
GALAXY Science Fiction Novel No. 21
THE HUMANOIDS
by Jack Williamson
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By JACK WILLIAMSON

GALAXY SCIENCE FICTION NOVEL No. 21

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1

THE GRANITE-FACED sergeant of the gate detail found her standing outside the tall steel fence, looking up at him with timid, imploring eyes. She was a grimy little waif, in a cheap yellow dress. Her bare brown feet were shuffling uncomfortably on the hot asphalt, and he first thought she had come to beg for something to eat.

"Please, mister, is this Starmont?" She seemed breathless and afraid. "May I please see Dr. Forester?" Her wet eyes shone. "Please, mister! It's awful important."

The sergeant scowled at her doubtfully, wondering how she had got here. She was about nine, he thought, far too young to be here alone.

"Not without a pass." She flinched from the harsh rasp of his voice, and the sergeant tried to smile. "Starmont's a military reservation, see?" He tried to warm his tone. "But what's your name, sister?"

"Jane." She lifted her thin voice, stoutly. "And I've just got to see him."

"Jane? Haven't you any other name?"

"People used to call me other things, because I didn't know my real name." Her eyes fell briefly. "They called me Squeak and Insect and Little Pip, and others not so nice. But Mr. White says my real name is Jane Carter – and he sent me to see Dr. Forester."

"How'd you get here?"

The sergeant squinted past her at the narrow road beyond the fence that twisted down the flank of the solitary mountain and lay straight and black on the tawny desert below. Salt City was much too far for her to have walked. But he could see no vehicle.

"Mr. White sent me," she repeated firmly. "To see—"

"Who," the sergeant broke in, "is Mr. White?"

An utter devotion illuminated her brimming eyes.

"He's a philosopher." She stumbled on the word. "He has a red, bushy beard, and he came from other places. He took me out of a bad place where people beat me, and he's awful good to me. He's teaching me tele—" She gulped. "He sent me with a paper for Dr. Forester."

"What sort of paper?"

"This." The sergeant glimpsed a gray card clutched in her thin grubby fingers. "It's awful important, mister!"

"You might send it in."

"Thank you." Her thin blue face smiled politely. "But Mr. White said I mustn't let anybody see it, except Dr. Forester."

"I told you, sister—" The sergeant saw her flinch, and tried to soften his refusal. "Dr. Forester is a big man, see? He's too busy to see anybody—unless you happen to be an inspecting general."

She nodded forlornly. "Then let me—think."

For a moment she sood still, forgetting even to move her feet on the hot pavement. Her bony head tilted and her eyes half closed. She nodded, and whispered something, and turned hopefully back to the sergeant.

"Please—may I see Mr. Ironsmith?"

"Sure, sister!" He gave her a leathery smile, relieved. "Forester's hard to see, but anybody can talk to Frank Ironsmith. He ain't important, and he's a friend of mine. We'll call him."

She came gratefully up under the narrow awning in front of the guard box. The sergeant picked up his telephone to call the observatory switchboard.

"Sure, Frank has a phone," came the operator's nasal whine. Just hold the line."

Ironsmith listened to the sergeant, and promised to drop right down. Waiting for him, the little girl stooped restlessly to pick gaudy yellow blooms from a desert weed outside the fence, and then her huge eyes came uneasily back to the sergeant.

"Don't you worry, sister." He tried to smooth his drill-field voice. "Because Frank Ironsmith is a good guy, see? I know he'll help you."

"I do need help." She gripped the card tighter. "To get this to Dr. Forester.

She had cocked her head again, staring past him at the lawns and the dark evergreens that made Starmont a cool oasis, and the sergeant was disturbed by a brief impression that she was listening for something besides his voice.

"Frank's all right, sister." He went on talking, because the child's odd intentness made him nervous. "And he knows plenty. Even when he stops at the canteen to drink a beer with us, he's apt to have a book along. Why, he can even read some old language he says people used to use back on the first planet."

She was looking back at him, now really listening.

"That's off somewhere in the stars, you know." He gestured vaguely at the brazen sky. "The first world, where Frank says all men came from. One night he showed me the mother sun." A remembered awe echoed in his voice. "Just another star, in the big telescope."

For Starmont was not on Earth, nor Jane Carter's language English; even her name is here translated from less familiar syllables. A hundred centuries had gone since the time of Einstein and Hiroshima, and the tamed atom had powered ships to scatter the seed of man across many thousand habitable planets. Countless human cultures, isolated from one another by the long lifetimes required by the best atomic ships to cross from star to star, had grown and killed themselves and sprung hardily up to invite new destruction. Caught in that ruthless repetition of history, this world had fallen back almost to barbarism. A dozen centuries of new progress had brought its people back about to the level of Earth at the dawn of the atomic age. Technology, however was a little further advanced. A world republic had ended the long eras of nationalistic war, but that universal state already faced new conflicts. For the local rediscovery of nuclear fission had set explorers to voyaging in space again, their crude atomic craft carry-

ing the virus of science to the near-by planets. Now, as the slow wave of progress passed its crest on this world of Jane Carter and the sergeant, the old historical cycle of rise and ruin was preparing to repeat itself again—and again with variations. The democratic republic was already sacrificing democracy as it armed desperately to face the totalitarian Triplanet Powers.

The anxious urchin looked up to see a slight young man coming along a shaded path from a little red-shingled building among the evergreens, riding a rusty bicycle. He waved a genial greeting to the sergeant, and looked at her with friendly eyes. She smiled at him uncertainly.

A boyish twenty-six, Ironsmith had a lean, sunburned face and untidy sandy hair. Looking easily relaxed in a faded shirt, open at the collar, and shapeless, ancient slacks, he answered her shy smile with a sympathetic grin.

"Miss Jane Carter," the sergeant said. "To see Dr. Forester."

Ironsmith tapped the bowl of his underslung brier against the bicycle frame. Seeing her breathless urgency, he shook his head with a quick regret.

"You'd have to be at least a general." His voice was soft and kindly. "Wouldn't anybody else do at all?"

"Nobody," she said firmly. "And it's awful important."

"I'm sure," Ironsmith agreed. "And what might it be about?"

Her great, limpid eyes stared beyond him. Her thin blue lips moved silently, and then she seemed to listen.

"I'm not to say," she told Ironsmith. "Except it's something Mr. White says is awful bad! That's why he wants to warn Dr. Forester."

Ironsmith peered beyond her, at the long empty road winding down to the desert.

"Tell me, Jane—where did you leave your folks?"

"I don't have no folks," she said gravely. "I never had any folks, and the cops shut me up in a big dark house with bad smells and iron on the windows. But I'm all right now."

Ironsmith rubbed his smooth chin, thoughtfully.

"Dr. Forester is pretty hard to see," he told her. "But maybe we

can arrange something. Suppose we go over to the cafeteria, and eat a dish of ice cream while we talk about it?" He looked at the sergeant. "I'll see her back to the gate."

She shook her head, reluctantly.

"Aren't you hungry?" Ironsmith urged. "They've got four flavors."

"Thank you." He could see the eager longing in her wet black eyes, but she stepped back firmly. "Mr. White says I haven't time to eat."

Turning, she started away from the gate. Beyond her the basalt pillars of the mountain, and the nearest haven was that dark smudge already rippling under the morning sun on the far horizon.

"Wait, Janel" he called anxiously. "Where're you going?"

"Back to Mr. White." She paused, gulping. "But I'm awful sorry about that ice cream."

In a moment, her fluttering yellow dress was gone beyond the first dark jutting angle of the mountain. He got astride his bicycle to go back to work, and then something stopped him.

"Let me out," he told the sergeant suddenly. "A homeless kid, with that crazy notion about a message for Dr. Forester—we can't just let her run away in the desert. I'm going to bring her in and try to get Forester to see her. I'll be responsible."

He rode down around the curve, and on for a mile beyond. He didn't find Jane Carter. Presently he came back to the gate, walking to push the cycle up the grade.

"Find her?" the sergeant greeted him.

He shook his head.

"Then where'd she go?"

"I don't know." Ironsmith peered uneasily back down the empty road behind him. "But she's gone."

"I kept watching." The sergeant put down a pair of binoculars. "I didn't see her anywhere. Or anybody else, between here and Salt City." He scratched his head, and then automatically set his cap back to the proper angle and checked the military neatness of

his buttons and his tie. "A funny thing," he concluded vehemently. "Damn funny!"

Nodding mildly, Ironsmith asked to use his telephone.

"Belle," he told the operator, "please get me Dr. Forester's office. If he isn't there yet, I want to talk to anyone who is."

2

THE TELEPHONE beside his bed was about to ring, with bad news from the project. That taut expectancy dragged Clay Forrester out of a restless sleep, in his small white house in the shadow of the observatory drome. He had worked too late last night at the project; a brown furriness lined his mouth and the yellow glow of sunlight in the bedroom hurt his eyes. He turned stiffly, reaching for the telephone.

It would be Armstrong calling, probably, with some urgent message from the Defense Authority. Perhaps—the stark thought stiffened him—the spy Mason Horn had come back from space with new information about the hostile activities of the Triplanet Powers.

Forester touched the cold telephone—and checked his hand. The instrument hadn't rung, and probably wouldn't. Disaster, of course, was always likely enough at the project, but he didn't believe in psychic premonitions.

Maybe the feeling had somehow resulted from the senseless discussion into which Frank Ironsmith had drawn him yesterday, about precognition. He hadn't meant to argue. All he had done was to question Ironsmith's astonishing simplification of one difficult calculation in rhodomagnetic ballistics. The offhand explanation that Ironsmith had casually scrawled on a paper napkin at their table in the cafeteria amounted to a complete repudiation of all the orthodox theories of space and time. The equations looked impressive, but Forester, mistrusting the younger man's effortless cleverness, had sputtered an incredulous protest.

"Your own experience will tell you I'm right," the mathematician had murmured easily. "Time really works both ways, and I'm sure you often perceive the future yourself. Not consciously, I know; not in detail. But unconsciously, emotionally, you do. Trouble is apt to depress you before it happens, and you're likely to feel happy before any good reason appears."

"Nonsense," Forester snorted. "You're putting the effect before the cause."

"So what?" Ironsmith grinned amiably. "The math proves that causality is actually reversible—"

Forester hadn't listened any longer. Ironsmith was just a clerk, even though he ran the machines in the computing section well enough. Too well, perhaps, because he always seemed to have too much free time to spin such unprofitable paradoxes for his own amusement. But cause-and-effect remained the cornerstone of science. Forester shook his head, rising on his elbow to glare sleepily at the telephone and daring it to ring.

It didn't.

Trying to forget about precognition, he looked across at the other twin bed, to find it empty. Ruth must be already gone to work at the business office. He sat up heavily, feeling a dull annoyance at her absence. She certainly didn't need the salary, although he had to admit that she was an efficient office manager, and it was true the project left him little time for her.

Lifting from the empty bed, his eyes found the huge aluminum observatory dome framed in the west window. Silvered with the sunlight, it shone with a clean, functional beauty. Once it had been his life, but the sight of it merely depressed him now.

His long quest and his defeat, now that he took this empty moment to look back, reminded him of the efforts and frustrations of those first scientists of the mother planet, the alchemists. Ironsmith had lately read him some historical fragment which told how those early searchers after truth had spent their lives looking for the *prima materia* and the philosophers' stone—the single primary material of the universe, according to their naïve theories, and the

fabulous principle that made it appear as common lead or precious gold.

His own disappointed life, it came to him now, had followed an identical pattern. For he had still been searching, with the aid of more facts and better equipment, for the hidden nature of things. He had found new knowledge, even as the first alchemists had done, and bitter failure with it.

All the effort of science, he reflected, had been one long pursuit of the elusive *prima materia* and the key to all its many manifestations. Other pioneers of thought, in fact, back in the preatomic age on the mother planet, had even discovered a very useful sort of philosophers' stone—in common iron.

Almost magical metal of the first atomic triad, iron had created the mighty science of electromagnetics. It had worked all the miracles of electronics and nucleonics, and presently powered ships of space.

The philosophers of that restless age had tried the new wonder-stuff on the common facts of the universe, and Forester could sense the brief triumph they must have felt when most of their riddles seemed to vanish. The electromagnetic spectrum ran from radio waves to cosmic rays, and the mathematicians of a new physics had dreamed for a time of their own special *prima* materia, a unified field equation.

Forester could share the bewildered frustration of those hopeful scientists, in their inevitable defeat before a few stubborn facts which would not yield to iron. A few phenomena, as various as the binding force which contains the disruptive energy of atoms and the repulsion which thrusts galaxies apart, perversely refused to be joined in the electromagnetic system. Iron alone was not enough.

In his own quest, he had tried another key.

Iron had failed. He tried palladium. All Starmont was merely the tool he had shaped for that vast effort. The cost had been half a lifetime spent, a fortune squandered, the wasted labor and the broken hopes of many men. The final outcome was titanic disaster,

as inexplicable as any failure of those first alchemists, when their crucibles of molten lead and sulphur tantalizingly didn't turn to gold.

A faint clatter from the kitchen told him now that Ruth was still at home. Glad she hadn't gone to work, he looked at her dark-haired head smiling sedately from the photograph standing on his chest of drawers, the one she had given him not long before their marriage—five years ago.

Starmont had been new then, and his tremendous vision still unshattered. It was trouble in the computing section that first brought Ruth Cleveland to the observatory. The section was planned to do all the routine math for the research staff as well as for the military projects to be set up later, but it began with a persistent series of expensive errors.

Ruth had been the remarkably enchanting expert sent by the instrument firm to repair the machines. Briskly efficient, she tested the equipment and interviewed the staff—the chief computer and his four assistants and the graduate astronomer in charge. She even talked with Frank Ironsmith, who was not quite twenty then, only the office boy and janitor.

"The machines are perfect," she reported to Forester. "What you need is a mathematician. My recommendation is to transfer the rest of your staff, and put Mr. Ironsmith in charge."

"Ironsmith?" Forester remembered staring at her, his incredulous protest slowly melting into a shy approval of the clear intelligence behind her dark eyes. "That fresh kid?" he muttered weakly. "He hasn't a single degree."

"But he reads, and he has a mind for math." A persuasive smile warmed her lean loveliness. "Even Einstein, the mathematician back on the mother planet who first discovered atomic energy, was once just a patent office clerk. Frank told me so today."

Forester had never suspected any unusual ability behind Ironsmith's cheerful indolence, but the unsolved problems were piling up. The math section was as essential to his purpose as the telescope itself. Reluctantly, because Ruth would admit no choice, he

agreed to try Ironsmith—though it went against every instinct.

And the errors somehow ceased. When the Crater Supernova blazed out at last, a star of incredible promise, Forester was ready.

He and Ruth were newly married, then. He grinned wearily at her picture now, thinking how shaken he had been to find unplanned passion upsetting the neat scheme of his career, almost astonished at the remembered pain of his jealousy and desire, and his sick fear that she would choose Ironsmith.

He wondered, now that he thought of it, why she hadn't.

Perhaps the answer was Ironsmith's indolence, his want of push and drive. She must have seen that he would never achieve anything, despite the easy glitter of his talk. Anyhow, from whatever mixture of love and respect and common prudence, she had chosen Forester, fifteen years the older and already eminent. And Ironsmith, to his relief, hadn't seemed upset about it.

Forester had forgotten the telephone, in his wistful introspections, and now the sudden burr of it startled him unpleasantly.

"Chief?" The troubled voice was Armstrong's, just as he had feared. "Something has come up that Mr. Ironsmith says you ought to know."

"Well?" He gulped uneasily. "What is it?"

"Were you expecting any message by special courier?"

"No." He could breathe again. "Why?"

"Mr. Ironsmith just called about a child asking for you at the main gate. She claimed to have a confidential message from some Mr. White."

"I don't know any Mr. White." For a moment he was merely grateful that this had been no Red Alert against space raiders from the Triplanet Powers, and then he asked, "Where's this child?"

"Nobody knows." Armstron seemed annoyed. "That's the funny part. When the guard didn't let her in, she somehow disappeared. That's what Mr. Ironsmith says you ought to know."

3

FORESTER yawned and stretched, feeling better. The ringing of the telephone was certainly no proof of any psychic intuition, because it was always ringing, every time he tried to snatch any rest. An unknown child asking for him at the gate was nothing to become alarmed about, anyhow, before the occurrence or after.

He could still hear Ruth doing something in the kitchen. Baking a cake, perhaps, for she still had periodic fits of domesticity when she stayed away from the office to clean house. He glanced again at the demure vivacity of her face in that old photograph, feeling a bleak regret for the emptiness of their marriage.

Nobody was to blame. Ruth had tried desperately, and he thought he had done his best. All the trouble came from that remote star in the Crater, which had already exploded, actually long before either one of them was born. If the speed of light had been a trifle slower, it occurred to him, he might have been a doting father by now, and Ruth a contented wife and mother.

The first cold rays of the new star, arriving two centuries old, cut short their honeymoon and changed everything. They were staying at the small West Coast town where she was born, and that evening they had driven out to an abandoned lighthouse.

"That's the old Dragonrock Light." They were sprawled on their blanket in the dusk, her dark head pillowed on his shoulder, and she was happily introducing him to her fondest childhood recollections. "Grandfather used to keep it, and sometimes I came down to visit—"

He saw a faint cold light on the cliffs, and turned his head and found the star. The hard violet splendor of it took his breath and brought him upright. His memory of that moment was always

poignant with the cold sting and the salt taste of spray from the breakers, and the sharp smoke of damp driftwood smoldering, and Ruth's perfume—a heavy scent called Sweet Delirium. He could still see the hard blue glitter of the star's thin light, in her first tears.

Because she cried. She was no astronomer. She knew how to set up and operate an electronic integrator, but the Crater Supernova was just a point of light to her.

"But look, darling!" Checking its position with a little pocket glass, he tried to tell her what a supernova meant.

"Any star, our own sun, is a great atomic engine. For millions of years it runs normally, changing its mass into measured energy. Sometimes, adjusting its equilibrium, one flares up with heat enough to melt its planets, and then you have an ordinary nova. But a few stars go somehow—wrong. Stability fails altogether. The star explodes into perhaps a billion times its normal brightness, releases a flood of neutrinos, and completely changes its state, shrinking to become a white dwarf. The thing is an unsolved mystery—as fundamental as the sudden failure of the binding force that lets an atom split!"

The red glow of their dying fire touched warm glints in Ruth's hair, but the thin light of the star was cold on her hurt white face, and it made hard blue diamonds of her tears.

"Please, darling!" He gestured eagerly at the stabbing violet point. "I knew that star was ripe for this," he told her breathlessly. "From its spectrum. I've been hoping this would happen in my lifetime. It may tell us—everything! Please, darling—"

She yielded then, as gracefully as she could, to his more urgent passion. They left their basket and blanket forgotten on the beach, and drove hard to reach Starmont before the star had set. She went with him into the high dome, watching as he toiled to set up his special spectrographs and expose his special plates while the seeing lasted.

Forester's flash of intuition, when presently it came, was as dazzling to him as the supernova's light. It illuminated the cause of that stellar engine's wreck, and revealed a new geometry of the universe,

and showed him a deeper meaning even in the familiar pattern of the periodic table of the elements.

In his first hot fever of perception, he thought he had seen even more.

Wistfully, now, he recalled the trembling emotion which had swept him out of the observatory, coatless and hatless in the blue chill of a windy winter dawn, to hammer and shout outside the two rooms where Ironsmith lived at the computing section. That sleepy youth appeared at last, and Forester thrust the hasty calculations at him.

Drunk with his imagined triumph, Forester thought the expansions and transformations of that equation would answer every question men could ask, about the beginning and the nature and the fate of all things, about the limits of space and the mechanics of time and the meaning of life.

"A rush job," he barked impatiently. "I want you to check all this work, right away—particularly this derivation for *rho*." Then Ironsmith's yawning astonishment made him aware of the time, and he muttered apologetically, "Sorry to wake you."

"Never mind that," the young man told him cheerfully. "I was running the machines until an hour ago, anyhow, playing around with a new tensor of my own. Things like this aren't really work to me, sir."

Forester watched him glance indolently through the pages of hurried symbols. Ironsmith's pink face frowned suddenly. Clucking with his tongue, he shook his sandy head. Still staying nothing, he turned with an infuriating deliberation to his keyboards and began deftly punching out paper tapes, setting up the problems in perforations the machines could read.

Too restless to wait on the murmuring, unconcerned machines, Forester went outside again, to stalk the windy lawns of Starmont. For an hour he was great. Then Ironsmith came pedaling after him down a gravel walk, blinking sleepily and lazily chewing gum, to shatter all the splendor of that vision.

"I found a little error, sir." Grinning with a cheery friendliness,

the clerk seemed unaware of the staggering blow his words inflicted. "Can't you see it, right here? Your symbol *rho* is irrelevant. It has no obtainable value, though everything else is correct."

Forester tried not to show how much that hurt him. Thanking the lean youth on the bicycle, he stumbled dazedly back to his desk and rechecked his work. Ironsmith was right. The elusive *prima materia* had evaded him again.

Like the alchemists of the first world, however, whose failures had founded chemistry and made a basis for the entire science of electromagnetics, he had uncovered new knowledge.

He had discovered rhodomagnetics, a vast new field of physical knowledge, lying beside the old. He had failed, with the loss of that irrelevant symbol, to join it to electromagnetics, but his corrected equation still described an unsuspected energy-spectrum.

The older science of iron had split the atom, sometimes usefully. Annihilating matter entirely, his new science of palladium freed a force a thousand times mightier than fission, far too terrible to be controlled for any creative use. His suitable reward, he thought bleakly now, had been the project itself.

Forester was still in the bathroom, splashing cold water to arouse himself from such moody introspections, when the telephone buzzed again behind him. Shuffling uneasily back to his bedside to answer, he heard the quiet voice of Frank Ironsmith, less casual than usual.

"Have you heard about Jane Carter—that little girl who came to see you?"

"Yes." He was beginning to want his coffee, and he had no time for trivialities. "So what?"

"Do you know where she went?"

"How could I know?" He had heard enough about the child. "And what does it matter?"

"I imagine it might matter a good deal, sir."

"Really, I don't think you need to worry—" He checked himself, restraining his sarcastic intent. "I'll see about it when I get to the office."

4

RUTH was standing in the hall door when he turned from the telephone. Not yet dressed for the office, she was slim and youthful in a long blue robe he hadn't seen before. Her restless, gaunt face was already made up, her lips invitingly crimson and her dark hair brushed loosely back and shining. She was trying hard, he saw, to look attractive to him.

"Darling, aren't you ever coming to breakfast?" She had studied business diction with her other profession courses, and her throaty voice still had a careful limpid perfection. "I put on your eggs the first time the phone rang, and now they're getting cold."

"I haven't time to eat." He kissed her lifted lips, scarcely interrupting himself. "I'll try to get something later at the cafeteria."

"That's what you always say, but you never do, and I think that's the trouble with your stomach."

"There's nothing really wrong with my stomach," he told her, "and the office is already calling—"

The telephone interrupted him, and Ruth picked up the extension receiver. Her upper lip whitened as she listened. "Your Mr. Armstrong wants to know when you'll be down."

"Ten minutes, tell him."

"Darling! Don't—" She swallowed that sharp outcry, to murmur into the telephone and set it back mechanically. "I'm sorry for you, Clay. See you at lunch?"

"If I can manage," he agreed, half absently, already wondering again how any sort of child, lost outside the gate, could possibly threaten the project. "The cafeteria at two, if I can make it."

She said nothing else, and she was still sitting at the kitchen table when he had dressed, her shoulders stooped dejectedly in the

new blue robe. For a moment he wanted to make some gesture of tenderness toward her, but that generous impulse was quickly swallowed in the unceasing crisis of the project. The supernova was gone long ago, faded to a telescopic puff of spreading nebular debris, but its harsh sudden rays had kindled something no man could stop.

A hurried three-minute walk, which he felt to be beneficial exercise, brought him to the gleaming steel mesh of the inner fence around the squat, ugly dome of the new concrete building on the north rim of the flat mountain top, which was now his fortress and his prison.

For the supernova's light had made Starmont a guarded arsenal. Searchlights played across the tall fence and the uncompromising building inside by night, and armed guards watched always from the four corner towers. Only six men, besides Forester, were admitted inside the gate. Those picked technicians slept in the building, ate in their own mess hall, and came outside only in watchful twos.

Forester signed his name in the pass book at the gate and let the guard pin on his numbered badge. Armstrong inspected him through a wicket at the steel door of the low fortress beyond, let him in, and locked the door again behind him.

"Glad to see you, Chief." The technician's voice was grave. "Something has us worried."

"That little girl?"

"Don't know anything about her." Armstrong shrugged. "But there's a peak on the search drums we thought you ought to see."

Curiously relieved to hear no more of that vanishing urchin, Forester followed him beyond the offices to the huge oval room beneath the heavy concrete dome, where his assistant, Dodge, was waching the search equipment of Project Lookout.

"See that, Chief?" Armstrong pointed at one sharp peak, just slightly higher than many others, in the jagged line a recording pen drew on a slowly turning drum. "Another neutrino burst. Some-

where in Sector Vermilion. Think it's strong enough to be significant?"

Forester frowned at the uneven line. The nominal purpose of Project Lookout was to detect the neutrino bursts from any tests of atomic or rhodomagnetic weapons, on the hostile planets or near in space.

The gray thickness of curbed concrete above was no barrier to incoming neutrinos, because no possible shielding—either here or around any Triplanet laboratory—could absorb those most tiny and elusive particles of disrupted matter. Each particle wrote its history on the turning drums, revealing the direction of its origin.

But Forester stood scowling, now, at that slightly higher peak on the trace, uncertain what it meant. Triplanet space fleets were always maneuvering suspiciously in Sector Vermilion, but that was also the direction of the vanished supernova, whose spreading flood of natural neutrinos had not yet reached a crest.

"Well, Chief?"

"We had better report it," Forester decided. "That one burst isn't strong enough to be significant, but look at these." His nervous forefinger followed the line on the drum. "Three other peaks almost as high, made earlier. Three and a half hours ago, seven, and ten and a half. That interval happens to be the length of a watch in the Triplanet fleets. They may be testing something, using the supernova spray for a screen."

"Maybe," Armstrong said. "But we've picked up stronger bursts that you said were natural peaks in the supernova spray."

That was true, Forester knew, and part of the reason for his ulcers.

"We can't be sure," he agreed uncomfortably. "That regularity may be just coincidence, but it's too alarming to be ignored." He dictated a brief bulletin for Armstrong to encode and put on the teleprinter for the Defense Authority. "I'm going down to work in the lower project," he added. "Call me if anything breaks."

He hurried back to his own silent office, and through it into the innocent-seeming cloakroom beyond. Locking the door behind him,

he lifted a mirror to punch a hidden button. The cloakroom dropped, a disguised elevator.

For Project Lookout, however vital the watch it kept, was also a blind for something more important. The Geiger counters in the new military satellite stations above the atmosphere kept a wider watch against enemy weapons; the graver function of the search installation was to hide the deeper secret of Project Thunderbolt.

Project Thunderbolt had sprung from the supernova's explosion. It was a weapon—of the last, most desperate resort. Only eight other men shared with him the killing burden of its secret. Six were the youthful technicians, Armstrong and Dodge and the rest, picked and trained for their appalling duty. The other two were the defense minister and the world president.

The secret of the lower project had been efficiently kept, he assured himself. That hidden elevator dropped him a hundred feet, to a concrete vault in the heart of the mountain. All the blasting and construction had been done by his own technicians, and all supplies were delivered to the less important project above, which was supported by unaudited grants of discretionary emergency funds. Not even Ironsmith could know anything about it.

Yet something tightened Forester's stomach muscles with a faint apprehension, now, as he hurried out of the elevator and along the narrow tunnel to the vault. Snapping on the lights, he peered alertly about the launching station for anything wrong.

The launching tube ran up through the search building, disguised as a ventilator shaft, the gleaming breech mechanism open now and ready. His searching eyes moved to the missiles racked beneath it. They were just as he had left them, and a sense of their supreme deadliness lessened his unease. Turning to the machine shop beside the station, he paused before the newly assembled weapon on a bench there, whose final delicate adjustments had kept him so late last night.

Stroking the cold sleekness of the dural case, he couldn't help feeling a creative pride in this thing he had made. Slim and tapered and beautiful with precision machining, it was smaller than any

of the old atomic weapons, but heavy with an entirely different order of destruction. Its war head, smaller than his skinny fist, was designed to shatter a planet. Its rhodomagnetic drive could far exceed the speed of light, and the relay grid of the auto-pilot invested it with a ruthless mechanical intelligence.

Forester picked up his jewelers' loupe and bent to open the inspection plate above the pilot again, afraid he had somehow failed to set the safety keys to prevent any detonation before the functioning of the drive had released them. Such a failure could turn Starmount into a small supernova; the fear of it forever harried his sleep, and ate his ulcers deeper.

He found the keys properly set, but that somehow failed to quiet his shapeless anxiety. Closing the plate again, he wished that he had been a different sort of man, better fitted to carry the lives of planets in his hands.

"Please, mister!"

The child spoke to him timidly as he turned from the missile. She was coming out of the narrow passage from the elevator, walking on bare silent feet. One grimy paw was deep in the pocket of her yellow dress, and she was trembling as if to some desperate resolution, her voice dry with fright.

"Please—are you Dr. Forester?"

5

FORESTER started to an incredulous alarm. His jewelers' lens fell and clattered with a shocking sound on the steel floor. Because no intruder should be here. Even the six technicians were not allowed to enter this vault except on duty, in twos to watch each other. He stumbled back against the bench, gasping sharply:

"How did you get in?

He believed himself a mild and kindly man. His mirror showed the perpetual frown that worry had etched into his thin features,

but he was still a wistful, harmless-seeming gnome of a man, slight and stooped and brown. He felt a flicker of hurt astonishment at the child's voiceless fear of him, before shocked dismay made him rasp again:

"Who let you down here?"

His voice went up, too shrill. For security and peace had been swept out of his life, by the very being of Project Thunderbolt. Because the holder of such a weapon had to be forever ready to use it instantly, or else to perish by it, this silent vault had become his last refuge from fear, where he caught uneasy naps on a cot beside the launching station and lived on coffee and hurried sandwiches and waited for the teleprinters to thump out orders to strike. Now the child's intrusion had demolished even this uncertain sanctuary.

"Nobody—" She stammered and trembled and gulped. Big tears started down her pinched cheeks, and she dropped a handful of yellow-flowered weeds to wipe them away with a grimy fist. "Please don't be mad, mister," she whispered. "Nobody let me in."

Sensitive to pollens, Forester sneezed to the rank odor of the blooms, Shrinking back from him, as if that had been a threatening gesture, the child began to cry.

"Mr. W-White said you wouldn't l-like me, mister," she sobbed faintly. "But he said you'd have to l-listen to us, if I came to see you here."

"But how did you get past the guards?"

"Mr. White sent me." Shyly, she offered him a thin gray card. "With this."

Sneezing again, Forester kicked away the weeds, and took the finger-smudged card. His breath went out as he read the brief message on it, boldly inked:

Clay Forester:

Sharing your concern for the people of these endangered planets, we can trade distressing and vital information for the aid we need from you. If you want to know how Jane Carter

reached you, come alone to the old Dragonrock Light, or bring Frank Ironsmith—we trust nobody else.

Mark White, Philosopher

Hearing the child's bare feet pattering on the steel floor, he looked up in time to see her running back down the tunnel to the elevator. He darted after her, shouting at her to wait, but the door closed in his face and a green arrow lit to show that the disguised cage was going up.

Shaken with dismay, Forester ran back to his desk in the shop to telephone the upper project. Armstrong had seen no intruders, certainly no small girl in a yellow dress, but he promised to meet the rising elevator and hold anybody in it. Forester waited an agonized three minutes, and started nervously when the telephone rang again. Armstrong's voice seemed oddly constrained.

"Well, Chief, we unlocked the door and searched the elevator."

"Did you catch her?"

"No, Chief," Armstrong said slowly. "There wasn't anybody in it."

"But I saw her go in." Forester tried to hold down his voice. "There isn't any other landing, and the door can't open between stops. She had to be in the elevator."

"She wasn't," Armstrong said. "Nobody was."

Forester considered himself a man of reason. He preferred to ignore any stray bits of experience which refused too stubbornly to fit the ordered pattern of physics. The planet-shattering missiles of the project no longer aroused any particular wonder in him, because they were part of the same pattern.

But the urchin's visit wasn't.

The grotesque impossibility of her coming and going left him shuddering. Restraining himself from starting up the escape ladder beyond the emergency door, he kept his numb forefinger on the elevator button. The cage came back at last, and he went up to join the two technicians.

"Have you caught her yet?"

Staring oddly, Armstrong shook his head. "Sir, there has been no outsider here."

The man's voice was too courteous, too flatly formal, his level gaze too penetrating. Forester felt a sudden sickness.

"Somebody brought that elevator up."

"Sir, nobody went down." Armstrong kept on staring. "And nobody came up."

"But she was—down there," Forester croaked. These men knew the intolerable strain upon him always. Perhaps it wasn't strange for them to think that he had cracked, but he insisted huskily, "Look, Armsrong. I'm sane—yet."

"I hope you are, sir." But the man's bleak eyes were unconvinced. "We've searched the place and phoned the guard detachments," he reported stiffly. "There is nobody inside except the staff. Nobody but you has been admitted through our gate today." He glanced behind him uneasily. "The only odd thing is that call from Mr. Ironsmith."

"He called me, too"—Forester tried to keep his voice from trembling—"about the child at the gate, but that doesn't explain how she got inside."

"Ironsmith said she had some message—"

"She did." Forester displayed the gray card, soiled from Jane Carter's fingers. The two men studied it silently, and he saw the hard suspicion fade from Armstrong's eyes.

"Sorry, sir!"

"Can't blame you." Feebly, Forester answered his apologetic grin. "Now we can get at the problem."

They all went down again, to search the vault, but they found no intruder there. The great safe was still intact, plastered with unbroken seals. The long missiles lay safe in the racks. But Forester gathered up the weeds the child had dropped, frowning at them dazedly.

"This math expert," Armstrong said. "How does he come in?"

"We'll find out."

Picking up the desk telephone, Forester told Ironsmith to meet

him at the inside gate, right now. They hurried silently back to the upper project, and out to the gate. Two guards let them outside to meet Ironsmith, who was already waiting for them, leaning on his rusty bicycle and calmly chewing gum. Forester asked him harshly:

"What about this little girl?"

"Who?" Ironsmith's easy grin had faded when he saw their tight faces, and now his gray eyes widened. "Did Jane Carter come back again?"

Narrowly watching that open, boyish face, Forester realized suddenly how many secrets he had carried to the computing section. A sudden sick panic tightened his voice.

"All right?" he rasped. "Who is Jane Carter?"

"I never saw her before—" Seeing the drooping weeds in Forester's hand, Ironsmith started slightly. "Did she leave those?" he whispered. "I saw her picking them, outside the gate."

Searching his pink, bewildered face, Forester handed him the gray card. He read it silently, and shook his sand head. In a flat, accusing voice, Forester said:

"What I want to know is why you called me about her."

"Just because I couldn't understand how she went away," Ironsmith answered innocently. "I'll go with you to Dragonrock Light."

"No, Chief!" Armstrong protested instantly. "Let the Security Police look for this mysterious Mr. White. Our job is here, and not playing cloak-and-dagger games with Triplanet spies." A sudden apprehension shook his voice. "Sir, you wouldn't think of really going?"

Forester was a man of science. Priding himself on the clear logic of his mind, he felt only scorn for intuition and mistrust for impulse. His own reckless words astonished him now, for he said quietly, "I'm going."

"If this White had any honest purpose," Armstrong objected, "he could contact you in some ordinary way. I don't like the look of all this funny business, sir. Why don't you just notify the police?"

But the technicians, after all, were a sort of military force, and

Forester held command. He listened carefully to all the sensible cautions of Armstrong and the rest, but nothing altered that abrupt decision. He gave his soft-voiced orders, and Armstrong and Dodge began loading a gray-painted official car with portable weapons.

"Stand by," he instructed the four men left behind. "Two off and two on. Watch the teleprinters for a Red Alert—just in case these people are Triplanet agents, trying to cripple the project until their fleets can strike."

The car was ready when he recalled his date for lunch with Ruth, and telephoned her hastily to say he wouldn't have time to eat. He tried to sound casual, but she must have heard the anxious tension in his voice.

"Clay!" she broke in sharply. "What's the trouble now?"

"Nothing, darling," he lied uneasily. "Nothing at all."

He hurried to join the men in the car, and they stopped at the computing section for Ironsmith. No trained fighter, that indolent clerk would be useless in a trap, but Forester wanted to keep an eye on him.

Tense at the wheel, Forester drove down the twisting road to the desert and west to Salt City and on across the coast range. Beyond the mountains, they came down through a wall of chill gray fog to the sea.

The round tower of the old Dragonrock Light stood dim in the fog, half a mile from the road, on a cragged granite islet still joined to the mainland by the ruin of a storm-shattered causeway. Forester parked the car, as near as he could drive.

"Set up your rocket launcher in that ditch," he told Armstrong. "If we aren't back in exactly one hour, I want you to blow that tower off the rock. Any contrary order will be sent under duress, and you will ignore it."

"Okay, Chief," Armstrong agreed reluctantly, and looked at his watch. Dodge was already unfolding the tripod mount. Forester gave those two able men a smile of confidence, and then peered mistrustfully at Ironsmith, who was unconcernedly folding a fresh stick of gum into his mouth and tossing away the empty wrapper.

Annoyed at his calm, Forester told him curtly to come along.

Grinning pleasantly, Ironsmith started scrambling briskly ahead over the wet, storm-tilted stones of the old causeway, which made an uncomfortable footpath. Forester followed, shivering to the raw bite of the mist-laden wind, and suddenly regretful of his impulsive decision. If this were really a trap, it occurred to him, the Triplanet agents had probably come ashore from a space raider lying underwater off the old lighthouse, and with the fog for a veil they might have him and the secret of the project safe on board long before that hour was up.

"Hello, Dr. Forester!"

The child's voice came to meet them through the mist, thin and high as some plaintive bird-call above the sigh of the wind and the murmur of the sea, and then he saw her standing above them at the base of the crumbling tower, tiny and alone. The wind whipped her thin yellow dress, and her skinny knees were blue and shaking with the cold.

6

FORESTER climbed to meet her, breathless and uneasy.

"Please be careful," she called anxiously. "The rocks are so slick and wet." The gusty wind blew her tiny voice away, and then she was saying, "—waiting to see you. Mr. White said you'd have to come."

Ahead of him, young Ironsmith ran up the spray-drenched rocks to the little girl. He grinned at her, his face pink and shining from the wind and exercise, and gave her a stick of chewing gum. Forester thought they seemed too friendly, although he tried to suspend his harsh suspicion when the clerk turned back thoughtfully to help him up the last high step. Greeting him with a timid nod, little Jane Carter trustfully offered Ironsmith her small grimy hand, and led them toward an open archway in the base of the old tower.

"Oh, Mr. White," she called eagerly. "Here they are."

A huge man came stalking out of that dark doorway. He towered a whole head above Forester, and the fiery red of his flowing hair and magnificent beard gave him a kind of vagabond splendor. He moved with a graceful, feline sort of strength, yet the angular planes of his ruddy face looked unyieldingly stubborn.

"We knew you'd be along, Forester, Ironsmith." His soft low voice was deep as the booming of the surf. He nodded at the dark archway. "Come and meet my associates."

Amiably, Ironsmith shook the big man's offered hand, commenting like a delighted tourist on the bleak grandeur of the view. But Forester stepped back warily, his narrowed eyes looking for a Triplanet agent.

"Just a second!" The fabric and the cut of White's threadbare, silver-colored cloak belonged to no familiar fashion, and his soft accent seemed too carefully accurate to be native. "First, I want to see your papers."

"Sorry, Forester, but we're traveling light." The big man shook his flaming head. "I have no papers."

"But you've got to have papers!" Forester's nervous voice came too thin and high. "If you're a foreigner—and I think you are—then you aren't allowed off the spaceport without a visa."

"I'm not a citizen." White stood looking down at him with intent, expressionless, bright blue eyes. "But I didn't arrive by ship."

"Then how—" Forester caught his breath, nodding abruptly at the child. "And how did she get into Starmont?"

The big man chuckled, and the little girl turned from Ironsmith to smile up at him with a shining adoration on her pinched face.

"Jane," he murmured, "has a remarkable accomplishment."

"See here, Mr. White!" A bewildered resentment sharpened Forester's voice. "I don't like all these sinister hints—or your theatrical method of luring us out here. I want to know exactly what you're up to."

"I only want to talk to you." White drawled that disarming explanation. "You are fenced in with red tape. Jane broke it for me,

in a way that made you come here. I mean to send you safely back before Armstrong decides to open fire."

Startled, Forester peered back toward the mainland. The gray official car was vague in the fog. He couldn't see the two technicians waiting with their rocket launcher in the ditch beyond. Certainly he couldn't see their names.

"I call myself a philosopher." Beneath the lazy tone, Forester could hear a note of savage vehemence. "That's only a tag, however. Not completely accurate."

"Precisely what is your business?"

"I'm a soldier, really," murmured White. "I'm trying to wage war against a vicious enemy of man. I arrived here quite alone, a few days ago, to gather another force for this final stand."

He gestured at the old stone tower.

"Here's my fortress. And my little army. Three men and a brilliant child. We have our weapons, even if you don't see them. We're training for a last bold assault—for only the utmost daring can hope to snatch the victory now."

The big man glanced forebodingly up into the driving mist.

"Because we've met reverses," he rumbled solemnly. "Our brave little force is not enough, and our weapons are inadequate. That's where you come in." His penetrating eyes came back to Forester. "Because we must have the help of one or two good rhodomagnetic engineers."

Forester shuddered in icy dismay, for the whole science of rhodomagnetics was still top secret. Even Ironsmith, whose computing section had established so much of the theory, had never been told of the frightful applications. Trying to cover his consternation, he demanded harshly:

"Who is this enemy, so-called?"

"You will meet it soon," White promised softly, "and you will call it so. It is nothing human, but ruthless and intelligent and almost invincible—because it comes in a guise of utmost benevolence. I'm going to tell you all about it, Forester. But first I want you to meet the rest of my little band."

He gestured urgently at the black archway. Little Jane Carter took Ironsmith's hand again, and the smiling clerk strolled with her into the darkness of the old tower. White stood aside, waiting for Forester to follow. Glancing up at him, Forester felt a tremor of awe. A queer philosopher, he thought, and a very singular soldier.

Uneasily aware that he had come too far to turn back now, Forester reluctantly entered. The chill wind came after him, and he thought the trap was closing. But the bait still fascinated him, that solemn-eyed child holding Ironsmith's hand. The tower room was round and vaulted, dimly lit from narrow slits of windows. The damp stone walls, black with ancient smoke, were scarred with the names of earlier vandals.

Blinking against the gloom, Forester saw three men, squatting around a small open fire on the stone floor. One was stirring a battered pot, which reeked of garlic. Ironsmith sniffed appreciatively, and the three made room for him and the child to sit on driftwood blocks by the fire.

The gaunt man stirring the pot was named Graystone. He rose stiffly, a gaunt and awkward scarecrow in rusty black. His angular face was stubbled and cadaverous, with dark sunken eyes and a very red nose.

"Graystone the Great." Bowing with a solemn dignity, he amplified White's introduction. "Formerly a noted stage magician and professional telepath."

Lucky Ford was a small man, bald as Forester, crouching close to the fire. His dark cheeks were seamed and wizened, and darker pouches sagged under his narrow shrewd eyes. Squinting up at Forester, he nodded silently.

"Ford," White explained, "was a professional gambler."

Forester stood watching, fascinated. Absently, still peering up, the little man was rolling dice against a stick of drying driftwood. Somehow, the dice always came sevens. He met Forester's astonishment with a thinlipped grin.

"Telekinesis." His voice had a hard nasal twang. "Mr. White

taught me the word, just now, but I could always roll the bones." Dancing away from the driftwood, the dice made another seven. "The art is less profitable than you might think," he added cynically. "Because every gambler has a little of the skill—and calls it luck. When you win, the suckers always think you cheated, and the law ain't friendly. Mr. White got me out of a county jail."

Ash Overstreet was a short heavy man, sitting on a rock in stolid immobility. He looked sallow and unhealthy. His thick hair was prematurely white, and massive lenses magnified his dull, myopic eyes.

"A clairvoyant," White said. "Extratemporal."

"We used to call it just a nose for news, when I was a reporter." Scarcely moving, Overstreet spoke in a hoarse whisper. "But I had a sharper perception than most. I got to seeing so much, before I learned control, that I had to dull my insight with drugs. Mr. White found me locked up in a narcotics ward."

Forester shook his head uneasily. All such phenomena of the mind belonged to a disreputable borderland of science, where the truth had always been obscured by ignorant superstition and by the trickery of such cheap mountebanks as this Graystone. He wanted to stalk out scornfully, but something made him look around for the little girl in yellow. She was gone.

He blinked at the fire, shivering uncomfortably. The hungry-looking child had been here, he was certain, just a moment before, chattering to Ironsmith, but now her place was empty. Ironsmith was watching the doorway, with a calm, bright interest, and Forester turned that way in time to see her come running in again. Handing the clerk some small metal object, she sat down again by the fire.

"Please, Mr. Graystone." She watched the simmering pot, with enormous eager eyes. "Please, can't we eat?"

"You've already met Jane Carter," White was drawling softly. "Her great accomplishment is teleportation."

"Tele—" Forester gasped, wrestling with a sudden overwhelming surmise. "What?"

"I think you'll have to agree that Jane's good." The big man smiled down through the red beard, and she looked back, her eyes luminous with a mute admiration. "In fact, she has the richest psychophysical capacities that I've found on any of the planets where I've looked for resources to fight our common enemy."

Forester shivered to the wind at his back.

"Jane was another misfit," White went on. "In this age of machine worship, her young genius had been ignored and denied. Her only recognition had come from some petty criminal, who attempted to turn her talents to shoplifting. I took her out of a reform school.

She turned hopefully to watch the stew again, and Forester peered sharply about that smoke-darkened room, where a few driftwood timbers and little piles of straw made the only furniture.

"A curious fortress, I know." That ruthless purpose burned again in White's blue eyes. "But all our weapons are in our minds, and the hard pursuit of the enemy has left us no resources to waste on needless luxuries."

"What enemy?" he demanded.

"I see you aren't taking my warning very seriously." White's rumbling drawl became ominously intense. "But I think you will when you hear the news." The big man took his arm, to lead him away from the fire. "Mason Horn is going to land tonight."

Forester swallowed hard, unable to cover his shock. For Mark White, whether a desperate Interplanet agent or merely a clever private rogue, had no right to know even the name of Mason Horn.

7

THE MISSION of Mason Horn was another high secret, as closely guarded as Project Thunderbolt itself. Two years ago, when the pen traces in the new search dome at Starmont first began to hint of neutrino bursts from some nearer and less friendly source than the supernova, that competent astronomer had been drafted from

the observatory staff to find why the Triplanet fleets always selected Sector Vermilion for their space maneuvers. Hurriedly briefed in the dangerous art of interplanetary espionage and equipped as a legitimate salesman of medico-radiological supplies, he had taken passage on a Triplanet trading vessel. No word of him had yet come back.

"Mason Horn!" Forester felt ill with shock. "Did he find—"

Caution choked him, but White's great shaggy head had already nodded at Ash Overstreet. Turning slowly from the fire, the clairvoyant looked up with an expression of lax stupidity.

"Horn's an able secret agent," he rasped hoarsely. "He was able to penetrate an Interplanet space fort stationed out in the direction designated as Sector Vermilion, and he got away with some kind of military device. I don't understand it, but he thinks of it as a mass-converter."

Forester's legs turned weak, and he sat down on a driftwood block. During all those ghastly years, while he had been perfecting the slender missiles of his own project and waiting beside them in the vault through anxious days and sleepless nights, this was what he had most greatly feared.

"So that's your bad news?"

"No." White shook his flowing, fiery mane. "Our enemy is something vaster and more vicious than the Triplanet Powers. And the weapon against us is something more deadly than any mass-converter. It is pure benevolence."

Forester sat hunched and shuddering.

"I'm afraid you don't understand mass-conversion weapons," he protested faintly. "They use all the energy in the detonated matter —while the fission process, in the best plutonium bombs, releases less than a tenth of one per cent. They make a different sort of war. One small missile can split the crust of a planet, boil the seas and sterilize the land, and poison everything with radio-isotopes for a thousand years." He stared at White. "What could be worse than that?"

"Our benevolent enemy is."

"How could that be?" Forester felt awash in riddles.

"That's what I brought you here to tell you." Forester waited, perched uncomfortably on the damp timber, and White kicked aside a straw bed to stand over him impatiently. "It's a simple, dreadful story. The beginning of it was ninety years ago, on a planet known as Wing IV. The human villain of it was a scientist whose name translates as Warren Mansfield."

"You pretend to know what happened there only ninety years ago?" Forester stiffened skeptically. "When even the light that left the star Wing at that time is not halfway to us yet?"

"I do." White's smile had a passing glint of malice. "The missiles of your secret project are not all that travels faster than light!"

Forester gulped with cold dismay, listening silently.

"Ninety years ago," the huge man rumbled, "the planet Wing IV had come to face the same technological crisis that this one does today. The common solutions are death and slavery—violent ruin or slow decay. On Wing IV, however, Warren Mansfield created a third alternative."

Forester looked up at him searchingly, waiting.

"Physical science had got out of hand there, as it has here. Mansfield had already discovered rhodomagnetism there—perhaps because the light of the Crater Supernova struck Wing IV a century before it reached here. He had seen his discovery misused as a weapon. Foolishly, he tried to bottle up the technological devil he had freed."

Forester began to wish he had called the police after all, for this man knew far too much to be free.

"Military mechanicals had already been evolved too far, you see, there on Wing IV," White went on. "Mansfield used his new science to design android mechanicals of a new type—humanoids, he called them—intended to restrain men from war. He was too successful. His rhodomagnetic mechanicals are a little too perfect."

The big man paused, but Forester sat too dazed to ask the frightened questions in his mind. He shivered again, as if the damp wind at his back had the chill of outer space.

"I knew Mansfield," White resumed at last. "Later, and on a different planet. He was an old man, then, but still desperately fighting the benevolent monster he had made. A refugee from his own humanoids. For those efficient mechanicals were following him from planet to planet, spreading out across the human worlds to stamp out war—exactly as he had meant them to do.

"Mansfield couldn't stop them.

"He found me a homeless child, wandering in a land that war had ruined. He rescued me from starvation and fear, and brought me up to join his crusade. I was with him for a good many years, while he was trying one weapon and another, but he always failed to stop the humanoids."

A sad sternness hardened White's bearded face.

"Growing old, defeated, Mansfield tried to make a physical scientist out of me, to carry on after him. He failed again. He had been a physicist. I grew into something else.

"I shared his hatred, but I saw the need of some better weapon than any machine. I put my trust in men—in the native human powers I had begun to learn. If men were to save themselves, I saw they must discover and use their own inborn capacities, rusty as they are from long neglect.

"So at last we separated He went on to try his last weapon—he was attempting to ignite a chain reaction in the oceans and the rocks of Wing IV, with some kind of rhodomagnetic beam. I never saw him again, but I know he didn't succeed.

"Because the humanoids are still running.

"I'm still fighting them, and these are my soldiers." The huge man nodded indignantly at his ragged followers squatting by the fire. "Look at them—the most talented citizens of this planet. I found them in the gutter, the jail, the madhouse. But they are the last hope of man."

White shrugged heavily, in the silver cloak.

"I've had dreams, Forester." His voice turned wistfully sad. "Magnificent dreams, of a coming time when my new science might free every man from the old, cruel shackles of the brute and the

machine. I used to believe that the human mind could conquer matter, master space, and govern time.

"But the most of my efforts have failed—I don't know why." He shook his fiery, shaggy head. "Perhaps there's some barrier I fail to see, some limiting natural law that I've never grasped."

He moved restlessly, towering over Forester.

"I don't know," he repeated bitterly. "And there's no time left for trial and error now, because those machines have taken most of the human universe. This is one of the last planets left—and I don't think you know that their first scouts are already here!"

Forester stared up in slack-jawed unbelief.

"Yes, old Mansfield's humanoids are already infiltrating your defenses." White's voice turned wearily grim. "They make efficient spies, you see. They don't sleep, and they don't blunder.

"Huh!" Forester gulped, astonished. "You don't mean—spying machines?"

"You've met them," White said. "You would find it impossible to tell them from men—they are cunning enough to avoid being X-rayed or mangled in accidents. But I know them. I've trained myself to sense the rhodomagnetic energy that operates them."

Forester shook his head, incredulous and yet appalled.

"They're already here," the big man insisted. "And Ash Overstreet says Mason Horn's report is going to be the signal for them to strike. That's why we need rhodomagnetic engineers."

Forester stood up uncertainly. "I don't quite see—"

"Those machines are rhodomagnetic," White's great voice broke in. "They are all operated by remote control, on beamed rhodomagnetic power, from a central relay grid on Wing IV. They must be attacked, somehow, through that grid—because they can replace one lost unit, or a billion of them, without feeling any harm. Now, unfortunately I've no head for higher math, and old Mansfield failed to teach me more than the rudiments of rhodomagnetics. So that's where you come in." The deep voice tightened. "Will you join us?"

Forester hesitated for half a second. He was fascinated against

his will by the possibility that White and his dubious disciples had stumbled into a new field of science, but he shook his head uneasily. If all this were true—if Mason Horn were really coming back to report that Triplanet scientists had perfected mass-conversion weapons—then he should be back at his own project, standing by for a Red Alert.

"Sorry," he said stiffly. "Can't do it."

White didn't argue. Oddly, instead, as if he had expected the refusal, he turned immediately to Ironsmith, who still sat beside Jane Carter at the fire, listening with a calm attention.

"Ironsmith, will you stay with us?"

Forester caught his breath, watching narrowly. If the clerk chose to stay, that might mean that he was already an accomplice of White's. But Ironsmith shook his sandy head.

"I can't see what's so bad about those mechanicals," he protested mildly. "Not from anything I heard you say. After all, they're nothing but machines, doing what they were designed for. If they can actually abolish war, I'd be glad to see them come."

"They're already here!" Savagely harsh, White's voice forgot to drawl. "Overstreet told me you wouldn't help us now, but at least you are warned. I think you'll change your mind when you meet the humanoids."

"Might be." Ironsmith met his ruthless glare with a pink and affable grin. "But I don't think so."

"Anyhow, there's something you can do." White swung impatiently back to Forester, as if stung by Ironsmith's calm. "You can warn the nation of those humanoid spies."

White broke off suddenly, with an inquiring glance at Ash Overstreet. The short man had stirred on the rock where he sat. His dim eyes stared vacantly at the dark stone walls, but the tilt of his head had a curious new alertness.

"It's time for him to go." The clairvoyant nodded heavily at Forester. "Because his men are getting nervous, out there with their rocket gun."

8

FORESTER peered at his watch and darted out of that dark room without ceremony. Outside the tower, he began frantically waving his hat hoping that Armstrong and Dodge could see him through the drifting fog. Behind him, he heard Ironsmith taking a more deliberate leave. Little Jane Carter laughed with pleasure, and then he heard her voice:

"Thank you, Mr. Ironsmith!"

"Come along!" Forester shouted hoarsely. "Before they shoot!"

"They won't shoot." Grinning, Ironsmith displayed a dark bit of metal. "Because little Jane brought me the firing link out of their rocket gun."

Shuddering to the cold sea wind, still desperately waving his hat, Forester scrambled ahead of Ironsmith across the great wet stones of the broken causeway. He was breathless when they came back to the car, and cold with sweat from something else than running.

"You had us worried, sir," Dodge called gratefully from beside the tripod in the ditch. "That hour was almost up."

Turning to peer uneasily back at the old round tower, dark in the driving mist, Forester told him to unload the launcher and test the mechanism. He obeyed, and shouted a startled curse. His jaw dropped when Ironsmith silently handed him the missing firing link.

"Don't ask questions now." Forester clung weakly to the door of the car. "Just stow your gear, and let's get back to Starmont."

He didn't feel like driving. Armstrong took the wheel, and he sat with Ironsmith and the folded tripod behind. He studied Ironsmith uneasily. The clerk sat comfortably sprawled with his feet propped on the launcher tube, watching the landscape with a casual interest until they left the mountains and dropped back to the brown

monotony of the desert, when he stretched and went to sleep. Forester jogged him back to a quiet alertness.

"I'm a physicist." Forester felt that he had to talk. "I'm used to limiting my inquiries to phenomena that are reproducible at will, by mechanical means, under strict controls. This psychic stuff—I just don't want to believe it."

"I understand." Ironsmith nodded cheerfully. "I recall a paper you wrote to attack the evidence for extraphysical action. You were pretty violent."

"Just a lab report," Forester protested defensively. "You see, Ruth's instrument firm had supplied equipment for some crackpot experiment. There were dice in a little frame that tilted to roll them, mechanically, making the conditions for each fall identical. The experimenter claimed that he could control the fall mentally, and I thought Ruth was taking him too seriously. I tried to repeat the experiment—just to show her that it was all nonsense. And my results showed a curve of random distribution."

"Which itself was a pretty good proof of extraphysical action." Grinning quizzically at his startled gape, the clerk added innocently, "Because that was what you wanted. Any sort of extraphysical research, don't you see, requires a slight modification in the methods of classical physics. The experimenter is also a part of the experiment. Your negative results were a logical outcome of your negative purpose."

Forester stared, as if discovering a stranger. Ironsmith had never seemed much more than a convenient accessory to the electronic calculators, serenely content with his insignificant job. He had always showed an irritating irreverence for the established aristocracy of scholarship, and Forester was startled into silence, now, by his unexpected cogency.

"Purpose is the key," he went on casually. "But Mark White has too much of the wrong sort—he's looking for weapons, instead of the truth. That's why I think he'll never learn enough to control those mechanicals. He hates them too hard."

"But he has reasons." Resentment of the clerk's pleasant calm

spurred Forester to a harsh protest. "He knows the humanoids. I intend making a full report of his warning to the Defense Authority. Whatever the circumstances, our military forces ought to be alerted against any such planned invasion."

"I'd think that over, sir." Ironsmith shook his head. "Because this whole affair would look a little odd, don't you realize, to anybody who wasn't on the spot."

His boyish face brightened.

"Besides, sir, I think these new mechanicals might turn out to be very useful. If they can actually abolish war, we need them now. Don't you think so, sir?"

Forester didn't, but the quiet protest recalled that bleak doubt in Armstrong's eyes. Reflecting that the members of the Defense Authority might prove equally incredulous, he decided to wait for better evidence.

The Red Alert came at midnight, on the tight-beam teleprinter. That warning signal meant that hostile action from the Triplanet Powers had been detected. It called for the staff of Project Thunderbolt to arm two missiles against each of the enemy planets, and stand by for the final order to end three worlds.

A second message, five minutes later, called Forester himself to the capital for an emergency meeting of the Defense Authority. He took off at once, with no time even for a word to Ruth. His official aircraft landed in cold rain at dawn on a military field, and a waiting staff car took him into a guarded tunnel in the face of a hill.

Deep in the underground sites which men had dug in their frantic search for vanished safety, he came at last into a narrow room of gray concrete, and took his place at the foot of a green-covered table to wait for the meeting. He blinked and started when he saw Mason Horn.

The secret agent came in through another guarded door, walking between two armed lieutenants of the Security Police. Forester rose eagerly to call out his greeting, but Horn answered with only a stiff little nod, and one of the lieutenants beckoned Forester back. They waited, watchfully apart at the end of that long gray room. Horn

carried a small brown leather case, chained to his left wrist. Sinking back into his chair, Forester felt a new chill in the damp blast from a fan somewhere behind him. He knew what that case must contain, and the knowledge was monstrous.

The nearer lieutenant saw his eyes on the case, and frowned at him sharply. Starting again, he shifted his gaze and tried to wipe the stickiness out of his palms. The silent weight of rock above began to give him a smothered feeling, and a faint reek of drying paint sharpened his physical unease.

The aged world president entered at last, leaning on the arm of his solicitous military aide, one Major Steel. Calling out quavering greetings to a few of his cronies, he shuffled to his big chair at the end of the table. Steel helped him to sit, and he waited for the dapper little officer to prompt him before he spoke to the hushed meeting.

"Gentlemen, I've bad news for you." His voice faltered thinly. "Mr. Mason Horn will tell you what it is."

The special agent left the two lieutenants and stepped up briskly to the table. With his thinning yellowish hair and fat red face, he looked more like a show salesman than an interplanetary spy. Unlocking the chain, he opened the brown leather case to display a polished metal object the size of an egg.

"This is the bad news." His voice was as blandly casual as if he had been offering a chic new number in brown suede for the spring market. "I brought it back from a Triplanet arsenal in Sector Vermilion. The president has instructed me not to reveal the technical specifications. I'm only to tell you what it can do."

The men around that long, bright-lit table, most of them withered with years and all tight-faced with anxiety, leaned silently to watch as Horn's plump, careful fingers unscrewed the flat-ended metal egg into two parts and set them on the table. Cold light glittered on small knurled metal knobs and graduated scales.

"Huh!" The chief of staff sniffed scornfully. "Is that all?"

"It's enough, sir." Horn gave him a brief, amiable smile, as if about to explain the irresistible sales appeal of a plastic evening

sandal. "Actually, the device itself is only a sort of fuse. The explosive charge is formed by any matter which happens to be near. The atoms aren't just fissioned, but converted entirely to free energy. This little knob sets the radius of detonation—anywhere from zero to twelve yards."

When his smooth voice stopped, an appalled silence filled that buried room. Men leaned to stare with a sick, slack-jawed fascination at the tiny machine on the table. The muted drone of the ventilator fan became an unpleasant roaring, and the reek of paint seemed stronger.

"One of these could finish us." With a fumbling care, Mason Horn began screwing the two small sections back together. "If you want to estimate its effectiveness for yourselves, convert the cubic yards of soil and rock to tons, and then multiply the answer by one thousand. That will give you the approximate equivalent in plutonium."

He paused, carefully locking the chain again.

"The Triplanet Powers have now had more than two years to plant these where they want them," he added quietly. "They may have been dropped into our seas, or sowed across the polar caps, or perhaps even smuggled into this very site. Placed in advance, they can be detonated by remote control, by a time mechanism, or even by the penetrating radiation from a mass-explosion on another planet. No defense is possible, and we cannot attack, not even with similar weapons, without destroying ourselves."

And Horn stepped respectfully back, mopping at his plump red face and waiting as if to write up an order for shoes. The chief of staff scowled at him, and abruptly sat down, seeming to say with his indignant shrug that such unmilitary men, with their unbelievable new weapons and their shocking ignorance of discipline, had ruined all his old pleasure in the ancient calling of war.

The old president was turning anxiously to his aide, with some question in his watery eyes. Nodding briskly, little Major Steel helped him to his feet. Forester tried to conceal a sharp disapproval, recalling the legends of Steel's phenomenal memory and efficiency, and mistrusting his undue influence.

"An unpleasant situation, gentlemen." Clutching the edge of the table with trembling yellow hands, the president cleared his throat uncertainly. "It first appeared to offer us only the hard choice of war without hope, or peace without freedom. However—" Gasping breathlessly, he gulped water the little officer held to his lips. "However, Major Steel has revealed a third alternative."

9

THAT QUAVERED PHRASE took Forester's breath. He remembered a pale tattered man, squatting by a smoky fire and peering as if at distant things with a strange alertness.

"—quite a shock to me, as you will soon understand." The president nodded his cadaverous head at the trim little officer, who stood motionless at attention, peering fixedly down the table. "But the alternative he offers has ended a nightmare for me, and I urge you to accept his advice without question."

He coughed, leaning weakly on the table, and waited for the brisk little aid to hold the glass for him to drink again.

"Gentlemen, I believe in Major Steel." He turned to smile at the officer with a vague gratitude. "He has been my efficient right hand for the past ten years, and I feel that we can trust him now. But I'm going to let him state the facts, with only this one word of warning—he is not a human being."

Forester knew that he shouldn't have been surprised. Mark White had tried to prepare him for this moment, and he had always mistrusted the superhuman energy and competence of the president's aide. Yet, as he watched the human-seeming thing at the other end of the long green table now, something made him shudder. Something cold brushed up his spine, and something took his breath.

"At your service, gentlemen." The human vocal quality was suddenly gone from Steel's voice, so that it became a mellow silver drone. "But just a moment, if you please. Because you should see

us as we are, and now the need for this disguise has ended."

And the thing slipped out of the crisp uniform. It snapped contact lenses out of its eyes. It ripped at what had seemed its skin, and began peeling flesh-colored plastic from its limbs and its body in long spiral strips.

Forester watched helplessly. He saw the faces around the table turning stiff and gray, and heard men gasping with something close to horror. His own breath caught when an overturned chair fell with a shocking crash. Yet there was nothing really horrible about what emerged from that discarded mask.

Rather, it was beautiful. The shape of it was nearly human, but very slim and graceful, with no mechanical awkwardness or angularity whatever. Half a head shorter than Forester, it was nude now, and sexless. The sleek skin of it was a shining black, sheened with changing lights of bronze and blue. A yellow brand gleamed on its breast:

HUMANOID
Serial No. M8-B3-ZZ
"To Serve and Obey,
And Guard Men from Harm."

For a moment, when it had flung off the last of its wrappings, it stood quite still beside the old president. Now its eyes were blind-seeming orbs that caught the light like polished steel, and its narrow, high-cheeked face was fixed in a look of dark benignity. After the flowing felicity of its action, that frozen poise seemed eerie as its inhuman voice.

"Your present alarm is needless, gentlemen," it cooed musically, "because we never injure any man. Major Steel was simply a useful fiction, created for your own benefit, which enabled us to observe the crisis as it developed here and to offer our services in time to avert calamity."

"But—Mr. President!" The defense minister had risen, still gasping. "I fail to understand this strange display," he protested shak-

enly. "But I must remind you that wise laws exist to protect our working classes from the competition of such multi-purpose android mechanicals."

The president merely looked at the machine.

"You need not fear the labor vote," it broke in briskly. "Because we bring no want or suffering to any workingman. On the contrary, our only function is to promote human welfare. Once established, our service will remove all class distinctions along with such other causes of unhappiness and pain as war and poverty and toil and crime. There will be no class of toilers, because there will be no toil."

Fumbling agitatedly with a pitcher and a glass, the chief of staff looked uncertainly from the droning mechanical to the trembling lieutenants beside Mason Horn, and finally shouted hoarsely:

"Seize that—device!"

"That isn't necessary, sir," its golden voice sang instantly. "Because we have no purpose except to serve you."

The two lieutenants merely moved closer to Horn, and the chief of staff forgot them, sputtering breathlessly, "That's no machine! It—it thinks!"

"We are mechanical," the steel-eyed thing told him melodiously. "But we do think, because all our identical units are joined by rhodomagnetic beams to our central relay grid on the planet Wing IV. We don't sleep and we don't err and we don't forget, and our awareness embraces everything that happens on many thousand worlds. You may welcome us without fear, however, because we exist only to serve and obey mankind."

The chief of staff swallowed convulsively, and somehow overturned his glass and pitcher. Moving with a silent, incredible ability, the mechanical righted them before the water had time to spill, and held the glass to the old general's lips.

"Quite remarkable!" The chief of staff strangled on the water, turning red in the face, and sputtered at the dark humanoid, which now stood alertly motionless again. "But how—precisely how—can you abolish war?"

"We are used to dealing with the breakdowns of such hypertrophic technologies as this planet has developed," the machine pealed sweetly, "and we have efficient methods of averting violence. You will find the formal arrangements very simple."

The humanoid moved swiftly again, to set the glass and pitcher safely beyond reach of the man's agitated hands.

"Your spaceports and those of the Triplanet Powers must be opened immediately to our shipping," it continued serenely. "Our advance agents must be given authority to monitor communications and inspect military installations. At an agreed future date, all military equipment must be surrendered to us for safe disposal."

"Surrender?" The chief of staff turned a choleric purple. "Never!"

"The matter is not in your hands," the machine droned blandly. "The crucial decision for all these planets was actually made some decades ago in a physics laboratory, by a foolhardy man who had discovered the theoretical possibility of a nuclear chain reaction in a uranium-graphite pile. Once he chose to risk the test, and so demonstrated the fission process, the outcome was already fixed."

The Defense Authority voted a few minutes later, with the chief of staff indignantly abstaining, to suspend the anti-mechanicals statutes in this national emergency, and to open the spaceports to the craft from Wing IV. Forester hurried away from that damp underground room, tired and alarmed and vaguely ill, to look for a dose of bicarbonate.

10

HE SAW THE SHIPS from Wing IV landing that same afternoon. Returning in a staff car to his official aircraft, he had the driver pull off the highway where it ran near the spaceport, so that he could watch. One enormous interstellar vessel was already down, looming immense above the tall, familiar interplanetary liners, which now

stood humbly along the edges of the field, towed hastily out of the way.

"Well, sir!" the awed driver whispered. "Ain't she big!"

She was. The thick concrete aprons had shattered and buckled under the weight of that black hull, which towered so high that a white tuft of cumulus had formed about its peak. Peering upward until his neck ached, Forester watched gigantic valves lifting open, and long gangways sliding down, and the hordes of humanoids start marching out to establish their service to mankind.

Tiny against the scale of their colossal craft, the new mechanicals were all identical, nude and neuter, quicker and sleeker than men, graceful and perfect and tireless. The sun shimmered blue on their dark hastening limbs, and glittered on their yellow brands. They spread out across the broken concrete, innumerable.

The first scouts of that dark army came to the high wire fence around the spaceport, near where Forester had stopped. They began cutting it down, deftly slicing through the heavy mesh with small tools, and neatly piling the sections. Swarming about the task in ever greater numbers, they began to remind him of some social insects. They worked silently, never calling to one another—for they all were parts of the same ultimate machine, and each unit knew all that any of them did. Watching, he began to feel a vague impact of terror.

For they were too many. Glinting with bronze and frosty blue, their hard black bodies were too beautiful. They were too sure, too strong, too swift. Unlike any actual insects that he had ever watched, they wasted no time and no effort. They worked as one, and they made no blunders.

"Let's go!" He tugged at the staring driver's sleeve, and his voice was a husky whisper, as if he were already afraid for the humanoids to hear. "Drive on—fast!"

"Right, sir." With a last astonished look at the vastness of that ship and the silent machines still swarming from it, the driver pulled back on the road. "The world sure changes," he commented sagely. "What won't they think of next!"

Back at Starmont, Forester hurried down to the project without even taking time to call Ruth, and went to sleep in his overalls on a cot beside the launching station. The teleprinter bell awoke him instantly—and he saw that the time was somehow nine, next morning. The brief message from the defense minister was classified top secret. It warned him to be ready for a humanoid inspector, arriving within an hour.

The mechanical came on a military aircraft, escorted by the commanding general of the satellite space stations and his retinue. A staff car brought them from the landing strip below the mountain, and Forester waited to meet them at the inner gate. The machine stepped out ahead of the men, droning its greeting:

"Service, Dr. Clay Forester."

In the midst of the stiff military uniforms, the slender silicone nakedness of the humanoid had a curious incongruity, but that oddness was not amusing. Its air of kindly blind alertness was somehow disturbing, and Forester couldn't help an uncomfortable start when it spoke his name.

"We have come to examine your Project Lookout." Its voice was a mellow golden horn. "Under the provisional agreement, we are to patrol all military installations, to prevent any aggressions before the ratification election. Then we shall remove all weapons."

"But this project isn't a weapon," Forester protested. "Like the satellite stations, it's only part of the warning network."

He couldn't tell what the humanoid thought; nothing ever changed that serene expression of slightly astonished paternal benevolence. But the machine went methodically ahead with a painstaking study of the building, the instruments, and the staff. The inspection became a cruel ordeal which lasted all day. Even when the human members of the party went to lunch at the cafeteria, the mechanical kept Forester to explain the deliberately sketchy records he had kept.

"We have secured access to the secret files of the Defense Authority," it purred blandly. "We have seen figures for the discretionary funds spent on this project, and lists of the items of equipment pur-

chased for it. Can you tell us why those totals are so large, and why so much of that equipment does not appear to be in use here?"

"Certainly." He tried not to look so ill as he felt. "This was an experimental installation, remember, and men aren't quite so efficient as you machines claim to be. We made several expensive blunders in the design, and all that missing equipment was torn out and hammered into scrap long ago."

"Our coming will end such waste," the mechanical murmured, and he could see no other reaction. Even the humanoids, he thought grimly, would find it difficult to prove that those missing items had not already gone to the furnaces as scrap metal, but he was afraid to wonder what other clues to Project Thunderbolt their sleepless prying might uncover.

As the inquisition dragged on, Forester felt increasingly tired and annoyed and alarmed. He hadn't slept enough, and his empty stomach fluttered uncomfortably. He was afraid his own agitation might betray the project, and when the machine had finished grilling Armstrong, at dusk, he asked it desperately:

"Isn't that enough? You've seen everything, and talked to all of us. Aren't you satisfied?"

"Thank you, sir," cooed the humanoid. "But there is one other man connected with the project whom we must question. That is the mathematician who calculated the designs for the search equipment."

"All the routine math was done in our own computing section."

"Who operates that?"

"A young chap named Ironsmith." Forester's voice rose, too sharply. "But he had nothing to do with the actual equipment. He never saw the tubes, or even heard about them. He's just a mathematical hack, and all he did was solve the problems we gave him."

"Thank you, sir," droned the urbane machine. "But we must speak with Mr. Ironsmith."

"He knows nothing about the project." Desperately, Forester tried to smooth the apprehension from his voice. "Besides, we haven't much more time today. I've already telephoned my wife that we're

all coming over for cocktails and dinner, and she'll expect us right away. Human beings eat, remember?"

He didn't want the mechanical to meet Ironsmith—certainly not alone. There were too many secrets that bright young man might have guessed. The little humanoid didn't care for cocktails, however, and it glibly quoted the articles of agreement. Reductantly, Forester called the computing section, and Ironsmith came pedaling down to meet the machine at the gate.

It was midnight before the mechanical came back from the computing section, its dark serenity still revealing nothing of what it might have learned. Nervously, Forester went down in the staff car to put the departing group aboard their aircraft, and then he hurried frantically back to Ironsmith's rooms. The youthful clerk greeted him with shocked concern.

"What's the matter, Dr. Forester? Why so grim and haggard?"

Ignoring the query, Forester peered sharply around the room. The few pieces of furniture were shabby but comfortable. A book printed in the strange characters of some ancient language of the first planet lay open on a little table, beside a tobacco humidor and a bottle of wine. Ironsmith himself, in unpressed slacks and open-collared shirt, looked guileless and friendly as the room.

"What's the trouble, sir?" he insisted anxiously.

"That damned mechanical," Forester muttered.

"Oh!" The clerk looked surprised. "I found it very interesting."

"What did it want with you?"

"Nothing much. It asked a question or two, and looked at the calculators."

"But it stayed so long." Forester searched his open face.

"I was asking the questions." Ironsmith grinned with a boyish pleasure. "You see, that relay grid on Wing IV knows all the math that men have ever learned—and it's quite a calculator! I happened to mention a tough little problem I've been kicking around, and we went on from there."

"And?"

"That's all." Ironsmith's gray eyes held a limpid honesty. "Really,

Dr. Forester, I can't see any reason for you to be disturbed about the humanoids, or Mark White to hate them."

"Well, I do!"

"But they're only machines," Ironsmith persisted gently. "They can't be evil—or, for that matter, good. Because they aren't faced with any moral dilemmas. They have no choice of right or wrong. All they can do is what old Warren Mannsfield built them to do—serve and obey mankind."

Walking back to his house and his wife, alone beneath the stars the humanoids had conquered, Forester felt a sudden savage envy of Ironsmith's carefree ease. The harsh demands of the project became utterly intolerable. For one dark moment, he wished that the humanoid had found his fearful secret and set him free.

11

THE TELEPRINTER recalled Forester to the capital, next morning, to attend the final sessions of the Defense Authority. He stayed there through the elections until a brisk machine had put a pen in the trembling fingers of the world president and dictated the phrases of his resignation.

The mechanicals had disposed of Forester's official aircraft, informing him that all such primitive contraptions were too dangerous for human use. Waiting for him, when a trim humanoid driver took him from the hotel to the ariport, he found a wonderful new vehicle: a long mirror-bright teardrop, unmarred by any projecting airfoil or landing gear. Two quick machines helped him up through an oval door, and he found the smooth hull darkly transparent from within. The flat deck covered all the mechanism, and there were no controls that he could see.

"How does it work?" he wanted to know.

"The cruiser is powered by energy from converted matter," the calm machine informed him. "The converters are on Wing IV, and

the power is carried to the point of use by rhodomagnetic beam.

"So? And what is the field equation?"

"It is not our policy to supply such information," droned the humanoid. "Because men who enjoy our service have little need of knowledge, and science has often been used for purposes contrary to the Prime Directive."

He looked away uncomfortably, watching through the hull as the cruiser lifted swiftly through a milky veil of high cirro-stratus, and on into the ionosphere. And suddenly they were landing on a strange landing stage.

"Is this—Starmont?"

The familiar shape of the dark butte and the known brown face of the desert around it answered his voiceless question, but everything else was changed. New walls and towers rose everywhere, luminous in the sunlight with vivid pastels. Broad new gardens were fantastic with plants which must have come from other worlds.

The door of the cruiser had no handle that a man could work, but it was opened for him silently. The solicitous machines helped him down, too carefully. Staring breathlessly across the new red pavement of the landing stage to look for his wife and his friends, he was halted by an abrupt, sharp sense of disaster.

The exotic gardens and the colonnaded walks and the long bright-walled villa were no real surprise, because he already knew that the teeming machines had been rebuilding all the planet into a streamlined paradise, and it was a moment before he knew just what was wrong.

"Where is it?" he gasped accusingly. "The big reflector?"

"The observatory has been removed."

"Why?" A dim dread overwhelmed his first sharp anger, and his voice turned hoarse. "You had no right—"

"All necessary rights to set up and maintain our service were given us by a free election," the humanoid reminded him. "And that space was required for your new dwelling."

"I want the reflector put back."

"That will be impossible, sir." The tiny machine stood frozen and

alert, staring past him with seemingly sightless polished eyes. "Observatory equipment is far too dangerous for you, because you would be so easily injured by heavy instruments, broken glass, electric currents, inflammable film, or poisonous photographic solutions."

"You've got to replace that telescope." Forester stood trembling with a bitter amazement.

"Scientific research is no longer necessary, sir." The benign surprise remained unchanged on that narrow silicone face. "We have found on many planets that knowledge of any kind seldom makes men happy, and that scientific knowledge is often used for destruction. Foolish men have even attempted to attack Wing IV with illicit scientific devices."

Forster shuddered to a speechless terror.

"Therefore, Clay Forester, you must now forget your scientific interests." That melodious drone was dreadful with a ruthless benevolence. "You must now look for your happiness in some less harmful activity. We suggest philosophy or chess."

The small machine merely watched as he cursed it, the black, high-cheeked face struck with highlights of bronze and icy blue, and set in serene solicitude. It didn't move until a new fear made him gasp hoarsely, "Where's my wife?"

"Ruth is here," that limpid golden voice assured him. "Waiting for you in the new toy room."

"Will you tell her I've come home?"

"We've told her."

"What did she say?"

"She just asked who you are."

"Eh?" Terror took his breath. "Is—is she all right?"

"She is quite well, sir, since we removed her unhappiness."

"Removed—what"

"She had been unhappy," purred the black mechanical. "We discovered her secret troubles only a few days ago."

"So?" A surge of puzzled fury knotted his stringy fists. "We had our problems, but she wasn't that unhappy. What have you done to her?"

"We asked the cause of her tears," chimed the machine. "She was restless, she told us, because there was no more work for her to do, at the office or at home. And she was afraid of your return, she said, because she was losing her beauty and her youth."

"But she isn't!" Forester swayed to a numbness of bewilderment.

"By comparison with our own steel-and-plastic units, all human bodies are very fragile and ephemeral. Your wife had been afraid of age for many years, she told us. But now we have removed that fear, to make her happy again."

"Take me to her!"

At the door of the toy room, a wave of heavy scent staggered him. It was Ruth's perfume, Sweet Delirium. Her usual hint of it was cleanly pleasant, but this thick reek overwhelmed him. The room was huge and splendid, hung with softly glowing tapestries which the mechanicals must have copied from some nursery book.

He found her seated flat on the floor with her legs sprawled out, in the awkward posture a baby might have taken, and she must have drenched herself with that perfume, for its heavy sweetness seemed suffocating. A mechanical stood watching her.

"Ruth!" Shock had dried up his voice, and his knees shook.

She was building a little tower out of soft, bright-hued plastic blocks, gravely careful and yet strangely clumsy. Hearing his husky voice, she turned to face him as she sat, laughing in that cloud of choking sweetness, and he saw that age and ugliness had ceased to trouble her.

"Ruth—my poor dear!"

She looked as young as she had been when the hard blue light of the supernova struck them. Her fine skin was pink from lotions and massage, and her dark hair had been washed blond. Her brows were arched too thinly, her lips too crimson, and she wore a sheer blue negligee that she would before have thought too daring.

"Hello." She spoke to him at last, with a child's soft and solemn voice, still holding one of the spongy blocks with a child's clutching awkwardness in both her red-nailed hands. "Who are you?"

Terror struck Forester too dumb to answer, but she recognized

him. The soft block rolled slowly out of her hands, to bound across the plastic floor. The humanoid moved instantly to bring it back, but her lax fingers didn't take it. Her dark eyes big with effort, she whispered faintly:

"Your name's Clay. Isn't it—Clay?"

"My dear!" The pathos of her uncertain voice had blinded him with tears, but he started quickly toward her. "What have they done to you?"

Her searching eyes had slowly lit with a dim and wistful gladness, and her white arms reached out toward him in impulsive eagerness. She didn't seem to sense his fear, but her movement overturned the tower of blocks. Her round baby-eyes saw the damage.

"Service, Ruth Forester."

The brisk little humanoid helped her gather the fallen blocks, and she began building them up again. The groping uncertainty was gone from her eyes. Absorbed again, she smiled with pleasure. Forester heard a happy baby-chuckle. She had forgotten him.

12

FORESTER'S KNEES were weak, and he could scarcely see. Turning away from Ruth, he stumbled back into that splendid hall which was a gallery of windows into many other worlds that free men had lost. Catching a deep breath of unscented air, he whispered bitterly, "What have you done to my wife?"

"We have merely made her happy," the machine sang gaily. "We have only removed her cares."

"And her memory."

"Forgetfulness is the most useful key we have discovered to human happiness," whined the machine. "Our drug, euphoride, relieves the pain of needless memories and the tension of useless fear. You can see that Ruth has lost her fear of age."

"Maybe!" Forester blinked incredulously. "But did she ask for euphoride?"

"No request was necessary."

"I won't have it!" He was hoarse and breathless with his anger. "I want you to restore her mind—if you can!"

"Her mind isn't injured," the machine said briskly. "The drug merely protects her from memories and fears which serve no purpose now, since our service shields her from every want and harm. If that distresses you unduly, then it may be necessary for you to take euphoride also."

For an instant he was stunned. The words had echoed in his mind like silver music before he grasped their sense, but then an unthinking fury flung his stringy fist at the bald plastic head of the machine. Its steel eyes seemed blind as ever and its narrow face reflected no alarm, but it moved precisely enough to let his fist slip past.

"That is useless, sir." It danced back from him, poised and alert. "Many men have attacked us, on many worlds, and none has ever hurt anything except himself."

Gulping convulsively, Forester staggered back from the machine.

"I—I didn't really mean to hit you," he stammered desperately. "It was just—just the shock!" He tried to get his breath. "I know I'll soon be happy enough, without any need of your drug."

"That decision is our responsibility," the mechanical hummed. "But a few men do find happiness without euphoride, and you may try that, if you wish."

"Thank you!" He swallowed hard. "And you won't punish me?"

"Our function is not to punish men, but merely to serve them."

"Thanks!" he muttered. "And I'll soon be all right." He tried to grin at the alert machine. "All I need is time to think."

That was it. He must think how to reach the old search building and make his way down to those missiles in the vault, already set and ready to smash Wing IV and stop these machines.

"I think I'll take a walk." He turned slowly, carefully casual. "Just to look over all the new improvements here."

"We're at your service, sir."

"I don't want any service!"

"But you must be escorted, sir. Because our service exists to guard every man from every possible injury, at every instant."

"Forester sidled away, speechless.

"You appear uneasy, sir," purred the attentive machine. "Do you feel unwell?"

"No!" He tried to swallow the sickness of his terror and control the frantic impulse to open flight or open battle, and he halted his slow retreat. "A little tired, perhaps. I only need to rest."

"This way, sir."

He followed the machine into the east wing of the long villa. Some unseen relay opened another sliding panel, to let them into an immense chamber where shining murals showed sun-browned figures of lean young men and long-limbed girls dancing.

"Those are scenes of a village spring festival, in the barbaric age when the descendants of the first colonists here had almost forgotten their civilization," the humanoid explained. "Your wife helped us plan the building, before she was given euphoride, and she selected the paintings for us to copy."

"Very nice," he stammered. The mention of Ruth filled his eyes with tears of angry pain, and then he was shaken with a fear that the humanoids would perceive his dangerous emotions. Sinking wearily into an enormous easy chair, trying to seem at ease, he took a cigar out of the engraved pocket case Ruth had given him on his last birthday, and snapped the built-in lighter.

"Where's all the staff?" he asked, as calmly as possible. "I'd like to talk—huh!"

Astonishment took his voice, for the humanoid had snatched the cigar from his lips. It took the case, put out the flame, and gave cigar and case to another mechanical which must have come just to carry them away. He started up angrily.

"Sir, we cannot allow you to smoke." The machine's voice was honey-sweet. "Fire is too dangerous in your hands, and the excessive use of tobacco has become injurious to your health."

He subsided helplessly, trying to swallow his fury. One cigar, he told himself, wasn't worth the risk of oblivion.

"Maybe I have been smoking too much," he admitted uneasily. "But I was asking about my old associates here. Where are they now?"

"The other astronomers and their families all left Starmont when we closed the observatory. We have built new dwellings for them, wherever they chose to live. One of them is composing a symphony and one is painting water colors and the rest have already been given euphoride."

"And the civilian technicians?" Fear dried his throat.

The bright steel eyes watched him blankly.

"Those six men all appeared unhappy about leaving the project," the machine murmured blandly. "Therefore it was necessary for all of them to be given euphoride."

"I see." Forester nodded stiffly. "So all the staff is gone."

"All except one man, sir."

"Eh?" He sat up straight. "Who is that?"

"Mr. Frank Ironsmith, sir. He says he is quite happy in his old quarters here, and there was no reason for him to leave."

"Young Ironsmith, eh?" Forester tried to conceal his puzzlement with a manufactured grin. "I'd like to see him, right away."

"If you wish, sir."

Surprisingly, it glided toward the door. An identical machine was waiting in the hall, and the two escorted him out of the building and on across the newly landscaped grounds, where everything seemed too precise, the lawns too level and too neatly rectangular, the walks too painfully straight.

Oddly, however, the irregular grove about the computing section had not been disturbed. The grassy hillock had not been leveled, nor the old gravel path replaced with any shining plastic stuff. Sheltered among the trees, the old wooden building with its red man-made shingles remained unchanged. And Forester saw an even stranger thing.

For Frank Ironsmith came on his bicycle down the gravel path

to meet them. That itself was unaccountable—for even a cycle, could painfully damage its rider. More disturbing still, he was smoking that underslung brier. Riding with no hands on the handlebars—in a shocking defiance of the Prime Directive—he was holding a dangerous flame to the pipe. And Forester's own keepers made no protest. The cruel unfairness of that filled him with a stunned resentment, but he tried to stifle his envy. For here, apparently, was one man free—free to launch a missile against Wing IV.

"Glad to see you Forester!"

That hail of welcome had a warmly genial ring. Ironsmith braked the cycle to a perilous stop, alighted safely, and gave him a strong brown hand—too strong. He dropped it, staggering abruptly back. His knees turned weak, and sweat burst out on his face. For logic had struck him a cruel, foul blow. If men were not allowed to go about alone, or to handle fire, or to use any dangerous machines, then the conclusion was terribly clear. Ironsmith was not a man.

"Why, Forester!" Ironsmith's boyish face showed a friendly, shocked concern. "Are you ill?"

He reached out anxiously, and Forester shrank from his hand. It looked human enough. The fair skin showed a convincing pattern of red sunburn and freckle and tan. It seemed entirely human —yet how was he to tell?

Frantically, Forester studied the old bicycle with its rusty frame and worn tires and chipped enamel. He searched the lank and vigorous form propped a little awkwardly against it, the sagging slacks and faded shirt and comfortable old shoes, the sandy hair and friendly face and keen gray eyes, wide and puzzled now. But he could find no useful clue.

"Just tell the humanoids, if you don't feel well," Ironsmith was urging warmly. "They know all the medicine that human doctors ever did, and more. Whatever is wrong, they'll know how to fix it."

Forester fought the shudder which swept him, but everything fitted too well. The ruthless mechanism inside this plausible and pleasant-seeming mask must have come to spy on Starmont.

It had even been with him at Dragonrock, and heard the plans of Mark White—and then he saw the contradiction in his logic.

Ironsmith wasn't a machine. That knowledge warmed him with relief, and oddly it drained the little strength left in his knees. He clung to the frame of the battered cycle, beaming at Ironsmith's astonished face with a fatuous joy.

"I'm so glad!" he gasped. "For a moment, I was afraid—"

Awareness of the two real machines checked his voice. He was afraid to say what he had feared, but Ironsmith had been at Dragonrock. And Mark White, who had learned to perceive rhodomagnetic fields, had trusted him.

"Afraid of what?" Ironsmith was asking.

"That—that they had given you euphoride," Forester whispered desperately. "I'm glad to find you still remember!" Strength came back to his wobbling knees, and he let go the bicycle frame. "And I'm all right." He tried to stop the trembling of his hands. "Just a little nervous and upset. They gave that drug to Ruth, you know."

"A useful drug, sometimes." Ironsmith himself seemed to feel no terror of euphoride. "It's good to see you back at Starmont," he went on genially. Won't you come on to my rooms, and tell me what you think of the humanoids?"

Forester was still afraid to say what he thought about them, but he accepted instantly. Shaken and uncertain from that dark moment of unutterable suspicion, he still had a monstrous problem to face. If Frank Ironsmith wasn't a machine—what was he?

13

THEY WALKED up the path to the old wooden building together, Ironsmith pushing his cycle unaided, Forester stalking silently ahead of his keepers. When they came to the door, Forester saw with a mounting bitterness that it still had a common brass knob. He paused in the doorway, staring into Ironsmith's front room

with a chagrined bewilderment. For the old, booklined walls enclosed a comfortable oasis of casual human disorder, in the midst of all this sterile desert of ordered, shining newness the humanoids had made.

"Smoke?" The smiling mathematician opened a new silver humidor. "You know I couldn't afford cigars before the humanoids came, but now they keep me supplied with very good ones."

"Thanks." Forester glanced resentfully at the two machines behind him. "But they won't let me smoke."

"They know best."

Apologetically, Ironsmith closed the humidor, but the mellow fragrance from it had filled Forester with a hungry craving. He sat down stiffly, looking uncomfortably away from his guards. He wanted desperately to ask Ironsmith's aid, to help him smash Wing IV and set men free, but he couldn't speak of that. He was afraid to even ask the secret of the other's special privileges, but he nodded at the desk, inquiring indirectly:

"Still working?"

"Not really working." Lazily, the younger man sprawled his awkward-seeming length into a big, worn chair, beside a small table where chessmen were set up in an unfinished game. "Just playing around with a few ideas that I never had time to develop before. The humanoids do all the routine math—though they let me keep the old machines in the computing section, for any work I want to do myself."

"How do you manage that?" Forester gulped at a bitter lump of jealousy. "They tell me that research is too dangerous."

"But thinking isn't outlawed," Ironsmith murmured gravely. "And I believe men still need to think." He picked up the queen of the black chessmen, absently. "In the old world, we had no time for thought. We were all too busy running machines."

"Free?" Forester stared bleakly up at his keepers. "Free to do what?"

"To live, I believe," Ironsmith said softly. "Take my own experience. I used to be a kind of human calculating machine. The

best of my energy went into setting up problems for those clumsy old electronic devices. Now I have time to look for the real meanings of mathematics. Time to follow ideas—"

His honest gray eyes were looking far beyond the black queen, and his low voice quickened.

"Sorry, Forester, but I've another engagement coming up." He straightened, replacing the queen on the board. "But I think you'll be all right, if you'll just learn to trust the humanoids."

"It's that drug!" Forester stood up reluctantly, trying not to look at his guards. "I can't stand the thought of that."

"You're just overwrought." Ironsmith smiled, with a cheery, calm assurance. "Really, for those who fail to find their happiness in any other way, euphoride may be the best solution."

Forester shook his head, speechless.

"But you can easily avoid it, if you wish," the other promised lightly. "All you have to do is accept the humanoids, and find yourself a way of life that fits the Prime Directive."

"How's that?" Forester whispered blankly.

"We can talk about it later." Ironsmith absently adjusted the chessmen. "Someone's waiting on me now, but I do want to help you get adjusted to the humanoids."

Forester snorted indignantly.

"You will," Ironsmith insisted mildly. "It's really too bad you persist in imputing malice to them, because they're not malicious.

"Huh?" Forgetful of the machines beside him, Forester had caught his breath to protest. The other man was already frowning at the chessmen, however, and, as Forester hesitated, awareness of his dark guardians fell upon him crushingly. He swallowed hard.

"Suppose we meet again, later?" Ironsmith was asking cordially. "For dinner tonight?"

"Thanks," Forester muttered stiffly. "Glad to."

But Ironsmith would never be an ally—that was starkly clear. He had always liked the humanoids too well, and he seemed far too clever now at rationalizing and excusing that strange perversity. Whatever the secret of his special freedom and the origin of his

twisted loyalty to these benign enemies of men, he had become something far more sinister than any mere disguised machine.

"Till dinner, then," he was murmuring affably. "We'll go down to the coast. The humanoids have built a new place for me there."

Nodding happily at the shabby old room behind him, the mathematician went graciously to open the door. Forester propelled himself reluctantly out, pausing to glance uneasily back at the waiting chessmen. Clammy-fingered dread touched his spine, as he wondered who was Ironsmith's chess opponent.

Forester felt oddly sorry to leave Ironsmith's sun-burned grin and the comfortable little island of familiar things somehow preserved from the machines, for ahead was a sea of strangeness. He shuffled forlornly on between his keepers afraid to turn aside or look again, but he must have somehow betrayed his sharp unease, because the humanoid at his right elbow asked suddenly:

"Clay Forester, why are you unhappy?"

"But I am happy. Quite!" He gulped at the dusty roughness in his throat. "It's just that things are different, now, and a man needs time to think."

"Thinking doesn't make men happy, sir," the machine protested blandly, "But we can solve any necessary problem—"

Forester tried not to listen to that cheery purr. His necessary problem was to reach that buried vault alone, to launch one missile against Wing IV. His ploddings steps halted suddenly.

"Service, sir," whined the machine. "Has something disturbed you?"

"No, I'm quite all right." He made himself move on, kicking at a pebble to show his unconcern. "But a man needs to talk to his friends, and I just remembered an old acquaintance I'd like to see."

"What is his name, sir?"

"Mark White." Forester's voice went too high, and he paused to frown as if with effort. "I don't remember any address, but he was living somewhere on the West Coast. A big, blue-eyed man."

The machine stood frozen beside him. The sun struck its sleek blackness into molten bronze and frosty blue. Its opaque steel eyes

seemed curiously alert, but it didn't answer at once, and he shivered inwardly.

"There is no such individual," the machine said at last, "among the individuals we serve on this planet." And he thought there was a new watchfulness beyond the mild, benign surprise on that narrow plastic face. "On other planets, however, we have several times encountered a very large man, who often called himself a philosopher. His present whereabouts are unknown, because he took part in a foolish attack against Wing IV, and escaped when it failed."

Forester felt that veiled alertness tighten.

"Where did you know this man?" inquired the machine.

"I never knew him very well." Forester kicked carefully at the pebble again, attempting to undo his blunder. "I met him several years ago at scientific gatherings on the West Coast."

"Then the man we seek is a different Mark White." That searching intentness seemed to relax. "Because he did not escape to this planet until a few months ago. We are hunting him," the machine added smoothly, "because he is an extremely unhappy man, gravely in need of euphoride."

Forester strolled on, as deliberately as possible, regretting his question. Mark White loomed tremendous now, the last tragic champion of mankind and his only possible ally, yet Forester dared not try to reach him again.

14

WAITING FOR THE time to dine with Ironsmith, Forester wanted to see Ruth again, but he was afraid to return to that gay nursery room where he had seen her playing with her plastic blocks. Too easily, he might betray his feelings, and so invite oblivion.

Trying to relax, he surrendered his person to the efficient machines, which washed him in a perfumed bath, steamed him and massaged him, and clad him at last in a soft white robe. He didn't

like the robe, because it fastened in the back with tiny rhodomagnetic snaps that he couldn't reach or work, but when he asked meekly for his trousers, he was told they had been destroyed.

"They were man-made, sir. The garments we supply are far superior in durability and comfort."

He said no more, for he wasn't seeking forgetfulness.

"Your body needs attention, sir." The cheery words shattered his thoughts. "It already shows defects due to age and overwork and want of proper care."

"Dr. Pitcher told me just about the same thing a year ago." Forester tried to grin. "But I'm still here."

"We must advise euphoride, sir, without any long delay."

"No!" He felt those same familiar tensions drawing him dangerously rigid again. "I'll be all right," he insisted stubbornly. "Frank Ironsmith is going to help me get adjusted."

"The euphoride treatment may be delayed until you have seen him again," the machine agreed.

"If I really need any medical attention," he protested uneasily, "I'll just go back to Dr. Pitcher."

"He has retired," the machine said. "No human doctors are permitted to practice now, because drugs and surgical instruments can become extremely dangerous through misuse, and because our own medical skill is so much greater than any man's."

"Anyhow," Forester insisted, "Ironsmith will help me."

Waiting for the mathematician, he sat on a wide terrace at the villa, watching the desert redden in the dusk. The cruiser ready on the stage was a long smooth egg, bright-streaked with reflections of land and sky. A small humanoid, far beyond, was guiding a humming lawn mower. The whole scene was quiet enough, but he couldn't forget the frozen alertness of the machines behind his chair or the enigma of Ironsmith's freedom.

"Service, sir," the nearest humanoid said suddenly. "Mr. Ironsmith wishes to know if you will meet him aboard the cruiser."

Even that gentle purr made him start up nervously, for he had begun to face the evening with an uneasy dread. He hurried silently

down to the rhodomagnetic craft, and let the two machines help him up to the deck. Watching through the hull's dark transparency, he saw Ironsmith pedaling alone to join him, bareheaded in the cool twilight and whistling cheerfully.

Bitterly, he watched that blithe young man lean his cycle against the villa wall and run lightly to the cruiser. The covered deck was chest-high, with no gangway or ladder, but he asked no aid to come aboard and the mechanicals, oddly, offered him none.

Lifting out of the twilight over Starmont, the little ship curved high through the violet night of the ionosphere to overtake the setting sun. It dropped again, in its swift trajectory, toward a dark and jagged edge of land against the ruddy brightness of a hammered copper sea. A stark granite headland flung up to meet it. Red sunset shimmered on the wet black stones of a broken causeway. White spray plumed up from black fangs of stone. Startled, Forester blinked at his pleasant-faced companion.

"I call the place Dragonrock," Ironsmith was murmuring. "After the old lighthouse that used to stand here."

Forester nodded stiffly, afraid to ask what had become of those curious fugitives hiding in the old tower.

"Pretty wonderful, isn't it?"

Ironsmith was beaming innocently, and Forester turned uncomfortably to look at the new building crowning that bleak headland. Golden columns and balconies and clustered towers made a luminous filagree too elaborate for his taste, and high roofs burned crimson. When the craft had landed on a wide stage, Ironsmith took him proudly to tour the monumental halls and the exotic gardens.

"Pretty gorgeous, don't you think?" Ironsmith inquired happily.

Forester eyed him narrowly, wondering what else he had to do, and then blinked angrily at his own silent keepers, blurting impulsively, "Can't you send them away—so we can talk alone?"

To his stunned surprise, Ironsmith nodded calmly.

"If you like. I'm afraid you let their presence upset you too much, and maybe I can help you accept them." He turned quietly to the machines. "Please leave us alone for half an hour."

"Service, sir." Forester flinched at the mechanical voice.

Incredibly, the two guards departed. Forester looked hard at Ironsmith. All he could see was a lean and harmless-seeming man with untidy clothing and gray, friendly eyes, but something touched him with an icy awe. Beckoning cheerfully, Ironsmith led him on across the warm soundless pavement of a vast court, where the heated air was bitter with the fragrance from huge crimson fungi, fringed and intricate, towering out of tall golden jars. A crystal wall stopped them, and white surf was moaning over black rocks far below. Forester caught his breath, to plunge vehemently:

"Frank, I want to know what you've done with Mark White and that remarkable child and the others."

"Nothing." Ironsmith turned sober. "I don't even know where they are. When I came here looking for them, the old tower was empty. I selected this for a building site, hoping they might come back. But they didn't. I never found a clue."

The cold purpose in his voice astonished Forester, for this was not the callow and indolent clerk who had loafed through his work with such surprising ease in the old computing section, but suddenly a mature, determined man. Somehow unnerved, he gulped hoarsely:

"Why try so hard?"

"Because Mark White is an ignorant, dangerous fanatic." That calm voice held a crushing certainty.

"If he's against the humanoids, that's enough for me."

"That's why I brought you here—to warn you." Ironsmith's eyes were level and grave and a little sad. "Because I want to stop you from making Mark White's blunder."

Forester shivered. "You mean—I may get euphoride?"

"That doesn't matter at all." The lift of Ironsmith's shoulders was almost scornful. "Really, Forester, I think you ought to ask for the drug."

Forester said nothing, but his narrow jaw set hard. He stared out at the copper glints fading on the sea.

"The greatest danger is from Mark White," Ironsmith went on quietly. "I imagine he'll try to get back in touch with you. If he

does, please tell him to come and talk to me—before his mad plots have done too much harm to be repaired."

Forester shook his head.

"That's nonsense." His voice had a breathless harshness. "But there are things I want to know. How do you get on so well with these machines? Why are you so disturbed about White's fight against them? And who"—his husky voice caught—"who's your chess opponent—when you're all alone?"

"Your imagination is working too hard." Ironsmith gave him a brief, sunburned grin. "I think you should ask for euphoride."

"Don't say that!" Forester's voice turned husky, and he clutched desperately at the other's sleeve. "I know you can help me—because you've escaped. Please—please, Frank—be human!"

"I am." Ironsmith nodded sympathetically. "And I do want to help you, if you'll only let me."

"Then tell me—just tell me what to do."

"Accept the humanoids," Ironsmith said quietly.

"Accept those intolerable monsters?" Forester shivered in uneasy indignation. "When they've already wrecked my observatory and destroyed the mind of my wife? When they're even threatening me?"

"I'm sorry you persist in regarding the humanoids as malevolent enemies." Ironsmith shook his close-cropped sandy head with an air of bland regret. "Your whole attitude seems as childish as Mark White's, and I'm afraid it will get you in trouble."

"Trouble?" Forester tried unsuccessfully to grin. "What do you think I'm in right now?"

"Nothing you didn't ask for." A faint impatience edged Ironsmith's brisk voice. "You're a scientist, Forester—or you used to be. Can't you recognize the humanoids as nothing but machines?"

Forester whispered uneasily, "How do you mean?"

"When you make them into enemies, you imply something impossible to any machine." A sober frown had followed Ironsmith's flash of annoyance. "You imply the moral choice of an evil purpose, reinforced with some emotion of anger or hate—when you ought

to know that machines are equipped with neither morals nor emotions."

"I'll agree about the morals!"

Ignoring that feeble stab, Ironsmith stared past him at the sea. "The humanoids, in fact, are the best machines men have ever made, because the more primitive devices always had the dangerous flaw that careless or wicked men could turn them to destructive ends. The humanoids are protected from human manipulation."

Forester watched him silently, seeking in vain for whatever lay behind that disarming air of innocent candor.

"Get what I mean? A can opener will cut your finger as willingly as it does a can. A rifle will kill the hunter as quickly as the game. Yet those devices aren't evil; the error arises in the user."

Lips tight, Forester shook his head.

"Anyhow," Ironsmith went on earnestly, "you ought to be too intelligent to try to fight the humanoids. Let them serve and obey."

Forester rasped harshly, "Obey me?"

"They will." Ironsmith nodded persuasively. "If you'll accept them—sincerely. If you don't, I see no hope for you but the drug."

"You don't, huh?" Forester felt his thin fists clenching. "See here, Frank. I don't quite follow all your phony arguments, and I don't want any sort of run-around. I think there's something else—and pretty ugly—behind your immunity from these damned restrictions and your queer attitude toward these perfect machines."

Ironsmith seemed to hesitate. Ruddy in the reddening western light, his smoothly youthful face showed no resentment, and he nodded solemnly at last. "There are things I can't tell you."

"Why not?"

"If it were left to me, I'd tell you everything." He studied the remote, straight horizon. "I'd be willing to trust you with all the facts. But the humanoids are also involved, and they were designed to take no chances."

"Frank—don't you see?" Forester's broken voice was hoarsely pleading. "I've got to know!"

"Nothing more." Ironsmith turned to face him, smooth jaw

firm. "Not until you actually accept the humanoids—and I had better warn you that they are expert in assaying human reactions.

"That's why I'm so—so horribly afraid!"

"I'm sorry for you, Forester." Ironsmith turned reluctantly, as if to rejoin the humanoids. "I had really hoped to help you—because your abilities are too brilliant to be killed by euphoride, and because I'm your friend."

"Are you?"

Ironsmith ignored that savage interjection. "I never really understood you, Forester—especially the way you've always neglected Ruth. Perhaps the humanoids are right."

"Wait!" Anger swept Forester—terror and bleak suspicion. "I'll never ask for euphoride." His sobbing voice turned wildly threatening. "And you've got to help me—"

Ironsmith twisted away from his frantic hands with the effortless deftness of another humanoid, his calm and honest eyes looking back across the court again.

"Here they come," he murmured casually. "And I hope you remember my message." His voice fell to a whisper. "Tell Mark White to come and talk to me, before he starts any childish attack."

"Incidentally," Ironsmith added blandly, "They've already pulled the teeth of your Project Thunderbolt."

15

FORESTER WENT BACK to Starmont alone. Soaring above the atmosphere, he looked up once at the crystal beauty of the stars that men had lost, and then sat hunched deep in failure.

"Service, sir," murmured the mechanical beside him. "You appear uncomfortable."

"Huh!" Trying to cover his nervous start, he stretched himself elaborately and settled carefully back in the seat, grinning stiffly up at the two dark identical faces above. Nothing else was left to

do. Utterly benevolent, more dreadful than anything evil, these keepers of mankind prohibited even the freedom of despair.

Back in his velvet prison, an endless time dragged away, until he was awakened one night from a troubled dream.

"Dr. Forester! Please—can you hear me?"

A clear childish treble voice was calling to him, urgent and afraid.

Comfort surrounded him, quiet, and utter peace, here in his own new bedroom at Starmont. In the softly glowing murals, village swains and maids danced silently at their unceasing festival. The vast east window, transparent now, opened upon the empty desert.

"Dr. Forester!" He realized that the child's voice was not a dream. "Won't you please come with me now?"

He saw her then. Jane Carter! She came creeping timidly around the foot of his bed. That immense bright room seemed warm to him, and she was huddled in a worn leather coat too large for her, yet he saw that she was blue with cold.

"Come with me! To Wing IV!"

The meaning of her imploring words burst upon him then. A wave of hope dispelled his momentary terror of her solemn stare, and broke the nightmare chains of his total frustration. He smiled.

"I'm coming," he whispered.

And he knew the way. He caught the spark of her courage, and he gave her his trust. She led him, and he felt no movement at all—but they were on a high balcony.

"See!" she whispered. "It wasn't hard at all."

He squeezed her tiny fingers and looked around him blankly. The narrow metal floor jutted from a wall which gleamed with the gray color of oxidized aluminum. The wall reached, windowless, immensely far to right and left. It soared above them, topless. It dropped beneath, a featureless metal precipice.

He found the narrow door at the end of the balcony, but he couldn't keep his awed gaze from drifting up again. Because the vastness of that tower dazed him. Mansfield's original shop could only have been housed in some kind of rough temporary building—

for that misguided idealist had exiled himself alone here in the beginning.

But eighty years of the humanoids had changed Wing IV. Looking down again beyond the low gray railing, Forester shivered to a paralyzing awe. The shadow of this tremendous solitary tower fell dim and vast before him, an endless blot across a queerly flat plain, where mountains must have been leveled. For now, out to the gray rim of the murky sky, all he could see was a single unending spaceport, beneath interstellar craft arriving and departing.

A few of those mighty vessels were landing on the surface of that endless field, near enough for him to glimpse the chutes down which they poured dark rivers of ore—metal, he thought, for new humanoids. Another was loading, and he could see ordered armies of tiny black mechanicals marching ceaselessly up it gangways—ready, he supposed, to quiet all the quarrels of some troubled world.

Most of those vast transports, however, streamed down into wide black pits spaced across the field, or emerged from others, as if their docks were somewhere far beneath. The entire planet, it came to him, must have become a single busy labyrinth of shafts and landing cradles, ore bins and smelters, foundries and assembly lines—the dark metal matrix of Mansfield's unimaginable machine.

Forester withdrew from the railing, humbled and shuddering. Jane Carter had crouched close against his legs, breathlessly silent, and they retreated now to the cold face of the metal wall behind. She had been smiling proudly, showing him the way, but her huge eyes had turned solemn now, and she hung back when he tried to lead her toward that narrow door.

"Wait!" she whispered. "Mr. White wants you to look at that." She pointed uneasily out across the gray vastness of that mechanized planet. "He says maybe you can tell him what it is."

Looking the way she pointed, he saw something new the humanoids were building. Dim in the smoky distance, it was dome-shaped, taller than its breadth, colored darkly red. Scaffolding made a fine dark web around it. Towering far-off and alone, it gave him no clue to its size until he saw an ascending interstellar vessel creeping

up across its crimson face, tiny as a black insect.

"I tried to go inside it for Mr. White, but I somehow couldn't." Her voice was stifled and afraid. "Even Mr. Overstreet can't see anything inside, but he thinks it's going to be something to use against us. It's all platinum."

Forester tried to study that remote red dome. Were the humanoids attempting to improve themselves with a new grid of platinum relays better than the palladium brain Warren Mansfield had designed? That seemed scarcely possible.

"Tell Mr. White I don't know what it is." A thin wind had brushed his face, stinging his eyes with biting smoke and fumes.

"But it's something bad." He felt her small hand trembling, and then tugging him toward that weathered aluminum door. "Mr. White says we must hurry, now. Mr. Overstreet can see the shape of trouble waiting for us—only he can't tell quite what it is, with *that* always getting in the way."

She nodded fearfully at the far red dome, as he followed her toward the narrow metal door. Oddly, in this world without men, it had a knob shaped to fit a human hand, which yielded stiffly when he tried it. A short hallway, the walls glowing faintly with a gray radiant paint, let them into a strange old room.

"Wait." He felt her small hand tighten. "Mr. White says wait," she breathed. "Mr. Overstreet is watching the sections we must change, and he can see one of the black machines working near it now. We must stay out here till it goes away."

Waiting, taut and almost ill with the stress of hope and dread, Forester looked wonderingly around this musty room, for it was where Mansfield had built the first humanoid. The cold dull radiance of the paint fell on a scarred wooden desk and a worn swivel chair, on a dusty drafting table with a tall stool pushed against it. Forester turned slowly to the inner door, Jane Carter's anxious hand cold and tiny in his own.

That door also had a common knob, and no concealed relay. He opened it cautiously—to close it very quickly. For he had seen the grid. Its limitless billions of tiny palladium relays, the cells of the

mechanical brain, were all linked with rhodomagnetic synapses and among them all, he had to find and change the few that held the Prime Directive.

The humanoids required no light, and most of that enormous space inside the tower was dark. On this original level, however, which Warren Mansfield himself had designed and begun, the panel faces and the narrow inspection walks before them were finished with a gray-glowing paint, whose dim radiance shone far into the gloom, above and beyond and below.

"What's wrong?" Jane breathed fearfully.

It was the humanoids, the busy limbs of that eternal brain. He had seen scores of the tiny-seeming mechanicals moving with their swift, efficient grace about the web of narrow walks strung through the dim abyss between the tiers of panels. The nearest one, poised on a thin footway not fifty yards distant, had been facing toward him, and terror of its bright steel eyes had stricken him.

"But it didn't see you, Dr. Forester," Jane whispered through her own pale alarm. "It can't really see, you know, and Mr. White says it can't feel us more than about ten paces, here in the tower."

"I'm sorry." He moved shakenly to open the door again. "I just forgot they're blind."

They crept out silently, into the vast chamber of the brain. Beneath a soundless hush, Forester fancied that he could feel the pulsation of unimaginable energies—the rivers of incalculable rhodomagnetic power that flowed out from here to drive and control all the trillions of mechanicals serving all the worlds that men had owned.

Following a narrow, dim-lit catwalk that had no railing—because it was built for perfect machines, that never slipped or stumbled—he searched the gray glowing panel faces. And he found the numbers old Mansfield had painted on the sections, eighty years ago. Hasty brush marks, splashed on merely for identification in the shop, they were faded now, peeling away from the satiny palladium shieldings. But he could read them still.

The first sections ought to hold the Prime Directive. Trying to

ignore the blind machines ahead, trying to forget the giddy pit beneath, he leaned to read the faded numbers.

One! For an instant he couldn't breathe. He felt as if that narrow walk had swayed beneath him, and he had to clutch desperately for a flange of the nearest massive girder. But he got his balance back, and he was fumbling desperately to unlatch the hood that covered its relays, when he felt Jane tugging sharply at his hand.

Turning apprehensively, he saw her pointing at that nearest black mechanical. It was still busy removing invisible dust from the panel faces with something like a tiny, silent vacuum cleaner, but it was working steadily toward them. Forester saw that he had no time for terror. He lifted the cover of the first section and began rapidly unhooking the flexible wave-guide tubes that coupled it into the brain.

"Oh—"

Jane Carter's cry was a low and stifled moan of pain. She let his fingers go, but at first he didn't know what had happened. He thought she was falling from the walk until he saw her backing silently away from him along it, and then he thought that nearest humanoid must have discovered them.

That busy machine was still approaching as it dusted the panels, but he saw in a moment that it hadn't yet found them. He looked back down at Jane, trying to see what had so disturbed her. She stood frozen now, poised on that narrow gangway like a mechanical at rest. Her pinched face was bloodless, and her staring eyes seemed enormous in the gloom, watching the door where they had come in.

16

CLUTCHING the flange of that great girder to balance himself, Forester turned fearfully back to the door. It was still closed. In that breathless hush of inconceivable energies, he could hear nothing at all. He was glancing blankly back at that intent humanoid when

the first faint creak of the opening door spun him back. A man came out, striding toward him confidently along that giddy path.

"Stop it, Forester!"

Frank Ironsmith came stalking out along the catwalk, urbanely indifferent to any risk of falling.

"You blundering fool, Forester!" Lower now, restrained, his voice reflected neither hate nor anger, but only an infinite shocked regret. His boyish, sunburned face looked lean and stern, and his gray eyes held a wounded sadness as he looked past Forester at the rigid, staring child. "Look what you have done!"

For an instant Forester stood heartsick and shaken, swaying on that gangway meant for sure machines, wishing hopelessly that this grave antagonist had been merely another mechanical.

"I tried to warn you, Forester."

Scarcely hearing that sad reproof, he blinked unbelievingly at Frank Ironsmith—who should have been still idling his useless life away at Starmont, reading his ancient books and playing his mysterious chess and riding his rusty bicycle.

"I thought Mark White would call on you, but—"

Darting forward, Forester forgot all his dizzy fear of the vast black spaces of the brain beneath, and all his dread of the busy blind machines behind him. All he remembered was Ironsmith's shrewd defense of the humanoids, and his unfair freedom, and his treacherous hunt for White. He tried to knock the urbane traitor off that unrailed way, but Ironsmith evaded the blow.

"That won't help you, Forester." Smiling apologetically, Ironsmith caught his quivering wrist. Quick and strong as any humanoid, the mathematician twisted it up and back, to pin him against the gray panel faces. He gasped and pulled and tried to strike again, and somehow wrenched his knee. Throbbing pain checked his fury.

"You aren't fit to fight." Ironsmith's low calm voice held no resentment, but only smooth regret. "You had better give up."

Not yet! Forester shook his head to clear the mist of pain. He twisted in Ironsmith's ruthless grasp, trying to ease his arm, and shifted his weight to relieve his trembling knee. Looking desper-

ately behind him on that perilous catwalk, he found Jane Carter.

"Jane!" He fought that agony, and found his voice. "Stop him!"

Ironsmith was twisting back his arm again, with the merciless efficiency of a machine. He had to flinch, but red hatred surged back against the crushing weight of pain.

"Stop him, Jane! You can do it. Mr. White can help you."

But the little girl had shaken her head, the movement stiff and slight. Her blue lips seemed to quiver, but then she froze again, motionless as a humanoid not working.

Nothing happened to Ironsmith, and Forester gave way to pain. He stopped his useless struggles, and Ironsmith mercifully loosed his arm. Clinging to the girder again, he heard Jane speak.

"Service, Clay Forester." He shrank from her, stricken, for now her thin treble voice had a new quality of whining, emotionless melody. It was like the voices of the humanoids. "We heard your unwise request," that new voice droned. "but we cannot injure Mr. Ironsmith. You are the one who requires restraint, sir, because Mr. Ironsmith has been faithful to the Compact."

And she stood appallingly still again. Even her human terror had been somehow calmed, for now a strange smile was fixed on her tiny face—a white, dreamy smile, that he felt ill to see. For it reflected the serene tranquillity of the humanoids, without feeling and without life. It was mechanical. Forester turned in consternation, to croak accusingly at Ironsmith:

"What have you done to her?"

"Not I." Sternly, Ironsmith shook his bare sandy head. "Though it is a dreadful thing." His cool gray eyes rested on the stiffened child, and Forester could see the shocked pity in them. "Because the humanoids aren't ready, yet, to cope with such opponents in any humane way. I'm afraid she'll have to be destroyed. But you're the one to blame."

"I?" Forester trembled angrily. "How?"

"Come along—if you really want to talk about it." Glancing sadly at the child again, he nodded toward the door. "We can't stay here."

He swung, as if in sublime contempt, and Forester limped help-

lessly after him along that narrow inspection walk, to clutch gratefully at the jamb of the door. Looking bitterly back, Forester glimpsed the tiny tenders of the brain already hastening to inspect and repair the connections he had unhooked. Defeated, he stumbled wearily to the rusty swivel chair that old Mansfield had used.

Little Jane Carter had glided after him with the sure grace of another humanoid. She halted at the end of the battered desk, motionless as any stopped machine, still smiling. Her set face was pinched and bloodless, and her eyes had dilated into great pools of shadow, lifeless and blind. Forester looked away from her.

"How?" he croaked huskily. "How am I to blame?"

The mathematician was strolling absently about that gray-lit, stale-smelling room.

"The humanoids have to guard the grid." His voice was mild and friendly. "Warren Mansfield built that into them. When such blundering fools as you and Mark White attack the Prime Directive with paraphysical weapons, they are compelled to develop paraphysical defenses."

"They?" Forester kept his eyes off the frozen child. "Or you?"

Ironsmith stood silent, watching her with gray troubled eyes, until a sudden gust of wrath brought Forester out of the dusty chair. His knee gave, and he had to catch the corner of the desk.

"So you don't deny it?" He spat on the floor. "I guessed the truth a long time ago—when you began inventing all your sophistic little arguments for accepting the machines, and when they paid you off so well. You—traitor!"

"It's true that a mutual pact exists." Ironsmith nodded pleasantly. "They were unable to protect the Prime Directive from psychophysical attacks, without the human aid the Compact provides."

"I thought so!"

"But you didn't think enough." Rubbing the lean angle of his sunburned jaw, Ironsmith strolled about the shop again, and nodded at last in grave decision. "You've made things very difficult, Forester—but still I'm going to give you one more chance."

Peering in a bleak perplexity at this amiable and honest-seeming man who had turned so incredibly against his kind, Forester muttered sardonically, "Thank you!"

"Not me." Ironsmith shook his head. "Your thanks should go to someone else, who is willing to risk far too much to help you. To Ruth—who was your wife."

"Ruth? But she's at Starmont, under euphoride."

"She was." Ironsmith smiled innocently. "You left her there with the humanoids. But I had always liked her, Forester—more, I suppose than you ever did—and I brought her away with me when I came to leave Starmont. She had her mind and her memory back, and now she's with us in the Compact. She's anxious for you to join us." He paused hopefully. "What shall I tell her?"

"So she's with you?" Leaning weakly against the desk, he nodded to a painful understanding. He had never entirely liked Ironsmith, not even before the humanoid invasion, and now he thought he saw the reason.

For the desert observatory had been an isolated, intimate little world, and this ingratiating traitor, the realization stunned him, had too often been with Ruth. At staff parties and on the tennis courts, always conveniently free to spin his aimlessly glittering mathematical paradoxes—while Forester was busy with Project Thunderbolt.

Forester's skin felt hot, and he heard a roaring in his brain. His whole body tensed and shook with hatred, but he knew he couldn't fight. His eyes fell from Ironsmith's blandly urgent face, and he saw Jane Carter again. He looked at her blind, smiling stillness.

"I'll go with you." He swung abruptly back to Ironsmith. "On one condition."

"So you'll join us?" Ironsmith turned suddenly genial. "You're ready to accept the humanoids for the useful machines they are? And to help them defend the Prime Directive?" He offered a vigorous, sunburned hand. "Then welcome, Forester."

"On one condition," he repeated flatly. "Jane Carter comes with me—free."

"Sorry, but that's out of the question." Ironsmith was smoothly regretful. "We can rescue you, but she has unfortunately used psychophysical powers of her own against the humanoids, and I'm afraid there's nothing we can do for her."

"Then there's nothing you can do for me."

"If that's the way you want it." Ironsmith nodded soberly. "Ruth will be hurt—but I imagine the humanoids will need another guinea pig, to test their new relays."

He looked at Jane Carter.

"Service, Mr. Ironsmith." She spoke to him with that high, inhuman whine. "Since Clay Forester refuses to enter the Compact, we must keep him in our care because of his dangerous knowledge."

"All right," he cut at Ironsmith. "Let them kill me!"

The child's strange voice answered. "It will not be necessary to destroy you immediately, sir, because you have displayed no independent paramechanical capacities of your own."

Beyond her, two identical humanoids had come in through the balcony door. Beautiful with flowing gleams of bronze and blue, they glided silently to Forester's elbows.

"Service, sir," the child said. "Come with us."

Smoothly as any humanoid, she moved toward the balcony. Following between his keepers, Forester looked back twice. The first time, Ironsmith still stood beside the desk, tall and young and stern, watching him with a look of dispassionate regret. When he looked again, the dusty shop was hushed and empty.

17

A LITTLE RHODOMAGNETIC CRUISER was waiting outside, hovering silently above the low aluminum railing of the narrow balcony, the smooth oval hull of it reflecting the gray vastness of the tower and murk of the smoky sky and the dark flatness of that endless busy spaceport, all in shimmering distortion. Numbed and tingling at

the scalp from the vanishing of Ironsmith, Forester shuffled blankly toward it between his guards.

Agile as any mechanical, Jane Carter sprang nimbly over the railing to the deck of the waiting craft. Forester's two graceful guards helped him aboard, and the little ship rose silently. Watching through the one-way transparency of the hull, he saw the smoke-veiled vastness of that endless spaceport sink and spread. And he saw his destination.

His knee shuddered again, and the two intent machines moved close to his arms, asking gently if he wished to sit. But he didn't sit. He stood between them, scarcely breathing, watching the red curve of that unfinished dome rise up ahead. He could see the scaffolding still about it, a dark metal veil across its sullen glow. At last, as the cruiser dropped, he found the toiling machines on the platforms, the merest insects, still scarcely visible.

"Service, sir," droned one of his keepers. "What disturbs you now?"

"I just begin to get it!" The tiny craft banked, coming down to land, and he tried to guard his knee. "I begin to see what this monstrous thing is for."

His knee gave as the deck leveled again, and the humanoids reached quickly to support him. He cuffed at them impatiently, but they held him up until the cruiser had settled gently beside a long windowless building, with the scarlet dome looming up beyond. Forester shrank from it.

"No I think I see the truth," he rasped at his guardians. "I think those platinum relays are paraphysical. I think Ironsmith and his gang of renegades have taught you how to generate paraphysical energy and helped you build this new grid." His voice turned hoarse. "And I think it's intended to operate men."

"That is partly true, sir." His brooding eyes had moved to Jane Carter, and now her thin body broke suddenly out of that stark immobility, moving a little toward him with a quick mechanical grace. "The platinum rays are to be energized with paramechanical force, and the grid has in fact been constructed to control the minds

and bodies of men. But our purpose with it is not evil."

Sweetly melodious, her thin bright voice reflected nothing human.

"Our only function, as you should know, is to secure the greatest possible measure of happiness for all men, under the Prime Directive. In the past, we have sometimes failed. A few unhappy individuals have developed paramechanical abilities, enabling them to elude our care and endanger our whole service, but this new grid is designed to govern them."

Forester stood numbed and voiceless.

"Men have need of such guidance," droned the mechanized child. "Because most men cannot truly control the working of their own bodies, or even understand the functions of their own minds. Our function is to guard men from the consequences of their own ignorance and folly and vice. You cannot call that evil, sir."

Gulping painfully, Forester found no reply.

"Now come." The door of the cruiser was sliding open. "Here is our new paramechanical laboratory."

The two humanoids helped him carefully down from the deck. Shivering in the red shadow of that enormous dome, he limped stiffly after the child. Watching her strange new grace, he could see all men moving like puppets on the invisible strings of the grid. He could glimpse the ultimate depotism of old Warren Mansfield's altruistic idea, utterly benevolent and unthinkable.

In a windowless vastness of gray wall ahead, a narrow doorway opened. Beyond was a dark enormous space, where he could see the loom and gleam of strange machines. A sharpened apprehension checked his feet—for he didn't want to be a guinea pig.

"You need not be alarmed for yourself, sir." His keepers must have seen his hesitation. "Or concerned about Jane Carter. Because we are careful to conduct our paramechanical research without causing any pain or needless bodily harm to the human subjects."

Forester didn't want his mind dissected, not even by the most efficient methods, and he hung back until the two machines moved to catch his shrinking arms and thrust him, with an almost tender deftness, forward into the shadowy cavern of the research laboratory.

The humanoids had no use for light, and the only illumination came through the bars of an endless row of cages built along the foot of one high wall—cages much like those he had seen containing animals intended for biological experiment. They seemed quite small at first, in that enormous space, so that he wondered for an instant what sort of animal they were built to hold.

The dim light, spreading from them a little way across the floor and diffusing upward toward the unseen ceiling, outlined here and there the dark bulk of some immense unknown mechanism, picked out some polished metal surface, or caught the hastening sleekness of another humanoid. In a moment he had grasped the vastness of everything, and he knew that the cages were large enough for him.

He tried to stop again, but the two careful machines carried him on without effort. The barred door of one empty cage lifted him, and the machines set him gently down inside. One of them stayed with him.

"You must wait here," it said, "until additional sections of the new grid are ready to be tested. Meantime, you may request any comforts you wish."

Concealed relays behind him shut and locked the door again. His black guardian stood abruptly motionless, the glow of the walls glistening faintly on its slim silicone nudity. Muttering sardonic thanks, Forester looked about the cage. He found a cot, a table and a chair, a tiny bath behind another door. Partitions shut off the other cells, but the thick dark came in through the bars, crushingly. Limping to the cot, he sat down on the edge of the hard mattress. The cold air had an antiseptic bitterness that choked him, and the gray walls closed until he was shuddering.

"You have no reason for alarm, sir," came the golden monotone of his keeper. "Because you will feel nothing at all."

He watched its blind serenity, trying not to shiver.

"As a very distinguished physicist, sir, you should be interested in our research and pleased with your own part in it," the machine continued brightly. "Because we are following the methods of your own science. The basis of our work is a single simple assumption:

if paramechanical forces can cause mechanical effects, then mechanical means can also generate paramechanical forces."

He tried to listen. Sitting old and ill on that hard, narrow cot, he tried to breathe the bitter air. He tried to push back the suffocating dark. He rubbed his swollen knee, and tried to understand.

"We have proved that basic assumption," purred the humanoid. "With the aid of a few good men, we have designed instruments for the detection and analysis of paramechanical energies. A few bad men have also aided, however unwillingly, as experimental subjects."

Shivering on the cot, Forester wondered what had become of little Jane Carter. He had lost her in the dark while he struggled with his keepers, and he couldn't see into the other cages.

"As another scientist, sir, you will understand our methods," the machine went on. "Our human subjects, under strict control, are caused to exert paramechanical forces. We proceed to measure those forces, to investigate the mechanics of their origin and determine the nature of their effects, and finally to duplicate them by mechanical means."

Forester had slumped abjectly back against the cold partition. Watching the intent machine, he nursed his knee and clung to one thin thread of hope.

"The final result of this research will be the perfected paramechanical grid. Any human body under its direction will be operated far more efficiently than is ever possiible by the slow, uncertain biochemical processes of the natural brain. It can regulate men to prevent all the accidents caused by their clumsy feebleness. It can stimulate the restoration of lost or damaged members. It can even mend the decay of time, to make men almost as durable as our own units."

Forester shrank from the bright steel eyes of the machine, clutching his single thread of hope.

"So you see that our methods are sound and our goal is good," it finished serenely. "You see that you have no cause for any personal fear, and your own love of scientific truth should make you

eager to do your own small necessary part in this greatest possible humanitarian undertaking."

The humanoid ceased all movement, in absolute efficiency, as that golden melody ended. Forester sat uncomfortably before it on the cot, nursing his hope. For Mark White must still be toiling with his adepts to turn their freakish psychophysical powers into a fighting science of the mind. Perhaps—

His breath caught, and the feeble strand of his hopeless hope became a mighty thing. For he saw a huge, red-bearded figure striding out of the dark beyond the cages, still majestic in a tattered silver cloak.

"Mark!" He lurched to his feet, his knee strong again. "Mark White!" Darting past his frozen keeper, he tried to shake the massive, coldly glowing bars. "Mark—here I am!"

But that tall figure ignored his call. It stalked on by, and all his hope went with it. His knee shuddered under him, so that he clung weakly to the bars. For he had seen the face of the marching thing, strangely stiff and pale. He had seen the eyes, huge and dark and blank, their sullen blaze of hate dead at last.

He stared after the stalking creature, stricken, until it vanished in the dark. Even its movements, the realization hit him, no longer had any characteristic of Mark White. Its striding gait had been too quick and sure and soundless. Like little Jane Carter, it had become a mechanical puppet of the grid.

And it was not alone, for the others came marching after it out of the whispering dark. Still tall and gaunt, old Graystone was no longer awkward now, his nose no longer ruddy. Overstreet, for all his puffy bulk, moved lightly as a child. Not nervous any more, little Lucky Ford came gliding by with a swift mechanical grace.

Forester found no voice to call again, and none of them seemed aware of him—for all awareness was suspended, in those controlled by the paramechanical relays. All their eyes had blind, distended pupils, and all their faces smiled out of unfeeling oblivion.

"Service, sir." He started when his keeper touched his arm. "Those unhappy men can cause no trouble now. You must sleep."

18

BLANKLY FORESTER turned away from the murmuring dark and the monstrous shape of defeat. Limping obediently toward the narrow bathroom behind his cage, he nodded at the way those smiling automatons had gone, inquiring, "How did you capture them?"

"Through Jane Carter," the machine said. "They had hidden from us in a cave which had no physical entrance, but we reached them with the child's mind, and took hold of them with the energized test sections of the new grid. We controlled their own paramechanical capacities to bring them here."

Stumbling on his painful knee, Forester had to let the quick mechanical support him. "Come along and let us tend you."

He had no conscious purpose left, but he was still a scientist. The old habits and disciplines of abstract thought were still working in him, and his sick mind turned back now to seek relief in the old pursuit of fitting facts together to form new patterns of the truth.

Project Thunderbolt had never left him peace or freedom to develop all the theoretical implications of his first basic discoveries in rhodomagnetics, but now in the relaxation of despair he found his mind turning from practical things to consider that long-neglected challenge.

For the humanoids had not yet conquered the realm of pure thought, nor closed it to men. Lying on his cot, he resumed the oldest quest of science: the ancient search for the first fact of all things and the law of its multitudinous manifestations, for the *prima materia* and the philosophers' stone.

Electromagnetics, even with all its achievements in smashing and rebuilding atoms and draining off their energy, had never quite blueprinted atomic architecture. Mighty as it was, that old science of iron had never quite accounted for the nuclear binding force—

for that incredible something, not itself electromagnetic, which somehow contained the furious electrostatic repulsions within unfissioned atoms.

Rho had been his symbol for the constant of equivalence with which he had hoped to join the twin systems of energy, electromagnetic and rhodomagnetic. He had used the symbol to write an equation which seemed to unite the two sciences into the final fact he sought—until young Ironsmith so casually and cheerily proved that seeming *prima materia* to be just one more illusion.

For rhodomagnetics had also failed. Forester had carried the light a little farther, but vast areas of dark were left. He had detonated matter with his new partial knowledge, but both scieinces were still not enough to explain why all atoms didn't fisson.

Stable atoms still existed, to prove the presence of some third component, acting to preserve all substance from spontaneous dissolution under the furious disruptive force of the two components he knew. But *rho* had failed him. The unknown force refused to obey the established laws of either science, and its actual nature still escaped him. Unless, just possibly—

Forester caught his breath, recalling that the periodic table offered still a third triad—composed of the three precious heavy metals, platinum and osmium and iridium. The same elements the humanoids were using to build their new relays! Could that last triple group prove to be another convenient key, ready to unlock yet a third sort of energy?

The thought spread a swift excitement through him now, but he tried to keep his body quiet. Afraid to look at his keeper, or even to let the rhythm of his breathing change, he tried to analyze that breathtaking new conception in the uninvaded laboratory of his mind. The heavy elements of the platinum triad were indeed the logical key to that unknown component, it came to him, because the more powerfully disruptive electromagnetic and rhodomagnetic forces of the massive atoms must obviously require a far greater intensity of that stabilizing energy to balance and contain them—it was only the ultimate failure of the binding component in the very

heaviest atoms that allowed the fission of such elements as uranium.

Lying very still, wishing absently that he had Frank Ironsmith's computing section to help him with the math, he groped with his mind for the nature and the laws of that unknown energy. Since electromagnetic effects varied with the second power of the distance, and rhodomagnetic with the first, he thought this third sort of energy should logically be invariant with distance. Again, since the velocity even of electromagnetic light was finite in time, and the speed of rhodomagnetic energy infinite, then the effects of the platinomagnetic force might reasonably somehow transcend time. And, if those two fumbling hypotheses were true—

His breathing paused again, and he couldn't keep his body from stiffening on the cot. For Ash Overstreet could look into the future and the past, and the curious abilities of Lucky Ford and little Jane Carter were unlimited by distance. Trembling to a startled understanding of the platinum relays in that new grid, he recognized the unknown component. It was—it simply had to be—psychophysical energy!

"What disturbs you, sir?" inquired his keeper. "Are you still unhappy?"

"No trouble." He mumbled the words, turning carefully on the cot to keep his face away from it. He breathed again and made his limbs relax, trying to seem merely restless in his sleep. "And I'm going to be very happy now."

He was. Because that flash of intuition had been a wide illumination, lighting many things. It had closed the gaps in Mark White's half-science, and swept away the baffling contradictions. It actually explained Jane Carter's gift and Lucky Ford's ability and Overstreet's searching perception.

Lying still, relaxed again, he forgot the alert machine behind him. Absently regretful that Ironsmith couldn't check his speculations, he began an awed exploration of the universe, by that tremendous, sudden light.

It wasn't hope that urged him on—not consciously—for he thought hope was dead. He had yielded his body to the machines,

and ceased all resistance. Waiting resigned to whatever fate, he had simply released his intelligence upon the familiar paths of science, and now his triumphant mind began to rove through atoms and far galaxies.

For he had reached the oldest goal of alchemy and science. The fabulous *prima materia,* when now at last he grasped it, proved to be a very simple equation, so plainly obvious that he thought he should have found it long before. It merely stated the equivalence of electromagnetic and rhodomagnetic and psychophysical energies, as involved most simply in the equilibrium of a stable atomic particle—revealing all three as different aspects of the single basic unity science had ever sought.

The sheer mathematical beauty of that equation brought Forester a deep glow of pleasure. For the integration was complete. The terms described the fundamental stuff of nature, neither electromagnetic nor rhodomagnetic nor psychophysical, but all three at once—the keystone of all the splendor of the universe.

The alchemists, taking mercury for their *prima materia* and sulphur to be the philosophers' stone that made it into lead or iron or gold, had been but little farther from the truth, it occurred to him, than the ambitious thinkers of the later age of iron, who had attempted to balance their universe upon another single leg. Rhodomagnetics, adding a second leg, had improved the balance only slightly. But psychophysics, the third aspect of one reality, completed a firm tripod of truth.

The transformations and derivations of that equation of equivalence, Forester perceived, would explain the origin of atoms and the universe, the gravitation of matter and the dispersion of the galaxies, the dark paradox of time and the nature of space, and doubtless even the birth and meaning of life and mind themselves.

Lying quiet on that hard cot, he was lost in the elemental grandeur of that concept. He had forgotten the gray-walled cage around him, and his sleepless keeper watching, and the unpleasant fact that he himself was waiting for the scalpels of another research project—until the humanoid touched his arm.

"Service, Clay Forester," it said. "We're ready now."
Then he was no longer in the cage.

19

HE WAS STANDING on a flat gravel bed, at the bottom of a shallow, dry watercourse. On his left were low dark cliffs, formed where the vanished stream had cut against an outcropping granite ridge. The barren gravel fields spread far to his right, and beyond were hills, lying low and naked and dead beside the wide shallow valley of the ancient river.

It was night, and cruelly cold.

For this was not Wing IV. The sky told him that. The gray murk of the humanoid planet was gone, and the sky above the cliffs was a dead and utter black, scattered with only a few tiny oval blobs of gray mist. Towering against the dark, above the foot of that dead valley, was a tall, leaning dome of pale white splendor, a remote incredible spray of diamond glints frozen motionless.

For a moment he merely stared, shivering and bewildered, shrinking from the savage attack of the cold. For he stood barefoot on the icy sharpness of the gravel, clad only in the thin gray pajamas in which his mechanical keeper had clad him. The cruel cold sucked out his breath and seared his skin, and he stood blank with his stunned perplexity until he felt the tug of a child's anxious hand.

"Oh, Dr. Forester!" Jane Carter was crouched beside him on the river-worn gravel, no longer a creature of the machines. Her huge frightened eyes could see again, and that serene cold smile of far forgetfulness was gone. "I'm so cold!" She shivered against him. "Please take me out of the cold."

"But how can I do that"—he shuddered beneath a crushing wonderment—"when I don't even know where we are?"

He found that he couldn't really speak, because that empty cold had taken all his breath. His throat was dry and his lungs were

burning and his lips too stiff to move. He made no sound—and heard none, for this dark place was utterly dead. Yet the child seemed to understand him, for a new dismay was sick in her eyes.

"Don't you know?" She frowned up at him, her thin face stiff with pain, and he realized that he hadn't heard her actual voice at all. "You ought to know," she said. " 'Cause you took me away from the black machines, and you brought us both out here."

"No—that couldn't be!" He shook his head dazedly. "I don't remember doing anything at all."

"Please—where can we go?"

But Forester was mute, swaying to a numbed understanding. Now he saw the terrible meaning of the starless dark and that tall arch of diamond dust beyond the black and barren hills. The merciless, still cold sank into him more piercingly. For now he knew that he and Jane had been somehow marooned on this lifeless planet lost outside their native universe of stars.

Those tiny oval blots against the dead and empty dark were other island universes, remote beyond knowledge. And that tall plume was the edge of their own galaxy, luminous with light which must have left its splendid mist of suns a long thousand centuries before.

"It's so awful cold," the frightened child was sobbing. "Please, can't you do—anything?"

Blankly, Forester shook his head. Because it must have taken a long billion years, he thought, for this stray atom of a world to drift so far through the extragalactic dark. It must have been time beyond imagining since some lost sun had warmed these old black hills. This world was dead. No day would ever break the black-and-silver splendor of this savage, soundless night. Nothing could live long here. His hands were empty and his weak knee throbbed and the cold of the gravel burned the bare soles of his feet like something very hot. Peering at the black frown of those worn cliffs, he dropped his thin shoulders hopelessly.

"No, Jane, I don't think I brought us here." He was trying gently not to increase her fright, until he saw in her uplifted eyes that she knew all his own overpowering dismay. "Maybe the humanoids did

it, with that new grid." His mind shuddered from that. "They were using us for test animals you know. Maybe they mean to pull us back again, just before we die—to save us for some other test."

Quickly lifting one small bare foot and then the other away from the searing cold of the gravel, she stood straight and tiny in that worn leather coat too big for her, a white dust of frost on her stiffly frozen hair. " 'Scuse me, but you did it. You fought that new brain machine to take me from it, and you teleported us both out here." Her dark eyes held a solemn plea. "Mr. White would say you're awful good—but I'm still afraid we're going to die. Can't you find a warm place for us, with air?"

"I can't do teleportation," he insisted bleakly. "Or anything else. But you can go—somewhere." He pushed her slight body from him. "Better leave me, and look for some safe place."

"No—please—there isn't any!" She clung to him desperately. "You did take me away from the machines, even if you don't remember. You're still fighting that brain thing to keep me, even if you don't seem to know it. So we must stay together—don't you see?"

"We'll keep together." Die together, he thought, nodding to an uneasy acquiescence. Though they were somehow still alive, his blurred and stinging eyes could see no hope. For the silent fangs of cold had sunk deep into him.

He forgot his own despair, and bent to pick her up. His wrenched leg buckled. He fell, searing his hands on the gravel, and lurched feebly back to his knees. He lifted her tenderly, trying to shield her with his arms, for he knew nothing else to do. He could feel her straining effort to hold back that implacable emptiness of cold, but he knew no way to share the burden. She seemed to flinch and quiver, and instantly the cold slashed at them with new fury, as if her life and her power had almost failed.

"The door!" She stirred weakly in his stiff arms, trying to point. "See it—there!"

Turning painfully where he knelt, he found a faint new gleam above the rim of those changeless, ancient cliffs. Dimly, his fading vision made out the smooth curve of a transparent cupola there,

washed with the pale cold radiance of the far galaxy. Against the dark rock below, he saw a green light burning.

He shook his head stiffly, and peered again. Because it couldn't be a light. Nothing could be still alive to light any sort of beacon on his dark world, and he was certain that cupola hadn't been there, anyhow, when he first saw the cliffs. He blinked and gaped, mistrusting his dimming senses. But the light continued to glisten incredibly on polished metal surfaces, beyond a round opening.

"Please!" Jane was sobbing. "Hurry—"

He didn't wait to wonder any longer. Swaying laboriously to his feet, he picked her up again. A frozen numbness tried to hold him, and a painful roaring was increasing in his ears, but he staggered with her toward that green-lit opening. The sharp gravel no longer hurt his feet, but a dead stiffness tripped him. He fell.

And again he carried her on until at last, somehow still alive, he lurched across a shining metal threshold. Inside the tiny chamber where the green light burned, he saw that it must be an air lock. His bleared and throbbing eyes found a row of buttons, one glowing dimly green. He punched it clumsily, with a finger that had no strength or feeling left, and a massive valve slid up to shut them in.

Air screamed in, a warm and kindly hurricane. He filled his burning lungs, and breathed. His sight began to clear, and that pressure of roaring blood decreased in his ears, and his stiffened feet began to ache again to the good warmth of the floor.

Jane Carter was still in his arms, limp and silent. Catching her thin blue wrist, he felt no pulse. Her flesh seemed very cold, even to his numbed hands, and he thought she must be dead. He was bending to lay her down when he felt a sudden warmth—as if some psychokinetic force, he thought, had acted directly upon her to accelerate the molecular motion of heat. She shuddered convulsively, drawing a long sighing breath. Her dark eyes opened, seeing again.

"Oh, thank you, Dr. Forester!" Now he could hear the grave sweetness of her voice, her own again. Seeming fully restored, she slipped quickly out of his arms. Her smile was human now, re-

laxed and glad. "I think Mr. White would say you're very, very good!"

Puzzled again by her sudden recovery, Forester looked around him with a mounting bewilderment. Any aid or shelter for them, on this long-dead wanderer of the dark, had seemed unbelievably improbable, and now he began to notice singular things about this oddly convenient haven.

Certainly it wasn't a billion years old.

The clean warm air had a faint smell of new paint. The buttons which worked the valves were made of the newest sort of translucent synthetic—and all neatly labeled in his own language.

Calling up the courage to experiment, he gingerly pushed the button marked "Inner Valve—To Open." An amber light flashed, and a warning gong rang. And another heavy wedge of polished steel slid down, to let them into the shelter.

They followed a wide passage back into the rock. Plates of smoothly welded metal lined it, painted with the same shades of cream and gray that Forester had chosen for his own office back at Starmont. The soft illumination came from recessed fluorescent fixtures—which bore the familiar trade-mark of United Electric.

Doors were spaced along the tunnel, fitted with knobs for a man to turn. Forester pushed them open as he passed, to look dazedly into the rooms beyond. The first housed a power plant, with a small rotary converter humming silently beside a bank of transformers. Searching for the generator, he caught his breath. For all the power seemed to come from a single small cell, with a name plate which read, "Starmont Rhodomagnetic Research Foundation."

Forester blinked at the outrageous impossibility of that. Once, it was true, he had dreamed of establishing a nonprofit foundation to develop rhodomagnetics for peacetime usefulness, but the harsh demands of military security had killed that bright hope.

The next room was a kitchen—oddly like Ruth's had been, in the little house the humanoids had wrecked when they took over Starmont. The electric range and the streamlined refrigerator were the

same white and shining United Electric models and the canned and packaged food stacked in the shelves was all gaudy with the same familiar labels.

He found a room for himself, and a smaller one for Jane. The table beside his bed was thoughtfully stacked with a dozen of his favorite books—but there was none, he saw with a faint disappointment, that he hadn't read. The bathroom was even supplied with the soap and toothpaste he liked, and the razor on the shelf was incredibly like his own.

At the farther end of the tunnel, a narrow stair led upward. They climbed it breathlessly, and came up into the crystal-domed cupola that he had seen from outside. Chilled with an increasing awed perplexity, he stood staring at the dead landscape beyond the curving panels.

Nothing had changed, outside. The cruel sky was black and strange. The high curve of the galaxy stood like a leaning plume of silver dust beyond that empty valley where nothing could have lived within imaginable time, its pale radiance falling faint and cold on the naked cliffs and the low, eroded hills beyond the gravel fields that water once had washed.

Leaning on a little table under the center of that impossible dome, to ease his weary knee, Forester stood a long time looking dully at that tall splendid arch of silver mist and diamond dust. The biting cold and the brooding loneliness of this deadly night took hold of him again, and he shuddered convulsively. Jane Carter caught his hand, to whisper anxiously:

"Is it something very bad?"

"Nothing bad." He smiled down at her apprehensive face with the best assurance he could manufacture. "I just don't understand. I'm sure I did nothing—"

"But you did," she broke in softly. " 'Scuse me, you really did."

"Maybe it was Mark White." Looking up again at that remote plume of mist that was a billion stars, he ignored her shy protest. "Maybe he somehow beat the machines, after all!"

She shook her head. "But it wasn't Mr. White."

"How do you know?" He shivered again, to the monstrous cold that crouched outside the dome. "Somebody from our world must have built it—quite lately." Blinking at her breathless astonishment, he dropped his shoulders helplessly. "I just don't get it! Everything's so—familiar. The books I like. My kind of toothpaste. Even a bottle of capsules I take for indigestion, with Dr. Pitcher's name on it."

"But don't you remember?" Jane was frowning gravely, perplexed as he was. "Don't you know?"

He could only shake his head.

"It's funny you don't," she said softly, "'cause you're the one who did it all. You took me away from the brain machine, that still had poor Mr. White and his poor men."

He opened his mouth, and found no voice.

"Don't you really remember?" Her tiny voice was hushed with wonder. "How you fought the brain machine? And how you made this warm place for us, while I tried to stop the cold?" She nodded toward the empty valley, her dark eyes afraid again. "And how you helped me, here at the door, when I was about to die?" A bleak disappointment shadowed her face. "It's a pity you don't remember," she whispered faintly. "'Cause you could be awful good at psychophysics."

20

FORESTER looked down at his hands, and flexed them unbelievingly. They had served him once, but now his fingers were still clumsy and aching from the cold, his knuckles still dark-scabbed where he had peeled them awkwardly when Ironsmith came upon him in the tower of the grid. They were numbed and useless to him now.

"But you didn't use your hands at all." Jane Carter seemed to read his groping doubt. "You did it with your mind—how could you forget?"

Trembling with his stunned perplexity, Forester looked around

that little cupola again. The small table, lit from a shaded fixture, was like one he had used in the observatory at Starmont—even to the brown familiar scar where some forgotten cigarette had burned it. Neatly arranged on it were scratch pads and sharpened pencils, a slide rule, and several technical handbooks; one of them, listing tables of rhodomagnetic coefficients, published by the Starmont Press, was by Clay Forester, Ph.D.

"That's my name!" The back of his neck was prickling uncomfortably. "Those are values I worked out, or had Ironsmith calculate for me. But the book was never printed, because of the censorship. There was only the one typed copy I kept in the safe. I don't see how . . ."

"You did it with your mind," Jane insisted gravely. "You did it with paraphysics. I think you can change any atom, to let it go into energy, and then make the energy right back into any other atom you want. 'Cause you made all this place out of the rock!"

Forester stood speechless, unbelieving.

"I saw you do it," Jane told him. "I watched you cut the hollow in the cliff, with only your mind, and turn the rock into machines and air and food and everything we need. And I'm awful glad you did. I was nearly dead!"

He walked slowly to look at the thermostat beside the stair, near the ventilator register. It was a good copy of the one in the nursery at Starmont that he and Ruth had never needed.

"I suppose you're right." His narrow shoulders lifted uneasily. "Because I can see that everything is copied, somehow, from something in my own mind—from things I know or ideas I had thought about. But I don't see how."

His troubled glance went back to the windless world outside the dome, and something touched his spine with the white chill of the thin light that fell from the far galaxy. He knew the science of transmutation. Inspecting industrial atomic piles for the Defense Authority, he had seen awesome demonstrations in which a tiny sample of sodium or aluminum or platinum was cautiously thrust into the hot reactor through an opening in the lead-and-concrete

shielding, and came out again as an untouchable mixture of deadly radioactives in which cautious analysis revealed the triumphant traces of man-made magnesium or silicon or gold. That was old stuff to him. But this—this was different!

Cold granite dissolving swiftly to some inexplicable reagent of the mind, to flow into fitted sheets of strongly welded steel thickly backed with insulating fiber-glass, into sealed drums of compressed oxygen complete with pressure gauges and reduction valves, into bright-labeled cans of green beans and that remarkable rhodomagnetic power cell and the slide rule in his trembling hand—matter molded by sheer thought!

He knew no mechanics for that. The skeptical half of his brain wanted to reject the evidence, but no reluctance to believe diminished the comfortable hard reality of that transparent shell holding back the airless emptiness and the cold. The dome was there, and its solid existence spurred his uncertain search for understanding.

The theory of exchange forces might help, he thought—that concept of the ceaseless pulsation of identity between one atomic particle and any of its innumerable twins. Because every particle, conceived as a wave of probability, existed everywhere.

Probability! Itself an unsolved riddle, that must be the answer. Jane Carter had proved many times that her mind could govern probability, to change her place in space. And Lucky Ford had made a simpler demonstration, he recalled, long ago at Dragonrock, with only a pair of dice. There—somewhere—must lie the truth.

"I suppose I really made it." He turned slowly back to the troubled child. "But still I don't know how."

"You must try to remember," she insisted desperately. "Please—try awful hard! The black machines still have Mr. White and the others. We've just got to help them."

"We'll try." He nodded, his lean jaw set. Effort furrowed his thin face, but all the escape from Wing IV and the building of the shelter remained darkly mysterious as the dead landscape beneath that leaning arch of frost. Wearily, he shook his head.

"Can't you think how you learned?" Jane whispered anxiously.

"Can't you remember what you were thinking—just before you forgot?"

"Of course!" He started as it came to him. "That equation of equivalence."

Why hadn't he thought of that before? Lying in his cage beneath the machine's suave alertness, he had been excitedly elated with the infinite promise of that final *prima materia.* It was far too important, certainly, to be so casually forgotten. Wondering at the blind spot that had so oddly blotted it out of his mind, he snatched a pencil and hastily set the equation down—taut with a fresh sense of the limitless implications of it, and chilled with curious apprehension that it might somehow slip away again.

"Now?" Jane whispered hopefully. "Can you remember?"

"Not much." He shook his head, trying not to see the disappointment in her eyes. "But I think this equation ought to be the key—if I just knew how to use it. Because it gives the constants of equivalence for ferromagnetic and rhodomagnetic energy, both of them in terms of platinomagnetism—which is also the energy of mind."

He started to explain the symbols.

"I can't read." She stopped him shyly. "I never went to school, really, except to Mr. White. Some things I can do, like holding back the cold." She nodded, unafraid, at the black, silent savagery crouched outside. "But I can't understand when anybody tries to 'splain how I do it."

And Forester sat scowling at the paper in his hand. Here, he knew, was the ultimate key to knowledge and to power that other men had sought in vain since the days of alchemy. He had used it triumphantly, and then inexplicably forgotten how. Grim with resolution, he set out to get its secret back.

"Better go and play," he urged the child. "Or rest?"

But she refused to leave the dim-lit dome. Standing silently against the railing above the stair, she watched him work at the little desk, and sit scowling at the merciless dark.

"These are the expansions and transformations of that prime

equation," he explained. "I'm trying to derive complete mathematical descriptions for all the psychophysical phenomena. Because they ought to tell how to do those things I must have done and then forgotten."

She shook her head confusedly, and kept on watching.

"Huh!" He caught his breath, and wrote something hastily, and then peered outside at the fields of frozen gravel where she had looked for nuggets. Suddenly his gaunt face smiled, and he whispered softly, "See it, Jane!"

And a worn bit of metal dropped from nowhere to the table. He reached as if to touch it, and cautiously drew back his fingers. For the rich whiteness of palladium was swiftly covered with the brighter white of frost, which hissed and crackled and increased as the dreadful cold sucked moisture from the air.

His pencil hurried again. He paused to study Jane's uneasy face with somber eyes that seemed unseeing as if that new machine possessed him. His thin yellow fingers plied the new slide rule—until he caught his breath, and made another quick notation, and called a warning to the child:

"Cover your eyes!"

A flash brighter than lightning shattered that frozen night. A new blue star burned for an instant above those dead hills, before its brief splendor faded and went redly out.

"No, I don't remember yet." Forester shook his head at Jane's breathless question. "That's just one transformation of the prime equation, describing the detonation of mass into free energy when the psychophysical component is canceled. I tested it on that nugget."

He nodded triumphantly at the quarter of the sky where that savage light had burned and vanished.

"I teleported the nugget out in space, and set it off. An eight-ounce supernova! That's our weapon. A little better than Project Thunderbolt—and one I don't think Frank Ironsmith and his peculiar friends can steal."

"Then we can help poor Mr. White?" she whispered anxiously.

"I think we can." Forester nodded soberly. "Though there's something else we must do first, to give us any chance against the humanoids. We must find Ironsmith, and smash that gang of traitors with him."

"I guess he's the first one to fight." She nodded reluctantly, moving uneasily toward Forester in the shadows of the cupola. "He seems so terrible now, not a bit like he used to be. He doesn't really seem quite human any more."

"I don't know what he is." Forester's thin face set. "But we can fight him now."

With Jane Carter watching, he looked for the traitor's nest. Once he told her, with a hard wry smile, that what he needed was the computing section back at Starmont, because Ironsmith had always worked out the beautiful abstractions, and he had only applied them to reality. It was an endless time of scowling concentration.

"Still I don't remember anything," he told her. "But that's another derivation. It defines space and time—as the electromagnetic effects I thought they were, but joined by a psychophysical binding effect that keeps the universe from shattering into an infinity of tiny space-time manifolds, one around each separate quantum." Looking past her toward that far pillar of frosty light where all the worlds of men were lost, he added hopefully, "It's that psychophysical factor that makes it the equation of clairvoyance."

"You mean you can see with it?" she whispered.

"I hope so." He nodded thoughtfully. "If I can learn how to use it. Because the space factor vanishes when you solve for the psychophysical term, and the factor of past time is infinitesimal. The only actual limit is a factor of uncertainty, which increases to infinity in future time."

She shook her head reproachfully.

"That means," he tried to explain, "the equation tells how we ought to be able to see anything happening anywhere, right now—except of course in a place shielded with a powerful psychophysical field, the way that new grid is. We should be able to see things that happened a long time ago, though that would be harder. But things

that haven't happened yet will be dim and uncertain, because of that factor of increasing improbability."

"That doesn't really matter." Her puzzled eyes had brightened slightly. "If you can just find Mr. Ironsmith—and then go on to help poor Mr. White."

Sitting at that little desk beneath the dome, Forester lifted his brown, wistful face again to that cloud of stars beyond the dead valley. His searching eyes saw only misty light already old before men first thought of crossing space, but his mind explored that binding medium where distance was no barrier and even the evil of time drew thin. The anxious child saw him nod at last.

"Do you see him?" she whispered huskily. "Mr. Ironsmith?"

"It's hard to see anything." Still he faced that toppling column of cold cloud, his voice slow with effort. "The equation tells the method, but I haven't learned the skill. It's hard to focus the perception—with all the universe in view. Hard not to see too much."

But he looked again, and presently she saw his faint smile of triumph.

"Yes, I've found Frank Ironsmith now." His voice was so low she had to lean across the desk to hear. "Back in the past. Back at Starmont, before the machines ever came. We must follow him down through time, and trace him when he leaves—"

Forester shuddered, and something hardened that pale smile into a grimace of pain and hate. His bald head sank forward and his drawn face turned gray and his thin lips whitened. The child recoiled a little from him, before she asked gently:

"What did you see that hurt you so?"

"Ironsmith and—Ruth." His terrible eyes focused on her face for an instant, and then looked searchingly back toward the leaning, luminous plume. "That doesn't matter now—except to him and Ruth and me."

Jane waited, watching the changes on his haggard face. She saw effort and agony and dread, but at last he nodded again.

"I've found it." Still he looked at the leaning galaxy, and still his voice was hoarse with strain. "The den of the human renegades."

He shook his head uneasily. "Though I still don't understand that Compact."

Shivering, the child stood watching. After a long time, the man came back to her in the silent cupola. Drawing a long tired breath, he smiled a greeting to her and then stood up to stretch.

"Did you find Mr. Ironsmith?" she whispered. "Now?"

He began limping restlessly about the gloomy cupola. "I saw them there together, a few days ago. But now he's gone—I don't know where." His baffled eyes flickered back toward the far galaxy. "He's on Wing IV, I imagine—helping the humanoids complete that platinum brain. But I'm afraid to look for him there any more, because I felt the potential of it when I tried."

"Then what—what can we do?"

"I looked ahead." His voice was shaken with the conflict of fear and resolution. "That factor of uncertainty makes things blurred and dim, but I think I saw him coming back to Ruth. I think I know the place to wait."

"Where?"

"On that planet where the humanoids are paying off their human friends." His stubbled face was taut and dark and savage. "It's about three light-years from Wing IV—as near as the machines want men to come. The renegades seem to be the only people there."

He scowled at the toppling arch of far-off stars.

"I still don't understand," he told her. "Not how men could do what they have done. But Frank Ironsmith isn't the first. I could see others like him gathering there, years ago. I can't tell all they've learned or done—spying on them can't be very safe. But they're—powerfull"

Jane was biting her grimy knuckles, listening silently.

"I didn't see any weapon, but such men don't need physical weapons," he went on bleakly. "I don't know what unseen traps they may have set, or what unknown forces they have ready to destroy us. But I didn't see any evidence that they understand mass-detonation. Perhaps I can kill Ironsmith, and what others I must, and then somehow force the humanoids to give men a better deal."

She nodded apprehensively, and then, when she found they had still an hour to wait, she shyly confessed that she was hungry. He took her down to that white kitchen which the new unconscious power of his mind had shaped from the substance of the rock, and inexpertly fixed a meal. He watched her eat, but his own stomach felt too uncomfortable for food and presently he went to his room.

The mirror in the bathroom gave him a shocking glimpse of sunken, bloodshot eyes and a sick gray pallor beneath his unshaven beard; and the flapping gray pajamas seemed a comic battle dress. When he tried to change into a new blue suit he found in the closet, however, he couldn't work the rhodomagnetic snaps, and the thin gray cloth proved too tough to tear. He gave it up, and washed his face, and limped wearily back to where Jane waited.

"It's time," he told her. "In about five minutes—if that was really Ironsmith—he'll be coming back to Ruth."

He paused to study his notations on another scrap of paper.

"The equation of teleportation," he said. "It describes the instantaneous deformation of the exchange forces, through that psychophysical binding component, to shift patterns of atomic identity —such patterns as we are—to new co-ordinates of space and time. The uncertainty factor seems to rule out any actual travel in time, but the shift in space is the art Mark White taught you."

Jane shook her head at the words, reproachfully, and trustingly put her hand in his. He glanced at the paper again, and crumpled it savagely, turning with the child toward the distant galaxy.

21

THE GLOOMY CUPOLA was gone instantly, and they stood in a strange, enormous room. Immense square pillars the color of silver supported the lofty roof, and wide windows of something clearer than glass showed the green rolling hills and blue friendly sky of the

traitors' planet. Other great white-pillared buildings shone like silver crowns on other hills.

"He'll meet her there." Forester nodded at the wide stair outside the open doorway, his voice hoarse and cold. "We'll be ready."

Beckoning sharply for her to follow, he limped hastily across that vast floor, between rows of tall transparent display cases.

"Where are they all?" she whispered uneasily. "Mr. Ironsmith's terrible friends?"

"Not here." He didn't look back. "Because this is a museum of war. I think we can wait here, safe—Huh!"

An impact of sharp surprise had stopped him. For a moment he stood gaping blankly at something in a long crystal case, before he stumbled dazedly toward it. Jane watched him apprehensively. All the cases held weapons men had made. Clubs and spears and trays of arrow points. And later illustrations of the long evolution of the tools of death. The display that had checked Forester was a long shell of shining metal, shaped for speed, with the parts from inside neatly labeled and spread out below.

"Please." She pulled at his gray sleeve. "What is that?"

"One of my rhodomagnetic missiles." His voice was shaken. "From Starmont. I'd suspected Ironsmith of looting the project."

Jane hung back as he started on, to watch a tiny flying thing which must have strayed from the meadows outside. She followed the flutter of its rainbow-colored wings above a case of catapults and early cannon, smiling at its hovering loveliness. Glancing back impatiently, Forester saw it. His thin face tightened.

"Don't look." He swung her from it, with a quivering violence. A hard light flashed where the winged thing had been. A clap like thunder made a hollow rumbling against the far walls, and the odor of something burned drifted bitter in the air.

She flinched from him, crying out, "Why did you do that?"

"I wanted to test the detonation equation again." His haggard face was gray with illness and shining with a cold film of sweat. "And I suppose that butterfly reminded me of Frank Ironsmith—so lazy and so useless and so brilliant."

Pity erased her hurt bewilderment, and then her face was bleak again with fear. Clinging to the man's thin arm, she followed him to the gray ugly bulk of a battle tank, placed as if for its rusty guns to command the doorway. He drew her down behind the bullet-scarred and fire-blackened armor.

The broad steps outside fell to curving walks and wide green lawns. Beyond a clear stream, the meadows were clumped with strange low trees that flamed with violet blooms. A man and a girl were walking beside the stream, holding hands. Showing no visible stain of infamy, they looked happy and brown and strong, and their laughter lifted softly. No humanoids followed to serve them—although on another green hill, small as a toy in the distance, a tall black ship from Wing IV was standing. Forester peered at them, crouching lower, and a sudden alarm made Jane Carter tug at his sleeve, whispering anxiously:

"Please don't hurt them!"

"They're the enemy." His voice made her shiver. "If they find us, we must kill them."

"Then I hope—I so hope they don't!"

The laughing couple had chosen a level site beyond the stream, and now they began putting up a gay-colored building. They had brought no visible tools or materials, nor any humanoids to help, yet the house they made went up very swiftly. The sections of it seemed to form in the stream, and float into place, and flow firmly together. Those two, Forester knew, must have found the unity of ferromagnetic and rhodomagnetic and platinomagnetic energies, and discovered the philosophers' stone of mind to shape that *prima materia* to their desires. He drew himself lower, appalled by the ease of their creation, and started when the child touched him.

"There!" she breathed. "Is that—"

Peering around the war-scarred tank, he saw a man coming up the broad steps outside, but it wasn't Frank Ironsmith. The stranger was an old man, snowy-haired but lean and straight and tall as Mark White himself. His cragged, rawboned face had a look of austere command, and his great gnarled hands hung forward.

Forester looked unthinkingly for the vehicle in which the man had come, and saw none. He caught his breath and waited, then, watching covertly with hard narrowed eyes, ready to kill the old man if he started to come inside. But the stranger turned on the broad level above the steps, looking around expectantly and seeming himself to wait.

Jane relaxed a little, as if relieved that it hadn't been Ironsmith, but Forester was taut and quivering. Bright sweat shone on his twitching, sallow face, with his illness gray beneath the unshaven stubble, and the gnawing inside him lining his cheeks with pain. Wishing he had taken another antacid capsule, he set his teeth and held his breath and watched the silver steps.

Waiting too, the vigorous old stranger glanced idly across them into the museum, and then strolled to a low white parapet. He watched the man and girl across the stream until they saw him and paused at their work to wave to him gaily.

"Still I don't see Ruth," Forester breathed harshly. "But here's our man—if that's what he is!"

Still there was no vehicle, but Frank Ironsmith came running up the steps, smiling and holding out his hand. His sandy head was bare, his pleasant face bright with a quiet elation. He looked warmly human, and he had to be a man, but Forester still couldn't understand him.

"Well, Ironsmith?" The old man's heavy rumble of a voice seemed both glad and anxious. "How're you doing with your grid?"

"Done." They shook hands genially. "We can use it to go after Clay Forester as soon as we get an operating potential built up. If it works the way the test with White and his gang have showed, I don't think even such cases will ever be dangerous again."

Jane Carter huddled away from Forester, watching the grimace of effort twisting his haggard face and the fury burning in his hollowed eyes, shrinking from the detonation that would destroy Ironsmith. But nothing harmed the smiling man.

"No!" Forester whispered hoarsely, the deadly purpose relaxing from his dark face. "I can't kill Ruth."

For the woman who had been his wife was already coming to join the waiting men. She looked tall and joyous. Her hair was red-glinting black, and her long gown crimson and black, and all he knew for an instant was the fact of her utter loveliness.

"My darling!" she called. "I'm so glad you're home."

Behind the fire-scarred tank, Forester came stiffly to his feet. But her joy was for Ironsmith. He watched the man run down the steps to meet her, and her arms open for him, and her bright lips part for his kiss. And Forester's face, under the untidy stubble, was livid with his agony. He stumbled to the doorway of the peaceful museum of war and stopped between the silver pillars.

Forgotten, Jane Carter ran after him. Too frightened even to whimper, she crouched again behind the flapping folds of his gray pajamas, watching with him. Outside, the tall old man stood with his back to them, surveying Ironsmith and Ruth with a fond approval as they turned slowly from their long embrace. Ironsmith murmured something, and she whispered softly:

"Don't be gone so long again."

"Next time will be longer." Forester's voice was harshly uncontrolled. "Ruth—stand away from him!"

They all swung to face him then, with an unstartled calm which terrified him. The old man's seamed and cragged face hardened with a stern regret. Ironsmith stood with his arm still around the woman, unalarmed. It was shocked pity, and not terror, which widened Ruth's dark eyes.

"Clay Forester!" She seemed breathless, and wounded. "What—what are you doing here?"

Forester limped toward them across the wide platform, trembling violently. His hollowed face was bloodless. His knee buckled and he got back his balance awkwardly, catching a ragged breath of pain. The child kept close behind him, silent and afraid.

"I'll tell you!" He spat his answer. "And you'd better listen—all of you." His scowling vehemence included that calm old man. "Because now I can follow you across the universe, if you try to run

away. And now I've a better weapon, Frank, than those you stole from me."

And his gaunt head perked scornfully back toward the crystal case behind him.

"The Starmont project had served its purpose," Ironsmith protested mildly.

"Look!" Forester was pointing with a thin shaking arm out across the scattered silver buildings on the hills, toward the far estuary. "Watch that rock!"

The old man and Ironsmith and the woman all turned slowly, frowning as if with pained reproof. The rock stood far away, where wind-ruffled indigo water met the limpid sky, the black point of it accented by a wisp of shining foam. Forester gestured as if to strike it with his clenched hand, and it turned to incandescent fury.

"I'll guard us," Ironsmith murmured, "against the radiation."

And something screened the blinding light of that appalling dome swelling out from where the rock had been, until the terrible flame of it began to soften at last into a flow of strange tawny color, reddening in an ominous dusk. Then the screening something must have been removed, for that dusk lifted suddenly.

"You shouldn't have done that, Forester." The old man shook his white mane regretfully. "Seafowl nested on that rock."

Weakly trembling, Forester brought his eyes back from the great cloud of fire and darkness still mushrooming upward to stand like an ominous symbol of ultimate destruction against the peaceful sky. The three before him looked disturbingly unimpressed. Ironsmith, who must have set up that unseen barrier against the light of the explosion, stood gravely with his arm still around the woman.

"Clay!" Ruth's voice was choked with a hurt concern. "What do you think you're doing?"

"I know what I'm doing." He limped grimly toward her. "I'm going to fight the machine for a better deal—to give every man, everywhere, the same freedom a few of you have sold us out to get." He swung vehemently to the sober man beside her. "Ironsmith, I'm going to kill you. I'm willing to bargain with any of the rest, but

you've done too much. Have you anything to say?"

Mildly, Ironsmith said, "You might specify your charges."

"I think they're wide enough." Forester grinned sardonically. "You turned against your kind, to help the humanoids. You spied on Starmont. You sabotaged Project Thunderbolt. You betrayed Mark White. You wrecked our effort to change the Prime Directive. Now you're building this platinum brain, to operate us all like more machines.

"Those are the crimes I know, and I think they're wicked enough." Gulping, he stiffened as if to a spasm of pain. "I won't even ask how long you schemed to take my wife away. Beside all the rest, that doesn't matter." His sick eyes flickered at Ruth. "Now, have you any defense to make?"

He paused swaying on his bad knee, but Ironsmith stood calmly silent.

"Get away from him, Ruth!" Agony shivered in his voice. "Because I don't want to hurt you—whatever you may have done. But I'm going to kill this monstrous traitor now!"

"Please, Clay—don't be ugly." She shook her head sadly, as he lifted his skinny fist. "Because you can't hurt us, really."

Standing in a paralysis of rage and helpless pain, he dazedly watched the glow of devotion on her face when she glanced at the calm man beside her, and he wondered at the limpid pity in her eyes when she looked back at him.

"Please, Clay—won't you try to see it our way?" He saw her tears. "Because there's nothing unfair about Frank. And nothing to blame but Project Thunderbolt. I was always sorry for you, Clay, and I used to be sorry for myself. Because the project was your wife and your child. You never needed me.

"Don't—don't blame Frank." She tried to control her trembling voice. "Because he wouldn't take me away from Starmont until after you had abandoned me there, drugged with euphoride. He brought me here, and woke my memory, and taught me this real felicity. We're in love, Clay. I—I hope you'll try to wish us well."

"No!" With that choked sob, Forester pushed the child behind

him to shield her from the fire of annihilation. Swaying to the gray illness of his fury, he thrust his quivering fist at the two before him.

22

FORESTER tried with the weapon of his mind, and he waited for the man and the woman to die. No part of their bodies was detonated into dreadful flame, however. They didn't even fall. They merely stood there in the silver steps, Ironsmith urbanely grave, Ruth shaking her head in sad reproof.

"Huh!" Forester gasped with a shocked unbelief, as if the two had wounded him with some unfair blow. His bewildered eyes went back to the far horizon, where that tall mushroom of cloud was begining to thin and fade. He looked for another rock.

"Stop it, Forester!" the gaunt old man broke in hastily. "There's no use wrecking all the landscape. Because you can't hurt anybody —not with psychophysics."

Forester retreated from him warily.

"You needn't be alarmed," the stranger rumbled softly. "You can't injure us, and we don't need to retaliate." He smiled, patient and not unkind. "If you'll calm yourself enough to listen, I might explain that you've overlooked a couple of basic fundamentals."

Forester stood swaying, blank and ill.

"You should have learned that the psychophysical functions are normally unconscious," the old man said. "Full conscious control of them always requires long training, and a high degree of integration. You should know that—though you have astonished us."

The cragged face showed a kind of admiration.

"I don't suppose you know the wonder of your own achievements. It is a rare thing that a mind divided by such savage conflicts as yours is able to attain any conscious psychophysical control at all."

Forester stood numbed and stupid with pain.

"Yet, for all your incredible accomplishments, you still show no

real understanding." The old man turned gravely stern again. "You've just proved your blindness, with this insane attempt at murder. Anybody less crippled with hate would have learned, long ago, that psychophysical energy cannot be used for such destructive purposes.

"Because it's creative—can't you see that? The basic creative force of the universe. It builds stable atoms, out of disruptive ferromagnetic and rhodomagnetic components. It is the mother of suns and galaxies, and it aids the condensation of planets. It kindles life. It is the driving power of organic evolution. And it *is* mind."

Forester tried not to yield to his fatigue and his grief and his shock. Thin blades of pain stabbed through his swollen knee, and small fangs of hungry agony nibbled at his stomach, and a groggy weakness tried to possess him. But he shook his head and he tried to listen.

"Psychophysical energy is mind," the old man insisted softly. "Every atom in the universe has mentality to the tiny extent of its own creative component. Every molecule has more. Every new development of structure—in the complex organic molecules, in the simple viruses at the borderline of life, in the human brain—each such forward step in evolution is brought about by a new emergence of that building component, on a higher level.

"Some of the mystics among us can see the working of it on levels even higher. Studying the structure and the function of the entire creative mind arising from the substance of the whole universe, to make and shape all things, they perceive the anatomy of God."

Forester wanted to listen. But the phrases seemed too large and vague, and the warm breeze became suddenly oppressive. Sweat began trickling down his forehead and his taut flanks.

"—sick, Forester," the old man was saying. "You can't injure us, but the attempts are killing yourself. Because the energy of life and mind—and divinity, if you like—is always creative. When you attempt to turn it against itself, you set up conflicts which act to destroy your own identity. A mind, like an atom or a star, can be shattered by a failure of the psychophysical component."

His knee buckled, and the tall man caught him. Dazedly, aching all over, he sat down on the broad silver stair. The breeze from the far blue estuary seemed suddenly cold. Wet with a nervous perspiration, he began to shiver in the thin pajamas. Some stray pollen grain gave him a brief fit of sneezing. He blew his nose and tried to listen.

"The full conscious control of the psychophysical functions requires a whole mind," the stranger said. "A mature and integrated personality, free of inner strains. No man who has discovered that mental poise and peace would be capable of attempting murder. No man who has not would be able to commit it—not psychopsysically. Because that creative energy will not destroy itself. Does that tell you why you failed?"

Forester nodded uncertainly. Drugged with the poisons of fatigue and pain and defeat, he tried heavily to understand.

"You imagined you were fighting for the public good," the old man said. "The creative purpose—however mistaken—explains what you did accomplish. Didn't you have the most of your success with projects entirely creative?"

"That's true." Forester peered up dully. "And I think you've answered the most amazing riddle. When we escaped from Wing IV, you see, we somehow got to a planet outside the galaxy. Somehow I built a shelter for us there—or Jane says I did."

"A creative project." The gaunt man smiled briskly. "Therefore, no internal division existed. Imagined danger to the child was your stimulus. The unconscious function made successful use of your conscious knowledge. But your murderous attempt had to fail, just now, because it was destructive—the utmost folly."

Forester shivered, and sneezed again. He could feel the trembling fear of the child, and he put out his stringy arm to draw her to him. Apathetic, yet still defiant, he peered enviously down at Ironsmith and Ruth, below him on the silver stair.

"So you can't hurt us, Forester." He drew back stiffly from Ironsmith's suave assurance. "Because psychophysical energy creates, as surely as masses gravitate. I might have taught you that long ago—if you had been a little less absorbed in machines for smashing

planets, and more willing to trust the humanoids."

Too cold and ill to answer, Forester merely drew Jane a little closer. Her tiny fingers came up to touch his twitching cheek sympathetically. That small act of compassion blurred his eyes with tears. Wiping at them angrily with his thin gray sleeve, he sat staring at the tall stranger who had been his wife.

"Please, Clay—try not to hate us so!" Her pity cut him with a thin blade of pain. "Because your mind is sick, and hate is most of the sickness, and you can't get well until your hate is cured. Until you learn the meaning of love."

Heavily, he shook his head. He did not really hate her now, because all the past was lost. He thought he was glad to see the bright happiness binding her and Ironsmith, because the past was gone. But he didn't want to hear her voice again, or smell the musky scent of Sweet Delirium, or think of her beside him in the bed.

"Sure, Ruth," he muttered bleakly. "I understand."

"I knew you would." Her quick little smile hurt him with too many memories. He looked away, trying not to hear the tenderness in her voice, because he wanted nothing from her now. "And we can help you, Clay," she was saying softly. "With Frank's new grid."

"Huh?" Taut with protest, he came painfully to his feet on the silver steps. "What do you mean?"

"Yes, Forester, we'll take care of you." Ironsmith answered, still absently swinging the woman's hand, watching him with amicably candid eyes. "We designed that installation just to handle such troublesome cases as yours, where partial knowledge and inadequate power and mistaken resentments become too difficult for the humanoids to manage."

And the serene gray eyes of the younger man looked unseeingly away, as if to examine something far beyond the silver pillars and the vast crystal windows of the war museum with another sort of vision. Shrinking from him, Forester was washed with a sudden chilling tide of dreadful recollection. He remembered four human machines he had seen marching too swiftly and too gracefully through the dark laboratory on Wing IV.

"We'll be ready for you soon." Ironsmith nodded, smiling pleasantly. "The installation is mechanically complete, but it will take us just a little longer to build the psychophysical potentials up to operating levels—"

Convulsively, Forester broke free of his terror. Picking up the frightened child, he fled with her up the silver steps, toward the open doorway and a crystal case beyond.

"Listen, Jane!" he whispered hoarsely as he ran. "I want you to go away—back to our shelter. I think you'll be safe—because I'm going to blow this planet up—with the detonator in that case!"

"Please—don't!" She squirmed protestingly in his arms. " 'Cause —don't you see—even Mr. Ironsmith isn't really bad."

He almost paused. But he didn't want to be a flesh machine, surely run by any infallible platinum brain. His knee shuddering under him, Jane too heavy in his arms, he came to the top of the steps. His anxious eyes found the white palladium cylinder of the rhodomagnetic detonator among the labeled parts of the stolen missile displayed in the case—a weapon even smaller than his knobby fist, but big enough.

Stumbling on, he glanced back fearfully. The three behind had not moved to interfere. Perhaps they didn't guess his object. Or maybe their psychophysical powers, like his own, were useless for violence. They merely stood watching.

"Please!" Jane was whimpering. "Please don't—"

He was sure he hadn't noticed any raised threshold across the wide door before, but something tripped him now. He tried to save his balance, and tried to shield the child, and finally fell. His head struck the armor of that rusty battle tank.

For a time he merely lay there, dazed with his pain and his unexpected failure. Jane Carter was kneeling by him, crying. At first he thought he had hurt her as he fell, and then he felt her trying to lift his bursting head. He scrambled feebly to get up, and felt a sickening stab in his knee.

"Better wait, Forester," he heard the old man booming. "Wait for the grid."

Laboriously, he pushed his elbows beneath him, and hitched himself painfully backward far enough to prop his body against the massive treads and the armored trucks. He could feel warm blood in his hair, but he tried to grin at Jane's tearful face.

"Good try," he breathed. "Nearly—made it!"

He tried to push himself a little higher, but the surging breakers of pain hammered him down again.

"Lie still, you blundering fool." The aged stranger's voice seemed faint and far away.

He could see the gaunt man dimly then, following through that wide entrance with a vigorous stride—and now there was no longer any lifted threshold, where he had tripped. He looked dully beyond for Frank Ironsmith and Ruth, but they were gone.

"They went back to Wing IV," the old man said. "While the platinum grid is entirely automatic, there's a control room from which it can be stopped. The room is closed to the mechanicals that maintain the grid, and shielded against its own operating forces. We are going to keep watchers posted there, and Ironsmith has gone back to put Ruth and another on duty. A needless precaution," he added, "because that grid is perfect as the one that runs the humanoids. It can't go wrong."

Propped against the cold rusty steel, Forester waited blankly. Blood made a sticky rivulet down his stubbled cheek, dripping slowly on the gray pajamas. He reached with a feeble gesture of farewell, to touch the child's dark hair. For the trial was over. The verdict was guilty. The sentence was death—by a very special sort of gallows, which made a mechanized puppet the victim.

"Don't you worry, Dr. Forester." Jane bravely tried to smile. "That machine had me once, and it doesn't really hurt."

"It doesn't hurt at all," the old man promised heartily. "It heals." His rugged face seemed kindly now, as if he felt apologetic for a sentence too severe. "It can really help you, Forester. And I want to help you. Because, you see, I once shared your own sort of insanity. I fought the humanoids, and even attempted to alter the Prime Directive."

Forester blinked at him, rasping faintly, "Who are you?"

"My name's Mansfield," the tall man said. "Dr. Warren Mansfield."

23

FORESTER tried to sit up, but the pressure of pain forced him back against the blackened tank.

"Mansfield?" he muttered bleakly. "A Mansfield made the humanoids."

"That was I." The gaunt man nodded serenely. "Because I wanted to save men from themselves. I built the Prime Directive into the relays that govern them, and protected it from change—and tried mistakenly to change it."

Beyond the maker of the humanoids, Forester could see a display case made of something scarcely visible, and a tiny silver-colored cylinder inside it. He tried once more to lurch his body higher against the rusty armor, and again ruthless pain pressed him back.

"A common error." Mansfield shook his head sadly. "Many another has made it—though few have come so near a disastrous success as you and I did, Forester, in our turns. The common cause, I suppose, is a want of philosophy. I know that I had none, thirty years ago, when I tried to blow up Wing IV with a rhodomagnetic detonating beam—and fortunately failed."

Forester struggled protestingly, and had to gasp again with pain.

"Don't move," the old man urged calmly. "If you'll just wait a few minutes longer, the psychophysical grid will be ready to pick your body up and fix all that's wrong with you. Thirty years ago, I wasn't quite so lucky. Because Ironsmith hadn't designed his grid."

"Huh?" Forester caught his breath and tried to ease his knee. "Mark White told me how your own machines exiled you from Wing IV when you tried to modify them, and hounded you on from planet to planet." His voice was harshly accusing. "I don't suppose

you trusted them quite so far yourself, back in those days?"

"I didn't."

"Then tell me why you sold us out!"

"Nobody sold out, Forester." The old man was gravely emphatic. "In my case, I simply changed—rather, the humanoids changed me. Let me tell you how it was—from my standpoint, instead of Mark White's. Perhaps I can help you welcome the grid."

Forester shook his head sullenly, but he had to listen.

"Thirty years ago," Mansfield repeated, "there wasn't any Ironsmith grid. The humanoids had inherited the same scornful ignorance of the human mind I used to have, and their mechanical mind is not inventive. The psychophysical properties of the platinum metals were not then known. When the humanoids finally caught me, after my last defeat, they had to operate."

"Operate?" Forester stiffened. "For what?"

"To remove the conflict and the hate that kept me from accepting their service. They also took a part of my memory, because it was dangerous to the Prime Directive. Difficult surgery—I'm glad the new grid will make such operations needless. But it did give me freedom."

"So that's the way?" Forester shivered against the steel. "Did they operate on Ironsmith, too? Or did he get his remarkable immunity in some kind of ugly deal—"

"Neither," Mansfield said. "There aren't any deals. The humanoids are simply excellent psychologists—you'll have to admit I designed them well." The lean man smiled briefly. "They were always able to distinguish those who do need watching from that fortunate few who don't. They could see that Ironsmith was harmless."

Harmless? Forester caught his breath for an angry protest, but even the slight movement made another urge of pain beneath his matted hair, thrusting him down again.

"They left me free, soon after the operation," Mansfield continued. "They even let me carry on my research. The physical sciences were still out of bounds, of course, because you'll have to grant that most laboratory equipment is pretty dangerous, even

for mental adults. But there was parapsychology."

Forester's haggard eyes narrowed warily.

"I had always been a skeptic, as I suppose you were." The old man waited serenely for his stiff nod. "That conscious denial of the psychophysical phenomena usually comes, I think, from some buried rebellion against love—against the creative power of the unconscious psychophysical urge. Removing hatred from my mind, the humanoids also liberated my repressed psychophysical capacities. The telepathic function came first, and I was soon in contact with the pioneer philosophers here."

"Philosophers?" Forester rasped his challenge. "Or traitors?"

"Does this look like treason?" The old man turned soberly to point through the white-pillared doorway at the pleasant land without, the clustered silver towers crowning kindly hills and the wind smiling on the blue estuary. "No, Forester, this is the Psychophysical Institute. It was formed nearly seventy years ago, by a few adult and able men released by the service of the humanoids from their physical cares and their limiting pre-occupations with physical science. They turned naturally to philosophy. And then to a new sort of psychology which their true orientation made possible—an actual science of the mind. They were looking for truth, and they found it. The service of the machines kept them from placing too much value on such spectacular practical stunts as telurgy—"

Forester frowned his dull puzzlement.

"That's the term for mental transmutation of mass," the old man explained. "The same art you used, unconsciously, to build your shelter on that extragalactic planet.

"Such practical tools of the mind were useful, even to those first philosophic theoreticians. Scattered over all the planets the humanoids were overrunning, they discovered one another by telepathy. Teleportation brought them together here. Telurgy freed them from the machines, and clairvoyance soon warned them of the mounting danger to Wing IV from such dangerous fanatics as you.

"The Compact was formed when we first warned the humanoids of dangers which they lacked the paramechanical power, as they call

it, to foresee or avoid. They agreed to tolerate and support the Institute, in return for our necessary aid."

Nodding bleakly, Forester contrived at last to heave his shoulders a little higher against the tank. He reached gingerly to touch his puffy knee, and had to set his teeth against a sob of pain.

"Part of the Institute." The gaunt man gestured casually at the cases of wooden spears and guided missiles, of blowgun darts and biotoxin ampules, of flint points and rhodomagnetic detonators. "Collected tokens to remind us of the old enemy born again with every human being. For life hurts every man, many of us badly. The wounds must heal before we are actually adult. Some recover easily, most of us slowly. A few are deformed beyond any natural cure."

Forester was doggedly trying to listen, though his knee was a twisting torment and his head had become a beaten gong of torture beneath his clot-stiffened hair. He moved laboriously against the tank, looking carefully away from that tiny palladium cylinder that still contained a planet's fate.

"I want you to understand," Mansfield rumbled on persuasively. "I want you to see that our motives were simple and human and good. That all we've done had to be. Perhaps you don't yet like the humanoids—but the other alternative was death. They're here to stay, anyhow, and I want to show you the very useful change they've forced in the direction of human progress."

Forester lay sullenly still.

"Technology had got out of step with mentality," the cragged man insisted. "Don't you see? Technicians too busy to see the tragic consequences were putting such toys as rhodomagnetic detonators in the hands of mental savages. I made the humanoids to put an end to that. Such technicians as yourself—with the highest possible intentions—had wrecked the balance of civilization, so that it was breaking up like an off-center flywheel. The humanoids simply made them take a holiday until the philosophers could restore a better equilibrium.

"Ironsmith, now is another type." Admiration lit Mansfield's vigorous features. "The type who made the Institute—though I

don't imagine he ever won much success back at Starmont. Because your true philosopher is free from such destructive drives as excessive ambition. Probably you considered him sort of a bum."

"Completely worthless." That point, at least, Forester approved, and he tried to grin through a haze of pain. "Except that he was good at math."

"But Ironsmith found himself when the humanoids came. They saw he had no harm in him, and they left him free. When they learned of his interest in parapsychology, they put him in touch with the Institute—he used to play chess with me, when he was learning telepathy. Now, designing the platinomagnetic relays that made the new grid possible, he has turned out to be a brilliant psychophysical engineer as well as a philosopher."

"I see." Forester nodded painfully. "So that grid's the god you spoke about—built to run men everywhere like machines!"

"Won't you try to understand?" Mansfield begged. "Can't you see that any society must shape and train its members? And somehow discover and control and reclaim maladjusted individuals—before they destroy others or themselves? That's the real function of the grid—education. Don't you see that?"

"I saw Mark White after it got him," Forester whispered harshly. "A meat machine, smiling out of some cold hell! I don't want to be another machanical unit, operated by Ironsmith's relays—not even if they are efficient. I'd rather—"

His whisper failed, for breathing, even, had become laborious to him now. He lay glaring helplessly at Mansfield. He was afraid to look at that bright detonator, but his blood-stiffened fingers itched to feel its cold weight and the ultimate, conclusive power.

"Your mind's still closed," the old man was chiding him patiently. "Or you could see that the grid is just another tool, like the humanoids, built to serve mankind. Certainly it's no monstrous god arisen from the machine—the God our mystics see, existing in the total creative force of all the universe, is incomparably more than any mechanism."

Forester shook his head, because it hurt too much to think.

Mansfield looked down at him, compassionately.

"You're sick, Forester. You need the grid—as most men do. Because the whole race was sick, on my old world and yours. The cause beneath most of our symptoms, I think, was a runaway physical technology—killing us like the runaway cells of an organic cancer, and now I believe the new control of the Ironsmith grid will assure a balanced growth and heal such unhealthy cells as you are—"

The old man broke off suddenly, smiling, and Forester stiffly turned his head to see Ironsmith come striding briskly in.

"Ruth stayed on duty," the young man said. "And we're reaching out! The operating potential is coming up fast, as we find and unite more and more well-integrated minds. Ready, Forester?"

24

PROPPED against the battered tank, the child whimpering silently beside him, Forester didn't try to answer. His pain-fogged brain hadn't followed all the brief against him, but he knew the case was closed. He was condemned, and Frank Ironsmith the cheery hangman. He lay now looking at that white cylinder he couldn't reach, enduring the slow thudding in his head and the swollen tightness of his knee and the gnawing fangs of his ulcers.

"Please!" Jane Carter's breathless whisper startled him. "I know how to help you now!"

He felt her leave his side. He glimpsed her instantly again, stooping to pick up the rhodomagnetic detonator in that transparent case. Then she was already back, thrusting the small palladium cylinder into his grasping hands. His blood-stained fingers moved with an automatic skill, stripping out the safety keys. He set his trembling thumb on the firing bar, gasping hoarsely at the child:

"Thank you, Jane. Now save yourself!"

He waited to see her frightened nod. Then his shuddering thumb came down, in an act of ultimate rebellion against the humanoids

and that omnipotent mechanical brain. For the detonating field would instantly unstabilize all mass within forty yards—the stuff of the rusty tank and the museum floor and his own sick flesh—and convert it into energy to shatter the planet. The bar moved easily, and he felt the spring begin to yield.

Yet something stopped his thumb.

He shook his head painfully, glaring feebly at his enemies. The old man's ramblings hadn't impressed him. He still hated Ironsmith, and he still feared the grid. Here in his hands was escape, retaliation. But something in him refused to press the bar.

"I don't know why," he breathed to Jane, "but I just can't." Carefully, he locked the two safety keys back into their slots, and returned the cylinder to her. "Please put it back."

"But I can tell you why." Ironsmith had strolled easily nearer, smiling in candid friendship. "You didn't kill us—not even when we let you try—because you don't want to, really. Because you're already yielding, in spite of yourself, to love."

They had let him try. That meant they must have foreseen his failure, with their extratemporal vision. Apathetic frustration overwhelmed him, but he would acknowledge no surrender to love.

"Go ahead," he muttered harshly. "I'm ready now."

And he turned his scornful face away from the old man's cragged kindliness and the young one's sunburned benevolence. The strength fled out of him, dropping him back against the rusty steel.

Forester waited—and then he was standing again in the huge bedroom the humanoids had built for him at Starmont. The transition was abrupt. He had felt no power seize him, and now he had no sense of any time gone. Automatically shifting his weight from his hurt knee, he looked anxiously around him for Jane Carter.

The village swains and maids still danced in the high murals, luminous and gay. The vast east window was now an amber green, filling the room with a mellow radiance. Motionless before him stood a steel-eyed humanoid. But he couldn't find the child.

He recoiled from the machine—until his first unthinking terror

dissolved into a keenly pleased awareness of the molten gold of light flowing across its lean, ideal perfection.

"Where's Jane Carter?" he asked huskily. "Did that platinum brain—take her?"

For he thought that his own awakening psychophysical capacities must have somehow snatched him out of danger again, but failed to save the child. The machine's serene reply brushed him with a vanishing wonderment.

"Miss Carter did require special service," it purred. "She was admitted to the care of the Ironsmith grid at the same time you were."

"I?" A momentary disbelief lifted his voice. "But I didn't feel . . ."

His voice faded, with the dissipation of his first startled incredulity. For he knew somehow, without any conscious recollection, that the stimulating energies of the grid had remolded and restored him, and he felt a fleeting wonder at his own astonishment.

"Men don't ever feel the grid," the machine was saying, "because the individual consciousness is suspended."

"What—" Dread tried to choke him, but he shrugged it lightly off. Because the grid was nothing more terrible than a channel and a tool for the good will and the unconscious aid of people who loved him. How could anyone fear that? Swallowing his huskiness, he asked quietly, "What did it do to me?"

"It repaired your body, and retrained your mind."

Lifting quickly to his face, his searching fingers found that clotted stiffness of drying blood gone, and the unshaven beard. Reaching higher, to examine the long gash where his scalp had been cut against that armored tank in the war museum, he found no wound or scar. That slow, thudding pain had left his head, and—

"Let me—let me see a mirror."

The machine moved instantly to press the lowest stud in a row beside that immense translucent window—no concealed relay, but a button that he could reach. The amber glow went out, and the wide panel became a mirror, luminous with light from the murals.

It reflected a dark stranger, taller and younger than he had been,

not quite so skinny but lean and straight and fit. The balding head was haired again, the petulant twist gone from the lips. The deep scars of worry were all somehow erased. Moving to get a better view, he recalled his twisted knee.

Oddly, he felt no pain. He walked back across the soft floor, experimentally, and found his step firm and sure. He smiled gratefully at the sleek, alert machine, and saw no response.

Because that was what it was—merely a machine. Neither good nor bad—he could hear Frank Ironsmith's protesting voice again, convincing now. Neither friend nor enemy, moved by neither love nor hate, it was doing the work for which Warren Mansfield had designed it—serving and obeying, and guarding men from harm.

Approaching it with that enlightened understanding, he prodded the nude plastic flank of it with an experimental forefinger, and even slapped the lean curve of a silicone buttock resoundingly. There was no reaction. The slightest human need of its service or obedience or protection would trigger its remote relays, but nothing else could move it.

Turning his back on its blind benevolence, he wondered how long the grid had been teaching him the folly of his fears. How long had he been—blank? He caught his breath to ask the question, but apprehension checked him. Instead, he inquired:

"Jane Carter—is she still ruled by the grid?"

"Her Awakening Day was three years ago."

Three years! He must have spent all that time in featureless oblivion—and how much longer? A cold awe touched him and was gone—and he asked eagerly:

"Where is she now?"

"Away," the machine said. "Traveling."

"Tell her I want to see her."

"We can't reach her," the machine said. "She is beyond the range of our service, exploring planets where no men have been."

"Can't I get any message to her?"

"Possibly you can secure information from one of her associates, sir. From Mr. Frank Ironsmith, perhaps. Or from Mr. Warren

Mansfield or Mr. Mark White. They may know."

"Where are they?"

"Mr. Ironsmith is still with the Psychophysical Institute. Mr. Mansfield and Mr. White are living now at Dragonrock, in the intervals between their expeditions."

"So Mark White's free of the grid?" He smiled with relief. "I'd like to see him."

"Mr. White has anticipated your wish, sir. He had been informed that you were to awaken today, and he is now on his way here. He'll be landing in a few minutes."

"Good!" Forester nodded, anxious to see how the grid had transformed that archenemy of the machines into an associate of Mansfield and Ironsmith. He couldn't keep his voice from catching as he asked, "And where's—Ruth?"

"With Mr. Ironsmith, sir." The pain from which he shrank had somehow been erased, and he felt only an eager interest when the machine added, "She sent a gift, to be delivered when you asked."

Another mechanical brought it to him. A thin rectangular block of something black, polished smooth and golden-veined, it carried a green-lettered message in Ruth's neat printing:

Dearest Clay—

We're delighted that you're well again, and we both rejoice in the new felicity you should discover now.

Ruth and Frank

Felicitiy—that was a pet word of hers. The plaque had a faint, haunting hint of Sweet Delirium. He read the message twice.

"Please thank them both." His voice was quiet. "Please tell them I wish them happiness together.

Nodding a casual farewell to that curiously youthful and untroubled reflection of himself, he watched the mechanical press another button. The mirror became a wide transparency, which slid down silently. A clean morning breeze came in to cool his face.

The machine pointed gracefully. "Mr. White is landing now."

Turning to look, Forester gaped again. The red-paved landing stage, still empty, was just as he had known it. Far away, however, beyond the uneven edge of the mountain's flat crown, he could see the rolling vastness of the desert he once had known—now no longer a tawny desolation. For new lakes shone blue in the valleys, above dams the humanoids must have built, and scattered villas made gay islets of color in a new sea of tender green.

"That grid!" he breathed. "How long?"

He was turning, still almost afraid to put that question to the humanoid, when he caught a shimmer of color moving against the sky. The cruiser was dropping silently, the oval mirror of its hull aglow with blue and flowing green and the red reflection of the stage. It touched gently and Mark White jumped lightly down.

"Well, Clay!" Forester stared, too breathless to reply to that boom of greeting, for White showed no trace of the time for forests to grow. The luxuriant beard and shaggy head were fiery as ever, and he came striding across the stage with a young man's buoyancy. "Confused?" White's chuckle rumbled. "I know how you feel."

Forester stepped slowly over the low window ledge, to take the huge man's offered hand. Looking up from the merry light in those blue eyes which he had last seen smiling out of cold forgetfulness, he whispered huskily:

"How long has it been—how many years?"

"This is the fiftieth Awakening Day."

A cold wind blew on his spine.

"That's the day the grid releases its yearly crop of graduates, ready for independent life," White added genially. "Quite a holiday, and we've arranged a party for you. We're getting together at Dragonrock. Mansfield will be there, and our old friends Ford and Graystone and Overstreet—who all finished a year ago."

"And—Jane Carter?"

"Not there." Disappointingly, White shook his head. "But we're going to join her—and you'll find her changed.

"Grown up, I suppose." Forester caught the light of admiration

in White's eyes, and began to wonder what the grid had done to her. "Join her? he whispered. "Where?"

"A million light-years from here, more or less." The big man spoke of that unimaginable distance almost casually. "Somewhere in the Andromeda Galaxy—our nearest neighbor, you know, among the spiral nebulas. She'll be waiting for us."

"Andromeda!" Forester shivered. "That's a long way to go."

"But the distance is no barrier to us," White objected heartily. "The only difficulty is that the humanoid units can't operate there. We first settlers will have to exist without any humanoid service."

"No great hardship." Forester frowned at a momentary sense of wildly illogical delight. "I think I'd like to stay there."

"You're going to," White assured him. "That's why we had Ironsmith leave you under the grid so long—to receive special training."

Forester caught his breath, waiting.

"Our first installation, on the site Jane has picked, is going to be a new rhodomagnetic grid," the big man explained. "The beginning of a humanoid service for the Andromedan pioneers.

Forester wondered why his body tried to stiffen, and why he almost shook his head. He could recall a time when he had disliked the humanoids and even mistrusted Frank Ironsmith, but now, even though his recollection of past events seemed clear enough, all the misguided emotions which must have driven him to his unfortunate past actions were fading from awareness.

"Ready?" The former foe of the machines nodded restlessly toward the waiting cruiser. "Jane will be waiting."

Forester hesitated, glancing back at the motionless humanoid in the room behind, poised alertly to serve and obey. He knew it would be useless to him on those distant worlds until the new palladium relays were working, but at least he wanted it with him until the time to go.

"Come along," he commanded.

Obediently it came. Within him, something like a scream was stifled. He turned with a smile of relief to go aboard with White.