a feather in his jaunty cap. Mantro tossed the heat gun out on the road. The man sang as he walked.

"I'm Fritz the Friar of Robin's band,

A sturdy bow and a sturdy hand.

I'm sharp with the ladies and brave under fire.

Except that it's true under stress I do tire."

Mantro moaned and headed for the gun, but Fritz the Friar already had reached the weapon

and was bending to examine it. Mantro moved back as the outlaw straightened with it in his hand.

"Hm-mm-m," Fritz said, turning the weapon all around. He placed one eye to the muzzle, closed the other, and squinted. His finger found the trigger and the gun blasted. Mantro studied the white clouds in the blue sky, then ran his hand idly along the bark of the tree. Finally he clasped his hands and pressed them against his forehead.

"This should almost be a victory for me," he muttered, "but I know it's not. That stupid fool was most certainly destined to be killed in the next battle."

He looked around as the main outlaw band approached. Robin Hood himself leaped forward to kneel at Fritz the Friar's side. Mantro waited hopefully again.

"Zounds!" Robin said. "That Sheriff of Nottingham has found a way to shoot the biggest damned arrows we'll ever see. Sound retreat."

The notes from the little silver bugle rang through the forest as the outlaws picked up their fallen comrade. Mantro grimaced as Little John trod all over the heat gun before marching away. When they had gone, he retrieved it.

"Aldak III cannot be right," he said. "I will not believe that."

John Alden was somewhat better. The episode began auspici-

ously as John found the weapon, examined it not too foolishly, and then aimed it at an unwise turkey that wandered nearby. Mantro actually clapped his hands as John Alden stared at his shot and the cooked turkey. John tasted some of the white meat; then turned and ran like hell toward the village.

Mantro followed him to Priscilla's abode.

"I've found something wonderful, Priscilla," John gasped. "I must tell Miles about it immediately."

"Why don't you speak for yourself, John?" Priscilla inquired.

"Why do you always say that? This is important. It's a gadget that shoots and cooks game at the same time. A man wouldn't need a wife."

"Now, there's a miserable idea," Priscilla grumbled. "Look, we have some time before you have to see Miles."

"I wonder," Mantro murmured as the girl removed the gun from John's hand and placed it in his pocket, "if there's something wrong with the women of my generation. These others don't seem to think of anything else."

As John Alden embraced the girl she leaned against the trigger of the heat gun. The weapon was pointed down and the low intensity beam slowly charred the wooden flooring beside their feet. After a few moments John drew

his hand across his forehead.

"It's never been this warm before," he muttered.

Priscilla sighed. "Why don't you—"

"I think I will," John agreed. He took Priscilla by the hand and marched off. Mantro considered suicide for a moment but discarded the idea as unworthy. He walked resolutely into the next room, and returned moments later with his heat gun and a red face.

The small boat worked its way across the Delaware. Mantro approached it in Space and Time. Invisibly, he landed and sat on one gunwale. The boat rocked and the men steadied themselves. One of them looked forward.

"Dammit, George, sit down," he grumbled. "You're rocking the boat."

"The hell with it," Mantro muttered, spinning the dial on the Time Meter.

"One more try," Mantro said, eying the sprawling ranch house. "Not an indiscriminate try. A well-considered try. A man who would most likely understand the enormity of this occasion."

He entered the room and studied the man who sat thumbing through the manuscript.

"I should have chosen a Science Fiction editor at the beginning," Mantro said, placing the heat gun beside the typewriter.

The editor looked idly at the weapon and smiled. He picked it up and walked out of the house. Mantro followed and nodded with approval as the man lined up a beautiful peach tree in the sights. The tree disappeared in one dusty flash. The editor patted the gun and returned to the house. Mantro fairly bounced along after him. The editor placed the gun on the table and then deliberately placed a saucer and coffee cup on top of it. The combination tilted dangerously.

The editor wandered back to his manuscript. "Dr. Clatting warned me," he mused. "He said that my position in this imaginative field would lead to hallucinations. And here we are."

Mantro had difficulty stifling a scream as the editor resumed reading. Mantro angrily retrieved the heat gun. As the saucer and cup clinked into their normal place the editor looked over and smiled.

"Just disregard them is all I have to do." The editor smiled. "Smart S.O.B., that Dr. Clatting."

Mantro halted his time flight before he came to full return. Aldak III wandered about the room.

"He is bound to fail," Aldak III said. "Too bad in a way. Our brilliant young man might become discouraged."

"A meddler," Mantro growled. "One thing I cannot stand is a meddler." He spun the dial to full

return, took the heat gun in hand, and blasted Aldak III as the old man stood up to greet him.

"One less meddler," he said, using low intensity to clean up around the scene of the crime. Within seconds a massive vibration set up and time raced backward. Mantro stared as Aldak III reformed and then froze in position on the sofa. The other men materialized. Mantro frowned at the gold robes.

"Why are you here?" he asked.

The Speaker of the Extreme Council stepped forward.

"The Law, Mantro."

Mantro laughed hollowly.

"What law? I failed," he said.

The Speaker shook his head.

"Aldak III."

"Aldak III! Nonsense," Mantro sneered. "I killed him in the present. I can't stand a meddler. There's no law against that."

"The present, Mantro? I'm afraid not. You never reached full return."

Mantro grabbed his Time Meter and pounded the dial.

"Damned trading stamps," he sobbed. He managed to break the glass before he was evaporated by the Extreme Council.

"Sort of teaches one a lesson, doesn't it?" one member of the Council said.

"Yes," another agreed. "Crime doesn't pay."

"No," said the first. "I meant about the trading stamps."



THE ENEMY

by DAMON KNIGHT

Zael was alone and working happily on a rockball in the middle of the sky, with her escape ship, she thought, in safe orbit. And then she discovered an ancient enemy, and she could not summon her ship without his cruel help.

THE SPACESHIP LAY ON A rockball in the middle of the sky. There was a brilliance in Draco; it was the Sun, four billion miles away. In the silence, the stars did not blink or waver: they burned, cold and afar. Polaris blazed overhead. The Milky Way hung like

a frozen rainbow above the horizon.

In the yellow circle of the airlock, two figures appeared, both women, with pale, harsh faces behind the visors of their helmets. They carried a folding metal disk a hundred yards away, and set it

up on three tall insulators. They went back to the ship, moving lightly on tiptoe, like dancers, and came out again with a bulky collection of objects wrapped in a transparent membrane.

They sealed the membrane to the disk and inflated it. The objects inside were household articles: a hammock on a metal frame, a lamp, a radio transceiver. They entered the membrane through its flexible valve, and set the furniture in order. Then, carefully, they brought in the three last items—three tanks of growing green things, each in its protective bubble.

They unloaded a spidery vehicle with six enormous puffed wheels, and left it standing on three insulators of its own.

The work was done. The two women stood facing each other beside the bubble house. The elder said, "If your finds are good, stay here till I return in ten months. If not, leave the equipment and return in the escape shell."

They both glanced upward, where a faint spark was moving against the field of stars. The parent ship had left it in orbit before landing. If needed, it could be called down to land automatically by radio; otherwise, there was no reason to waste the fuel.

"Understood," said the younger one. Her name was Zael; she was sixteen and this was her first time away from the space city alone.

Isar, her mother, went to the ship and entered it without another glance. The lock door closed; the spark overhead was drifting down toward the horizon. A short burst of flame raised the parent ship; it drifted, rising and turning as it went. Then the torch blazed out again, and in a few moments the ship was only a brighter star.

Zael turned off her suit light and stood in the darkness under the enormous half-globe of the sky. It was the only sky she knew; like her mother's mother before her, she was space-born. Centuries ago, driven out of the fat green worlds, her people had grown austere, like the arid fields of stars they roamed among. In the five great space cities, and on Pluto, Titan, Mimas, Eros and a thousand lesser worlds, they struggled for existence. They were few; life was hard and short; it was no novelty for a sixteen-year-old child to be left alone to mine a planetoid.

The ship was a slightly dimmer star, now, climbing up the long slant toward the ecliptic. Up there, Isar and her other daughters had deliveries to make and cargoes to take on at Pluto. Gron, their city, had sent them down this long detour to make a survey. The planetoid, with an eccentric cometary orbit, was now approaching the Sun for the first time in twenty thousand years. It would be folly not to surface-mine it

while it was here; one child could do that, and survey it as well.

Alone, Zael turned impassively to the six-wheeled crawler. She might have rested awhile in the bubble house, but she had some hours of suit time left, and there was no need to waste it. She lifted herself easily against the slight gravity into the cab, turned on the lights and started the motor.

The spidery vehicle crawled ahead on its six individually sprung wheels. The terrain was astonishingly broken; giant spires and craters alternated with ravines and with fissures, some of them forty-feet wide and thousands of feet deep. The planetoid's orbit passed near the Sun, according to the astronomers, nearer even than the orbit of Venus. Now, the temperature of the rocks was a few degrees above absolute zero. This was a cold beyond anything Zael had ever experienced. She could feel it drawing at her feet through the long insulator spikes of her bootsoles. The molecules of every stone were slowed to stillness; the whole world was one frozen yawn of hunger.

Once it had been a hot world. The record was here. At every perihelion passage, the rocks must have split, again and again, to make this nightmare of tumbled stone.

The surface gravitation was one-fifth G; the light, puffy-wheeled vehicle crawled easily up

slopes within a few degrees of the vertical. Where it could not climb, it went around. Narrow fissures were bridged by the crawler's extensible legs; when she came to a larger one, Zael fired a harpoon which soared across the gap and embedded itself on the other side. The crawler edged forward, toppled and swung at the end of its cable; but while the slight gravity drew it toward the far side of the fissure, the crawler's winch motor was reeling in the cable. It arrived with a faint jar at the opposite side, and, without pausing, inched up and over.

Sitting erect behind her instruments, Zael was charting the mineral deposits she passed over. It was a satisfaction to her to find they were rich enough to repay surface mining. The cities could make almost anything out of anything, but they needed a primary source: they had to have metals.

Methodically, she spiraled outward from the bubble house in the unpressurized crawler, charting a region about thirty miles in diameter.

Laboring alone, hour after hour under the unchanging sky, she identified the richest lodes, marked them and established routes. Between times, she ate and slept in the bubble house, tended her necessary plants, serviced her equipment. Out of her armor, she was slender and spare, quick in her

movements, with the harsh, thin-lipped comeliness of her people.

When her chart was made, she rode out again. At each marked spot, she dropped two widely separated poles. Self-embedding, each pair generated a current which ionized the metals or metallic salts, and would slowly deposit pure metal around the cathode. Eventually the concentration would be such that the metal could be sawn out in blocks for convenient loading.

Only then did she turn her attention to the traces of shaped metal that clung here and there to the rocks. They were fragments, for the most part, such as were commonly found on cold satellites like Minas and Titan, and occasionally on stony asteroids. It was not a matter of any importance; it simply meant that the planetoid had been inhabited or colonized at one time by the same pre-human civilization that had left its traces throughout the solar system.

But she had been sent to see whatever was to be seen. Her real work was almost done; she conscientiously examined the traces, photographed some, took others for specimens. She beamed regular radio reports to Gron; sometimes, five days later, there would be a curt acknowledgment waiting for her in the printer; sometimes not. Regularly she made the rounds of the poles, testing the concentration of metal. She was ready to

replace any faulty poles she might find, but the occasion did not arise; Gron equipment seldom failed.

The planetoid hung in its millennial arc. The sky imperceptibly turned around it. The moving spark that was the escape shell traced its path, again and again. Zael grew restless, and took the crawler on wider explorations. Deep in the cold crannies of the mountains, she found some metal constructions that were not mere fragments but complete works—dwellings or machines. The dwellings, if they were that, were made for some creature smaller than man; the doorways were ovals not more than a foot across. She dutifully radioed this information back to Gron, and received the usual acknowledgment.

Then, one day the printer came to life out of season. The message read: I AM COMING. ISAR.

The ship would be three months slower than the message. Zael kept her calendar, rode her rounds, her starlit face impassive. Above her the escape shell, unneeded now, made its monotonous passage over and over. Zael was tracing the remnants of a complex of surface structures that had miraculously survived, some half buried, others naked to the stars. She found where they led, in a crater only forty miles from her base, a week before the ship was due.

In the crater was a heavily reinforced globe of metal; dented and scarred, but not smashed. As Zael's light shone steadily on it, there was a sudden puff of vapor and the globe seemed to haze over briefly. Zael peered, interested: the minute warmth of the light beam must have thawed some film of frozen gas.

Then it happened again, and this time she could see distinctly: the jet escaped from a thin, dark seam that had not been there before.

The seam widened as she watched. The globe was splitting. In the narrow gap between the two halves, something moved. Startled, Zael threw the crawler into reverse. The cab lights dipped as the crawler retreated up-slope. In the dimness outside the light beams, she saw the globe expanding still more. There was an ambiguous motion between the barely visible halves of the globe, and she wished she had not taken the light away.

The crawler was tilting sideways up a steep, broken slab of rock. Zael turned downward, still backing at a sharp angle. The light swung away from the globe altogether, then came back to it as she leveled out.

The two halves of the globe had separated completely. In the middle, something jerked as the light struck it. She could see nothing but a thick, gleaming coil of met-

al. While she hesitated, there was new motion between the halves of the globe. Something gleamed briefly; there was a short ground shock, and then something struck the cab a hard, resonant blow. The lights whirled bewilderingly and went out.

In the darkness, the cab was tipping. Zael clutched at the controls, but she was too slow. The crawler went over on its back.

Zael felt herself being flung out of the cab. As she rolled over, ears ringing, her first and sharpest impression was of the cold that struck through her armor at gauntlet and knee. She scrambled up quickly to a kneeling position, supporting herself on the brushlike spiked soles of her boots.

Even the brief contact had made her fingers smart with cold. She searched automatically for the crawler, which meant safety and warmth. She saw it smashed on the mountainside. Even so, her instinct drew her toward it, but she had hardly taken a first step before the wrecked machine leaped again, and rolled another dozen yards down the slope.

She turned now, for the first time fully realizing that something down there was shooting at the crawler. Then she saw a glimmering shape that writhed up toward the wrecked machine. Her helmet light was not turned on; she crouched still, and felt two grinding, metallic shocks trans-

mitted through the cold rock.

The moving thing appeared again on the other side of the crawler, vanished inside, and after a long time came out again. Zael caught a glimpse of a narrow head upraised, and two red eyes gleaming. The head dropped; the sinuous form glided down into a ravine, coming toward her. Her only thought was to get away. She scrambled up in the dark, circled a spire; she saw the gleaming head upraised farther down, among a tangle of boulders, and went at a headlong, dangerous run across the slope to the wrecked crawler.

The control board was ruined, levers bent off or flattened down, dials smashed. She straightened to look at the engine and transmission, but saw at once that it was no use; the heavy drive shaft was bent out of true. The crawler would never run again without shop repairs.

Down in the bowl, she caught sight of the silvery shape casting along the edge of a fissure. Keeping it in view, she examined her suit and instruments all over. As far as she could tell, the suit was tight, her oxygen tanks and recirculation system undamaged.

She was thinking coldly and clearly as she looked at the split globe, gaping empty under the stars. The thing must have been coiled in there, inert, for thousands of years. Perhaps there had

been a light-sensitive device in the globe, designed to open it when the planetoid approached the Sun again. But her light had broken the globe prematurely; the thing inside was awake before its time. What was it, and what would it do, now that it was alive again?

Whatever happened, her first duty was to warn the ship. She turned on the broadcast transmitter in her suit and called; the transmitter's range was small, but now that the ship was so near, there was a chance.

She waited long minutes, but no answer came. From where she stood, the Sun was not visible; one of the high crags must be blocking her transmission.

The loss of the crawler had been a disaster. She was alone and afoot, forty miles across an impossible terrain from the bubble house. Her chances of survival, she knew, were very small.

Still, to save herself now, without finding out more about the thing, would be less than her duty. Zael looked doubtfully down at the empty globe in the starlight. The way between was broken and dangerous; she would have to go slowly, for fear of attracting the thing if she used a light.

She started down nevertheless, picking her way carefully among the tumbled stones. Several times she leaped fissures too long to bypass. When she was halfway down

the slope, she saw movement, and froze. The thing writhed into view over a broken ridge—she saw the triangular head again, and a waving ruff of tentacles—and then disappeared inside the open globe.

Zael moved cautiously nearer, circling to get a view directly into the gap. After a few moments the thing emerged again, curiously stiff and thick-looking. On a level place outside the globe, it separated into two parts, and she saw now that one was the thing itself, the other a rigid metal framework, narrow and perhaps ten feet long. The thing retreated inside the globe again. When it came out, it was burdened with a bulbous mechanism which it fitted on somehow to one end of the framework. It continued working for some time, using the tentacle-like jointed members that sprouted from just behind its head. Then it returned to the globe, and this time came out with two large cubical objects. These it began to attach to the opposite end of the framework, connecting them by a series of tubes to the bulbous mechanism.

For the first time, the suspicion entered her mind that the thing was building a spacecraft. Nothing could look less like a conventional ship, to be sure: there was no hull, nothing but a narrow shaft on which the thing could lie, the bulbous object which might be an

engine, and the two big containers for reaction mass. Abruptly, she was certain. She had no geiger with her, it was back in the crawler, but she felt sure there must be radioactives in the bulbous mechanism—a micropile, unshielded, for a spaceship without a hull! It would kill any living creature that rode on it—but what creature of flesh and blood could survive for twenty thousand years on this airless planetoid, at close to absolute zero?

She stood gravely still. Like all her people, she had seen the evidences of an eons-old war among the cold planetoids. Some thought the war had ended with the deliberate destruction of the fourth planet, the one which had formerly occupied the place of the asteroids. A bitter war that one must have been; and now Zael thought she could understand why. If one side had been human-like, and the other like this thing, then neither could rest until it had wiped out the other. And if this thing were now to escape, and perhaps breed more of its kind—

Zael inched forward, making her way from stone to stone, moving only when the thing was out of sight. The alien had finished attaching several small ambiguous objects to the front of the frame. It went back inside the globe. To Zael, the structure looked almost complete. It did not seem possible

to encumber it any more, and still leave space for the rider.

Her heart was thudding. She left her concealment and went forward in a clumsy tiptoe pace that was faster than leaping. When she was almost in reach of the framework, the thing came out of the open globe. It glided toward her, enormous in the starlight, with its metal head rearing high.

Out of pure instinct she hit the light switch. The helmet beams flared: she had an instant's glimpse of skeletal metal ribs and gleaming jaws. Then the thing was thrashing away from her into the darkness. For a moment more she was stunned. She thought: It can't stand light! And she scrambled forward desperately into the globe.

The thing was coiled there, hiding. When the light struck it, it hurled itself out the other side. Zael pursued again, and caught it once more on the far side of the low ridge. It dived into a ravine and was gone.

She turned back. The framework lay on the rock where it had been left. Zael picked it up tentatively. It had more mass than she had expected, but she was able to swing it at arms' length until it gained a respectable speed. She dashed it against the nearest stone; the impact numbed her fingers. The framework leaped free, slid to rest on the stone. The two

containers were detached: the bulbous mechanism was bent away from the frame. She picked it up again, and again swung it hard against the rock. The frame bent and buckled; small pieces came loose. She swung it again, and again, until the frame broke and the bulbous part came free.

The alien thing was not in sight. Zael carried the pieces of the framework to the nearest fissure and dropped them in. In her helmet beams, they drifted silently down and were gone.

She returned to the globe. The creature was still nowhere to be seen. She examined the interior: it was full of oddly shaped partitions and of machines, most too large to be moved, some that were detached and portable. She could not identify any of them with certainty as weapons. To be safe, she took all the movable objects and dropped them after the framework.

She had done all she could, and perhaps more than was prudent. Her task now was to survive—to get back to the bubble house, call the escape shell down, and get away.

She turned back up the slope, past the wrecked crawler, retracing her route until she came to the crater wall.

The crags loomed over her, hundreds of feet above her head, and so sheer that when she tried to climb them, even her momen-

tum would not keep her upright; she began to topple back, and had to dance her way slowly down again to firmer footing.

She made the full circuit of the crater before she was convinced: there was no way out.

She was sweating under the armor: a bad beginning. The ragged tops of the mountains seemed to bend forward, peering down at her mockingly. She stood still to calm herself, took a salt pill and a sip of water from the dispenser in her helmet. The indicators showed that she had less than five hours of air left. It was little enough. She had to get out.

She chose what seemed to be the easiest slope within reach. She went up it with a rush. When her momentum began to fail, she used her hands. The cold bit through her gauntlets like needles of fire. The slightest contact was painful; to grasp firmly became an agony. She was within yards of the top when her fingers began to grow numb. She clawed upward furiously, but her fingers refused to grip; her hands slid uselessly away from the rock.

She was falling. She toppled slowly down the slope she had climbed with so much pain; caught herself with an effort and came to rest, shaken and trembling, at the bottom.

Cold despair settled at her heart. She was young; she had no taste for death, even for a

quick and clean one. To die slowly, gasping for air in a foul suit, or bleeding out her warmth against the stone, would be horrible.

Out across the crater floor, she saw a dim movement in the starlight. It was the alien thing; what could it be doing, now that she had destroyed its means of escape? The thought came to her slowly that perhaps it could not get out of the crater, either. After a moment, hesitantly, she went down the slope toward it.

Halfway down, she remembered to turn off her suit lights so as not to drive it away. The crater floor was criss-crossed with innumerable fissures. As she came nearer, she saw that the split sphere was surrounded by them on all sides. Down at one end of this long, irregular island of rock, the alien was throwing itself back and forth.

It turned to face her as she leaped the last gap. She could see its red eyes gleaming in the darkness, and the circle of thin, jointed arms that formed a collar behind its head. As she approached, the head reared higher, and the jaws gaped.

The sight of the thing, so near, filled her with a cold loathing she had never experienced before. It was not only that the creature was metal, and alive; it was some radiance of evil that seemed to

reach her directly from the thing, as if to say, *I am the death of all you love.*

The blind, red eyes stared with implacable hatred. How could she make it understand?

The body of the thing was sinuous and strong; its jointed arms could grasp and hold. It was made for climbing; but not for jumping.

Abruptly, her loathing for the alien was more than she could master. She turned and jumped across the chasm again. On the far side, she looked back. The alien was swaying high, with more than half its length raised from the rock. She saw now that there was another cluster of gripping members at its tail. The thing glided forward to the very edge of the fissure and swayed upright again, jaws agape, eyes glaring.

They had nothing in common but hatred . . . and fear. Staring across at the alien, Zael realized that it must be as afraid as she. Metal though it was, it could not live forever without warmth. She had broken its machines, and now, like her, it was trapped. But how could she make it understand?

She moved a few yards away along the edge of the fissure, and then jumped again, back to the alien's side. It watched her alertly. The thing was intelligent; it must be. It must know that she

was not native to the planetoid, and therefore that she must have a ship, or some means of escape.

She spread her arms. The alien's circle of limbs widened in response: but was that a gesture of invitation, or of menace? Suppressing her fear and repugnance, she walked nearer. The tall shape swayed above her in the starlight. She saw now that the segments of the alien's body were metal rings that slid smoothly upon one another. Each ring was slightly open at the bottom, and inside she could glimpse some mechanism.

Such a thing could never have evolved on any world; it must have been made, for some unguessable purpose. The long, supple body was built for pursuit and capture; the jaws were for killing. Only a depth of hatred beyond her comprehension could have conceived this horror and let it loose in the world of the living.

She forced herself to move a step nearer. She pointed to herself, then back to the crater wall. She turned and leaped across the fissure, recovered herself and leaped back.

It seemed to her that the alien's attitude, as it stared at her, was an almost human parody of wariness and doubt. She pointed to herself, and to the alien; again, she turned and leaped across the chasm; leaped back. She pointed to herself and to the alien, and

then gestured across the fissure, a wide, slow motion of one arm. She waited.

After a long time the alien moved slowly forward. She retreated, as slowly, until she was at the edge of the fissure. Trembling, she held out her arm. Slowly the great head dipped; the circle of grasping members waved forward to wrap themselves around her sleeve. The red eyes stared blindly into hers from a few inches away.

She turned and kicked off strongly. She tried to allow for the alien's mass, but the unaccustomed drag on her arm tipped her backward in midair. They landed together with a grating jar. Awkwardly, Zael scrambled up, away from the cold that searched through her armor. The alien was swaying erect, near—too near.

By instinct again, she hit the light switch. The thing writhed away in silvery coils.

Zael was trembling with reaction. Her heart pounded at her throat. With an effort, she turned off the light again. The thing rose into view, waiting for her, a dozen yards away.

When she moved, it moved, keeping its distance. When they reached the next fissure, she stood still until it again approached and laid its grasping members on her arm.

On the far side, they separated once more. In this way, they

traversed four of the islands of rock before they came to the crater wall.

The alien thrust its body slowly up along the steep incline. At full stretch, the gripping arms found a hold; the tail swung free. The long body looped gracefully up; the tail members found another hold above the alien's head.

It paused there, looking down at her. Zael spread her arms; she pantomimed climbing, then stepped back, shaking her head. She held out her arms again.

The alien hesitated. After a long moment, the head members gripped again, the tail swung down. Zael braced herself as the alien slid nearer. The smooth, shining head loomed over her. In that frozen moment, Zael found herself thinking that to the alien, the universe might be like a photographic negative: all the evil things good, the good things evil. It gave her a queer sense of exhilaration to realize that when they met, the alien too might be embracing darkness.

Then the head glided past her shoulder; the heavy coils looped around her body with a faint scraping sound. The thing was cold, but not with the numbing supercold of the rocks. As the coils tightened, she felt the chill, constrictive strength of the great body. Then she was being lifted off her feet. The steep wall tilted and swung at a crazy angle.

A faintness sapped her strength as she lay in the metal coils. The stars swung around her head; they steadied and burned still. The alien had set her down at the top of the crater wall.

The cold coils slowly slipped away. Shaken and stunned, Zael followed the alien down the broken, tilted land. The touch still burned in her flesh. It was like a meaning that lay so heavily and coldly inside her that she had to puzzle to make it out. It was like a ring that, having been worn so long, still seems to be there after it has been removed.

Down in the tumbled vastness of the valley, the alien's head was upraised, waiting for her. Humbly she went down to it, where it lay at the edge of a fissure. This time, instead of clutching her arm, the heavy mass coiled itself around her.

She leaped. At the other side, slowly, almost reluctantly, the supple body slid down and away from her. When they came to a high place, again the alien took her in its cold embrace, and swung her up, weightlessly, like a woman in a dream.

The Sun was in the sky, low over the horizon. Zael put her hand to the radio switch, hesitated, and let it fall away. What could she tell them? How could she make them understand?

Time slipped away. When they passed one of her mining areas,

where the cold purple light flickered from the rocks, she knew they were on the right path. She steered by that, and by the Sun. At each fissure, the alien coiled itself around her shoulders; at each steep ascent, it cradled her about the waist, and lifted her in long, free arcs to the top.

When, standing on a height, she saw the bubble house, she realized with a shock that she had lost account of time. She looked at the indicators. There was half an hour of air left.

The knowledge brought to wakefulness some part of her mind which had been submerged and asleep. She knew that the other had seen the bubble house too; there was a new tension in its manner, a new fixity in the way it stared ahead. She tried to recall the topography that lay between this spot and the house. She had been over it dozens of times, but always in the crawler. It was very different now. The high ridges that had been only momentary obstacles before were now impassable. The whole aspect of the country was changed; she could not be certain even of her landmarks any longer.

They were passing the last of the mining areas. The cold purple light rolled across the rocks. Just beyond this point, Zael recalled, there should be a wide fissure; the alien, a few yards distant, was not looking her way.

Bending forward, she broke into a stiff-toed run. The fissure was there; she reached the edge, and jumped.

On the far side, she turned to look. The alien was writhing back and forth at the edge of the fissure, its collar of limbs extended in fury, its red eyes blazing. After a moment, its motion slowed and stopped. They stared at each other across the gap of silence; then Zael turned away.

The indicators gave her fifteen minutes more. She set off at a brisk pace, and soon found herself descending into a deep ravine she recognized. All around her were the landmarks of the route she was accustomed to take in the crawler. Ahead and to the right, where stars gleamed in a gap, must be the place where a broken fall of rock formed a natural stairway to the top of the ravine. But as she neared the place, something made her uneasy. The far wall of the ravine was too sheer and too tall.

She stood beneath the gap at last, and there was no stairway.

She must have mistaken the spot. There was nothing for it but to cast along the ravine until she came to the right place. After a moment's indecision, she set off hurriedly to the left.

At every step, the ravine promised to become familiar. Surely, she could not have gone so far

wrong in so short a time! The dots of light from her helmet beams danced ahead of her, mockingly elusive. Abruptly, she realized that she was lost.

There were seven minutes of air left.

The thought came to her that the alien must still be where she had left it, trapped on one of the islands of rock. If she went straight back to it, now, without hesitating a second, there might still be time.

With an involuntary groan of protest, she turned back. Her movements were hurried and unsure; once she stumbled, and caught herself barely in time to prevent a bad fall. Yet she dared not slow down or stop for a moment. Inside the helmet, her breath was labored; the familiar reek of the recirculated air seemed to have grown stuffier and more foul.

She looked at the indicators: five minutes.

Topping a rise, she saw a liquid glint of metal moving down among the purple fires. She leaped the last fissure, and came to a wary halt. The alien was approaching her slowly. The great metal head was expressionless, the jaws closed; the ruff of grasping members was almost still; only now and then, one of the jointed limbs twitched abruptly. There was a grim, waiting stillness

about it that she found disquieting, but she had no time for caution.

Hurriedly, with abrupt gestures, she tried to pantomime her need. She held out her arms. The alien glided forward slowly, and slowly wrapped its coils around her.

She scarcely felt the leap, or the landing. The alien glided beside her: close, this time, near enough to touch. Down into the starlit half-darkness of the ravine they went, Zael treading uncertainly because she could not use her helmet lights. They paused at the foot of the precipice. The alien turned to look at her for a moment.

Zael's ears were ringing. The great head swayed toward her, and passed by. The metal arms gripped the rock; the great body swung up, over her head. She looked up to see it looping diagonally across the face of the rock; it glimmered briefly against the stars and then was gone.

Zael stared after it in incredulous horror. It had happened too quickly; she did not understand how she could have been so stupid. She had not even tried to grasp the coils as they passed!

The indicators were blurred; the needles hung near the zero mark. Staggering a little, she set off down the ravine to the right. She had perhaps a minute or two of air left, and then five or six

minutes of slow asphyxiation. She might still find the stair; she was not dead yet, and there was a fierce will in her to go on living.

The ravine wall, instead of sinking to an easier level, rose in spires and pinnacles. Zael stopped, cold and sodden with weariness. The silent peaks rose high against the stars. There was no help there, nor in all the dead, vampirish world around her.

Something leaped out of the stone at her feet. Startled, she drew back. The thing was spinning away under the stars. As she watched, another fragment of rock burst into view, and then another. This time she saw it fall, strike the stone and rebound.

She jerked her head back. Half-way down the rock face, swinging easily from hold to hold, came the alien. A cloud of rock fragments, dislodged by its passage, floated slowly down and rebounded about her head. The alien slid the last few yards and came to rest beside her.

Her head was swimming. She felt the heavy coils wind themselves around her; felt herself lifted and carried. The coils were too tight; she could not get her breath. When she was released, the pressure did not relax.

Reeling, she went forward toward the bubble house, where it winked and beckoned from the low horizon. Her throat was afire. Beside her, the alien went like

quicksilver among the ragged rocks.

Once she fell—an appalling, slow, helpless fall into the bruising cold—and the alien's heavy coils helped her up.

They came to a fissure. Zael stood tottering on the lip of it, dimly understanding now why the alien had come back for her. It was tit for tat; and now she was too bemused to play that game again. The alien's grasping members were on her sleeve.

Up there, somewhere in Draco, Isar's ship was on the way. Zael fumbled for the radio switch. Her voice came hoarse and strange: "Mother—"

The heavy body was winding itself around her shoulders. Breathing hurt her chest, and her vision was dim. Gathering her strength, she jumped.

On the far side, she moved with a blurred slowness. She could see the bubble-house light winking prismatically at the end of an avenue of mist, and she knew that she had to get to it. She was not sure why; perhaps it had something to do with the silvery being that glided beside her.

The hum of a carrier wave suddenly filled her earphones. "Zael, is that you?"

She heard the words, but their meaning slipped away. The bubble house was near, now; she could see the flexible valve of its doorway. She had the idea that the silver thing must not be allowed

to go inside, or it might breed there, and then there would be a plague of metal creatures running everywhere.

She turned clumsily to prevent it, but lost her balance and fell against the side of the bubble. The great, silvery head was looming over her. She saw the jaws open and a pair of gleaming fangs slide into view. The head dipped delicately, the jaws seized her thigh, and the fangs went in, once. Without haste, the thing coiled itself away, out of her range of vision.

A coldness was spreading outward from her thigh. She saw two thin jets of vapor escaping from the armor where it was pierced. She turned her head; the alien creature was just disappearing through the flexible valve into the bubble. Inside, she could see it coursing back and forth, avoiding the one tiny light. It nosed at the hammock, the lamp, and then the radio transceiver. Remembering, Zael said plaintively, "Mother?"

As if in answer, the carrier hum came again, and the voice said: "Zael, what is it?"

She tried to respond, but her thick tongue could not find the words. She felt weak and cold, but not at all afraid. Fumbling in her kit, she found the adhesive paste and smeared it over the punctures. The paste bubbled for a moment, then hardened. Some-

thing slow and languorous was spreading from the icy hurt in her thigh. As she turned again, she saw that the alien was still curved over the radio transceiver. Even from here, she could see the bright red knob of the escape-shell signaller. As she watched, one of the alien's limbs grasped it and pushed it down.

She glanced up. After a moment the crawling orange spark in the sky seemed to pause and then grow slowly larger. The light burned to a bright star, then to a golden flare.

The escape shell came down on the rocky plain a hundred yards away. She saw the dark shape of the alien come gliding down out of the bubble house.

It stopped, and for a moment the cruel head was poised, looking down at her. Then it flowed on.

The airlock door of the escape

shell was a circle of yellow light. The alien seemed to hesitate before it; then it moved on and disappeared inside. The door closed. After a few moments the torch blazed again, and the shell rose on a pillar of fire.

Weakly Zael lay cradled against the bubble's resilient curve. Dimly the thought was in her mind that inside the bubble, a few feet away, were air and warmth. In a moment she would make the necessary effort and climb through the valve. The pain, at least, was gone from her chest. Whatever venom the alien had deposited in her flesh, perhaps it would not kill her for a long time. Her mother's ship was coming. She had a chance to live.

But the escape shell was still rising on its long golden plume; and she had eyes only for that terrible beauty ascending into the night.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)

SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION
of Venture Science Fiction, published bi-monthly at Concord, New Hampshire, for September 19, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Joseph W. Ferman, 527 Madison Avenue, New York 22, N. Y.; Editor, Robert P. Mills, 527 Madison Avenue, New York 22, N. Y. 2. The owners are: Fantasy House, Inc., 527 Madison Avenue, New York 22, N. Y.; Joseph W. Ferman, 527 Madison Avenue, New York 22, N. Y. 3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None. 4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. (Signed) Joseph W. Ferman, Publisher. Sworn to and subscribed before me this 19th day of September, 1957. (Seal) Melvin Flamm. (My commission expires March 30, 1959.)

Venturings

• Most people we know were immeasurably fascinated at the news of the launching of the first satellite. But not, astonishingly enough, everybody, and we've encountered some curious reactions. "What good is it doing anybody?" . . . "Well, that's about as far as we'll go in our lifetime." . . . "Bet taxes will go up now. . . ." The *New York Times* recently carried a report that the Russians are expected to land a rocket on the moon within the very near future—possibly within three months of this writing. We discussed this with a successful, literate, imaginative businessman of our acquaintance, who flatly refused to believe that the Russians or anybody else would do such a thing. "No point to it, and I doubt that it can be done anyhow." We would hate to believe that this complete lack of belief—or even interest—in new frontiers is in any way typically American; and yet the fact that the first satellite was named Sputnik instead of Betsy would seem to indicate that it may not be as uncharacteristic as it would have been 100 years ago. . . . We can hope, however, that Sputnik will have the eventual effect of jarring some of us loose from complacency.

• DR. ASIMOV's first column for his new Venture Science Department gives one basic, long-range reason why complacency has no place in our lives, and we expect that he will be equally disturbing in future columns—as well as informative, wise, and from time to time astonishing. Incidentally, we would be glad to receive suggestions for subjects you'd like him to explore. We are proud indeed to have such a distinguished authority as the eminent bio-chemistry professor from Boston in our camp, and we want to exploit him fully.

• That "tight, hard little tale" by ALGIS BUDRYS that we promised for this issue was pushed out by "Falling Torch," our lead novelet, which we think has a powerful point to make. Mr. Budrys writes: "I have recently been concerned with the human trait of rhapsodizing on some high idealistic plane while groping blindfold in a high semantic fog. We have a habit, I think, of using catch-phrases to describe concepts we would rather not define exactly, and 'Freedom,' aside from being a catch-phrase in itself, is buried under a mountain of blather. I happen to respect the idea of freedom—too many of my countrymen are doing without it. But I have become convinced that it is hard to say exactly what it is they are doing without—and that until a clear identification of this thing is established, too many sincere people with idealistic axes to grind may, in all good conscience, sell them on something which is far from a genuine article, and grow vindictive when they sicken of it."

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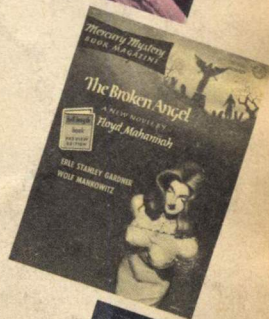
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