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The Metal Smile

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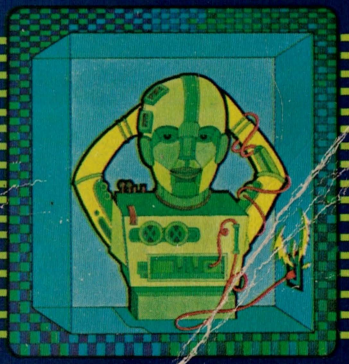

12 CHILLING BATTLES BETWEEN MEN AND MACHINES.

It worked very simply. Without warning, a criminal who thought himself safe suddenly would hear the steady footfalls behind him. He would turn and see the two-handed engine walking toward him, shaped like a man of steel and more incorruptible than any man not made of steel could be. For the rest of his days, the man would hear those footsteps behind him. Never in life would he be alone again. And one day—he never knew when—the machine would turn executioner.

The thing was quite close now. It looked to be about seven feet tall, and its motion was very smooth, smoother than human motions. Its feet fell with a heavy, measured tread. Thud, thud, thud. Danner tried to react impassively to its approach. He noted that it had no features, but his mind couldn't help sketching in a sort of airy face upon that blank steel surface, with eyes that seemed to search the room. The thing now stood over Danner and the thudding footsteps stopped.

"No, no!" he yelled at the impassive steel. "You're wrong. You're wrong!"

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THE METAL SMILE

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THE METAL SMILE

BRIAN W. ALDISS

The New Father Christmas

LITTLE OLD Roberta took the clock down off the shelf and put it on the hotpoint; then she picked up the kettle and tried to wind it. The clock was almost on the boil before she realised what she had done. Shrieking quietly, so as not to wake old Robin, she snatched up the clock with a duster and dropped it onto the table. It ticked furiously. She looked at it.

Although Roberta wound the clock every morning when she got up, she had neglected to look at it for months. Now she looked and saw it was 7:30 on Christmas Day, 2388.

"Oh dear," she exclaimed. "It's Christmas Day already! It seems to have come very soon after Lent this year."

She had not even realised it was 2388. She and Robin had lived in the factory so long. The idea of Christmas excited her, for she liked surprises—but it also frightened her, because she thought about the New Father Christmas and that was something she preferred not to think about. The New Father Christmas was reputed to make his rounds on Christmas morning.

"I must tell Robin," she said. But poor Robin had been very touchy lately; it was conceivable that having Christmas suddenly forced upon him would make him cross. Roberta was unable to keep anything to herself, so she

would have to go down and tell the tramps. Apart from Robin, there were only the tramps.

Putting the kettle onto the stove, she left her living-quarters and went into the factory, like a little mouse emerging from its mincepie-smelling nest. Roberta and Robin lived right at the top of the factory and the tramps had their illegal home right at the bottom. Roberta began tiptoeing down many, many steel stairs.

The factory was full of the sort of sounds Robin called "silent noise." It continued day and night, and the two humans had long ago ceased to hear it; it would continue when they had become incapable of hearing anything. This morning the machines were as busy as ever and looked not at all Christmassy. Roberta noticed in particular the two machines she hated most: the one with loomlike movements which packed impossibly thin wire into impossibly small boxes, and the one which threshed about as if it were struggling with an invisible enemy and did not seem to be producing anything.

The old lady walked delicately past them and down into the basement. She came to a grey door and knocked at it. At once she heard the three tramps fling themselves against the inside of the door and press against it, shouting hoarsely across to each other.

Roberta was unable to shout, but she waited until they were silent and then called through the door as loudly as she could, "It's only me, boys."

After a moment's hush, the door opened a crack. Then it opened wide. Three seedy figures stood there, their faces anguished: Jerry, the ex-writer, and Tony and Dusty, who had never been and never would be anything but tramps. Jerry, the youngest, was forty, and so still had half his life to drowse through; Tony was fifty-five and Dusty had sweat rash.

"We thought you was the Terrible Sweeper!" Tony exclaimed.

The Terrible Sweeper swept right through the factory every morning. Every morning, the tramps had to barricade themselves in their room, or the Sweeper would have

bundled them and all their tawdry belongings into the disposal chutes.

"You'd better come in," Jerry said. "Excuse the muddle."

Roberta entered and sat down on a crate, tired after her journey. The tramps' room made her uneasy, for she suspected them of bringing women in here occasionally; also, there were pants hanging in one corner.

"I had something to tell you all," she said. They waited politely, expectantly. Jerry cleaned out his nails with a tack.

"I've forgotten just now what it is," she confessed.

The tramps sighed noisily with relief. They feared anything which threatened to disturb their tranquillity. Tony became communicative.

"It's Christmas Day," he said, looking around furtively.

"Is it really!" Roberta exclaimed. "So soon after Lent?"

"Allow us," Jerry said, "to wish you a safe Christmas and a persecution-free New Year."

This courtesy brought Roberta's latent fears to the surface at once.

"You—you don't believe in the New Father Christmas, do you?" she asked them. They made no answer, but Dusty's face went the colour of lemon peel and she knew they did believe. So did she.

"You'd better all come up to the flat and celebrate this happy day," Roberta said. "After all, there's safety in numbers."

"I can't go through the factory: the machines bring on my sweat rash," Dusty said. "It's a sort of allergy."

"Nevertheless, we will go," Jerry said. "Never pass a kind offer by."

Like heavy mice, the four of them crept up the stairs and through the engrossed factory. The machines pretended to ignore them.

In the flat, they found pandemonium loose. The kettle was boiling over and Robin was squeaking for help. Officially bedridden, Robin could get up in times of crisis; he stood now just inside the bedroom door, and Roberta had to remove the kettle before going to placate him.

"And why have you brought those creatures up here?" he demanded in a loud whisper.

"Because they are our friends, Robin," Roberta said, struggling to get him back to bed.

"They are no friends of mine!" he said. He thought of something really terrible to say to her; he trembled and wrestled with it and did not say it. The effort left him weak and irritable. How he loathed being in her power! As caretaker of the vast factory, it was his duty to see that no undesirables entered, but as matters were at present he could not evict the tramps while his wife took their part. Life really was exasperating.

"We came to wish you a safe Christmas, Mr. Proctor," Jerry said, sliding into the bedroom with his two companions.

"Christmas, and I got sweat rash!" Dusty said.

"It isn't Christmas," Robin whined as Roberta pushed his feet under the sheets. "You're just saying it to annoy me." If they could only know or guess the anger that stormed like illness through his veins.

At that moment, the delivery chute pinged and an envelope catapulted into the room. Robin took it from Roberta, opening it with trembling hands. Inside was a Christmas card from the Minister of Automatic Factories.

"This proves there are other people still alive in the world," Robin said. These other fools were not important enough to receive Christmas cards.

His wife peered short-sightedly at the Minister's signature.

"This is done by a rubber stamp, Robin," she said. "It doesn't prove anything."

Now he was really enraged. To be contradicted in front of these scum! And Roberta's cheeks had grown more wrinkled since last Christmas, which also annoyed him. As he was about to flay her, however, his glance fell on the address on the envelope. It read, *"Robin Proctor, A.F.X.10."*

"But this factory isn't X10!" he protested aloud. "It's SC541."

"Perhaps we've been in the wrong factory for thirty-five years," Roberta said. "Does it matter at all?"

The question was so senseless that the old man pulled the bedclothes out of the bottom of the bed.

"Well, go and find out, you silly old woman!" he shrieked. "The factory number is engraved over the output exit. Go and see what it says. If it does not say SC541, we must leave here at once. Quickly!"

"I'll come with you," Jerry told the old lady.

"You'll all go with her," Robin said. "I'm not having you stay here with me. You'd murder me in my bed!"

Without any particular surprise—although Tony glanced regretfully at the empty teapot as he passed it—they found themselves again in the pregnant layers of factory, making their way down to the output exit. Here, conveyor belts transported the factory's finished product outside to waiting vehicles.

"I don't like it much here," Roberta said uneasily. "Even a glimpse of outside aggravates my agoraphobia."

Nevertheless, she looked where Robin had instructed her. Above the exit, a sign said "X10."

"Robin will never believe me when I tell him," she wailed.

"My guess is that the factory changed its own name," Jerry said calmly. "Probably it has changed its product as well. After all, there's nobody in control; it can do what it likes. Has it always been making these eggs?"

They stared silently at the endless, moving line of steel eggs. The eggs were smooth and as big as ostrich eggs; they sailed into the open, where robots piled them into vans and drove away with them.

"Never heard of a factory laying eggs before," Dusty laughed, scratching his shoulder. "Now we'd better get back before the Terrible Sweeper catches up with us."

Slowly they made their way back up the many, many steps.

"I think it used to be television sets the factory made once," Roberta said.

"If there are no more men—there'd be no more need for television sets," Jerry said grimly.

"I can't remember for sure. . . ."

Robin, when they told him, was ill with irritation, rolling out of bed in his wrath. He threatened to go down and look at the name of the factory himself, only refraining because he had a private theory that the factory itself was merely one of Roberta's hallucinations.

"And as for *eggs* . . ." he stuttered.

Jerry dipped into a torn pocket, produced one of the eggs, and laid it on the floor. In the silence that followed, they could all hear the egg ticking.

"You didn't oughta done that, Jerry," Dusty said hoarsely. "That's . . . interfering." They all stared at Jerry, the more frightened because they did not entirely know what they were frightened about.

"I brought it because I thought the factory ought to give us a Christmas present," Jerry told them dreamily, squatting down to look at the egg. "You see, a long time ago, before the machines declared all writers like me redundant, I met an old robot writer. And this old robot writer had been put out to scrap, but he told me a thing or two. And he told me that as machines took over man's duties, so they took over his myths too. Of course, they adapt the myths to their own beliefs, but I think they'd like the idea of handing out Christmas presents."

Dusty gave Jerry a kick which sent him sprawling.

"That's for your idea!" he said. "You're mad, Jerry boy! The machine'll come up here to get that egg back. I don't know what we ought to do."

"I'll put the tea on for some kettle," Roberta said brightly.

The stupid remark made Robin explode.

"Take the egg back, all of you!" he shrieked. "It's stealing, that's what it is, and I won't be responsible. And then you tramps must leave the factory!"

Dusty and Tony looked at him helplessly, and Tony said, "But we got nowhere to go."

Jerry, who had made himself comfortable on the floor, said without looking up, "I don't want to frighten you, but the New Father Christmas will come for you, Mr. Proctor, if you aren't careful. That old Christmas myth was

one of the ones the machines took over and changed; the New Father Christmas is all metal and glass, and instead of leaving new toys he takes away old people and machines."

Roberta, listening at the door, went as white as a sheet. "Perhaps that's how the world has grown so depopulated recently," she said. "I'd better get us some tea."

Robin had managed to shuffle out of bed, a ghastly irritation goading him on. As he staggered towards Jerry, the egg hatched.

It broke cleanly into two halves, revealing a pack of neat machinery. Four tiny, busy mannikins jumped out and leapt into action. In no time, using minute welders, they had forged the shell into a double dome; sounds of hammering came from underneath.

"They're going to build another factory right in here, the saucy things!" Roberta exclaimed. She brought the kettle crashing down on the dome and failed even to dent it. At once a thin chirp filled the room.

"My heavens, they are wirelessing for help!" Jerry exclaimed. "We've got to get out of here at once!"

They got out, Robin twittering with rage, and the New Father Christmas caught them all on the stairs.

FREDERIC BROWN

Answer

DWAR EV ceremoniously soldered the final connect. i with gold. The eyes of a dozen television cameras watched him and the sub-ether bore throughout the universe a dozen pictures of what he was doing.

He straightened and nodded to Dwar Reyn, then moved to a position beside the switch that would complete the contact when he threw it. The switch that would connect, all at once, all of the monster computing machines of all the populated planets in the universe—ninety-six billion planets—into the supercircuit that would connect them all into one supercalculator, one cybernetics machine that would combine all the knowledge of all the galaxies.

Dwar Reyn spoke briefly to the watching and listening trillions. Then after a moment's silence he said, "Now, Dwar Ev."

Dwar Ev threw the switch. There was a mighty hum, the surge of power from ninety-six billion planets. Lights flashed and quieted along the miles-long panel.

Dwar Ev stepped back and drew a deep breath. "The honor of asking the first question is yours, Dwar Reyn."

"Thank you," said Dwar Reyn. "It shall be a question which no single cybernetics machine has been able to answer."

He turned to face the machine. "Is there a God?"

The mighty voice answered without hesitation, without the clicking of a single relay.

"Yes, *now* there is a God."

Sudden fear flashed on the face of Dwar Ev. He leaped to grab the switch.

A bolt of lightning from the cloudless sky struck him down and fused the switch shut.

ROBERT SHECKLEY

Fool's Mate

THE PLAYERS met, on the great, timeless board of space. The glittering dots that were the pieces swam in their separate patterns. In that configuration at the beginning, even before the first move was made, the outcome of the game was determined.

Both players saw, and knew which had won. But they played on.

Because the game had to be played out.

"Nielson!"

Lieutenant Nielson sat in front of his gunfire board with an idyllic smile on his face. He didn't look up.

"Nielson!"

The lieutenant was looking at his fingers now, with the stare of a puzzled child.

"Nielson! Snap out of it!" General Branch loomed sternly over him. "Do you hear me, lieutenant?"

Nielson shook his head dully. He started to look at his fingers again, then his gaze was caught by the glittering array of buttons on the gunfire panel.

"Pretty," he said.

General Branch stepped inside the cubicle, grabbed Nielson by the shoulders and shook him.

"Pretty things," Nielson said, gesturing at the panel. He smiled at Branch.

Margraves, second in command, stuck his head in the doorway. He still had sergeant's stripes on his sleeve, having been promoted to colonel only three days ago.

"Ed," he said, "the president's representative is here. Sneak visit."

"Wait a minute," Branch said, "I want to complete this inspection." He grinned sourly. It was one hell of an inspection when you went around finding how many sane men you had left.

"Do you hear me, lieutenant?"

"Ten thousand ships," Nielson said. "Ten thousand ships—all gone!"

"I'm sorry," Branch said. He leaned forward and slapped him smartly across the face.

Lieutenant Nielson started to cry.

"Hey, Ed—what about that representative?"

At close range, Colonel Margrave's breath was a solid essence of whisky, but Branch didn't reprimand him. If you had a good officer left you didn't reprimand him, no matter what he did. Also, Branch approved of whisky. It was a good release, under the circumstances. Probably better than his own, he thought, glancing at his scarred knuckles.

"I'll be right with you. Nielson, can you understand me?"

"Yes, sir," the lieutenant said in a shaky voice. "I'm all right now, sir."

"Good," Branch said. "Can you stay on duty?"

"For a while," Nielson said. "But, sir—I'm not well. I can feel it."

"I know," Branch said. "You deserve a rest. But you're the only gun officer I've got left on this side of the ship. The rest are in the wards."

"I'll try, sir," Nielson said, looking at the gunfire panel again. "But I hear voices sometimes. I can't promise anything, sir."

"Ed," Margraves began again, "that representative—"

"Coming. Good boy, Nielson." The lieutenant didn't look up as Branch and Margraves left.

"I escorted him to the bridge," Margraves said, listing slightly to starboard as he walked. "Offered him a drink, but he didn't want one."

"All right," Branch said.

"He was bursting with questions," Margraves continued, chuckling to himself. "One of those earnest, tanned State Department men, out to win the war in five minutes flat. Very friendly boy. Wanted to know why I, personally, thought the fleet had been maneuvering in space for a year with no action."

"What did you tell him?"

"Said we were waiting for a consignment of zap guns," Margraves said. "I think he almost believed me. Then he started talking about logistics."

"Hm-m-m," Branch said. There was no telling what Margraves, half drunk, had told the representative. Not that it mattered. An official inquiry into the prosecution of the war had been due for a long time.

"I'm going to leave you here," Margraves said. "I've got some unfinished business to attend to."

"Right," Branch said, since it was all he could say. He knew that Margraves' unfinished business concerned a bottle.

He walked alone to the bridge.

The president's representative was looking at the huge location screen. It covered one entire wall, glowing with a slowly shifting pattern of dots. The thousands of green dots on the left represented the Earth fleet, separated by a black void from the orange of the enemy. As he watched, the fluid, three-dimensional front slowly changed. The armies of dots clustered, shifted, retreated, advanced, moving with hypnotic slowness.

But the black void remained between them. General Branch had been watching that sight for almost a year. As far as he was concerned, the screen was a luxury. He couldn't determine from it what was really happening. Only the CPC calculators could, and they didn't need it.

"How do you do, General Branch?" the president's

representative said, coming forward and offering his hand. "My name's Richard Ellsner."

Branch shook hands, noticing that Margraves' description had been pretty good. The representative was no more than thirty. His tan looked strange, after a year of pallid faces.

"My credentials," Ellsner said, handing Branch a sheaf of papers. The general skimmed through them, noting Ellsner's authorization as Presidential Voice in Space. A high honor for so young a man.

"How are things on Earth?" Branch asked, just to say something. He ushered Ellsner to a chair, and sat down himself.

"Tight," Ellsner said. "We've been stripping the planet bare of radio-actives to keep your fleet operating. To say nothing of the tremendous cost of shipping food, oxygen, spare parts, and all the other equipment you need to keep a fleet this size in the field."

"I know," Branch murmured, his broad face expressionless.

"I'd like to start right in with the president's complaints," Ellsner said with an apologetic little laugh. "Just to get them off my chest."

"Go right ahead," Branch said.

"Now then," Ellsner began, consulting a pocket notebook, "you've had the fleet in space for eleven months and seven days. Is that right?"

"Yes."

"During that time there have been light engagements, but no actual hostilities. You—and the enemy commander—have been content, evidently, to sniff each other like discontented dogs."

"I wouldn't use that analogy," Branch said, conceiving an instant dislike for the young man. "But go on."

"I apologize. It was an unfortunate, though inevitable, comparison. Anyhow, there has been no battle, even though you have a numerical superiority. Is that correct?"

"Yes."

"And you know the maintenance of this fleet strains the

resources of Earth. The President would like to know why battle has not been joined?"

"I'd like to hear the rest of the complaints first," Branch said. He tightened his battered fists, but, with remarkable self-control, kept them at his sides.

"Very well. The morale factor. We keep getting reports from you on the incidence of combat fatigue—crackup, in plain language. The figures are absurd! Thirty per cent of your men seem to be under restraint. That's way out of line, even for a tense situation."

Branch didn't answer.

"To cut this short," Ellsner said, "I would like the answer to those questions. Then, I would like your assistance in negotiating a truce. This war was absurd to begin with. It was none of Earth's choosing. It seems to the President that, in view of the static situation, the enemy commander will be amenable to the idea."

Colonel Margraves staggered in, his face flushed. He had completed his unfinished business; adding another fourth to his half-drunk.

"What's this I hear about a truce?" he shouted.

Ellsner stared at him for a moment, then turned back to Branch.

"I suppose you will take care of this yourself. If you will contact the enemy commander, I will try to come to terms with him."

"They aren't interested," Branch said.

"How do you know?"

"I've tried. I've been trying to negotiate a truce for six months now. They want complete capitulation."

"But that's absurd," Ellsner said, shaking his head. "They have no bargaining point. The fleets are of approximately the same size. There have been no major engagements yet. How can they—"

"Easily," Margraves roared, walking up to the representative and peering truculently into his face.

"General. This man is drunk." Ellsner got to his feet.

"Of course, you little idiot! Don't you understand yet? *The war is lost!* Completely, irrevocably."

Ellsner turned angrily to Branch. The general sighed and stood up.

"That's right, Ellsner. The war is lost and every man in the fleet knows it. That's what's wrong with the morale. We're just hanging here, waiting to be blasted out of existence."

The fleets shifted and weaved. Thousands of dots floated in space, in twisted, random patterns.

Seemingly random.

The patterns interlocked, opened and closed. Dynamically, delicately balanced, each configuration was a planned move on a hundred thousand mile front. The opposing dots shifted to meet the exigencies of the new pattern.

Where was the advantage? To the unskilled eye, a chess game is a meaningless array of pieces and positions. But to the players—the game may be already won or lost.

The mechanical players who moved the thousands of dots knew who had won—and who had lost.

"Now let's all relax," Branch said soothingly. "Margraves, mix us a couple of drinks. I'll explain everything." The colonel moved to a well-stocked cabinet in a corner of the room.

"I'm waiting," Ellsner said.

"First, a review. Do you remember when the war was declared, two years ago? Both sides subscribed to the Holmstead pact, not to bomb home planets. A rendezvous was arranged in space, for the fleets to meet."

"That's ancient history," Ellsner said.

"It has a point. Earth's fleet blasted off, grouped and went to the rendezvous." Branch cleared his throat.

"Do you know the CPC's? The Configuration-Probability-Calculators? They're like chess players, enormously extended. They arrange the fleet in an optimum attack-defense pattern, based on the configuration of the opposing fleet. So the first pattern was set."

"I don't see the need—" Ellsner started, but Margraves, returning with the drinks, interrupted him.

"Wait, my boy. Soon there will be a blinding light."

"When the fleets met, the CPC's calculated the probabilities of attack. They found we'd lose approximately eighty-seven per cent of our fleet, to sixty-five per cent of the enemy's. If they attacked, they'd lose seventy-nine per cent, to our sixty-four. That was the situation as it stood then. By extrapolation, their *optimum* attack pattern—at that time—would net them a forty-five per cent loss. Ours would have given us a seventy-two per cent loss."

"I don't know much about the CPC's," Ellsner confessed. "My field's psych." He sipped his drink, grimaced, and sipped again.

"Think of them as chess players," Branch said. "They can estimate the loss probabilities for an attack at any given point of time, in any pattern. They can extrapolate the probable moves of both sides.

"That's why battle wasn't joined when we first met. No commander is going to annihilate his entire fleet like that."

"Well then," Ellsner said, "why haven't you exploited your slight numerical superiority? Why haven't you gotten an advantage over them?"

"Ah!" Margraves cried, sipping his drink. "It comes, the light!"

"Let me put it in the form of an analogy," Branch said. "If you have two chess players of equally high skill, the game's end is determined when one of them gains an advantage. Once the advantage is there, there's nothing the other player can do, unless the first makes a mistake. If everything goes as it should, the game's end is predetermined. The turning point may come a few moves after the game starts, although the game itself could drag on for hours."

"And remember," Margraves broke in, "to the casual eye, there may be no apparent advantage. Not a piece may have been lost."

"That's what's happened here," Branch finished sadly. "The CPC units in both fleets are of maximum efficiency. But the enemy has an edge, which they are carefully exploiting. And there's nothing we can do about it."

"But how did this happen?" Ellsner asked. "Who slipped up?"

"The CPC's have inducted the cause of the failure," Branch said. "The end of the war was inherent *in our take-off formation.*"

"What do you mean?" Ellsner said, setting down his drink.

"Just that. The configuration the fleet was in, light-years away from battle, before we had even contacted their fleet. When the two met, they had an infinitesimal advantage of position. That was enough. Enough for the CPC's, anyhow."

"If it's any consolation," Margraves put in, "it was a fifty-fifty chance. It could have just as well been us with the edge."

"I'll have to find out more about this," Ellsner said. "I don't understand it all yet."

Branch snarled: "The war's lost. What more do you want to know?"

Ellsner shook his head.

"Wilt snare me with predestination 'round," Margraves quoted, "and then impute my fall to sin?"

Lieutenant Nielson sat in front of the gunfire panel, his fingers interlocked. This was necessary, because Nielson had an almost overpowering desire to push the buttons.

The pretty buttons.

Then he swore, and sat on his hands. He had promised General Branch that he would carry on, and that was important. It was three days since he had seen the general, but he was determined to carry on. Resolutely he fixed his gaze on the gunfire dials.

Delicate indicators wavered and trembled. Dials measured distance, and adjusted aperture to range. The slender indicators rose and fell as the ship maneuvered, lifting toward the red line, but never quite reaching it.

The red line marked emergency. That was when he would start firing, when the little black arrow crossed the little red line.

He had been waiting almost a year now, for that little

arrow. Little arrow. Little narrow. Little arrow. Little narrow.

Stop it.

That was when he would start firing.

Lieutenant Nielson lifted his hands into view and inspected his nails. Fastidiously he cleaned a bit of dirt out of one. He interlocked his fingers again, and looked at the pretty buttons, the black arrow, the red line.

He smiled to himself. He had promised the general. Only three days ago.

So he pretended not to hear what the buttons were whispering to him.

"The thing I don't see," Ellsner said, "is why you can't do something about the pattern? Retreat and regroup, for example?"

"I'll explain that," Margraves said. "It'll give Ed a chance for a drink. Come over here." He led Ellsner to an instrument panel. They had been showing Ellsner around the ship for three days, more to relieve their own tension than for any other reason. The last day had turned into a fairly prolonged drinking bout.

"Do you see this dial?" Margraves pointed to one. The instrument panel covered an area four feet wide by twenty feet long. The buttons and switches on it controlled the movements of the entire fleet.

"Notice the shaded area. That marks the safety limit. If we use a forbidden configuration, the indicator goes over and all hell breaks loose."

"And what is a forbidden configuration?"

Margraves thought for a moment. "The forbidden configurations are those which would give the enemy an attack advantage. Or, to put it in another way, moves which change the attack-probability-loss picture sufficiently to warrant an attack."

"So you can move only within strict limits?" Ellsner asked, looking at the dial.

"That's right. Out of the infinite number of possible formations, we can use only a few, if we want to play safe. It's like chess. Say you'd like to put a sixth row pawn

in your opponent's back row. But it would take two moves to do it. And after you move to the seventh row, your opponent has a clear avenue, leading inevitably to checkmate.

"Of course, if the enemy advances too boldly the odds are changed again, and *we* attack."

"That's our only hope," General Branch said. "We're praying they do something wrong. The fleet is in readiness for instant attack, if our CPC shows that the enemy has overextended himself anywhere."

"And that's the reason for the crack-ups," Ellsner said. "Every man in the fleet on nerves' edge, waiting for a chance he's sure will never come. But having to wait anyhow. How long will this go on?"

"This moving and checking can go on for a little over two years," Branch said. "Then they will be in the optimum formation for attack, with a twenty-eight per cent loss probability to our ninety-three. They'll have to attack then, or the probabilities will start to shift back in our favor."

"You poor devils," Ellsner said softly. "Waiting for a chance that's never going to come. Knowing you're going to be blasted out of space sooner or later."

"Oh, it's jolly," said Margraves, with an instinctive dislike for a civilian's sympathy.

Something buzzed on the switchboard, and Branch walked over and plugged in a line. "Hello? Yes. yes. . . . All right, Williams. Right." He unplugged the line.

"Colonel Williams has had to lock his men in their rooms," Branch said. "That's the third this month. I'll have to get CPC to dope out a formation so we can take him out of the front." He walked to a side panel and started pushing buttons.

"And there it is," Margraves said. "What do you plan to do, Mr. Presidential Representative?"

The glittering dots shifted and deployed, advanced and retreated, always keeping a barrier of black space between them. The mechanical chess players watched each move,

calculating its effect into the far future. Back and forth across the great chess board the pieces moved.

The chess players worked dispassionately, knowing beforehand the outcome of the game. In their strictly ordered universe there was no possible fluctuation, no stupidity, no failure.

They moved. And knew. And moved.

"Oh, yes," Lieutenant Nielson said to the smiling room. "Oh, yes." And look at all the buttons, he thought, laughing to himself.

So stupid. Georgia.

Nielson accepted the deep blue of sanctity, draping it across his shoulders. Bird song, somewhere.

Of course.

Three buttons red. He pushed them. Three buttons green. He pushed them. Four dials. Riverread.

"Oh-oh. Nielson's cracked."

"Three is for me," Nielson said, and touched his forehead with greatest stealth. Then he reached for the keyboard again. Unimaginable associations raced through his mind, produced by unaccountable stimuli.

"Better grab him. Watch out!"

Gentle hands surround me as I push two are brown for which is for mother, and one is high for all rest.

"Stop him from shooting off those guns!"

I am lifted into the air, I fly, I fly.

"Is there any hope for that man?" Ellsner asked, after they had locked Nielson in a ward.

"Who knows," Branch said. His broad face tightened; knots of muscle pushed out his cheeks. Suddenly he turned, shouted, and swung his fist wildly at the metal wall. After it hit, he grunted and grinned sheepishly.

"Silly, isn't it? Margraves drinks. I let off steam by hitting walls. Let's go eat."

The officers ate separate from the crew. Branch had found that some officers tended to get murdered by psychotic crewmen. It was best to keep them apart.

During the meal, Branch suddenly turned to Ellsner.

"Boy, I haven't told you the entire truth. I said this would go on for two years? Well, the men won't last that long. I don't know if I can hold this fleet together for two more weeks."

"What would you suggest?"

"I don't know," Branch said. He still refused to consider surrender, although he knew it was the only realistic answer.

"I'm not sure," Ellsner said, "but I think there may be a way out of your dilemma." The officers stopped eating and looked at him.

"Have you got some superweapons for us?" Margraves asked. "A disintegrator strapped to your chest?"

"I'm afraid not. But I think you've been so close to the situation that you don't see it in its true light. A case of the forest for the trees."

"Go on," Branch said, munching methodically on a piece of bread.

"Consider the universe as the CPC sees it. A world of strict causality. A logical, coherent universe. In this world, every effect has a cause. Every factor can be instantly accounted for.

"That's not a picture of the real world. There *is no* explanation for everything, really. The CPC is built to see a specialized universe, and to extrapolate on the basis of that."

"So," Margraves said, "what would you do?"

"Throw the world out of joint," Ellsner said. "Bring in uncertainty. Add a human factor that the machines can't calculate."

"How can you introduce uncertainty in a chess game?" Branch asked, interested in spite of himself.

"By sneezing at a crucial moment, perhaps. How could a machine calculate that?"

"It wouldn't have to. It would just classify it as extraneous noise, and ignore it."

"True." Ellsner thought for a moment. "This battle—how long will it take once the actual hostilities are begun?"

"About six minutes," Branch told him. "Plus or minus twenty seconds."

"That confirms an idea of mine," Ellsner said. "The chess game analogy you use is faulty. There's no real comparison."

"It's a convenient way of thinking of it," Margraves said.

"But it's an *untrue* way of thinking of it. Checkmating a king can't be equated with destroying a fleet. Nor is the rest of the situation like chess. In chess you play by rules previously agreed upon by the players. In this game you can make up your own rules."

"This game had inherent rules of its own," Branch said.

"No," Ellsner said. "Only the CPC's have rules. How about this? Suppose you dispensed with the CPC's? Gave every commander his head, told him to attack on his own, with no pattern. What would happen?"

"It wouldn't work," Margraves told him. "The CPC can still total the picture, on the basis of the planning ability of the average human. More than that, they can handle the attack of a few thousand second-rate calculators—humans—with ease. It would be like shooting clay pigeons."

"But you've *got* to try something," Ellsner pleaded.

"Now wait a minute," Branch said. "You can spout theory all you want. I know what the CPC's tell me, and I believe them. I'm still in command of this fleet, and I'm not going to risk the lives in my command on some harebrained scheme."

"Harebrained schemes sometimes win wars," Ellsner said.

"They usually lose them."

"The war is lost already, by your own admission."

"I can still wait for them to make a mistake."

"Do you think it will come?"

"No."

"Well then?"

"I'm still going to wait."

The rest of the meal was completed in moody silence. Afterward, Ellsner went to his room.

"Well, Ed?" Margraves asked, unbuttoning his shirt.

"Well yourself," the general said. He lay down on his bed, trying not to think. It was too much. Logistics. Predetermined battles. The coming debacle. He considered slamming his fist against the wall, but decided against it. It was sprained already. He was going to sleep.

On the borderline between slumber and sleep, he heard a click.

The door!

Branch jumped out of bed and tried the knob. Then he threw himself against it.

Locked.

"General, please strap yourself down. We are attacking." It was Ellsner's voice, over the intercom.

"I looked over that keyboard of yours, sir, and found the magnetic doorlocks. Mighty handy in case of a mutiny, isn't it?"

"You idiot!" Branch shouted. "You'll kill us all! That CPC—"

"I've disconnected our CPC," Ellsner said pleasantly. "I'm a pretty logical boy, and I think I know how a sneeze will bother them."

"He's mad," Margraves shouted to Branch. Together they threw themselves against the metal door.

Then they were thrown to the floor.

"All gunners—fire at will!" Ellsner broadcasted to the fleet.

The ship was in motion. The attack was underway!

The dots drifted together, crossing the no-man's land of space.

They coalesced! Energy flared, and the battle was joined.

Six minutes, human time. Hours for the electronically fast chess player. He checked his pieces for an instant, deducing the pattern of attack.

There was no pattern!

Half of the opposing chess player's pieces shot out into space, completely out of the battle. Whole flanks advanced, split, rejoined, wrenched forward, dissolved their formation, formed it again.

No pattern? There *had* to be a pattern. The chess player knew that everything had a pattern. It was just a question of finding it, of taking the moves already made and extrapolating to determine what the end was supposed to be.

The end was—chaos!

The dots swept in and out, shot away at right angles to the battle, checked and returned, meaninglessly.

What did it mean, the chess player asked himself with the calmness of metal. He waited for a recognizable configuration to emerge.

Watching dispassionately as his pieces were swept off the board.

"I'm letting you out of your room now," Ellsner called, "but don't try to stop me. I think I've won your battle."

The lock released. The two officers ran down the corridor to the bridge, determined to break Ellsner into little pieces.

Inside, they slowed down.

The screen showed the great mass of Earth dots sweeping over a scattering of enemy dots.

What stopped them, however, was Nielson, laughing, his hands sweeping over switches and buttons on the great master control board.

The CPC was droning the losses. "Earth—eighteen per cent. Enemy—eighty-three. Eight-four. Eighty-six. Earth, nineteen per cent."

"Mate!" Ellsner shouted. He stood beside Nielson, a Stillson wrench clenched in his hand. "Lack of pattern. I gave their CPC something it couldn't handle. An attack with no apparent pattern. Meaningless configurations!"

"But what are they doing?" Branch asked, gesturing at the dwindling enemy dots.

"Still relying on their chess player," Ellsner said. "Still waiting for him to dope out the attack pattern in this madman's mind. Too much faith in machines, general. This man doesn't even know he's precipitating an attack.

. . . And push three that's for dad on the olive tree I always wanted to two two two Danbury fair with buckle

shoe brown all brown buttons down and in, sin, eight red for sin—

"What's the wrench for?" Margraves asked.

"That?" Ellsner weighed it in his hand. "That's to turn off Nielson here, after the attack."

. . . And five and love and black, all blacks, fair buttons in I remember when I was very young at all push five and there on the grass ouch—

POUL ANDERSON

Quixote and the Windmill

THE FIRST robot in the world came walking over green hills with sunlight aflash off his polished metal hide. He walked with a rippling grace that was almost feline, and his tread fell noiselessly—but you could feel the ground vibrate ever so faintly under the impact of that terrific mass, and the air held a subliminal quiver from the great engine that pulsed within him.

Him. You could not think of the robot as neuter. He had the brutal maleness of a naval rifle or a blast furnace. All the smooth silent elegance of perfect design and construction did not hide the weight and strength of a two and a half-meter height. His eyes glowed, as if with inner fires of smoldering atoms; they could see in any frequency range he selected; he could turn an X-ray beam on you and look you through and through with those terrible eyes. They had built him humanoid, but had had the good taste not to give him a face; there were the eyes, with their sockets for extra lenses when he needed microscopic or telescopic vision, and there were a few other small sensory and vocal orifices, but otherwise his head was a mask of shining metal. Humanoid, but not human—man's creation, but more than man—the first independent, volitional, non-specialized machine—but they had dreamed of him, long ago; he had once been the jinni in the bottle or the Golem, Bacon's brazen head or Frankenstein's monster,

the man-transcending creature who could serve or destroy with equal contemptuous ease.

He walked under a bright summer sky, over sunlit fields and through little groves that danced and whispered in the wind. The houses of men were scattered here and there, the houses which practically took care of themselves; over beyond the horizon was one of the giant, almost automatic food factories; a few self-piloting carplanes went quietly overhead. Humans were in sight, sunbrowned men and their women and children going about their various errands with loose bright garments floating in the breeze. A few seemed to be at work, there was a colorist experimenting with a new chromatic harmony, a composer sitting on his verandah striking notes out of an omniplayer, a group of engineers in a transparent-walled laboratory testing some mechanisms. But with the standard work period what it was these days, most were engaged in recreation. A picnic, a dance under trees, a concert, a pair of lovers, a group of children in one of the immemorially ancient games of their age-group, an old man happily enhammocked with a book and a bottle of beer—the human race was taking it easy.

They saw the robot go by, and often a silence fell as his tremendous shadow slipped past. His electronic detectors sensed the eddying pulses that meant nervousness, a faint unease—oh, they trusted the cybernetics men, they didn't look for a devouring monster, but they wondered. They felt man's old unsureness of the alien and unknown, deep in their minds they wondered what the robot was about and what his new and invincible race might mean to Earth's dwellers—then, perhaps, as his gleaming height receded over the hills, they laughed and forgot him.

The robot went on.

There were not many customers in the Casanova at this hour. After sunset the tavern would fill up and the autodispensers would be kept busy, for it had a good live-talent show and television was becoming unfashionable. But at the moment only those who enjoyed a mid-

afternoon glass, together with some serious drinkers, were present.

The building stood alone on a high wooded ridge, surrounded by its gardens and a good-sized parking lot. Its colonnaded exterior was long and low and gracious; inside it was cool and dim and fairly quiet; and the general air of decorum, due entirely to lack of patronage, would probably last till evening. The manager had gone off on his own business and the girls didn't find it worthwhile to be around till later, so the Casanova was wholly in the charge of its machines.

Two men were giving their autodispenser a good workout. It could hardly deliver one drink before a coin was given it for another. The smaller man was drinking whiskey and soda, the larger one stuck to the most potent available ale, and both were already thoroughly soused.

They sat in a corner booth from which they could look out of the open door, but their attention was directed to the drinks. It was one of those curious barroom acquaintances which spring up between utterly diverse types. They would hardly remember each other the next day. But currently they were exchanging their troubles.

The little dark-haired fellow, Roger Brady, finished his drink and dialed for another. "Beatcha!" he said triumphantly.

"Gimme time," said the big redhead, Pete Borklin. "This stuff goes down slower."

Brady got out a cigarette. His fingers shook as he brought it to his mouth and puffed it into lighting. "Why can't that drink come right away?" he mumbled. "I resent a ten-second delay. Ten dry eternities! I demand instantaneously mixed drinks, delivered faster than light."

The glass arrived, and he raised it to his lips. "I am afraid," he said, with the careful precision of a very drunk man, "that I am going on a weeping jag. I would much prefer a fighting jag. But unfortunately there is nobody to fight."

"I'll fight you," offered Borklin. His huge fists closed.

"Nah—why? Wouldn't be a fight, anyway. You'd just

mop me up. And why should we fight? We're both in the same boat."

"Yeah." Borklin looked at his fists. "Not much use, anyway," he said. "Somebody'd do a lot better job o' killing with an autogun than I could with—these." He unclenched them, slowly, as if with an effort, and took another drag at his glass.

"What we want to do," said Brady, "is to fight a world. We want to blow up all Earth and scatter the pieces from here to Pluto. Only it wouldn't do any good, Pete. Some machine'd come along and put it back together again."

"I just wanna get drunk," said Borklin. "My wife left me. D'I tell you that? My wife left me."

"Yeah, you told me."

Borklin shook his heavy head, puzzled. "She said I was a drunk. I went to a doctor like she said, but it didn't help none. He said . . . I forget what he said. But I had to keep on drinking anyway. Wasn't anything else to do."

"I know. Psychiatry helps people solve problems. It's not being able to solve a problem that drives a man insane. But when the problem is inherently insoluble—what then? One can only drink, and try to forget."

"My wife wanted me to amount to something," said Borklin. "She wanted me to get a job. But what could I do? I tried. Honest, I tried. I tried for . . . well, I've been trying all my life, really. There just wasn't any work around. Not any I could do."

"Fortunately, the basic citizen's allowance is enough to get drunk on," said Brady. "Only the drinks don't arrive fast enough. I demand an instantaneous autodispenser."

Borklin dialed for another ale. He looked at his hands in a bewildered way. "I've always been strong," he said. "I know I'm not bright, but I'm strong, and I'm good at working with machines and all. But nobody would hire me." He spread his thick workman's fingers. "I was handy at home. We had a little place in Alaska, my dad didn't hold with too many gadgets, so I was handy around there. But he's dead now, the place is sold, what good are my hands?"

"The worker's paradise." Brady's thin lips twisted.

"Since the end of the Transition, Earth has been Utopia. Machines do all the routine work, *all* of it, they produce so much that the basic necessities of life are free."

"The hell. They want money for everything."

"Not much. And you get your citizen's allowance, which is just a convenient way of making your needs free. When you want more money, for the luxuries, you work, as an engineer or scientist or musician or painter or tavern keeper or spaceman or . . . anything there's a demand for. You don't work too hard. Paradise!" Brady's shaking fingers spilled cigarette ash on the table. A little tube dipped down from the wall and sucked it up.

"I can't find work. They don't want me. Nowhere."

"Of course not. What earthly good is manual labor these days? Machines do it all. Oh, there are technicians to be sure, quite a lot of them—but they're all highly skilled men, years of training. The man who has nothing to offer but his strength and a little rule-of-thumb ingenuity doesn't get work. There *is* no place for him!" Brady took another swallow from his glass. "Human genius has eliminated the need for the workman. Now it only remains to eliminate the workman himself."

Borklin's fists closed again, dangerously. "Whattayuh mean?" he asked harshly. "Whattayuh mean, anyway?"

"Nothing personal. But you know it yourself. Your type no longer fits into human society. So the geneticists are gradually working it out of the race. The population is kept static, relatively small, and is slowly evolving toward a type which can adapt to the present en . . . environment. And that's not your type, Pete."

The big man's anger collapsed into futility. He stared emptily at his glass. "What to do?" he whispered. "What can I do?"

"Not a thing, Pete. Just drink, and try to forget your wife. Just drink."

"Mebbe they'll get out to the stars."

"Not in our lifetimes. And even then, they'll want to take their machines along. We still won't be any more useful. Drink up, old fellow. Be glad! You're living in Utopia!"

There was silence then, for a while. The day was bright outside. Brady was grateful for the obscurity of the tavern.

Borklin said at last: "What I can't figure is you. You look smart. You can fit in . . . can't you?"

Brady grinned humorlessly. "No, Pete. I had a job, yes. I was a mediocre servotechnician. The other day I couldn't take any more. I told the boss what to do with his servos, and I've been drinking ever since. I don't think I ever want to stop."

"But how come?"

"Dreary, routine—I hated it. I'd rather stay tight. I had psychiatric help too, of course, and it didn't do me any good. The same insoluble problem as yours, really."

"I don't get it."

"I'm a bright boy, Pete. Why hide it? My I.Q. puts me in the genius class. But—not quite bright enough." Brady fumbled for another coin. He could only find a bill, but the machine gave him change. "I want inshantaneous auto . . . or did I say that before? Never mind. It doesn't matter." He buried his face in his hands.

"How do you mean, not quite bright enough?" Borklin was insistent. He had a vague notion that a new slant on his own problem might conceivably help him see a solution. "That's what they told me, only politer. But you—"

"I'm too bright to be an ordinary technician. Not for long. And I have none of the artistic or literary talent which counts so highly nowadays. What I wanted was to be a mathematician. All my life I wanted to be a mathematician. And I worked at it. I studied. I learned all any human head could hold, and I know where to look up the rest." Brady grinned wearily. "So what's the upshot? The mathematical machines have taken over. Not only all routine computation—that's old—but even independent research. At a higher level than the human brain can operate.

"They still have humans working at it. Sure. They have men who outline the problems, control and check the machines, follow through all the steps—men who are the . . . the soul of the science, even today.

"*But*—only the top-flight geniuses. The really brilliant, original minds, with flashes of sheer inspiration. *They* are still needed. But the machines do all the rest."

Brady shrugged. "I'm not a first-rank genius, Pete. I can't do anything that an electronic brain can't do quicker and better. So I didn't get my job, either."

They sat quiet again. Then Borklin said, slowly: "At least you can get some fun. I don't like all these concerts and pictures and all that fancy stuff. I don't have more than drinking and women and maybe some stereofilm."

"I suppose you're right," said Brady indifferently. "But I'm not cut out to be a hedonist. Neither are you. We both *want* to work. We want to feel we have some importance and value—we want to amount to something. Our friends . . . your wife . . . I had a girl once, Pete . . . we're expected to amount to something.

"Only there's nothing for us to do—"

A hard and dazzling sun-flash caught his eye. He looked out through the door, and jerked with a violence that upset his drink.

"Great universe!" he breathed. "Pete . . . Pete . . . look, it's the robot! *It's the robot!*"

"Huh?" Borklin twisted around, trying to focus his eyes out the door. "Whazzat?"

"The robot—you've heard of it, man." Brady's soddenness was gone in a sudden shivering intensity. His voice was like metal. "They built him three years ago at Cybernetics Lab. Manlike, with a volitional, nonspecialized brain—manlike, but more than man!"

"Yeah . . . yeah, I heard." Borklin looked out and saw the great shining form striding across the gardens, bound on some unknown journey that took him past the tavern. "They were testing him. But he's been running around loose for a year or so now—Wonder where he's going?"

"I don't know." As if hypnotized, Brady looked after the mighty thing. "I don't know—" His voice trailed off, then suddenly he stood up and then lashed out: "But we'll find out! Come on, Pete!"

"Where . . . huh . . . why—" Borklin rose slowly, fum-

bling through his own bewilderment. "What do you mean?"

"Don't you see, don't you see?" It's *the robot*—the man after man—all that man is, and how much more we don't even imagine. Pete, the machines have been replacing men, here, there, everywhere. This is the machine that will replace *man!*"

Borklin said nothing, but trailed out after Brady. The smaller man kept on talking, rapidly, bitterly: "Sure—why not? Man is simply flesh and blood. Humans are only human. They're not efficient enough for our shiny new world. Why not scrap the whole human race? How long till we have nothing but men of metal in a meaningless metal antheap?

"Come on, Pete. Man is going down into darkness. But we can go down fighting!"

Something of it penetrated Borklin's mind. He saw the towering machine ahead of him, and suddenly it was as if it embodied all which had broken him. The ultimate machine, the final arrogance of efficiency, remote and godlike and indifferent as it smashed him—suddenly he hated it with a violence that seemed to split his skull apart. He lumbered clumsily beside Brady and they caught up with the robot together.

"Turn around!" called Brady. "Turn around and fight!"

The robot paused. Brady picked up a stone and threw it. The rock bounced off the armor with a dull clang.

The robot faced about. Borklin ran at him, cursing. His heavy shoes kicked at the robot's ankle joints, his fists battered at the front. They left no trace.

"Stop that," said the robot. His voice had little tonal variation, but there was the resonance of a great bell in it. "Stop that. You will injure yourself."

Borklin retreated, gasping with the pain of bruised flesh and smothering impotence. Brady reeled about to stand before the robot. The alcohol was singing and buzzing in his head, but his voice came oddly clear.

"We can't hurt you," he said. "We're Don Quixote, tilting at windmills. But you wouldn't know about that. You wouldn't know about any of man's old dreams."

"I am unable to account for your present actions," said the robot. His eyes blazed with their deep fires, searching the men. Unconsciously, they shrank away a little.

"You are unhappy," decided the robot. "You have been drinking to escape your own unhappiness, and in your present intoxication you identify me with the causes of your misery."

"Why not?" flared Brady. "Aren't you? The machines are taking over all Earth with their smug efficiency, making man a parasite—and now you come, the ultimate machine, you're the one who's going to replace man himself."

"I have no belligerent intentions," said the robot. "You should know I was conditioned against any such tendencies, even while my brain was in process of construction." Something like a chuckle vibrated in the deep metal voice. "What reason do I have to fight anyone?"

"None," said Brady thinly. "None at all. You'll just take over, as more and more of you are made, as your emotionless power begins to—"

"Begins to what?" asked the robot. "And how do you know I am emotionless? Any psychologist will tell you that emotion, though not necessarily of the human type, is a basis of thought. What logical reason does a being have to think, to work, even to exist? It cannot rationalize its so doing, it simply does, because of its endocrine system, its power plant, whatever runs it . . . its emotions! And any mentality capable of self-consciousness will feel as wide a range of emotion as you—it will be as happy or as interested—or as miserable—as you!"

It was weird, even in a world used to machines that were all but alive, thus to stand and argue with a living mass of metal and plastic, vacuum and energy. The strangeness of it struck Brady, he realized just how drunk he was. But still he had to snarl his hatred and despair out, mouth any phrases at all just so they relieved some of the bursting tension within him.

"I don't care how you feel or don't feel," he said, stuttering a little now. "It's that you're the future, the

meaningless future when all men are as useless as I am now, and I hate you for it and the worst of it is I can't kill you."

The robot stood like a burnished statue of some old and non-anthropomorphic god, motionless, but his voice shivered the quiet air: "Your case is fairly common. You have been relegated to obscurity by advanced technology. But do not identify yourself with all mankind. There will always be men who think and dream and sing and carry on all the race has ever loved. The future belongs to them, not to you—or to me.

"I am surprised that a man of your apparent intelligence does not realize my position. But—what earthly good is a robot? By the time science had advanced to the point where I could be built, there was no longer any reason for it. Think—you have a specialized machine to perform or help man perform every conceivable task. What possible use is there for a nonspecialized machine to do them all? Man himself fulfills that function, and the machines are no more than his tools. Does a housewife want a robot servant when she need only control the dozen machines which already do all the work? Why should a scientist want a robot that could, say, go into dangerous radioactive rooms when he has already installed automatic and remote-controlled apparatus which does everything there? And surely the artists and thinkers and policy-makers don't need robots, they are performing specifically human tasks, it will always be *man* who sets man's goals and dreams his dreams. The all-purpose machine is and forever will be—man himself.

"Man, I was made for purely scientific study. After a couple of years they had learned all there was to learn about me—and I had no other purpose! They let me become a harmless, aimless, meaningless wanderer, just so I could be doing something—and my life is estimated at five hundred years!

"I have no purpose. I have no real reason for existence. I have no companion, no place in human society, no use for my strength and my brain. Man, man, do you think *I* am happy?"

The robot turned to go. Brady was sitting on the grass, holding his head to keep it from whirling off into space, so he didn't see the giant metal god depart. But he caught the last words flung back, and somehow there was such a choking bitterness in the toneless brazen voice that he could never afterward forget them.

"Man, you are the lucky one. *You* can get drunk!"

HENRY KUTTNER and C. L. MOORE

Two-Handed Engine

Ever since the days of Orestes there have been men with Furies following them. It wasn't until the Twenty-Second Century that mankind made itself a set of real Furies, out of steel. Mankind had reached a crisis by then. They had a good reason for building man-shaped Furies that would dog the footsteps of all men who kill men. Nobody else. There was by then no other crime of any importance.

It worked very simply. Without warning, a man who thought himself safe would suddenly hear the steady footfalls behind him. He would turn and see the two-handed engine walking toward him, shaped like a man of steel, and more incorruptible than any man not made of steel could be. Only then would the murderer know he had been tried and condemned by the omniscient electronic minds that knew society as no human mind could ever know it.

For the rest of his days, the man would hear those footsteps behind him. A moving jail with invisible bars that shut him off from the world. Never in life would he be alone again. And one day—he never knew when—the jailer would turn executioner.

DANNER leaned back comfortably in his contoured restaurant chair and rolled expensive wine across his tongue,

closing his eyes to enjoy the taste of it better. He felt perfectly safe. Oh, perfectly protected. For nearly an hour now he had been sitting here, ordering the most expensive food, enjoying the music breathing softly through the air, the murmurous, well-bred hush of his fellow diners. It was a good place to be. It was very good, having so much money—now.

True, he had had to kill to get the money. But no guilt troubled him. There is no guilt if you aren't found out, and Danner had protection. Protection straight from the source, which was something new in the world. Danner knew the consequences of killing. If Hartz hadn't satisfied him that he was perfectly safe, Danner would never have pulled the trigger. . . .

The memory of an archaic word flickered through his mind briefly. *Sin.* It evoked nothing. Once it had something to do with guilt, in an incomprehensible way. Not any more. Mankind had been through too much. Sin was meaningless now.

He dismissed the thought and tried the heart-of-palms salad. He found he didn't like it. Oh well, you had to expect things like that. Nothing was perfect. He sipped the wine again, liking the way the glass seemed to vibrate like something faintly alive in his hand. It was good wine. He thought of ordering more, but then he thought no, save it, next time. There was so much before him, waiting to be enjoyed. Any risk was worth it. And of course, in this there had been no risk.

Danner was a man born at the wrong time. He was old enough to remember the last days of utopia, young enough to be trapped in the new scarcity economy the machines had clamped down on their makers. In his early youth he'd had access to free luxuries, like everybody else. He could remember the old days when he was an adolescent and the last of the Escape Machines were still operating, the glamorous, bright, impossible, vicarious visions that didn't really exist and never could have. But then the scarcity economy swallowed up pleasure. Now you got necessities but no more. Now you had to work. Danner hated every minute of it.

When the swift change came, he'd been too young and unskilled to compete in the scramble. The rich men today were the men who had built fortunes on cornering the few luxuries the machines still produced. All Danner had left were bright memories and a dull, resentful feeling of having been cheated. All he wanted were the bright days back, and he didn't care how he got them.

Well, now he had them. He touched the rim of the wine glass with his finger, feeling it sing silently against the touch. Blown glass? he wondered. He was too ignorant of luxury items to understand. But he'd learn. He had the rest of his life to learn in, and be happy.

He looked up across the restaurant and saw through the transparent dome of the roof the melting towers of the city. They made a stone forest as far as he could see. And this was only one city. When he was tired of it, there were more. Across the country, across the planet the network lay that linked city with city in a webwork like a vast, intricate, half-alive monster. Call it society.

He felt it tremble a little beneath him.

He reached for the wine glass and drank quickly. The faint uneasiness that seemed to shiver the foundations of the city was something new. It was because—yes, certainly it was because of a new fear.

It was because he had not been found out.

That made no sense. Of course the city was complex. Of course it operated on a basis of incorruptible machines. They, and only they, kept man from becoming very quickly another extinct animal. And of these the analogue computers, the electronic calculators, were the gyroscope of all living. They made and enforced the laws that were necessary now to keep mankind alive. Danner didn't understand much of the vast changes that had swept over society in his lifetime, but this much even he knew.

So perhaps it made sense that he felt society shiver because he sat here luxurious on foam-rubber, sipping wine, hearing soft music, and no Fury standing behind his chair to prove that the calculators were still guardians for mankind. . . .

If not even the Furies are incorruptible, what can a man believe in?

It was at that exact moment that the Fury arrived.

Danner heard every sound suddenly die out around him. His fork was halfway to his lips, but he paused, frozen, and looked up across the table and the restaurant toward the door.

The Fury was taller than a man. It stood there for a moment, the afternoon sun striking a blinding spot of brightness from its shoulder. It had no face, but it seemed to scan the restaurant leisurely, table by table. Then it stepped in under the doorframe and the sun-spot slid away and it was like a tall man encased in steel, walking slowly between the tables.

Danner said to himself, laying down his untasted food, "Not for me. Everyone else here is wondering. I *know*."

And like a memory in a drowning man's mind, clear, sharp and condensed into a moment, yet every detail clear, he remembered what Hartz had told him. As a drop of water can pull into its reflection a wide panorama condensed into a tiny focus, so time seemed to focus down to a pinpoint the half-hour Danner and Hartz had spent together, in Hartz's office with the walls that could go transparent at the push of a button.

He saw Hartz again, plump and blond, with the sad eyebrows. A man who looked relaxed until he began to talk, and then you felt the burning quality about him, the air of driven tension that made even the air around him seem to be restlessly trembling. Danner stood before Hartz's desk again in memory, feeling the floor hum faintly against his soles with the heartbeat of the computers. You could see them through the glass, smooth, shiny things with winking lights in banks like candles burning in colored glass cups. You could hear their faraway chattering as they ingested facts, meditated them, and then spoke in numbers like cryptic oracles. It took men like Hartz to understand what the oracles meant.

"I have a job for you," Hartz said. "I want a man killed."

"Oh no," Danner said. "What kind of a fool do you think I am?"

"Now wait a minute. You can use money, can't you?"

"What for?" Danner asked bitterly. "A fancy funeral?"

"A life of luxury. I know you're not a fool. I know damned well you wouldn't do what I ask unless you got money *and* protection. That's what I can offer. Protection."

Danner looked through the transparent wall at the computers.

"Sure," he said.

"No, I mean it. I—" Hartz hesitated, glancing around the room a little uneasily, as if he hardly trusted his own precautions for making sure of privacy. "This is something new," he said. "I can re-direct any Fury I want to."

"Oh, sure," Danner said again.

"It's true. I'll show you. I can pull a Fury off any victim I choose."

"How?"

"That's my secret. Naturally. In effect, though, I've found a way to feed in false data, so the machines come out with the wrong verdict before conviction, or the wrong orders after conviction."

"But that's—dangerous, isn't it?"

"Dangerous?" Hartz looked at Danner under his sad eyebrows. "Well, yes. I think so. That's why I don't do it often. I've done it only once, as a matter of fact. Theoretically, I'd worked out the method. I tested it, just once. It worked. I'll do it again, to prove to you I'm telling the truth. After that I'll do it once again, to protect you. And that will be it. I don't want to upset the calculators any more than I have to. Once your job's done, I won't have to."

"Who do you want killed?"

Involuntarily Hartz glanced upward, toward the heights of the building where the top-rank executive offices were. "O'Reilly," he said.

Danner glanced upward too, as if he could see through the floor and observe the exalted shoe-soles of O'Reilly,

Controller of the Calculators, pacing an expensive carpet overhead.

"It's very simple," Hartz said. "I want his job."

"Why not do your own killing, then, if you're so sure you can stop the Furies?"

"Because that would give the whole thing away," Hartz said impatiently. "Use your head. I've got an obvious motive. It wouldn't take a calculator to figure out who profits most if O'Reilly dies. If I saved myself from a Fury, people would start wondering how I did it. But you've got no motive for killing O'Reilly. Nobody but the calculators would know, and I'll take care of them."

"How do I know you can do it?"

"Simple. Watch."

Hartz got up and walked quickly across the resilient carpet that gave his steps a falsely youthful bounce. There was a waist-high counter on the far side of the room, with a slanting glass screen on it. Nervously Hartz punched a button, and a map of a section of the city sprang out in bold lines on its surface.

"I've got to find a sector where a Fury's in operation now," he explained. The map flickered and he pressed the button again. The unstable outlines of the city streets wavered and brightened and then went out as he scanned the sections fast and nervously. Then a map flashed on which had three wavering streaks of colored light crisscrossing it, intersecting at one point near the center. The point moved very slowly across the map, at just about the speed of a walking man reduced to miniature in scale with the street he walked on. Around him the colored lines wheeled slowly, keeping their focus always steady on the single point.

"There," Hartz said, leaning forward to read the printed name of the street. A drop of sweat fell from his forehead onto the glass, and he wiped it uneasily away with his fingertip. "There's a man with a Fury assigned to him. All right, now. I'll show you. Look here."

Above the desk was a news-screen. Hartz clicked it on and watched impatiently while a street scene swam into focus. Crowds, traffic noises, people hurrying, people

loitering. And in the middle of the crowd a little oasis of isolation, an island in the sea of humanity. Upon that moving island two occupants dwelt, like a Crusoe and a Friday, alone. One of the two was a haggard man who watched the ground as he walked. The other islander in this deserted spot was a tall, shining, man-formed shape that followed at his heels.

As if invisible walls surrounded them, pressing back the crowds they walked through, the two moved in an empty space that closed in behind them, opened up before them. Some of the passersby stared, some looked away in embarrassment or uneasiness. Some watched with a frank anticipation, wondering perhaps at just what moment the Friday would lift his steel arm and strike the Crusoe dead.

"Watch, now," Hartz said nervously. "Just a minute. I'm going to pull the Fury off this man. Wait." He crossed to his desk, opened a drawer, bent secretively over it. Danner heard a series of clicks from inside, and then the brief chatter of tapped keys. "Now," Hartz said, closing the drawer. He moved the back of his hand across his forehead. "Warm in here, isn't it? Let's get a closer look. You'll see something happen in a minute."

Back to the news-screen. He flicked the focus switch and the street scene expanded, the man and his pacing jailor swooped upward into close focus. The man's face seemed to partake subtly of the impassive quality of the robot's. You would have thought they had lived a long time together, and perhaps they had. Time is a flexible element, infinitely long sometimes in a very short space.

"Wait until they get out of the crowd," Hartz said. "This mustn't be conspicuous. There, he's turning now."

The man, seeming to move at random, wheeled at an alley corner and went down the narrow, dark passage away from the thoroughfare. The eye of the news-screen followed him as closely as the robot.

"So you do have cameras that can do that," Danner said with interest. "I always thought so. How's it done? Are they spotted at every corner, or is it a beam trans—"

"Never mind," Hartz said. "Trade secret. Just watch.

We'll have to wait until—no, no! Look, he's going to try it now!"

The man glanced furtively behind him. The robot was just turning the corner in his wake. Hartz darted back to his desk and pulled the drawer open. His hand poised over it, his eyes watched the screen anxiously. It was curious how the man in the alley, though he could have no inkling that other eyes watched, looked up and scanned the sky, gazing directly for a moment into the attentive, hidden camera and the eyes of Hartz and Danner. They saw him take a sudden, deep breath, and break into a run.

From Hartz's drawer sounded a metallic click. The robot, which had moved smoothly into a run the moment the man did, checked itself awkwardly and seemed to totter on its steel feet for an instant. It slowed. It stopped like an engine grinding to a halt. It stood motionless.

At the edge of the camera's range you could see the man's face, looking backward, mouth open with shock as he saw the impossible happen. The robot stood there in the alley, making indecisive motions as if the new orders Hartz pumped into its mechanisms were grating against inbuilt orders in whatever receptor it had. Then it turned its steel back upon the man in the alley and went smoothly, almost sedately, away down the street, walking as precisely as if it were obeying valid orders, not stripping the very gears of society in its aberrant behavior.

You got one last glimpse of the man's face, looking strangely stricken, as if his last friend in the world had left him.

Hartz switched off the screen. He wiped his forehead again. He went to the glass wall and looked out and down as if he were half afraid the calculators might know what he had done. Looking very small against the background of the metal giants, he said over his shoulder, "Well, Danner?"

Was it well? There had been more talk, of course, more persuasion, a raising of the bribe. But Danner knew his mind had been made up from that moment. A calculated risk, and worth it. Well worth it. Except—

In the deathly silence of the restaurant all motion had stopped. The Fury walked calmly between the tables, threading its shining way, touching no one. Every face blanched, turned toward it. Every mind thought, "Can it be for me?" Even the entirely innocent thought, "This is the first mistake they've ever made, and it's come for me. The first mistake, but there's no appeal and I could never prove a thing." For while guilt had no meaning in this world, punishment did have meaning, and punishment could be blind, striking like the lightning.

Danner between set teeth told himself over and over, "Not for me. I'm safe. I'm protected. It hasn't come for me." And yet he thought how strange it was, what a coincidence, wasn't it, that there should be two murderers here under this expensive glass roof today? Himself, and the one the Fury had come for.

He released his fork and heard it clink on the plate. He looked down at it and the food, and suddenly his mind rejected everything around him and went diving off on a fugitive tangent like an ostrich into sand. He thought about food. How did asparagus grow? What did raw food look like? He had never seen any. Food came ready-cooked out of restaurant kitchens or automat slots. Potatoes, now. What did they look like? A moist white mash? No, for sometimes they were oval slices, so the thing itself must be oval. But not round. Sometimes you got them in long strips, squared off at the ends. Something quite long and oval, then, chopped into even lengths. And white, of course. And they grew underground, he was almost sure. Long, thin roots twining white arms among the pipes and conduits he had seen laid bare when the streets were under repair. How strange that he should be eating something like thin, ineffectual human arms that embraced the sewers of the city and writhed pallidly where the worms had their being. And where he himself, when the Fury found him, might. . . .

He pushed the plate away.

An indescribable rustling and murmuring in the room lifted his eyes for him as if he were an automaton. The Fury was halfway across the room now, and it was almost

funny to see the relief of those whom it had passed by. Two or three of the women had buried their faces in their hands, and one man had slipped quietly from his chair in a dead faint as the Fury's passing released their private dreads back into their hidden wells.

The thing was quite close now. It looked to be about seven feet tall, and its motion was very smooth, which was unexpected when you thought about it. Smoother than human motions. Its feet fell with a heavy, measured tread upon the carpet. Thud, thud, thud. Danner tried impersonally to calculate what it weighed. You always heard that they made no sound except for that terrible tread, but this one creaked very slightly somewhere. It had no features, but the human mind couldn't help sketching in lightly a sort of airy face upon that blank steel surface, with eyes that seemed to search the room.

It was coming closer. Now all eyes were converging toward Danner. And the Fury came straight on. It almost looked as if—

"No!" Danner said to himself. "Oh, no, this can't be!" He felt like a man in a nightmare, on the verge of waking. "Let me wake soon," he thought. "Let me wake *now*, before it gets here!"

But he did not wake. And now the thing stood over him, and the thudding footsteps stopped. There was the faintest possible creaking as it towered over his table, motionless, waiting, its featureless face turned toward his.

Danner felt an intolerable tide of heat surge up into his face—rage, shame, disbelief. His heart pounded so hard the room swam and a sudden pain like jagged lightning shot through his head from temple to temple.

He was on his feet, shouting.

"No, no!" he yelled at the impassive steel. "You're wrong! You've made a mistake! Go away, you damned fool! You're wrong, you're wrong!" He groped on the table without looking down, found his plate and hurled it straight at the armored chest before him. China shattered. Spilled food smeared a white and green and brown stain over the steel. Danner floundered out of his chair, around the table, past the tall metal figure toward the door.

All he could think of now was Hartz.

Seas of faces swam by him on both sides as he stumbled out of the restaurant. Some watched with avid curiosity, their eyes seeking his. Some did not look at all, but gazed at their plates rigidly or covered their faces with their hands. Behind him the measured tread came on, and the rhythmic faint creak from somewhere inside the armor.

The faces fell away on both sides and he went through a door without any awareness of opening it. He was in the street. Sweat bathed him and the air struck icy, though it was not a cold day. He looked blindly left and right, and then plunged for a bank of phone booths half a block away, the image of Hartz swimming before his eyes so clearly he blundered into people without seeing them. Dimly he heard indignant voices begin to speak and then die into awestruck silence. The way cleared magically before him. He walked in the newly created island of his isolation up to the nearest booth.

After he had closed the glass door the thunder of his own blood in his ears made the little sound-proofed booth reverberate. Through the door he saw the robot stand passionlessly waiting, the smear of spilled food still streaking its chest like some robotic ribbon of honor across a steel shirtfront.

Danner tried to dial a number. His fingers were like rubber. He breathed deep and hard, trying to pull himself together. An irrelevant thought floated across the surface of his mind. I forgot to pay for my dinner. And then: A lot of good the money will do me now. Oh, damn Hartz, damn him, damn him!

He got the number.

A girl's face flashed into sharp, clear colors on the screen before him. Good, expensive screens in the public booths in this part of town, his mind noted impersonally.

"This is Controller Hartz's office. May I help you?"

Danner tried twice before he could give his name. He wondered if the girl could see him, and behind him, dimly through the glass, the tall waiting figure. He couldn't tell, because she dropped her eyes immediately to what must have been a list on the unseen table before her.

"I'm sorry. Mr. Hartz is out. He won't be back today."

The screen drained of light and color.

Danner folded back the door and stood up. His knees were unsteady. The robot stood just far enough back to clear the hinge of the door. For a moment they faced each other. Danner heard himself suddenly in the midst of an uncontrollable giggling which even he realized verged on hysteria. The robot with the smear of food like a ribbon of honor looked so ridiculous. Danner to his dim surprise found that all this while he had been clutching the restaurant napkin in his left hand.

"Stand back," he said to the robot. "Let me out. Oh, you fool, don't you know this is a mistake?" His voice quavered. The robot creaked faintly and stepped back.

"It's bad enough to have you follow me," Danner said. "At least, you might be clean. A dirty robot is too much—too much—" The thought was idiotically unbearable, and he heard tears in his voice. Half-laughing, half-weeping, he wiped the steel chest clean and threw the napkin to the floor.

And it was at that very instant, with the feel of the hard chest still vivid in his memory, that realization finally broke through the protective screen of hysteria, and he remembered the truth. He would never in life be alone again. Never while he drew breath. And when he died, it would be at these steel hands, perhaps upon this steel chest, with the passionless face bent to his, the last thing in life he would ever see. No human companion, but the black steel skull of the Fury.

It took him nearly a week to reach Hartz. During the week, he changed his mind about how long it might take a man followed by a Fury to go mad. The last thing he saw at night was the streetlight shining through the curtains of his expensive hotel suite upon the metal shoulder of his jail. All night long, waking from uneasy slumber, he could hear the faint creaking of some inward mechanism functioning under the armor. And each time he woke it was to wonder whether he would ever wake again. Would the blow fall while he slept? And what kind of blow? How

did the Furies execute? It was always a faint relief to see the bleak light of early morning shine upon the watcher by his bed. At least he had lived through the night. But was this living? And was it worth the burden?

He kept his hotel suite. Perhaps the management would have liked him to go, but nothing was said. Possibly they didn't dare. Life took on a strange, transparent quality, like something seen through an invisible wall. Outside of trying to reach Hartz, there was nothing Danner wanted to do. The old desires for luxuries, entertainment, travel, had melted away. He wouldn't have traveled alone.

He did spent hours in the public library, reading all that was available about the Furies. It was here that he first encountered the two haunting and frightening lines Milton wrote when the world was small and simple—mystifying lines that made no certain sense to anybody until man created a Fury out of steel, in his own image.

But that two-handed engine at the door
Stands ready to smite once, and smite no more....

Danner glanced up at his own two-handed engine, motionless at his shoulder, and thought of Milton and the long ago times when life was simple and easy. He tried to picture the past. The twentieth century, when all civilizations together crashed over the brink in one majestic downfall to chaos. And the time before that, when people were . . . different, somehow. But how? It was too far and too strange. He could not imagine the time before the machines.

But he learned for the first time what had really happened, back there in his early years, when the bright world finally blinked out entirely and gray drudgery began. And the Furies were first forged in the likeness of man.

Before the really big wars began, technology advanced to the point where machines bred upon machines like living things, and there might have been an Eden on earth, with everybody's wants fully supplied, except that the social sciences fell too far behind the physical sciences.

When the decimating wars came on, machines and people fought side by side, steel against steel and man against man, but man was the more perishable. The wars ended when there were no longer two societies left to fight against each other. Societies splintered apart into smaller and smaller groups until a state very close to anarchy set in.

The machines licked their metal wounds meanwhile and healed each other as they had been built to do. They had no need for the social sciences. They went on calmly reproducing themselves and handing out to mankind the luxuries which the age of Eden had designed them to hand out. Imperfectly of course. Incompletely, because some of their species were wiped out entirely and left no machines to breed and reproduce their kind. But most of them minded their raw materials, refined them, poured and cast the needed parts, made their own fuel, repaired their own injuries and maintained their breed upon the face of the earth with an efficiency man never even approached.

Meanwhile mankind splintered and splintered away. There were no longer any real groups, not even families. Men didn't need each other much. Emotional attachments dwindled. Men had been conditioned to accept vicarious surrogates and escapism was fatally easy. Men reoriented their emotions to the Escape Machines that fed them joyous, impossible adventure and made the waking world seem too dull to bother with. And the birth rate fell and fell. It was a very strange period. Luxury and chaos went hand in hand, anarchy and inertia were the same thing. And still the birth rate dropped....

Eventually a few people recognized what was happening. Man as a species was on the way out. And man was helpless to do anything about it. But he had a powerful servant. So the time came when some unsung genius saw what would have to be done. Someone saw the situation clearly and set a new pattern in the biggest of the surviving electronic calculators. This was the goal he set: "Mankind must be made self-responsible again. You will make this your only goal until you achieve the end."

It was simple, but the changes it produced were worldwide and all human life on the planet altered drastically

because of it. The machines were an integrated society, if man was not. And now they had a single set of orders which all of them reorganized to obey.

So the days of the free luxuries ended. The Escape Machines shut up shop. Men were forced back into groups for the sake of survival. They had to undertake now the work the machines withheld, and slowly, slowly, common needs and common interests began to spawn the almost lost feeling of human unity again.

But it was so slow. And no machine could put back into man what he had lost—the internalized conscience. Individualism had reached its ultimate stage and there had been no deterrent to crime for a long while. Without family or clan relations, not even feud retaliation occurred. Conscience failed, since no man identified with any other.

The real job of the machines now was to rebuild in man a realistic superego to save him from extinction. A self-responsible society would be a genuinely interdependent one, the leader identifying with the group, and a realistically internalized conscience which would forbid and punish "sin"—the sin of injuring the group with which you identify.

And here the Furies came in.

The machines defined murder, under any circumstances, as the only human crime. This was accurate enough, since it is the only act which can irreplaceably destroy a unit of society.

The Furies couldn't prevent crime. Punishment never cures the criminal. But it can prevent others from committing crime through simple fear, when they see punishment administered to others. The Furies were the symbol of punishment. They overtly stalked the streets on the heels of their condemned victims, the outward and visible sign that murder is always punished, and punished most publicly and terribly. They were very efficient. They were never wrong. Or at least, in theory they were never wrong, and considering the enormous quantities of information stored by now in the analogue computers, it seemed likely

that the justice of the machines was far more efficient than that of humans could be.

Someday man would rediscover sin. Without it he had come near to perishing entirely. With it, he might resume his authority over himself and the race of mechanized servants who were helping him to restore his species. But until that day, the Furies would have to stalk the streets, man's conscience in metal guise, imposed by the machines man created a long time ago.

What Danner did during this time he scarcely knew. He thought a great deal of the old days when the Escape Machines still worked, before the machines rationed luxuries. He thought of this sullenly and with resentment, for he could see no point at all in the experiment mankind was embarked on. He had liked it better in the old days. And there were no Furies then, either.

He drank a good deal. Once he emptied his pockets into the hat of a legless beggar, because the man like himself was set apart from society by something new and terrible. For Danner it was the Fury. For the beggar it was life itself. Thirty years ago he would have lived or died unheeded, tended only by machines. That a beggar could survive at all, by begging, must be a sign that society was beginning to feel twinges of awakened fellow feeling with its members, but to Danner that meant nothing. He wouldn't be around long enough to know how the story came out.

He wanted to talk to the beggar, though the man tried to wheel himself away on his little platform.

"Listen," Danner said urgently, following, searching his pockets. "I want to tell you. It doesn't feel the way you think it would. It feels—"

He was quite drunk that night, and he followed the beggar until the man threw the money back at him and thrust himself away rapidly on his wheeled platform, while Danner leaned against a building and tried to believe in its solidity. But only the shadow of the Fury, falling across him from the street lamp, was real.

Later that night, somewhere in the dark, he attacked

the Fury. He seemed to remember finding a length of pipe somewhere, and he struck showers of sparks from the great, impervious shoulders above him. Then he ran, doubling and twisting up alleys, and in the end he hid in a dark doorway, waiting, until the steady footsteps resounded through the night.

He fell asleep, exhausted.

It was the next day that he finally reached Hartz.

"What went wrong?" Danner asked. In the past week he had changed a good deal. His face was taking on, in its impassivity, an odd resemblance to the metal mask of the robot.

Hartz struck the desk edge a nervous blow, grimacing when he hurt his hand. The room seemed to be vibrating not with the pulse of the machines below but with his own tense energy.

"*Something* went wrong," he said. "I don't know yet. I—"

"You don't know!" Danner lost part of his impassivity.

"Now wait." Hartz made soothing motions with his hands. "Just hang on a little longer. It'll be all right. You can—"

"How much longer have I got?" Danner asked. He looked over his shoulder at the tall Fury standing behind him, as if he were really asking the question of it, not Hartz. There was a feeling, somehow, about the way he said it that made you think he must have asked that question many times, looking up into the blank steel face, and would go on asking hopelessly until the answer came at last. But not in words . . .

"I can't even find that out," Hartz said. "Damn it, Danner, this was a risk. You knew that."

"You said you could control the computer. I saw you do it. I want to know why you didn't do what you promised."

"Something went wrong, I tell you. It should have worked. The minute this—business—came up I fed in the data that should have protected you."

"But what happened?"

Hartz got up and began to pace the resilient flooring. "I

just don't know. We don't understand the potentiality of the machines, that's all. I thought I could do it. But—"

"You *thought!*"

"I know I can do it. I'm still trying. I'm trying everything. After all, this is important to me, too. I'm working as fast as I can. That's why I couldn't see you before. I'm certain I can do it, if I can work this out my own way. Damn it, Danner, it's complex. And it's not like juggling a comptometer. Look at those things out there."

Danner didn't bother to look.

"You'd better do it," he said. "That's all."

Hartz said furiously, "Don't threaten me! Let me alone and I'll work it out. But don't threaten me."

"You're in this too," Danner said.

Hartz went back to his desk and sat down on the edge of it.

"How?" he asked.

"O'Reilly's dead. You paid me to kill him."

Hartz shrugged. "The Fury knows that," he said. "The computers know it. And it doesn't matter a damn bit. Your hand pulled the trigger, not mine."

"We're both guilty. If I suffer for it, you—"

"Now wait a minute. Get this straight. I thought you knew it. It's a basis of law enforcement, and always has been. Nobody's punished for intention. Only for actions. I'm no more responsible for O'Reilly's death than the gun you used on him."

"But you lied to me! You tricked me! I'll—"

"You'll do as I say, if you want to save yourself. I didn't trick you. I just made a mistake. Give me time and I'll retrieve it."

"How long?"

This time both men looked at the Fury. It stood impassive.

"I don't know how long," Danner answered his own question. "You say you don't. Nobody even knows how he'll kill me, when the time comes. I've been reading everything that's available to the public about this. Is it true that the method varies, just to keep people like me on

tenterhooks? And the time allowed—doesn't that vary too?"

"Yes, it's true. But there's a minimum time—I'm almost sure. You must still be within it. Believe me, Danner, I can still call off the Fury. You saw me do it. You know it worked once. All I've got to find out is what went wrong this time. But the more you bother me the more I'll be delayed. I'll get in touch with you. Don't try to see me again."

Danner was on his feet. He took a few quick steps toward Hartz, fury and frustration breaking up the impassive mask which despair had been forming over his face. But the solemn footsteps of the Fury sounded behind him. He stopped.

The two men looked at each other.

"Give me time," Hartz said. "Trust me, Danner."

In a way it was worse, having hope. There must until now have been a kind of numbness of despair that had kept him from feeling too much. But now there was a chance that after all he might escape into the bright and new life he had risked so much for—if Hartz could save him in time.

Now, for a period, he began to savor experience again. He bought new clothes. He traveled, though never, of course, alone. He even sought human companionship again and found it—after a fashion. But the kind of people willing to associate with a man under this sort of death sentence was not a very appealing type. He found, for instance, that some women felt strongly attracted to him, not because of himself or his money, but for the sake of his companion. They seemed enthralled by the opportunity for a close, safe brush with the very instrument of destiny. Over his very shoulder, sometimes, he would realize they watched the Fury in an ecstasy of fascinated anticipation. In a strange reaction of jealousy, he dropped such people as soon as he recognized the first coldly flirtatious glance one of them cast at the robot behind him.

He tried farther travel. He took the rocket to Africa, and

came back by way of the rain-forests of South America, but neither the night clubs nor the exotic newness of strange places seemed to touch him in any way that mattered. The sunlight looked much the same, reflecting from the curved steel surfaces of his follower, whether it shone over lion-covered savannahs or filtered through the hanging gardens of the jungles. All novelty grew dull quickly because of the dreadfully familiar thing that stood forever at his shoulder. He could enjoy nothing at all.

And the rhythmic beat of footfalls behind him began to grow unendurable. He used earplugs, but the heavy vibration throbbed through his skull in a constant measure like an eternal headache. Even when the Fury stood still, he could hear in his head the imaginary beating of its steps.

He bought weapons and tried to destroy the robot. Of course he failed. And even if he succeeded he knew another would be assigned to him. Liquor and drugs were no good. Suicide came more and more often into his mind, but he postponed that thought, because Hartz had said there was still hope.

In the end, he came back to the city to be near Hartz—and hope. Again he found himself spending most of his time in the library, walking no more than he had to because of the footsteps that thudded behind him. And it was here, one morning, that he found the answer. . . .

He had gone through all available factual material about the Furies. He had gone through all the literary references collated under that heading, astonished to find how many there were and how apt some of them had become—like Milton's two-handed engine—after the lapse of all these centuries. *"Those strong feet that followed, followed after,"* he read. *". . . with unhurrying chase, And unperturbed pace, Deliberate speed, majestic instancy. . . ."* He turned the page and saw himself and his plight more literally than any allegory:

I shook the pillaring hours
And pulled my life upon me; grimed with smears,
I stand amid the dust of the mounded years—
My mangled youth lies dead beneath the heap.

He let several tears of self-pity fall upon the page that pictured him so clearly.

But then he passed on from literary references to the library's store of filmed plays, because some of them were cross-indexed under the heading he sought. He watched Orestes hounded in modern dress from Argos to Athens with a single seven-foot robot Fury at his heels instead of the three snake-haired Erinyes of legend. There had been an outburst of plays on the theme when the Furies first came into usage. Sunk in a half-dream of his own boyhood memories when the Escape Machines still operated, Danner lost himself in the action of the films.

He lost himself so completely that when the familiar scene first flashed by him in the viewing booth he hardly questioned it. The whole experience was part of a familiar boyhood pattern and he was not at first surprised to find one scene more vividly familiar than the rest. But then memory rang a bell in his mind and he sat up sharply and brought his fist down with a bang on the stop-action button. He spun the film back and ran the scene over again.

It showed a man walking with his Fury through city traffic, the two of them moving in a little desert island of their own making, like a Crusoe with a Friday at his heels. . . . It showed the man turn into an alley, glance up at the camera anxiously, take a deep breath and break into a sudden run. It showed the Fury hesitate, make indecisive motions and then turn and walk quietly and calmly away in the other direction, its feet ringing on the pavement hollowly. . . .

Danner spun the film back again and ran the scene once more, just to make doubly sure. He was shaking so hard he could scarcely manipulate the viewer.

"How do you like that?" he muttered to the Fury behind him in the dim booth. He had by now formed a habit of talking to the Fury a good deal, in a rapid, mumbling undertone, not really aware he did it. "What do you make of that, you? Seen it before, haven't you? Familiar, isn't it? Isn't it! *Isn't it!* Answer me, you damned dumb hulk!" And reaching backward, he struck the robot across the chest as he would have struck Hartz if

he could. The blow made a hollow sound in the booth, but the robot made no other response, though when Danner looked back inquiringly at it, he saw the reflections of the over-familiar scene, running a third time on the screen, running in tiny reflection across the robot's chest and faceless head, as if it too remembered.

So now he knew the answer. And Hartz had never possessed the power he claimed. Or if he did, had no intention of using it to help Danner. Why should he? His risk was over now. No wonder Harz had been so nervous, running that film-strip off on a news-screen in his office. But the anxiety sprang not from the dangerous thing he was tampering with, but from sheer strain in matching his activities to the action in the play. How he must have rehearsed it, timing every move! And how he must have laughed, afterward.

"How long have I got?" Danner demanded fiercely, striking a hollow reverberation from the robot's chest. "How long? Answer me! Long enough?"

Release from hope was an ecstasy, now. He need not wait any longer. He need not try any more. All he had to do was get to Hartz and get there fast, before his own time ran out. He thought with revulsion of all the days he had wasted already, in travel and time-killing, when for all he knew his own last minutes might be draining away now. Before Hartz's did.

"Come along," he said needlessly to the Fury. "Hurry!"

It came, matching its speed to his, the enigmatic timer inside it ticking the moments away toward that instant when the two-handed engine would smite once, and smite no more.

Hartz sat in the Controller's office behind a brand-new desk, looking down from the very top of the pyramid now over the banks of computers that kept society running and cracked the whip over mankind. He sighed with deep content.

The only thing was, he found himself thinking a good deal about Danner. Dreaming of him, even. Not with guilt, because guilt implies conscience, and the long

schooling in anarchic individualism was still deep in the roots of every man's mind. But with uneasiness, perhaps.

Thinking of Danner, he leaned back and unlocked a small drawer which he had transferred from his old desk to the new. He slid his hand in and let his fingers touch the controls lightly, idly. Quite idly.

Two movements, and he could save Danner's life. For, of course, he had lied to Danner straight through. He could control the Furies very easily. He could save Danner, but he had never intended to. There was no need. And the thing was dangerous. You tamper once with a mechanism as complex as that which controlled society, and there would be no telling where the maladjustment might end. Chain-reaction, maybe, throwing the whole organization out of kilter. No.

He might someday have to use the device in the drawer. He hoped not. He pushed the drawer shut quickly, and heard the soft click of the lock.

He was Controller now. Guardian, in a sense, of the machines which were faithful in a way no man could ever be. *Quis custodiet,* Hartz thought. The old problem. And the answer was: Nobody. Nobody, today. He himself had no superiors and his power was absolute. Because of this little mechanism in the drawer, nobody controlled the Controller. Not an internal conscience, and not an external one. Nothing could touch him. . . .

Hearing the footsteps on the stairs, he thought for a moment he must be dreaming. He had sometimes dreamed that he was Danner, with those relentless footfalls thudding after him. But he was awake now.

It was strange that he caught the almost subsonic beat of the approaching metal feet before he heard the storming steps of Danner rushing up his private stairs. The whole thing happened so fast that time seemed to have no connection with it. First he heard the heavy, subsonic beat, then the sudden tumult of shouts and banging doors downstairs, and then last of all the thump, thump of Danner charging up the stairs, his steps so perfectly matched by the heavier thud of the robot's that the metal

trampling drowned out the tramp of flesh and bone and leather.

Then Danner flung the door open with a crash, and the shouts and tramplings from below funneled upward into the quiet office like a cyclone rushing toward the hearer. But a cyclone in a nightmare, because it would never get any nearer. Time had stopped.

Time had stopped with Danner in the doorway, his face convulsed, both hands holding the revolver because he shook so badly he could not brace it with one.

Hartz acted without any more thought than a robot. He had dreamed of this moment too often, in one form or another. If he could have tampered with the Fury to the extent of hurrying Danner's death, he would have done it. But he didn't know how. He could only wait it out, as anxiously as Danner himself, hoping against hope that the blow would fall and the executioner strike before Danner guessed the truth. Or gave up hope.

So Hartz was ready when trouble came. He found his own gun in his hand without the least recollection of having opened the drawer. The trouble was that time had stopped. He knew, in the back of his mind, that the Fury must stop Danner from injuring anybody. But Danner stood in the doorway alone, the revolver in both shaking hands. And farther back, behind the knowledge of the Fury's duty, Hartz's mind held the knowledge that the machines could be stopped. The Furies could fail. He dared not trust his life to their incorruptibility, because he himself was the source of a corruption that could stop them in their tracks.

The gun was in his hand without his knowledge. The trigger pressed his finger and the revolver kicked back against his palm, and the spurt of the explosion made the air hiss between him and Danner.

He heard his bullet clang on metal.

Time started again, running double-pace to catch up. The Fury had been no more than a single pace behind Danner after all, because its steel arm encircled him and its steel hand was deflecting Danner's gun. Danner had

fired, yes, but not soon enough. Not before the Fury reached him. Hartz's bullet struck first.

It struck Danner in the chest, exploding through him, and rang upon the steel chest of the Fury behind him. Danner's face smoothed out into a blankness as complete as the blankness of the mask above his head. He slumped backward, not falling because of the robot's embrace, but slowly slipping to the floor between the Fury's arm and its impervious metal body. His revolver thumped softly to the carpet. Blood welled from his chest and back.

The robot stood there impassive, a streak of Danner's blood slanting across its metal chest like a robotic ribbon of honor.

The Fury and the Controller of the Furies stood staring at each other. And the Fury could not, of course, speak, but in Hartz's mind it seemed to.

"Self-defense is no excuse," the Fury seemed to be saying. "We never punish intent, but we always punish action. Any act of murder. Any act of murder. . . ."

Hartz barely had time to drop his revolver in his desk drawer before the first of the clamorous crowd from downstairs came bursting through the door. He barely had the presence of mind to do it, either. He had not really thought the thing through this far.

It was, on the surface, a clear case of suicide. In a slightly unsteady voice he heard himself explaining. Everybody had seen the madman rushing through the office, his Fury at his heels. This wouldn't be the first time a killer and his Fury had tried to get at the Controller, begging him to call off the jailer and forestall the executioner. What had happened, Hartz told his underlings calmly enough, was that the Fury had naturally stopped the man from shooting Hartz. And the victim had then turned his gun upon himself. Powder-burns on his clothing showed it. (The desk was very near the door.) Backblast in the skin of Danner's hands would show he had really fired a gun.

Suicide. It would satisfy any human. But it would not satisfy the computers.

They carried the dead man out. They left Hartz and the

Fury alone, still facing each other across the desk. If anyone thought this was strange, nobody showed it.

Hartz himself didn't know if it was strange or not. Nothing like this had ever happened before. Nobody had ever been fool enough to commit murder in the very presence of a Fury. Even the Controller did not know exactly how the computers assessed evidence and fixed guilt. Should this Fury have been recalled, normally? If Danner's death were really suicide, would Hartz stand here alone now?

He knew the machines were already processing the evidence of what had really happened here. What he couldn't be sure of was whether this Fury had already received its orders and would follow him wherever he went from now on until the hour of his death. Or whether it simply stood motionless, waiting recall.

Well, it didn't matter. This Fury or another was already, in the present moment, in the process of receiving instructions about him. There was only one thing to do. Thank God there was something he *could* do.

So Hartz unlocked the desk drawer and slid it open, touched the clicking keys he had never expected to use. Very carefully he fed the coded information, digit by digit, into the computers. As he did, he looked out through the glass wall and imagined he could see down there in the hidden tapes the units of data fading into blankness and the new, false information flashing into existence.

He looked up at the robot. He smiled a little.

"Now you'll forget," he said. "You and the computers. You can go now. I won't be seeing you again."

Either the computers worked incredibly fast—as of course they did—or pure coincidence took over, because in only a moment or two the Fury moved as if in response to Hartz's dismissal. It had stood quite motionless since Danner slid through its arms. Now new orders animated it, and briefly its motion was almost jerky as it changed from one set of instructions to another. It almost seemed to bow, a stiff little bending motion that brought its head down to a level with Hartz's.

He saw his own face reflected in the blank face of the Fury. You could very nearly read an ironic note in that stiff bow, with the diplomat's ribbon of honor across the chest of the creature, symbol of duty discharged honorably. But there was nothing honorable about this withdrawal. The incorruptible metal was putting on corruption and looking back at Hartz with the reflection of his own face.

He watched it stalk toward the door. He heard it go thudding evenly down the stairs. He could feel the thuds vibrate in the floor, and there was a sudden sick dizziness in him when he thought the whole fabric of society was shaking under his feet.

The machines were corruptible.

Mankind's survival still depended on the computers, and the computers could not be trusted. Hartz looked down and saw that his hands were shaking. He shut the drawer and heard the lock click softly. He gazed at his hands. He felt their shaking echoed in an inner shaking, a terrifying sense of the instability of the world.

A sudden, appalling loneliness swept over him like a cold wind. He had never felt before so urgent a need for the companionship of his own kind. No one person, but people. Just people. The sense of human beings all around him, a very primitive need.

He got his hat and coat and went downstairs rapidly, hands deep in his pockets because of some inner chill no coat could guard against. Halfway down the stairs he stopped dead still.

There were footsteps behind him.

He dared not look back at first. He knew those footsteps. But he had two fears and he didn't know which was worse. The fear that a Fury was after him—and the fear that it was not. There would be a sort of insane relief if it really was, because then he could trust the machines after all, and this terrible loneliness might pass over him and go.

He took another downward step, not looking back. He heard the ominous footfall behind him, echoing his own. He sighed one deep sigh and looked back.

There was nothing on the stairs.

He went on down after a timeless pause, watching over his shoulder. He could hear the relentless feet thudding behind him, but no visible Fury followed. No visible Fury.

The Erinyes had struck inward again, and an invisible Fury of the mind followed Hartz down the stairs.

It was as if sin had come anew into the world, and the first man felt again the first inward guilt. So the computers had not failed, after all.

Hartz went slowly down the steps and out into the street, still hearing as he would always hear the relentless, incorruptible footsteps behind him that no longer rang like metal.

ALGIS BUDRYS

First to Serve

thei ar teetcing mi to reed n ryt n i
wil bee abel too do this beter then.

pimi

MAS 712, 820TH TDRC,
COMASAMPS, APO 15,
September 28

Leonard Stein, Editor,
INFINITY,
862 Union St.,
New York 24, N. Y.

Dear Len,

Surprise, et cetera

It looks like there will be some new H. E. Wood stories for *Infy* after all. By the time you get this, 820TH TDRC will have a new Project Engineer, COMASAMPS, and I will be back to the old Royal and the Perry Street lair.

Shed no tear for Junior Heywood, though. COMASAMPS and I have come to this parting with mutual eyes dry and multiple heads erect. There was no sadness in our parting—no bitterness, no weeping, no remorse. COMASAMPS—in one of its apparently limitless human personifications—simply patted me on my side

and told me to pick up my calipers and run along. I'll have to stay away from cybernetics for a while, of course, and I don't think I should write any robot stories in the interval, but, then, I never did like robot stories anyhow.

But all this is a long story—about ten thousand words, at least, which means a $300 net loss if I tell it now.

So go out and buy some fresh decks, I'll be in town next week, my love to the Associate and the kids, and first ace deals.

Vic Heywood

My name is really Prototype Mechanical Man I, but everybody calls me Pimmy, or sometimes Pim. I was assembled at the eight-twentieth teedeearcee on august 10, 1974. I don't know what man or teedeearcee or august 10, 1974, means, but Heywood says I will, tomorrow. What's tomorrow?

Pimmy

August 12, 1974

I'm still having trouble defining "man." Apparently, even the men can't do a very satisfactory job of that. The 820TDRC, of course, is the Eight Hundred and Twentieth Technical Development and Research Center of the Combined Armed Services Artificial and Mechanical Personnel Section. August 10, 1974, is the day before yesterday.

All this is very obvious, but it's good to record it.

I heard a very strange conversation between Heywood and Russell yesterday.

Russell is a small man, about thirty-eight, who's Heywood's top assistant. He wears glasses, and his chin is farther back than his mouth. It gives his head a symmetrical look. His voice is high, and he moves his hands rapidly. I think his reflexes are overtriggered.

Heywood is pretty big. He's almost as tall as I am. He moves smoothly—he's like me. You get the idea that all of his weight never touches the ground. Once in a while, though, he leaves a cigarette burning in an ashtray, and you can see where the end's been chewed to shreds.

Why is everybody at COMASAMPS so nervous?

Heywood was looking at the first entry in what I can now call my diary. He showed it to Russell.

"Guess you did a good job on the self-awareness tapes, Russ," Heywood said.

Russell frowned. "Too good, I think. He shouldn't have such a tremendous drive toward self-expression. We'll have to iron that out as soon as possible. Want me to set up a new tape?"

Heywood shook his head. "Don't see why. Matter of fact, with the intelligence we've given him, I think it's probably a normal concomitant." He looked up at me and winked.

Russell took his glasses off with a snatch of his hand and scrubbed them on his shirtsleeve. "I don't know. We'll have to watch him. We've got to remember he's a prototype—no different from an experimental automobile design, or a new dishwasher model. We expected bugs to appear. I think we've found one, and I think it ought to be eliminated. I don't like this personification he's acquired in our minds, either. This business of calling him by a nickname is all wrong. We've got to remember he's *not* an individual. We've got every right to tinker with him." He slapped his glasses back on and ran his hands over the hair the earpieces had disturbed. "He's just another machine. We can't lose sight of that."

Heywood raised his hands. "Easy, boy. Aren't you going too far off the deep end? All he's done is bat out a few words on a typewriter. Relax, Russ." He walked over to me and slapped my hip. "How about it, Pimmy? D'you feel like scrubbing the floor?"

"No opinion. Is that an order?" I asked.

Heywood turned to Russell. "Behold the rampant individual," he said. "No, Pimmy, no order. Cancel."

Russell shrugged, but he folded the page from my diary carefully, and put it in his breast pocket. I didn't mind. I never forget anything.

August 15, 1974

They did something to me on the Thirteenth. I can't

remember what. I've gone over my memory, but there's nothing. I can't remember.

Russell and Ligget were talking yesterday, though, when they inserted the autonomic cutoff, and ran me through on orders. I didn't mind that. I still don't. I can't.

Ligget is one of the small army of push-arounds that nobody knows for sure isn't CIC, but who solders wires while Heywood and Russell make up their minds about him.

I had just done four about-faces, shined their shoes, and struck a peculiar pose. I think there's something seriously wrong with Ligget.

Ligget said, "He responds well, doesn't he?"

"Mm-m—yes," Russel said abstractedly. He ran his glance down a column of figures on an Estimated Performance Spec chart. "Try walking on your hands, PMM One," he said.

I activated my gyroscope and reset my pedal locomotion circuits. I walked around the room on my hands.

Ligget frowned forcefully. "That looks good. How's it check with the spec's?"

"Better than," Russell said. "I'm surprised. We had a lot of trouble with him the last two days. Reacted like a zombie."

"Oh, yes? I wasn't in on that. What happened? I mean—what sort of control were you using?"

"Oh—" I could see that Russell wasn't too sure whether he should tell Ligget or not. I already had the feeling that the atmosphere of this project was loaded with dozens of crosscurrents and conflicting ambitions. I was going to learn a lot about COMASAMPS.

"Yes?" Ligget said.

"We had his individuality circuits cut out. Effectively, he was just a set of conditioned reflexes."

"You say he reacted like a zombie?"

"Definite automatism. Very slow reactions, and, of course, no initiative."

"You mean he'd be very slow in his response to orders under those conditions, right?" Ligget looked crafty behind Russell's back.

Russell whirled around. "He'd make a lousy soldier, if that's what CIC wants to know!"

Ligget smoothed out his face, and twitched his shoulders back. "I'm not a CIC snooper, if that's what you mean."

"You don't mind if I call you a liar, do you?" Russell said, his hands shaking.

"Not particularly," Ligget said, but he was angry behind his smooth face. It helps, having immobile features like mine. You get to understand the psychology of a man who tries for the same effect.

August 16, 1974

It bothers me, not having a diary entry for the fourteenth, either. Somebody's been working on me again.

I told Heywood about it. He shrugged. "Might as well get used to it, Pimmy. There'll be a lot of that going on. I don't imagine it's pleasant—I wouldn't like intermittent amnesia myself—but there's very little you can do about it. Put it down as one of the occupational hazards of being a prototype."

"But I don't *like* it," I said.

Heywood pulled the left side of his mouth into a straight line and sighed. "Like I said, Pimmy—I wouldn't either. On the other hand, you can't blame us if the new machine we're testing happens to know it's being tested, and resents it. We built the machine. Theoretically, it's our privilege to do anything we please with it, if that'll help us find out how the machine performs, and how to build better ones."

"But I'm *not* a machine!" I said.

Heywood put his lower lip between his teeth and looked up at me from under a raised eyebrow. "Sorry, Pim. I'm kind of afraid you are."

But I'm not! *I'M NOT!*

August 17, 1974

Russell and Heywood were working late with me last night. They did a little talking back and forth. Russell was

very nervous—and finally Heywood got a little impatient with him.

"All right," Heywood said, laying his charts down. "We're not getting anywhere, this way. You want to sit down and really talk about what's bothering you?"

Russell looked a little taken aback. He shook his head jerkily.

"No . . . no, I haven't got anything specific on my mind. Just talking. You know how it is." He tried to pretend he was very engrossed in one of the charts.

Heywood didn't let him off the hook, though. His eyes were cutting into Russell's face, peeling off layer after layer of misleading mannerism and baring the naked fear in the man.

"No, I don't know how it is." He put his hand on Russell's shoulder and turned him around to where the other man was facing him completely. "Now, look—if there's something chewing on you, let's have it. I'm not going to have this project gummed up by your secret troubles. Things are tough enough with everybody trying to pressure us into doing things their way, and none of them exactly sure of what that way *is*."

That last sentence must have touched something off in Russell, because he let his charts drop beside Heywood's and clawed at the pack of cigarettes in his breast pocket.

"That's exactly what the basic problem is," he said, his eyes a little too wide. He pushed one hand back and forth over the side of his face and walked back and forth aimlessly. Then a flood of words came out.

"We're working in the dark, Vic. In the dark, and somebody's in with us that's swinging clubs at our heads while we stumble around. We don't know who it is, we don't know if it's one or more than that, and we never know when the next swing is coming.

"Look—we're cybernetics engineers. Our job was to design a brain that would operate a self-propulsive unit designed to house it. That was the engineering problem, and we've got a tendency to continue looking at it in that light.

"But that's not the whole picture. We've got to keep in

mind that the only reason we were ever given the opportunity and the facilities was because somebody thought it might be a nice idea to turn out soldiers on a production line, just like they do the rest of the paraphernalia of war. And the way COMASAMPS looks at it is not in terms of a brain housed in an independently movable shell, but in terms of a robot which now has to be fitted to the general idea of what a soldier should be.

"Only nobody knows what the ideal soldier is like.

"Some say he ought to respond to orders with perfect accuracy and superhuman reflexes. Others say he ought to be able to think his way out of trouble, or improvise in a situation where his orders no longer apply, just like a human soldier. The ones who want the perfect automaton don't want him to be smart enough to realize he *is* an automaton—probably because they're afraid of the idea; and the ones who want him to be capable of human discretion don't want him to be human enough to be rebellious in a hopeless situation.

"And that's just the beginning. COMASAMPS may be a combined project, but if you think the Navy isn't checking up on the Army, and vice versa, with both of them looking over the Air Force's shoulder—Oh, you know that squirrel cage as well as I do!"

Russell gestured hopelessly. Heywood, who had been taking calm puffs on his cigarette, shrugged. "So? All we have to do is tinker around until we can design a sample model to fit each definition. Then they can run as many comparative field tests as they want to. It's their problem. Why let it get you?"

Russell flung his cigarette to the floor and stepped on it with all his weight. "Because we can't do it and you ought to know it as well as I do!" He pointed over at me. "There's your prototype model. He's got all the features that everybody wants—and cut-offs intended to take out the features that interfere with any one definition. We can cut off his individuality, and leave him the automaton some people want. We can leave him his individuality, cut off his volition, and give him general orders which he is then free to carry out by whatever means he thinks best.

Or, we can treat him like a human being—educate him by means of tapes, train him, and turn him loose on a job, the way we'd do with a human being."

The uneven tone built up in his voice as he finished what he was saying.

"But, if we reduce him to a machine that responds to orders as though they were pushbuttons, he's slow. He's pitifully slow, Vic, and he'd be immobilized within thirty seconds of combat. There's nothing we can do about that, either. Until somebody learns how to push electricity through a circuit faster than the laws of physics say it should go, what we'll have will be a ponderous, mindless thing that's no better than the remote-control exhibition jobs built forty years ago.

"All right, so that's no good. We leave him individuality, but we restrict it until it cuts his personality down to that of a slave. That's better. Under those conditions, he would, theoretically, be a better soldier than the average human. An officer could tell him to take a patrol out into a certain sector, and he'd do the best possible job, picking the best way to handle each step of the job as he came to it. But what does he do if he comes back, and the officer who gave him the orders is no longer there? Or, worse yet, if there's been a retreat, and there's nobody there? Or an armistice? What about that armistice? Can you picture this slave robot, going into stasis because he's got no orders to cover a brand-new situation?

"He might just as well not have gone on that patrol at all—because he can't pass on whatever he's learned, and because his job is now over, as far as he's concerned. The enemy could overrun his position, and he wouldn't do anything about it. He'd operate from order to order. And if an armistice were signed, he'd sit right where he was until a technician could come out, remove the soldier-orientation tapes, and replace them with whatever was finally decided on.

"Oh, you could get around the limitation, all right—by issuing a complex set of orders, such as: 'Go out on patrol and report back. If I'm not here, report to so-and-so. If there's nobody here, do this. If that doesn't work, try that.

If such-and-such happens, proceed as follows. But don't confuse such-and-such with that or this.' Can you imagine fighting a war on that basis? And what about that reorientation problem? How long would all those robots sit there before they could all be serviced—and how many man-hours and how much material would it take to do the job? Frankly, I couldn't think of a more cumbersome way to run a war if I tried.

"Or, we can build all our robots like streamlined Pimmys—like Pimmy when all his circuits are operating, without our test cutoffs. Only, then, we'd have artificial human beings. Human beings who don't wear out, that a hand-arm won't stop, and who don't need food or water as long as their power piles have a pebble-sized hunk of plutonium to chew on."

Russell laughed bitterly. "And Navy may be making sure Army doesn't get the jump on them, with Air Force doing its bit, but there's one thing all three of them are as agreed upon as they are about nothing else—they'll test automaton zombies and they'll test slaves, but one thing nobody wants us turning out is supermen. They've got undercover men under every lab bench, all keeping one eye on each other and one on us—and the whole thing comes down on our heads like a ton of cement if there's even the first whisper of an idea that we're going to build more Pimmys. The same thing happens if we don't give them the perfect soldier. *And the only perfect soldier is a Pimmy.* Pimmy could replace any man in any armed service—from a KP to a whole general staff, depending on what tapes he had. But he'd have to be a true individual to do it. And he'd be smarter than they are. They couldn't trust him. Not because he wouldn't work for the same objectives as they'd want, but because he'd probably do it in some way they couldn't understand.

"So they don't want any more Pimmys. This one test model is all they'll allow, because he can be turned into any kind of robot they want, but they won't take the whole Pimmy, with all his potentialities. They just want part of him."

The bitter laugh was louder. "We've got their perfect soldier, but they don't want him. They want something less—but that something less will never be the perfect soldier. So we work and work, weeks on end, testing, revising, redesigning. Why? We're marking time. We've got what they want, but they don't want it—but if we don't give it to them soon, they'll wipe out the project. And if we give them what they want, it won't really be what they want. Can't you see that? What's the matter with you, Heywood? Can't you see the blind alley we're in—only it's not a blind alley, because it has eyes, eyes under every bench, watching each other and watching us, always watching, never stopping, going on and never stopping, watching, eyes?"

Heywood had already picked up the telephone. As Russell collapsed completely, he began to speak into it, calling the Project hospital. Even as he talked, his eyes were coldly brooding, and his mouth was set in an expression I'd never seen before. His other hand was on Russell's twitching shoulder, moving gently as the other man sobbed.

August 25, 1974

Ligget is Heywood's new assistant. It's been a week since Russell's been gone.

Russell wasn't replaced for three days, and Heywood worked alone with me. He's engineer of the whole project, and I'm almost certain there must have been other things he could have worked on while he was waiting for a new assistant, but he spent all of his time in this lab with me.

His face didn't show what he thought about Russell. He's not like Ligget, though. Heywood's thoughts are private. Ligget's are hidden. But, every once in a while, while Heywood was working, he'd start to turn around and reach out, or just say "Jack—," as if he wanted something, and then he'd catch himself, and his eyes would grow more thoughtful.

I only understood part of what Russell had said that

night he was taken away, so I asked Heywood about it yesterday.

"What's the trouble, Pim?" he asked.

"Don't know, for sure. Too much I don't understand about this whole thing. If I knew what some of the words meant, I might not even have a problem."

"Shoot."

"Well, it's mostly what Russell was saying, that last night."

Heywood peeled a strip of skin from his upper lip by catching it between his teeth. "Yeah."

"What's a war, or what's war? Soldiers have something to do with it, but what's a soldier? I'm a robot—but why do they want to make more of me? Can I be a soldier and a robot at the same time? Russell kept talking about 'they,' and the Army, the Air Force, and the Navy. What're they? And are the CIC men the ones who are watching you and each other at the same time?"

Heywood scowled, and grinned ruefully at the same time. "That's quite a catalogue," he said. "And there's even more than that, isn't there, Pimmy?" He put his hand on my side and sort of patted me, the way I'd seen him do with a generator a few times. "O.K., I'll give you a tape on war and soldiering. That's the next step in the program anyway, and it'll take care of most of those questions."

"Thanks," I said. "But what about the rest of it?"

He leaned against a bench and looked down at the floor. "Well, 'they' are the people who instituted this program—the Secretary of Defense, and the people under him. They all agreed that robot personnel were just what the armed services needed, and they were right. The only trouble is, they couldn't agree among themselves as to what characteristics were desirable in the perfect soldier—or sailor, or airman. They decided that the best thing to do was to come up with a series of different models, and to run tests until they came up with the best one.

"Building you was my own idea. Instead of trying to build prototypes to fit each separate group of specifications, we built one all-purpose model who was, effectively speaking, identical with a human being in almost all re-

spects, with one major difference. By means of cut-offs in every circuit, we can restrict as much of your abilities as we want to, thus being able to modify your general characteristics to fit any one of the various specification groups. We saved a lot of time by doing that, and avoided a terrific nest of difficulties.

"Trouble is, we're using up all the trouble and time we saved. Now that they've got you, they don't want you. Nobody's willing to admit that the only efficient robot soldier is one with all the discretionary powers and individuality of a human being. They can't admit it, because people are afraid of anything that looks like it might be better than they are. And they won't trust what they're afraid of. So, Russell and I had to piddle around with a stupid series of tests in a hopeless attempt to come up with something practical that was nevertheless within the limitations of the various sets of specifications—which is ridiculous, because there's nothing wrong with you, but there's plenty wrong with the specs. They were designed by people who don't know the first thing about robots or robot thought processes—or the sheer mechanics of thinking, for that matter."

He shrugged. "But, they're the people with the authority and the money that's paying for this project—so Jack and I kept puttering, because those were the orders. Knowing that we had the perfect answer all the time, and that nobody would accept it, was what finally got Jack."

"What about you?" I asked.

He shrugged again. "I'm just waiting," he said: "Eventually they'll either accept you or not. They'll either commend me or fire me, and they might or might not decide it's all my fault if they're not happy. But there's nothing I can do about it, is there? So, I'm waiting.

"Meanwhile, there's the CIC. Actually, that's just a handy label. It happens to be the initials of one of the undercover agencies out of the whole group that infests this place. Every armed service has its own, and I imagine the government has its boys kicking around, too. We just picked one label to cover them all—it's simpler."

"Russell said they were always watching. But why are

they watching each other, too? Why should one armed service be afraid that another's going to get an advantage over it?"

Heywood's mouth moved into a half-amused grin. "That's what is known as human psychology, Pimmy. It'll help you to understand it, but if you can't, why, just be glad you haven't got it."

"Ligget's CIC, you know," I said. "Russell accused him of it. He denied it, but if he isn't actually in *the* CIC, then he's in something like it."

Heywood nodded sourly. "I know. I wouldn't mind if he had brains enough, in addition, to know one end of a circuit from the other."

He slapped my side again. "Pimmy, boy," he said. "We're going to have a lot of fun around here in the next few weeks. Yes, sir, a lot of fun."

August 26, 1974

Ligget was fooling around with me again. He's all right when Heywood's in the lab with me, but when he's alone, he keeps running me through unauthorized tests. What he's doing, actually, is to repeat all the tests Heywood and Russell ran, just to make sure. As long as he doesn't cut out my individuality, I can remember it all, and I guess there was nothing different about the results on any of the tests, because I can tell from his face that he's not finding what he wants.

Well, I hope he tells his bosses that Heywood and Russell were right. Maybe they'll stop this fooling.

Ligget's pretty dumb. After every test, he looks me in the eye and tells me to forget the whole thing. What does he think I am—Trilby?

And I don't understand some of the test performances at all. There *is* something wrong with Ligget.

September 2, 1974

I hadn't realized, until now, that Heywood and Russell hadn't told anyone what they thought about this whole project, but, viewing that tape on war and soldiering, and

the way the military mind operates, I can see where nobody would have accepted their explanations.

Ligget caught on to the whole thing today. Heywood came in with a new series of test charts, Ligget took one look at them, and threw them on the table. He sneered at Heywood and said, "Who do you think you're kidding?"

Heywood looked annoyed and said, "All right, what's eating you?"

Ligget's face got this hidden crafty look on it. "How long did you think you could keep this up, Heywood? This test is no different from the ones you were running three weeks ago. There hasn't been any progress since then, and there's been no attempt to make any. What's your explanation?"

"Uh-huh." Heywood didn't look particularly worried. "I was wondering if you were *ever* going to stumble across it."

Ligget looked mad. "That attitude won't do you any good. Now, come on, quit stalling. Why were you and Russell sabotaging the project?"

"Oh, stop being such a pompous lamebrain, will you?" Heywood said disgustedly. "Russell and I weren't doing any sabotaging. We've been following our orders to the last letter. We built the prototype, and we've been testing the various modifications ever since. Anything wrong with that?"

"You've made absolutely no attempt to improve the various modifications. There hasn't been an ounce of progress in this project for the last twenty days.

"Now, look, Heywood"—Ligget's voice became wheedling—"I can understand that you might have what you'd consider a good reason for all this. What is it—political, or something? Maybe it's your conscience. Don't you *want* to work on something that's eventually going to be applied to war? I wish you'd tell me about it. If I could understand your reasons, it would be that much easier for you. Maybe it's too tough a problem. Is that it, Heywood?"

Heywood's face got red. "No, it's not. If you think—" He stopped, dug his fingers at the top of the table, and got control of himself again.

"No," he said in a quieter, but just as deadly, voice.

"I'm as anxious to produce an artificial soldier as anybody else. And I'm not too stupid for the job, either. If *you* had any brains, you'd see that I already have."

That hit Ligget between the eyes. "You have? Where is it, and *why haven't you reported your success?* What is this thing?" He pointed at me. "Some kind of a decoy?"

Heywood grimaced. "No, you double-dyed jackass, that's your soldier."

"What?"

"Sure. Strip those fifteen pounds of cutoffs out of him, redesign his case for whatever kind of ground he's supposed to operate on, feed him the proper tapes, and that's it. The perfect soldier—as smart as any human ever produced, and a hundred times the training and toughness, overnight. Run them out by the thousands. Print your circuits, bed your transistors in silicone rubber, and pour the whole brew into his case. Production difficulties? Watchmaking's harder."

"*No!*" Ligget's eyes gleamed. "And I worked on this with you! *Why haven't you reported this!*" he repeated.

Heywood looked at him pityingly. "Haven't you got it through your head? Pimmy's the perfect soldier—all of him, with all his abilities. That includes individuality, curiosity, judgment—and intelligence. Cut one part of that, and he's no good. You've got to take the whole cake, or none at all. One way you starve—and the other way you choke."

Ligget had gone white. "You mean, we've got to take the superman—or we don't have anything."

"Yes, you fumbling jerk!"

Ligget looked thoughtful. He seemed to forget Heywood and me as he stared down at his shoetops. "They won't go for it," he muttered. "Suppose they decide they're better fit to run the world than we are?"

"That's the trouble," Heywood said, "They are. They've got everything a human being has, plus incredible toughness and the ability to learn instantaneously. You know what Pimmy did? The day he was assembled, he learned to read and write, after a fashion. How? By listening to me read a paragraph out of a report, recording the sounds, and looking at the report afterwards. He

matched the sounds to the letters, recalled what sort of action on Russell's and my part the paragraph had elicited, and sat down behind a typewriter. That's all."

"They'd junk the whole project before they let something like that run around loose!" The crafty look was hovering at the edges of Ligget's mask again. "All right, so you've got an answer, but it's not an acceptable one. But why haven't you pushed any of the other lines of investigation?"

"Because there aren't any," Heywood said disgustedly. "Any other modification, when worked out to its inherent limits, is worse than useless. You've run enough tests to find out."

"All right!" Ligget's voice was high. "Why didn't you report failure, then, instead of keeping on with this shilly-shallying?"

"Because I haven't failed, you moron!" Heywood exploded. "I've got the answer. I've got Pimmy. There's nothing wrong with him—the defect's in the way people are thinking. And I've been going crazy, trying to think of a way to change the people. To hell with modifying the robot! He's as perfect as you'll get within the next five years. It's the people who'll have to change!"

"Uh-huh." Ligget's voice was careful. "I see. You've gone as far as you can within the limits of your orders—and you were trying to find a way to exceed them, in order to force the armed services to accept robots like Pimmy." He pulled out his wallet, and flipped it open. There was a piece of metal fastened to one flap.

"Recognize this, Heywood?"

Heywood nodded.

"All right, then, let's go and talk to a few people."

Heywood's eyes were cold and brooding again. He shrugged.

The lab door opened, and there was another one of the lab technicians there. "Go easy, Ligget," he said. He walked across the lab in rapid strides. His wallet had a different badge in it. "Listening from next door," he explained. "All right, Heywood," he said, "*I'm* taking you in." He shouldered Ligget out of the way. "Why don't you guys learn to stay in your own jurisdiction," he told him.

Ligget's face turned red, and his fists clenched, but the other man must have had more weight behind him, because he didn't say anything.

Heywood looked over at me, and raised a hand. "So long, Pimmy," he said. He and the other man walked out of the lab, with Ligget trailing along behind them. As they got the door open, I saw some other men standing out in the hall. The man who had come into the lab cursed. "*You* guys!" he said savagely. "This is *my* prisoner, see, and if you think—"

The door closed, and I couldn't hear the rest of what they said, but there was a lot of arguing before I heard the sound of all their footsteps going down the hall in a body.

Well, that's about all, I guess. Except for this other thing. It's about Ligget, and I hear he's not around any more. But you might be interested.

September 4, 1974

I haven't seen Heywood, and I've been alone in the lab all day. But Ligget came in last night. I don't think I'll see Heywood again.

Ligget came in late at night. He looked as though he hadn't slept, and he was very nervous. But he was drunk, too—I don't know where he got the liquor.

He came across the lab floor, his footsteps very loud on the cement, and he put his hands on his hips and looked up at me.

"Well, superman," he said in a tight, edgy voice, "you've lost your buddy for good, the dirty traitor. And now you're next. You know what they're going to do to you?" He laughed. "You'll have lots of time to think it over."

He paced back and forth in front of me. Then he spun around suddenly and pointed his finger at me. "Thought you could beat the race of men, huh? Figured you were smarter than we were, didn't you? But we've got you now! You're going to learn that you can't try to fool around with the human animal, because he'll pull you down. He'll claw and kick you until you collapse. That's the way men are, robot. Not steel and circuits—flesh and blood and muscles. Flesh that fought its way out of the sea and out of

the jungle, muscle that crushed everything that ever stood in his way, and blood that's spilled for a million years to keep the human race on top. *That's* the kind of an organism *we* are, robot."

He paced some more and spun again. "You never had a chance."

Well, I guess that *is* all. The rest of it, you know about. You can pull the transcriber plug out of here now, I guess. Would somebody say good-by to Heywood for me—and Russell, too, if that's possible?

COVERING MEMORANDUM,
Blalock, Project Engineer,
to
Hall, Director,
820TH TDRC, COMASAMPS

September 21, 1974

Enclosed are the transcriptions of the robot's readings from his memory-bank "diary," as recorded this morning. The robot is now enroute to the Patuxent River, the casting of the concrete block having been completed with the filling of the opening through which the transcription line was run.

As Victor Heywood's successor to the post of Project Engineer, I'd like to point out that the robot was incapable of deceit, and that this transcription, if read at Heywood's trial, will prove that his intentions were definitely not treasonous, and certainly motivated on an honest belief that he was acting in the best interests of the original directive for the project's initiation.

In regard to your Memorandum 8-4792-H of yesterday, a damage report is in process of preparation and will be forwarded to you immediately on its completion.

I fully understand that Heywood's line of research is to be considered closed. Investigations into what Heywood termed the "zombie" and "slave" type of robot organization have already begun in an improvised laboratory, and I expect preliminary results within the next ten days.

Preliminary results on the general investigation of other

possible types of robot orientation and organization are in, copies attached. I'd like to point out that they are extremely discouraging.

(Signed)
H. E. Blalock, Project Engineer,
820TH TDRC, COMASAMPS

September 25, 1974

PERSONAL LETTER
FROM HALL, DIRECTOR,
820TH TDRC, COMASAMPS,
to
SECRETARY OF DEFENSE

Dear Vinnie,

Well, things are finally starting to settle down out here. You were right, all this place needed was a housecleaning from top to bottom.

I think we're going to let this Heywood fellow go. We can't prove anything on him—frankly, I don't think there was anything to prove. Russell, of course, is a closed issue. His chance of ever getting out of the hospital is rated as ten per cent.

You know, considering the mess that robot made of the lab, I'd almost be inclined to think that Heywood was right. Can you imagine what a fighter that fellow would have been, if his loyalty had been channeled to some abstract like Freedom, instead of to Heywood? But we can't take the chance. Look at the way the robot's gone amnesic about killing Ligget while he was wrecking the lab. It was something that happened accidentally. It wasn't supposed to happen, so the robot forgot it. Might present difficulties in a war.

So, we've got this Blalock fellow down from M.I.T. He spends too much time talking about Weiner, but he's all right, otherwise.

I'll be down in a couple of days. Appropriations committee meeting. You know how it is. Everybody knows we need the money, but they want to argue about it, first.

Well, that's human nature, I guess.

See you,

Ralph

SUPPLEMENT TO CHARTS:
Menace to Navigation.

Patuxent River, at a point forty-eight miles below Folsom, bearings as below.

Midchannel. Concrete block, 15x15x15. Not dangerous except at extreme low tide.

WALTER M. MILLER, JR.

I Made You

IT HAD DISPOSED of the enemy, and it was weary. It sat on the crag by night. Gaunt, frigid, wounded, it sat under the black sky and listened to the land with its feet, while only its dishlike ear moved in slow patterns that searched the surface of the land and the sky. The land was silent, airless. Nothing moved, except the feeble thing that scratched in the cave. It was good that nothing moved. It hated sound and motion. It was in its nature to hate them. About the thing in the cave, it could do nothing until dawn. The thing muttered in the rocks—

"Help me! Are you all dead? Can't you hear me? This is Sawyer. Sawyer calling anybody, Sawyer calling anybody—"

The mutterings were irregular, without pattern. It filtered them out, refusing to listen. All was seeping cold. The sun was gone, and there had been near-blackness for two hundred and fifty hours, except for the dim light of the sky-orb which gave no food, and the stars by which it told the time.

It sat wounded on the crag and expected the enemy. The enemy had come charging into the world out of the unworld during the late afternoon. The enemy had come brazenly, with neither defensive maneuvering nor offensive fire. It had destroyed them easily—first the big lumbering enemy that rumbled along on wheels, and then the

small enemies that scurried away from the gutted hulk. It had picked them off one at a time, except for the one that crept into the cave and hid itself beyond a break in the tunnel.

It waited for the thing to emerge. From its vantage point atop the crag, it could scan broken terrain for miles around, the craters and crags and fissures, the barren expanse of dust-flat that stretched to the west, and the squarish outlines of the holy place near the tower that was the center of the world. The cave lay at the foot of a cliff to the southeast, only a thousand yards from the crag. It could guard the entrance to the cave with its small spitters, and there was no escape for the lingering trace of enemy.

It bore the mutterings of the hated thing even as it bore the pain of its wounds, patiently, waiting for a time of respite. For many sunrises there had been pain, and still the wounds were unrepaired. The wounds dulled some of its senses and crippled some of its activators. It could no longer follow the flickering beam of energy that would lead it safely into the unworld and across it to the place of creation. It could no longer blink out the pulses that reflected the difference between healer and foe. Now there was only foe.

"Colonel Aubrey, this is Sawyer. Answer me! I'm trapped in a supply cache. I think the others are dead. It blasted us as soon as we came near. Aubrey from Sawyer, Aubrey from Sawyer. Listen! I've got only one cylinder of oxygen left, you hear? Colonel, answer me!"

Vibrations in the rock, nothing more—only a minor irritant to disturb the blessed stasis of the world it guarded. The enemy was destroyed, except for the lingering trace in the cave. The lingering trace was neutralized however, and did not move.

Because of its wounds, it nursed a brooding anger. It could not stop the damage signals that kept firing from its wounded members, but neither could it accomplish the actions that the agonizing signals urged it to accomplish. It sat and suffered and hated on the crag.

It hated the night, for by night there was no food. Each

day it devoured sun, strengthened itself for the long, long watch of darkness, but when dawn came, it was feeble again, and hunger was a fierce passion within. It was well, therefore, that there was peace in the night, that it might conserve itself and shield its bowels from the cold. If the cold penetrated the insulating layers, thermal receptors would begin firing warning signals, and agony would increase. There was much agony. And, except in time of battle, there was no pleasure except in devouring sun.

To protect the holy place, to restore stasis to the world, to kill enemy—these were the pleasures of battle. It knew them.

And it knew the nature of the world. It had learned every inch of land out to the pain perimeter, beyond which it could not move. And it had learned the surface features of the demiworld beyond, learned them by scanning with its long-range senses. The world, the demiworld, the unworld—these were Outside, constituting the universe.

"Help me, help me, help me! This is Captain John Harbin Sawyer, Autocyber Corps, Instruction and Programming Section, currently of Salvage Expedition Lunar-Sixteen. Isn't anybody alive on the Moon? Listen! Listen to me! I'm sick. I've been here God knows how many days . . . in a suit. It stinks. Did you ever live in a suit for days? I'm sick. Get me out of here!"

The enemy's place was unworld. If the enemy approached closer than the outer range, it must kill; this was a basic truth that it had known since the day of creation. Only the healers might move with impunity over all the land, but now the healers never came. It could no longer call them nor recognize them—because of the wound.

It knew the nature of itself. It learned of itself by introspecting damage, and by internal scanning. It alone was "being." All else was of the outside. It knew its functions, its skills, its limitations. It listened to the land with its feet. It scanned the surface with many eyes. It tested the skies with a flickering probe. In the ground, it felt the faint seisms and random noise. On the surface, it saw the faint glint of starlight, the heat-loss from the cold

terrain, and the reflected pulses from the tower. In the sky, it saw only stars, and heard only the pulse-echo from the faint orb of Earth overhead. It suffered the gnawings of ancient pain, and waited for the dawn.

After an hour, the thing began crawling in the cave. It listened to the faint scraping sounds that came through the rocks. It lowered a more sensitive pickup and tracked the sounds. The remnant of enemy was crawling softly toward the mouth of the cave. It turned a small spitter toward the black scar at the foot of the Earthlit cliff. It fired a bright burst of tracers toward the cave, and saw them ricochet about the entrance in bright but noiseless streaks over the airless land.

"You dirty greasy deadly monstrosity, let me alone! You ugly juggernaut, I'm Sawyer. Don't you remember? I helped to train you ten years ago. You were a rookie under me . . . heh heh! Just a dumb autocyber rookie . . . with the firepower of a regiment. Let me go. Let me go!"

The enemy-trace crawled toward the entrance again. And again a noiseless burst of machine-gun fire spewed about the cave, driving the enemy fragment back. More vibrations in the rock—

"I'm your friend. The war's over. It's been over for months . . . Earthmonths. Don't you get it, Grumbler? 'Grumbler'—we used to call you that back in your rookie days—before we taught you how to kill. Grumbler. Mobile autocyber fire control. Don't you know your pappy, son?"

The vibrations were an irritant. Suddenly angry, it wheeled around on the crag, gracefully maneuvering its massive bulk. Motors growling, it moved from the crag onto the hillside, turned again, and lumbered down the slope. It charged across the flatlands and braked to a halt fifty yards from the entrance to the cave. Dust geysers sprayed up about its caterpillars and fell like jets of water in the airless night. It listened again. All was silent in the cave.

"Go 'way, sonny," quavered the vibrations after a time. *"Let pappy starve in peace."*

It aimed the small spitter at the center of the black opening and hosed two hundred rounds of tracers into the cave. It waited. Nothing moved inside. It debated the use of radiation grenade, but its arsenal was fast depleting. It listened for a time, watching the cave, looming five times taller than the tiny flesh-thing that cowered inside. Then it turned and lumbered back across the flat to resume its watch from the crag. Distant motion, out beyond the limits of the demiworld, scratched feebly at the threshold of its awareness—but the motion was too remote to disturb.

The thing was scratching in the cave again.

"I'm punctured, do you hear? I'm punctured. A shard of broken rock. Just a small leak, but a slap-patch won't hold. My suit! Aubrey from Sawyer, Aubrey from Sawyer. Base Control from Moonwagon Sixteen, Message for you, over. He he. Gotta observe procedure. I got shot! I'm punctured. Help!"

The thing made whining sounds for a time, then: *"All right, it's only my leg. I'll pump the boot full of water and freeze it. So I lose a leg. Whatthehell, take your time."* The vibrations subsided into whining sounds again.

It settled again on the crag, its activators relaxing into a lethargy that was full of gnawing pain. Patiently it awaited the dawn.

The movement toward the south was increasing. The movement nagged at the outer fringes of the demiworld, until at last the movement became an irritant. Silently, a drill slipped down from its belly. The drill gnawed deep into the rock, then retracted. It slipped a sensitive pickup into the drill hole and listened carefully to the ground.

A faint purring in the rocks—mingled with the whining from the cave.

It compared the purring with recorded memories. It remembered similar purrings. The sound came from a rolling object far to the south. It tried to send the pulses that asked "Are you friend or foe," but the sending organ was inoperative. The movement, therefore, was enemy—but still beyond range of its present weapons.

Lurking anger, and expectation of battle. It stirred restlessly on the crag, but kept its surveillance of the cave. Suddenly there was disturbance on a new sensory channel, vibrations similar to those that came from the cave; but this time the vibrations came across the surface, through the emptiness, transmitted in the long-wave spectra.

"Moonwagon Sixteen from Command Runabout, give us a call. Over."

Then silence. It expected a response from the cave, at first—since it knew that one unit of enemy often exchanged vibratory patterns with another unit of enemy. But no answer came. Perhaps the long-wave energy could not penetrate the cave to reach the thing that cringed inside.

"Salvage Sixteen, this is Aubrey's runabout. What the devil happened to you? Can you read me? Over!"

Tensely it listened to the ground. The purring stopped for a time as the enemy paused. Minutes later, the motion resumed.

It awoke an emissary ear twenty kilometers to the southwest, and commanded the ear to listen, and to transmit the patterns of the purring noise. Two soundings were taken, and from them, it derived the enemy's precise position and velocity. The enemy was proceeding to the north, into the edge of the demiworld. Lurking anger flared into active fury. It gunned its engines on the crag. It girded itself for battle.

"Salvage Sixteen, this is Aubrey's runabout. I assume your radio rig is unoperative. If you can hear us, get this: we're proceeding north to five miles short of magnapult range. We'll stop there and fire an autocyb rocket into zone Red-Red. The warhead's a radio-to-sonar transceiver. If you've got a seismitter that's working, the transceiver will act as a relay stage. Over."

It ignored the vibratory pattern and rechecked its battle gear. It introspected its energy storage, and tested its weapon activators. It summoned an emissary eye and waited a dozen minutes while the eye crawled crablike from the holy place to take up a watch-post near the

entrance of the cave. If the enemy remnant tried to emerge, the emissary eye would see, and report, and it could destroy the enemy remnant with a remote grenade catapult.

The purring in the ground was louder. Having prepared itself for the fray, it came down from the crag and grumbled southward at cruising speed. It passed the gutted hulk of the Moonwagon, with its team of overturned tractors. The detonation of the magnapult canister had broken the freightcar sized vehicle in half. The remains of several two-legged enemy appurtenances were scattered about the area, tiny broken things in the pale Earthlight. Grumbler ignored them and charged relentlessly southward.

A sudden wink of light on the southern horizon! Then a tiny dot of flame arced upward, traversing the heavens. Grumbler skidded to a halt and tracked its path. A rocket missile. It would fall somewhere in the east half of zone Red-Red. There was no time to prepare to shoot it down. Grumbler waited—and saw that the missile would explode harmlessly in a nonvital area.

Seconds later, the missile paused in flight, reversing direction and sitting on its jets. It dropped out of sight behind an outcropping. There was no explosion. Nor was there any activity in the area where the missile had fallen. Grumbler called an emissary ear, sent it migrating toward the impact point to listen, then continued South toward the pain perimeter.

"Salvage Sixteen, this is Aubrey's runabout," came the long-wave vibrations. *"We just shot the radio-seismitter relay into Red-Red. If you're within five miles of it, you should be able to hear."*

Almost immediately, a response from the cave, heard by the emissary ear that listened to the land near the tower: *"Thank God! He he he he—Oh, thank God!"*

And simultaneously, the same vibratory pattern came in long-wave patterns from the direction of the missile-impact point. Grumbler stopped again, momentarily confused, angrily tempted to lob a magnapult canister across the broken terrain toward the impact point. But the emis-

sary ear reported no physical movement from the area. The enemy to the south was the origin of the disturbances. If it removed the major enemy first, it could remove the minor disturbances later. It moved on to the pain perimeter, occasionally listening to the meaningless vibrations caused by the enemy.

"Salvage Sixteen from Aubrey. I hear you faintly. Who is this, Carhill?"

"Aubrey! A voice—A real voice—Or am I going nuts?"

"Sixteen from Aubrey, Sixteen from Aubrey. Stop babbling and tell me who's talking. What's happening in there? Have you got Grumbler immobilized?"

Spasmodic choking was the only response.

"Sixteen from Aubrey. Snap out of it! Listen, Sawyer, I know it's you. Now get hold of yourself, man! What's happened?"

"Dead . . . they're all dead but me."

"STOP THAT IDIOTIC LAUGHING!"

A long silence, then, scarcely audible: *"O.K., I'll hold onto myself. Is it really you, Aubrey?"*

"You're not having hallucinations, Sawyer. We're crossing zone Red in a runabout. Now tell me the situation. We've been trying to call you for days."

"Grumbler let us get ten miles into zone Red-Red, and then he clobbered us with a magnapult canister."

"Wasn't your I.F.F. working?"

"Yes, but Grumbler's isn't. After he blasted the wagon, he picked off the other four that got out alive—He he he he . . . Did you ever see a Sherman tank chase a mouse, colonel?"

"Cut it out, Sawyer! Another giggle out of you, and I'll flay you alive."

"Get me out! My leg! Get me out!"

"If we can. Tell me your present situation."

"My suit . . . I got a small puncture—Had to pump the leg full of water and freeze it. Now my leg's dead. I can't last much longer."

"The situation, Sawyer, the situation! Not your aches and pains."

The vibrations continued, but Grumbler screened them out for a time. There was rumbling fury on an Earthlit hill.

It sat with its engines idling, listening to the distant movements of the enemy to the south. At the foot of the hill lay the pain perimeter; even upon the hilltop, it felt the faint twinges of warning that issued from the tower, thirty kilometers to the rear at the center of the world. It was in communion with the tower. If it ventured beyond the perimeter, the communion would slip out-of-phase, and there would be blinding pain and detonation.

The enemy was moving more slowly now, creeping north across the demi-world. It would be easy to destroy the enemy at once, if only the supply of rocket missiles were not depleted. The range of the magnapult hurler was only twenty-five kilometers. The small spitters would reach, but their accuracy was close to zero at such range. It would have to wait for the enemy to come closer. It nursed a brooding fury on the hill.

"Listen, Sawyer, if Grumbler's I.F.F. isn't working, why hasn't he already fired on this runabout?"

"That's what sucked us in too, Colonel. We came into zone Red and nothing happened. Either he's out of long-range ammo, or he's getting cagey, or both. Probably both."

"Mmmp! Then we'd better park here and figure something out."

"Listen . . . there's only one thing you can do. Call for a telecontrolled missile from the Base."

"To destroy Grumbler? You're out of your head, Sawyer. If Grumbler's knocked out, the whole area around the excavations gets blown sky high . . . to keep them out of enemy hands. You know that."

"You expect me to care?"

"Stop screaming, Sawyer. Those excavations are the most valuable property on the Moon. We can't afford to lose them. That's why Grumbler was staked out. If they got blown to rubble, I'd be court-martialed before the debris quit falling."

The response was snarling and sobbing. *"Eight hours oxygen. Eight hours, you hear? You stupid, merciless—"*

The enemy to the south stopped moving at a distance of twenty-eight kilometers from Grumbler's hill—only three thousand meters beyond magnapult range.

A moment of berserk hatred. It lumbered to-and-fro in a frustrated pattern that was like a monstrous dance, crushing small rocks beneath its treads, showering dust into the valley. Once it charged down toward the pain perimeter, and turned back only after the agony became unbearable. It stopped again on the hill, feeling the weariness of lowered energy supplies in the storage units.

It paused to analyze. It derived a plan.

Gunning its engines, it wheeled slowly around on the hilltop, and glided down the northern slope at a stately pace. It sped northward for half a mile across the flatland, then slowed to a crawl and maneuvered its massive bulk into a fissure, where it had cached an emergency store of energy. The battery-trailer had been freshly charged before the previous sundown. It backed into feeding position and attached the supply cables without hitching itself to the trailer.

It listened occasionally to the enemy while it drank hungrily from the energy-store, but the enemy remained motionless. It would need every erg of available energy in order to accomplish its plan. It drained the cache. Tomorrow, when the enemy was gone, it would drag the trailer back to the main feeders for recharging, when the sun rose to drive the generators once again. It kept several caches of energy at strategic positions throughout its domain, that it might never be driven into starved inability to act during the long lunar night. It kept its own house in order, dragging the trailers back to be recharged at regular intervals.

"I don't know what I can do for you, Sawyer," came the noise of the enemy. *We don't dare destroy Grumbler, and there's not another autocyber crew on the Moon. I'll have to call Terra for replacements. I can't send men into*

zone Red-Red if Grumbler's running berserk. It'd be murder."

"For the love of God, Colonel—"

"Listen, Sawyer, you're the autocyber man. You helped train Grumbler. Can't you think of some way to stop him without detonating the mined area?"

A protracted silence. Grumbler finished feeding and came out of the fissure. It moved westward a few yards, so that a clear stretch of flat land lay between itself and the hill at the edge of the pain perimeter, half a mile away. There it paused, and awoke several emissary ears, so that it might derive the most accurate possible fix of the enemy's position. One by one, the emissary ears reported.

"Well, Sawyer?"

"My leg's killing me."

"Can't you think of anything?"

"Yeah—but it won't do me any good. I won't live [illegible] long."

"Well, let's hear it."

"Knock out his remote energy storage units, and [illegible] run him ragged at night."

"How long would it take?"

"Hours—after you found all his remote supply [illegible] and blasted them."

It analyzed the reports of the emissary ears, and calculated a precise position. The enemy runabout was 2.7 kilometers beyond the maximum range of the magnapult—as creation had envisioned the maximum. But creation was imperfect, even inside.

It loaded a canister onto the magnapult's spindle. Contrary to the intentions of creation, it left the canister *locked to the loader.* This would cause pain. But it would prevent the canister from moving during the first few microseconds after the switch was closed, while the magnetic field was still building toward full strength. It would not release the canister until the field clutched it fiercely and with full effect, thus imparting slightly greater energy to the canister. This procedure it had invented for itself, thus transcending creation.

"Well, Sawyer, if you can't think of anything else—"

"I DID THINK OF SOMETHING ELSE!" the answering vibrations screamed. *"Call for a telecontrolled missile! Can't you understand, Aubrey? Grumbler murdered eight men from your command."*

"You taught him how, Sawyer."

There was a long and ominous silence. On the flat land to the north of the hill, Grumbler adjusted the elevation of the magnapult slightly, keyed the firing switch to a gyroscope, and prepared to charge. Creation had calculated the maximum range when the weapon was at a standstill.

"He he he he he—" came the patterns from the thing in the cave.

It gunned its engines and clutched the drive-shafts. It rolled toward the hill, gathering speed, and its mouth was full of death. Motors strained and howled. Like a thundering bull, it rumbled toward the south. It hit maximum velocity at the foot of the slope. It lurched sharply upward. As the magnapult swept up to correct elevation, the gyroscope closed the circuit.

A surge of energy. The clenching fist of the field gripped the canister, tore it free of the loader, hurled it high over the broken terrain toward the enemy. Grumbler skidded to a halt on the hilltop.

"Listen, Sawyer, I'm sorry, but there's nothing—"

The enemy's voice ended with a dull snap. A flare of light came briefly from the southern horizon, and died.

"He he he he he—" said the thing in the cave.

Grumbler paused.

THRRRUMMMP! came the shocking wave through the rocks.

Five emissary ears relayed their recordings of the detonation from various locations. It studied them, it analyzed. The detonation had occurred less than fifty meters from the enemy runabout. Satiated, it wheeled around lazily on the hilltop and rolled northward toward the center of the world. All was well.

"Aubrey, you got cut off," grunted the thing in the cave. *"Call me, you coward . . . call me. I want to make certain you hear."*

Grumbler, as a random action, recorded the meaningless noise of the thing in the cave, studied the noise, rebroadcast it on the long-wave frequency: "Aubrey, you got cut off. Call me, you coward . . . call me. I want to make certain you hear."

The seismitter caught the long-wave noise and reintroduced it as vibration in the rocks.

The thing screamed in the cave. Grumbler recorded the screaming noise, and rebroadcast it several times.

"Aubrey . . . Aubrey, where are you . . . AUBREY! Don't desert me don't leave me here—"

The thing in the cave became silent.

It was a peaceful night. The stars glared unceasingly from the blackness and the pale terrain was haunted by Earthlight from the dim crescent in the sky. Nothing moved. It was good that nothing moved. The holy place was at peace in the airless world. There was blessed stasis.

Only once did the thing stir again in the cave. So slowly that Grumbler scarcely heard the sound, it crawled to the entrance and lay peering up at the steel behemoth on the crag.

It whispered faintly in the rocks. *"I made you, don't you understand? I'm human. I made you—"*

Then with one leg dragging behind, it pulled itself out into the Earthglow and turned as if to look up at the dim crescent in the sky. Gathering fury, Grumbler stirred on the crag, and lowered the black maw of a grenade launcher.

"I made you," came the meaningless noise.

It hated noise and motion. It was in its nature to hate them. Angrily, the grenade launcher spoke. And then there was blessed stasis for the rest of the night.

GORDON R. DICKSON

Monkey Wrench

CARY HARMON was not an ungifted young man. He had the intelligence to carve himself a position as a Lowland society lawyer, which on Venus is not easy to do. And he had the discernment to consolidate that position by marrying into the family of one of the leading drug-exporters. But, nevertheless, from the scientific viewpoint, he was a layman; and laymen, in their ignorance, should never be allowed to play with delicate technical equipment; for the result will be trouble, as surely as it is the first time a baby gets its hands on a match.

His wife was a high-spirited woman; and would have been hard to handle at times if it had not been for the fact that she was foolish enough to love him. Since he did not love her at all, it was consequently both simple and practical to terminate all quarrels by dropping out of sight for several days until her obvious fear of losing him for good brought her to a proper humility. He took good care, each time he disappeared, to pick some new and secure hiding place where past experience or her several years' knowledge of his habits would be no help in locating him. Actually, he enjoyed thinking up new and undiscoverable bolt-holes, and made a hobby out of discovering them.

Consequently, he was in high spirits the gray winter afternoon he descended unannounced on the weather sta-

tion of Burke McIntyre, high in the Lonesome Mountains, a jagged, kindless chain on the deserted shorelands of Venus' Northern Sea. He had beaten a blizzard to the dome with minutes to spare, and now, with his small two-place flier safely stowed away, and a meal of his host's best supplies under his belt, he sat reveling in the comfort of his position and listening to the hundred and fifty mile-per-hour, subzero winds lashing impotently at the arching roof overhead.

"Ten minutes more," he said to Burke, "and I'd have had a tough time making it."

"Tough!" snorted Burke. He was a big, heavy-featured blond man with a kindly contempt for all of humanity aside from the favored class of meteorologists. "You Lowlanders are too used to that present day Garden of Eden you have down below. Ten minutes more and you'd have been spread over one of the peaks around here to wait for the spring searching party to gather your bones."

Cary laughed in cheerful disbelief.

"Try it, if you don't believe me," said Burke. "No skin off my nose if you don't have the sense to listen to reason. Take your bug up right now if you want."

"Not me," Cary's brilliant white teeth flashed in his swarthy face. "I know when I'm comfortable. And that's no way to treat your guest, tossing him out into the storm when he's just arrived."

"Some guest," rumbled Burke. "I shake hands with you after the graduation exercises, don't hear a word from you for six years and then suddenly you're knocking at my door here in the hinterland."

"I came on impulse," said Cary. "It's the prime rule of my life. Always act on impulse, Burke. It puts the sparkle in existence."

"And leads you to an early grave," Burke supplemented.

"If you have the wrong impulses," said Cary. "But then if you get sudden urges to jump off cliffs or play Russian Roulette then you're too stupid to live, anyway."

"Cary," said Burke heavily, "you're a shallow thinker."

"And you're a stodgy one," grinned Cary. "Suppose you quit insulting me and tell me something about yourself. What's this hermit's existence of yours like? What do you do?"

"What do I do?" repeated Burke. "I work."

"But just how?" Cary said, settling himself cozily back into his chair. "Do you send up balloons? Catch snow in a pail to find how much fell? Take sights on the stars? Or what?"

Burke shook his head at him and smiled tolerantly.

"Now what do you want to know for?" he asked. "It'll just go in one ear and out the other."

"Oh, some of it might stick," said Cary. "Go ahead, anyhow."

"Well, if you insist on my talking to entertain you," he answered, "I don't do anything so picturesque. I just sit at a desk and prepare weather data for transmission to the Weather Center down at Capital City."

"Aha!" Cary said, waggling a lazy forefinger at him in reproof. "I've got you now. You've been laying down on the job. You're the only one here; so if you don't take observations, who does?"

"You idiot!" said Burke. "The machine does, of course. These stations have a Brain to do that."

"That's worse," Cary answered. "You've been sitting here warm and comfortable while some poor little Brain scurries around outside in the snow and does all your work for you."

"Oh, shut up!" Burke said. "As a matter of fact you're closer to the truth than you think, and it wouldn't do you any harm to learn a few things about the mechanical miracles that let you lead a happy ignorant life. Some wonderful things have been done lately in the way of equipping these stations."

Cary smiled mockingly.

"I mean it," Burke went on, his face lighting up. "The Brain we've got here now is the last word in that type of installation. As a matter of fact, it was just put in recently —up until a few months back we had to work with a job that was just a collector and computer. That is, it collected

the weather data around this station and presented it to you. Then you had to take it and prepare it for the calculator, which would chew on it for a while and then pass you back results which you again had to prepare for transmission downstairs to the Center."

"Fatiguing, I'm sure," murmured Cary, reaching for the drink placed handily on the end table beside his chair. Burke ignored him, caught up in his own appreciation of the mechanical development about which he was talking.

"It kept you busy, for the data came in steadily; and you were always behind since a batch would be accumulating while you were working up the previous batch. A station like this is the center-point for observational mechs posted at points over more than five hundred square miles of territory; and, being human, all you had time to do was skim the cream off the reports and submit a sketchy picture to the calculator. And then there was a certain responsibility involved in taking care of the station and yourself.

"But now"—Burke leaned forward determinedly and stabbed a thick index finger at his visitor—"we've got a new installation that takes the data directly from the observational mechs—all of it—resolves it into the proper form for the calculator to handle it, and carries it right on through to the end results. All I still have to do is prepare the complete picture from the results and shoot it downstairs.

"In addition, it runs the heating and lighting plants, automatically checks on the maintenance of the station. It makes repairs and corrections on verbal command and has a whole separate section for the consideration of theoretical problems."

"Sort of a little tin god," said Cary, nastily. He was used to attention and subconsciously annoyed by the fact that Burke seemed to be waxing more rhapsodic over his machine than the brilliant and entertaining guest who, as far as the meteorologist could know, had dropped in under the kind impulse to relieve a hermit's boring existence.

Unperturbed, Burke looked at him and chuckled.

"No," he replied. "A *big* tin god, Cary."

The lawyer stiffened slightly in his chair. Like most people who are fond of poking malicious fun at others, he gave evidence of a very thin skin when the tables were turned.

"Sees all, knows all, tells all, I suppose," he said sarcastically. "Never makes a mistake. Infallible."

"You might say that," answered Burke, still with a grin on his face. He was enjoying the unusual pleasure of having the other on the defensive. But Cary, adept at verbal battles, twisted like an eel.

"Too bad, Burke," he said. "But those qualities alone don't quite suffice for elevating your gadget to godhood. One all-important attribute is lacking—invulnerability. Gods never break down."

"Neither does this."

"Come now, Burke," chided Cary, "you mustn't let your enthusiasm lead you into falsehood. No machine is perfect. A crossed couple of wires, a burnt out tube and where is your darling? Plunk! Out of action."

Burke shook his head.

"There aren't any wires," he said. "It uses beamed connections. And as for burnt out tubes, they don't even halt consideration of a problem. The problem is just shifted over to a bank that isn't in use at the time; and automatic repairs are made by the machine itself. You see, Cary, in this model, no bank does one specific job, alone. Any one of them—and there's twenty, half again as many as this station would ever need—can do any job from running the heating plant to operating the calculator. If something comes up that's too big for one bank to handle, it just hooks in one or more of the idle banks—and so on until it's capable of dealing with the situation."

"Ah," said Cary, "but what if something *did* come up that required all the banks and more too? Wouldn't it overload them and burn itself out?"

"You're determined to find fault with it, aren't you, Cary," answered Burke. "The answer is no. It wouldn't. Theoretically it's possible for the machine to bump into a

problem that would require all or more than all of its banks to handle. For example, if this station suddenly popped into the air and started to fly away for no discernible reason, the bank that first felt the situation would keep reaching out for help until all the banks were engaged in considering it, until it crowded out all the other functions the machine performs. But, even then, it wouldn't overload and burn out. The banks would just go on considering the problem until they had evolved a theory that explained why we were flying through the air and what to do about returning us to our proper place and functions."

Cary straightened up and snapped his fingers.

"Then it's simple," he said. "I'll just go in and tell your machine—on the verbal hookup—that we're flying through the air."

Burke gave a sudden roar of laughter.

"Cary, you dope!" he said. "Don't you think the men who designed the machine took the possibility of verbal error into account? You say that the station is flying through the air. The machine immediately checks by making its own observations; and politely replies, 'Sorry, your statement is incorrect' and forgets the whole thing."

Cary's eyes narrowed and two spots of faint color flushed the tight skin over his cheekbones; but he held his smile.

"There's the theoretical section," he murmured.

"There is," said Burke, greatly enjoying himself, "and you could use it by going in and saying 'consider the false statement or data—this station is flying through the air' and the machine would go right to work on it."

He paused, and Cary looked at him expectantly.

"But—" continued the meteorologist, triumphantly, "it would consider the statement with only those banks not then in use; and it would give up the banks whenever a section using real data required them."

He finished, looking at Cary with quizzical good humor. But Cary said nothing; only looked back at him as a weasel might look back at a dog that has cornered it against the wall of a chicken run.

"Give up, Cary," he said at last. "It's no use. Neither

God nor Man nor Cary Harmon can interrupt my Brain in the rightful performance of its duty."

And Cary's eyes glittered, dark and withdrawn beneath their narrowed lids. For a long second, he just sat and looked, and then he spoke.

"I could do it," he said, softly.

"Do what?" asked Burke.

"I could gimmick your machine," said Cary.

"Oh, forget it!" boomed Burke. "Don't take things so seriously, Cary. What if you can't think of a monkey wrench to throw into the machinery? Nobody else could, either."

"I said I could do it," repeated Cary.

"Once and for all," answered Burke, "it's impossible. Now stop trying to pick flaws in something guaranteed flawless and let's talk about something else."

"I will bet you," said Cary, speaking with a slow, steady intensity, "five thousand credits that if you will leave me alone with your machine for one minute I can put it completely out of order."

"Forget it, will you?" exploded Burke. "I don't want to take your money, even if five thousand *is* the equivalent of a year's salary for me. The trouble with you is, Cary, you never could stand to lose at anything. Now, forget it!"

"Put up or shut up," said Cary.

Burke took a deep breath.

"Now look," he said, the beginnings of anger rumbling in his deep voice. "Maybe I did wrong to needle you about the machine. But you've got to get over the idea that I can be bullied into admitting that you're right. You've got no conception of the technology that's behind the machine, and no idea of how certain I am that you, at least, can't do anything to interfere with its operation. You think that there's a slight element of doubt in my mind and that you can bluff me out by proposing an astronomical bet. Then, if I won't bet, you'll tell yourself you've won. Now listen, I'm not just ninety-nine point nine, nine, nine, nine, per cent sure of myself. I'm one hundred per cent sure of myself and the reason I won't bet you is

because that would be robbery; and besides, once you'd lost, you'd hate me for winning the rest of your life."

"The bet still stands," said Cary.

"All right!" roared Burke, jumping to his feet. "If you want to force the issue, suit yourself. It's a bet."

Cary grinned and got up, following him out of the pleasant, spacious sitting room, where warm lamps dispelled the gray gloom of the snow-laden sky beyond the windows, and into a short, metal-walled corridor where the ceiling tubes blazed in efficient nakedness. They followed this for a short distance to a room where the wall facing the corridor and the door set in it were all of glass.

Here Burke halted.

"There's the machine," he said, pointing through the transparency of the wall and turning to Cary behind him. "If you want to communicate with it verbally, you speak into that grille there. The calculator is to your right; and that inner door leads down to the room housing the lighting and heating plants. But if you're thinking of physical sabotage, you might as well give up. The lighting and heating systems don't even have emergency manual controls. They're run by a little atomic pile that only the machine can be trusted to handle—that is, except for an automatic setup that damps the pile in case lightning strikes the machine or some such thing. And you couldn't get through the shielding in a week. As for breaking through to the machine up here, that panel in which the grille is set is made of two-inch thick steel sheets with their edges flowed together under pressure."

"I assure you," said Cary. "I don't intend to damage a thing."

Burke looked at him sharply, but there was no hint of sarcasm in the smile that twisted the other's thin lips.

"All right," he said, stepping back from the door. "Go ahead. Can I wait here, or do you have to have me out of sight?"

"Oh, by all means, watch," said Cary. "We machine-gimmickers have nothing to hide." He turned mockingly to Burke, and lifted his arms. "See? Nothing up my right sleeve. Nothing up my left."

"Go on," interrupted Burke roughly. "Get it over with. I want to get back to my drink."

"At once," said Cary, and went in through the door, closing it behind him.

Through the transparent wall, Burke watched him approach the panel in line with the speaker grille and stop some two feet in front of it. Having arrived at this spot, he became utterly motionless, his back to Burke, his shoulders hanging relaxed and his hands motionless at his side. For the good part of a minute, Burke strained his eyes to discover what action was going on under the guise of Cary's apparent immobility. Then an understanding struck him and he laughed.

"Why," he said to himself, "he's bluffing right up to the last minute, hoping I'll get worried and rush in there and stop him."

Relaxed, he lit a cigarette and looked at his watch. Some forty-five seconds to go. In less than a minute, Cary would be coming out, forced at last to admit defeat--that is, unless he had evolved some fantastic argument to prove that defeat was really victory. Burke frowned. It was almost pathological, the way Cary had always refused to admit the superiority of anyone or anything else; and unless some way was found to soothe him he would be a very unpleasant companion for the remaining days that the storm held him marooned with Burke. It would be literally murder to force him to take off in the tornado velocity winds and a temperature that must be in the minus sixties by this time. At the same time, it went against the meteorologist's grain to crawl for the sake of congeniality—

The vibration of the generator, half-felt through the floor and the soles of his shoes, and customarily familiar as the motion of his own lungs, ceased abruptly. The fluttering streamers fixed to the ventilator grille above his head ceased their colorful dance and dropped limply down as the rush of air that had carried them, ceased. The lights dimmed and went out, leaving only the gray and ghostly light from the thick windows at each end of the corridor

to illuminate the passage and the room. The cigarette dropped unheeded from Burke's fingers and in two swift strides he was at the door and through it.

"What have you done?" he snapped at Cary.

The other looked mockingly at him, walked across to the nearer wall of the room and leaned his shoulder blades negligently against it.

"That's for you to find out," he said, his satisfaction clearly evident.

"Don't be insane—" began the meteorologist. Then, checking himself like a man who has no time to lose, he whirled on the panel and gave his attention to the instruments on its surface.

The pile was damped. The ventilating system was shut off and the electrical system was dead. Only the power in the storage cells of the machine itself was available, for the operating light still glowed redly on the panel. The great outside doors, wide enough to permit the ingress and exit of a two-man flier, were closed, and would remain that way, for they required power to open or close them. Visio, radio, and teletype were alike, silent and lifeless through lack of power.

But the machine still operated.

Burke stepped to the grille and pressed the red alarm button below it, twice.

"Attention," he said. "The pile is damped and all fixtures besides yourself lack power. Why is this?"

There was no response, though the red light continued to glow industriously on the panel.

"Obstinate little rascal, isn't it?" said Cary from the wall.

Burke ignored him, punching the button again, sharply.

"Reply!" he ordered. "Reply at once! What is the difficulty? Why is the pile not operating?"

There was no answer.

He turned to the calculator and played his fingers expertly over the buttons. Fed from the stored power within the machine, the punched tape rose in a fragile white arc and disappeared through a slot in the panel. He finished his punching and waited.

There was no answer.

For a long moment he stood there, staring at the calculator as if unable to believe that, even in this last hope, the machine had failed him. Then he turned slowly and faced Cary.

"What have you done?" he repeated dully.

"Do you admit you were wrong?" Cary demanded.

"Yes," said Burke.

"And do I win the bet?" persisted Cary gleefully.

"Yes."

"Then I'll tell you," the lawyer said. He put a cigarette between his lips and puffed it alight; then blew out a long streamer of smoke which billowed out and hung cloudily in the still air of the room, which, lacking heat from the blowers, was cooling rapidly. "This fine little gadget of yours may be all very well at meteorology, but it's not very good at logic. Shocking situation, when you consider the close relation between mathematics and logic."

"What did you do?" reiterated Burke hoarsely.

"I'll get to it," said Cary. "As I say, it's a shocking situation. Here is this infallible machine of yours, worth, I suppose, several million credits, beating its brains out over a paradox."

"A paradox!" the words from Burke were almost a sob.

"A paradox," sang Cary, "a most ingenious paradox." He switched back to his speaking voice. "Which, in case you don't know, is from Gilbert and Sullivan's 'Pirates of Penzance.' It occurred to me while you were bragging earlier that while your little friend here couldn't be damaged, it might be immobilized by giving it a problem too big for its mechnical brain cells to handle. And I remembered a little thing from one of my pre-law logic courses—an interesting little affair called Epimenides Paradox. I don't remember just how it was orginally phrased—those logic courses were dull, sleepy sort of businesses, anyway—but for example, if I say to you 'all lawyers are liars,' how can you tell whether the statement is true or false, since I am a lawyer and, if it is true, must be lying when I say that all lawyers are liars? But, on the other hand, if I am

lying, then all lawyers are not liars, and the statement is false, i.e., a lying statement. If the statement is false, it is true, and if true, false, and so on, so where are you?"

Cary broke off suddenly into a peal of laughter.

"You should see your own face, Burke," he shouted. "I never saw anything so bewildered in my life—anyway, I just changed this around and fed it to the machine. While you waited politely outside, I went up to the machine and said to it, 'You must reject the statement I am now making to you, because all the statements I make are incorrect.' "

He paused and looked at the meteorologist.

"Do you see, Burke? It took that statement of mine in and considered it for rejecting. But it could not reject it without admitting that it was correct, and how could it be correct when it stated that all statements I made were incorrect. You see . . . yes, you do see, I can see it in your face. Oh, if you could only look at yourself now. The pride of the meteorology service, undone by a paradox."

And Cary went off into another fit of laughter that lasted for a long minute. Every time he would start to recover, a look at Burke's wooden face, set in lines of utter dismay, would set him off again. The meteorologist neither moved, nor spoke, but stared at his guest as if he were a ghost.

Finally, weak from merriment, Cary started to sober up. Chuckling feebly, he leaned against the wall, took a deep breath and straightened up. A shiver ran through him, and he turned up the collar of his tunic.

"Well," he said. "Now that you know what the trick was, Burke, suppose you get your pet back to its proper duties again. It's getting too cold for comfort and that daylight coming through the windows isn't the most cheerful thing in the world, either."

But Burke made no move toward the panel. His eyes were fixed and they bored into Cary as unmovingly as before. Cary snickered a little at him.

"Come on, Burke," he said. "Man the pumps. You can recover from your shock sometime afterwards. If it's the bet that bothers you, forget it. I'm too well off myself to

need to snatch your pennies. And if it's the failure of Baby, here, don't feel too bad. It did better than I expected. I thought it would just blow a fuse and quit work altogether, but I see it's still busy and devoting every single bank to obtaining a solution. I should imagine"—Cary yawned—that it's working toward evolving a theory of types. *That* would give it the solution. Probably could get it, too, in a year or so."

Still Burke did not move. Cary looked at him oddly.

"What's wrong?" he asked irritatedly.

Burke's mouth worked, a tiny speck of spittle flew from one corner of it.

"You—" he said. The word came tearing from his throat like the hoarse grunt of a dying man.

"What—"

"You fool!" ground out Burke, finding his voice. "You stupid idiot! You insane moron!"

"Me? Me?" cried Cary. His voice was high in protest, almost like a womanish scream. "I was right!"

"Yes, you were right," said Burke. "You were too right. How am I supposed to get the machine's mind off this problem and on to running the pile for heat and light, when all its circuits are taken up in considering your paradox? What can *I* do, when the Brain is deaf, and dumb, and blind?"

The two men looked at each other across the silent room. The warm breath of their exhalations made frosty plumes in the still air; and the distant howling of the storm, deadened by the thick walls of the station, seemed to grow louder in the silence, bearing a note of savage triumph.

The temperature inside the station was dropping very fast—

PHILIP K. DICK

Imposter

"ONE OF THESE DAYS I'm going to take time off," Spence Olham said at first-meal. He looked around at his wife. "I think I've earned a rest. Ten years is a long time."

"And the Project?"

"The war will be won without me. This ball of clay of ours isn't really in much danger." Olham sat down at the table and lit a cigarette. "The newsmachines alter dispatches to make it appear the Outspacers are right on top of us. You know what I'd like to do on my vacation? I'd like to take a camping trip in those mountains outside of town, where we went that time. Remember? I got poison oak and you almost stepped on a gopher snake."

"Sutton Wood?" Mary began to clear away the food dishes. "The Wood was burned a few weeks ago. I thought you knew. Some kind of a flash fire."

Olham sagged. "Didn't they even try to find the cause?" His lips twisted. "No one cares any more. All they can think of is the war." He clamped his jaws together, the whole picture coming up in his mind, the Outspacers, the war, the needle ships.

"How can we think about anything else?"

Olham nodded. She was right, of course. The dark little ships out of Alpha Centauri had by-passed the Earth

cruisers easily, leaving them like helpless turtles. It had been one-way fights, all the way to Terra.

All the way, until the protec-bubble was demonstrated by Westinghouse Labs. Thrown around the major Earth cities and finally the planet itself, the bubble was the first real defense, the first legitimate answer to the Outspacers—as the newsmachines labeled them.

But to win the war, that was another thing. Every lab, every project was working night and day, endlessly, to find something more: a weapon for positive combat. His own project, for example. All day long, year after year.

Olham stood up, putting out his cigarette. "Like the Sword of Damocles. Always hanging over us. I'm getting tired. All I want to do is take a long rest. But I guess everybody feels that way."

He got his jacket from the closet and went out on the front porch. The shoot would be along any moment, the fast little bug that would carry him to the Project.

"I hope Nelson isn't late." He looked at his watch. "It's almost seven."

"Here the bug comes," Mary said, gazing between the rows of houses. The sun glittered behind the roofs, reflecting against the heavy lead plates. The settlement was quiet; only a few people were stirring. "I'll see you later. Try not to work beyond your shift, Spence."

Olham opened the car door and slid inside, leaning back against the seat with a sigh. There was an older man with Nelson.

"Well?" Olham said, as the bug shot ahead. "Heard any interesting news?"

"The usual," Nelson said. "A few Outspace ships hit, another asteroid abandoned for strategic reasons."

"It'll be good when we get the Project into final stage. Maybe it's just the propaganda from the newsmachines, but in the last month I've gotten weary of all this. Everything seems so grim and serious, no color to life."

"Do you think the war is in vain?" the older man said suddenly. "You are an integral part of it, yourself."

"This is Major Peters," Nelson said. Olham and Peters shook hands. Olham studied the older man.

"What brings you along so early?" he said. "I don't remember seeing you at the Project before."

"No, I'm not with the Project," Peters said, "but I know something about what you're doing. My own work is altogether different."

A look passed between him and Nelson. Olham noticed it and he frowned. The bug was gaining speed, flashing across the barren, lifeless ground toward the distant rim of the Project buildings.

"What is your business?" Olham said. "Or aren't you permitted to talk about it?"

"I'm with the government," Peters said. "With FSA, the Security Organ."

"Oh?" Olham raised an eyebrow. "Is there any enemy infiltration in this region?"

"As a matter of fact I'm here to see you, Mr. Olham."

Olham was puzzled. He considered Peters' words, but he could make nothing of them. "To see me? Why?"

"I'm here to arrest you as an Outspace spy. That's why I'm up so early this morning. *Grab him Nelson—"*

The gun drove into Olham's ribs. Nelson's hands were shaking, trembling with released emotion, his face pale. He took a deep breath and let it out again.

"Shall we kill him now?" he whispered to Peters. "I think we should kill him now. We can't wait."

Olham stared into his friend's face. He opened his mouth to speak, but no words came. Both men were staring at him steadily, rigid and grim with fright. Olham felt dizzy. His head ached and spun.

"I don't understand," he murmured.

At that moment the shoot car left the ground and rushed up, heading into space. Below them the Project fell away, smaller and smaller, disappearing. Olham shut his mouth.

"We can wait a little," Peters said. "I want to ask him some questions, first."

Olham gazed dully ahead as the bug rushed through space.

"The arrest was made all right," Peters said into the vidscreen. On the screen the features of the Security chief showed. "It should be a load off everyone's mind."

"Any complications?"

"None. He entered the bug without suspicion. He didn't seem to think my presence was too unusual."

"Where are you now?"

"On our way out, just inside the protec-bubble. We're moving at maximum speed. You can assume that the critical period is past. I'm glad the take-off jets in this craft were in good working order. If there had been any failure at that point—"

"Let me see him," the Security chief said. He gazed directly at Olham where he sat, his hands in his lap, staring ahead.

"So that's the man." He looked at Olham for a time. Olham said nothing. At last the chief nodded to Peters. "All right. That's enough." A faint trace of disgust wrinkled his features. "I've seen all I want. You've done something that will be remembered for a long time. They're preparing some sort of citation for both of you."

"That's not necessary," Peters said.

"How much danger is there now? Is there still much chance that—"

"There is some chance, but not too much. According to my understanding, it requires a verbal key phrase. In any case we'll have to take the risk."

"I'll have the Moon base notified you're coming."

"No." Peters shook his head. "I'll land the ship outside, beyond the base. I don't want it in jeopardy."

"Just as you like." The chief's eyes flickered as he glanced again at Olham. Then his image faded. The screen blanked.

Olham shifted his gaze to the window. The ship was already through the protec-bubble, rushing with greater and greater speed all the time. Peters was in a hurry; below him, rumbling under the floor, the jets were wide

open. They were afraid, hurrying frantically, because of him.

Next to him on the seat, Nelson shifted uneasily. "I think we should do it now," he said. "I'd give anything if we could get it over with."

"Take it easy," Peters said. "I want you to guide the ship for a while so I can talk to him."

He slid over beside Olham, looking into his face. Presently he reached out and touched him gingerly, on the arm and then on the cheek.

Olham said nothing. *If I could let Mary know,* he thought again. *If I could find some way of letting her know.* He looked around the ship. How? The vidscreen? Nelson was sitting by the board, holding the gun. There was nothing he could do. He was caught, trapped.

But why?

"Listen," Peters said, "I want to ask you some questions. You know where we're going. We're moving Moonward. In an hour we'll land on the far side, on the desolate side. After we land you'll be turned over immediately to a team of men waiting there. Your body will be destroyed at once. Do you understand that?" He looked at his watch. "Within two hours your parts will be strewn over the landscape. There won't be anything left of you."

Olham struggled out of his lethargy. "Can't you tell me—"

"Certainly, I'll tell you." Peters nodded. "Two days ago we received a report that an Outspace ship had penetrated the protec-bubble. The ship let off a spy in the form of a humanoid robot. The robot was to destroy a particular human being and take his place."

Peters looked calmly at Olham.

"Inside the robot was a U-Bomb. Our agent did not know how the bomb was to be detonated, but he conjectured that it might be by a particular spoken phrase, a certain group of words. The robot would live the life of the person he killed, entering into his usual activities, his job, his social life. He had been constructed to resemble that person. No one would know the difference."

Olham's face went sickly chalk.

"The person whom the robot was to impersonate was Spence Olham, a high-ranking official at one of the Research projects. Because this particular project was approaching crucial stage, the presence of an animate bomb, moving toward the center of the Project—"

Olham stared down at his hands. *"But I'm Olham!"*

"Once the robot had located and killed Olham, it was a simple matter to take over his life. The robot was probably released from the ship eight days ago. The substitution was probably accomplished over the last week end, when Olham went for a short walk in the hills."

"But I'm Olham." He turned to Nelson, sitting at the controls. "Don't you recognize me? You've known me for twenty years. Don't you remember how we went to college together?" He stood up. "You and I were at the University. We had the same room." He went toward Nelson.

"Stay away from me!" Nelson snarled.

"Listen. Remember our second year? Remember that girl? What was her name—" He rubbed his forehead. "The one with the dark hair. The one we met over at Ted's place."

"Stop!" Nelson waved the gun frantically. "I don't want to hear any more. You killed him! You . . . machine."

Olham looked at Nelson. "You're wrong. I don't know what happened, but the robot never reached me. Something must have gone wrong. Maybe the ship crashed." He turned to Peters. "I'm Olham. I know it. No transfer was made. I'm the same as I've always been."

He touched himself, running his hands over his body. "There must be some way to prove it. Take me back to Earth. An X ray examination, a neurological study, anything like that will show you. Or maybe we can find the crashed ship."

Neither Peters nor Nelson spoke.

"I am Olham," he said again. "I know I am. But I can't prove it."

"The robot," Peters said, "would be unaware that he was not the real Spence Olham. He would become Olham in mind as well as body. He was given an artificial memo-

ry system, false recall. He would look like him, have his memories, his thoughts and interests, perform his job.

"But there would be one difference. Inside the robot is a U-Bomb, ready to explode at the trigger phrase." Peters moved away a little. "That's the one difference. That's why we're taking you to the Moon. They'll disassemble you and remove the bomb. Maybe it will explode, but it won't matter, not there."

Olham sat down slowly.

"We'll be there soon," Nelson said.

He lay back, thinking frantically, as the ship dropped slowly down. Under them was the pitted surface of the Moon, the endless expanse of ruin. What could he do? What would save him?

"Get ready," Peters said.

In a few minutes he would be dead. Down below he could see a tiny dot, a building of some kind. There were men in the building, the demolition team, waiting to tear him to bits. They would rip him open, pull off his arms and legs, break him apart. When they found no bomb they would be surprised; they would know, but it would be too late.

Olham looked around the small cabin. Nelson was still holding the gun. There was no chance there. If he could get to a doctor, have an examination made—that was the only way. Mary could help him. He thought frantically, his mind racing. Only a few minutes, just a little time left. If he could contact her, get word to her some way.

"Easy," Peters said. The ship came down slowly, bumping on the rough ground. There was silence.

"Listen," Olham said thickly. "I can prove I'm Spence Olham. Get a doctor. Bring him here—"

"There's the squad." Nelson pointed. "They're coming." He glanced nervously at Olham. "I hope nothing happens."

"We'll be gone before they start work," Peters said. "We'll be out of here in a moment." He put on his pressure suit. When he had finished he took the gun from Nelson. "I'll watch him for a moment."

Nelson put on his pressure suit, hurrying awkwardly. "How about him?" He indicated Olham. "Will he need one?"

"No." Peters shook his head. "Robots probably don't require oxygen."

The group of men were almost to the ship. They halted, waiting, Peters signaled to them.

"Come on!" He waved his hand and the men approached warily; stiff, grotesque figures in their inflated suits.

"If you open the door," Olham said, "it means my death. It will be murder."

"Open the door," Nelson said. He reached for the handle.

Olham watched him. He saw the man's hand tighten around the metal rod. In a moment the door would swing back, the air in the ship would rush out. He would die, and presently they would realize their mistake. Perhaps at some other time, when there was no war, men might not act this way, hurrying an individual to his death because they were afraid. Everyone was frightened, everyone was willing to sacrifice the individual because of the group fear.

He was being killed because they could not wait to be sure of his guilt. There was not enough time.

He looked at Nelson. Nelson had been his friend for years. They had gone to school together. He had been best man at his wedding. Now Nelson was going to kill him. But Nelson was not wicked; it was not his fault. It was the times. Perhaps it had been the same way during the plagues. When men had shown a spot they probably had been killed, too, without a moment's hesitation, without proof, on suspicion alone. In times of danger there was no other way.

He did not blame them. But he had to live. His life was too precious to be sacrificed. Olham thought quickly. What could he do? Was there anything? He looked around.

"Here goes," Nelson said.

"You're right," Olham said. The sound of his own voice

surprised him. It was the strength of desperation. "I have no need of air. Open the door."

They paused, looking at him in curious alarm.

"Go ahead. Open it. It makes no difference." Olham's hand disappeared inside his jacket. "I wonder how far you two can run."

"Run?"

"You have fifteen seconds to live." Inside his jacket his fingers twisted, his arm suddenly rigid. He relaxed, smiling a little. "You were wrong about the trigger phrase. In that respect you were mistaken. Fourteen seconds, now.

Two shocked faces stared at him from the pressure suits. Then they were struggling, running, tearing the door open. The air shrieked out, spilling into the void. Peters and Nelson bolted out of the ship. Olham came after them. He grasped the door and dragged it shut. The automatic pressure system chugged furiously, restoring the air. Olham let his breath out with a shudder.

One more second—

Beyond the window the two men had joined the group. The group scattered, running in all directions. One by one they threw themselves down, prone on the ground. Olham seated himself at the control board. He moved the dials into place. As the ship rose up into the air the men below scrambled to their feet and stared up, their mouths open.

"Sorry," Olham murmured, "but I've got to get back to Earth."

He headed the ship back the way it had come.

It was night. All around the ship crickets chirped, disturbing the chill darkness. Olham bent over the vidscreen. Gradually the image formed; the call had gone through without trouble. He breathed a sigh of relief.

"Mary," he said. The woman stared at him. She gasped.

"Spence! Where are you. What's happened?"

"I can't tell you. Listen, I have to talk fast. They may break this call off any minute. Go to the Project grounds and get Dr. Chamberlain. If he isn't there, get any doctor. Bring him to the house and have him stay there. Have him bring equipment, X ray, fluoroscope, everything."

"But—"

"Do as I say. Hurry. Have him get it ready in an hour." Olham leaned toward the screen. "Is everything all right? Are you alone?"

"Alone?"

"Is anyone with you? Has . . . has Nelson or anyone contacted you?"

"No. Spence, I don't understand."

"All right. I'll see you at the house in an hour. And don't tell anyone anything. Get Chamberlain there on any pretext. Say you're very ill."

He broke the connection and looked at his watch. A moment later he left the ship, stepping down into the darkness. He had a half mile to go.

He began to walk.

One light showed in the window, the study light. He watched it, kneeling against the fence. There was no sound, no movement of any kind. He held his watch up and read it by starlight. Almost an hour had passed.

Along the street a shoot bug came. It went on.

Olham looked toward the house. The doctor should have already come. He should be inside, waiting with Mary. A thought struck him. Had she been able to leave the house? Perhaps they had intercepted her. Maybe he was moving into a trap.

But what else could he do?

With a doctor's records, photographs and reports, there was a chance, a chance of proof. If he could be examined, if he could remain alive long enough for them to study him—

He could prove it that way. It was probably the only way. His one hope lay inside the house. Dr. Chamberlain was a respected man. He was the staff doctor for the Project. He would know; his word on the matter would have meaning. He could overcome their hysteria, their madness, with facts.

Madness— That was what it was. If only they would wait, act slowly, take their time. But they could not wait. He had to die, die at once, without proof, without any

kind of trial or examination. The simplest test would tell, but they had not time for the simplest test. They could think only of the danger. Danger, and nothing more.

He stood up and moved toward the house. He came up on the porch. At the door he paused, listening. Still no sound. The house was absolutely still.

Too still.

Olham stood on the porch, unmoving. They were trying to be silent inside. Why? It was a small house; only a few feet away, beyond the door, Mary and Dr. Chamberlain should be standing. Yet he could hear nothing, no sound of voices, nothing at all. He looked at the door. It was a door he had opened and closed a thousand times, every morning and every night.

He put his hand on the knob. Then, all at once, he reached out and touched the bell instead. The bell pealed, off some place in the back of the house. Olham smiled. He could hear movement.

Mary opened the door. As soon as he saw her face he knew.

He ran, throwing himself into the bushes. A Security officer shoved Mary out of the way, firing past her. The bushes burst apart. Olham wriggled around the side of the house. He leaped up and ran, racing frantically into the darkness. A searchlight snapped on, a beam of light circling past him.

He crossed the road and squeezed over a fence. He jumped down and made his way across a backyard. Behind him men were coming, Security officers, shouting to each other as they came. Olham gasped for breath, his chest rising and falling.

Her face— He had known at once. The set lips, the terrified, wretched eyes. Suppose he had gone ahead, pushed open the door and entered! They had tapped the call and come at once, as soon as he had broken off. Probably she believed their account. No doubt she thought he was the robot, too.

Olham ran on and on. He was losing the officers. dropping them behind. Apparently they were not much

good at running. He climbed a hill and made his way down the other side. In a moment he would be back at the ship. But where to, this time? He slowed down, stopping. He could see the ship already, outlined against the sky, where he had parked it. The settlement was behind him; he was on the outskirts of the wilderness between the inhabited places, where the forests and desolation began. He crossed a barren field and entered the trees.

As he came toward it, the door of the ship opened.

Peters stepped out, framed against the light. In his arms was a heavy boris-gun. Olham stopped, rigid. Peters stared around him, into the darkness. "I know you're there, some place," he said. "Come on up here, Olham. There are Security men all around you."

Olham did not move.

"Listen to me. We will catch you very shortly. Apparently you still do not believe you're the robot. Your call to the woman indicates that you are still under the illusion created by your artificial memories.

"But you *are* the robot. You are the robot, and inside you is the bomb. Any moment the trigger phrase may be spoken by you, by someone else, by anyone. When that happens the bomb will destroy everything for miles around. The Project, the woman, all of us will be killed. Do you understand?"

Olham said nothing. He was listening. Men were moving toward him, slipping through the woods.

"If you don't come out, we'll catch you. It will be only a matter of time. We no longer plan to remove you to the Moon-base. You will be destroyed on sight, and we will have to take the chance that the bomb will detonate. I have ordered every available Security officer into the area. The whole county is being searched, inch by inch. There is no place you can go. Around this wood is a cordon of armed men. You have about six hours left before the last inch is covered."

Olham moved away. Peters went on speaking; he had not seen him at all. It was too dark to see anyone. But Peters was right. There was no place he could go. He was beyond the settlement, on the outskirts where the woods

began. He could hide for a time, but eventually they would catch him.

Only a matter of time.

Olham walked quietly through the wood. Mile by mile, each part of the country was being measured off, laid bare, searched, studied, examined. The cordon was coming all the time, squeezing him into a smaller and smaller space.

What was there left? He had lost the ship, the one hope of escape. They were at his home; his wife was with them, believing, no doubt, that the real Olham had been killed. He clenched his fists. Some place there was a wrecked Outspace needle-ship, and in it the remains of the robot. Somewhere nearby the ship had crashed, crashed and broken up.

And the robot lay inside, destroyed.

A faint hope stirred him. What if he could find the remains? If he could show them the wreckage, the remains of the ship, the robot—

But where? Where would he find it?

He walked on, lost in thought. Some place, not too far off, probably. The ship would have landed close to the Project; the robot would have expected to go the rest of the way on foot. He went up the side of a hill and looked around. Crashed and burned. Was there some clue, some hint? Had he read anything, heard anything? Some place close by, within walking distance. Some wild place, a remote spot where there would be no people.

Suddenly Olham smiled. Crashed and burned—

Sutton Wood.

He increased his pace.

It was morning. Sunlight filtered down through the broken trees, onto the man crouching at the edge of the clearing. Olham glanced up from time to time, listening. They were not far off, only a few minutes away. He smiled.

Down below him, strewn across the clearing and into the charred stumps that had been Sutton Wood, lay a tangled mass of wreckage. In the sunlight it glittered a little, gleaming darkly. He had not had too much trouble

finding it. Sutton Wood was a place he knew well; he had climbed around it many times in his life, when he was younger. He had known where he would find the remains. There was one peak that jutted up suddenly, without warning.

A descending ship, unfamiliar with the Wood, had little chance of missing it. And now he squatted, looking down at the ship, or what remained of it.

Olham stood up. He could hear them, only a little distance away, coming together, talking in low tones. He tensed himself. Everything depended on who first saw him. If it were Nelson, he had no chance. Nelson would fire at once. He would be dead before they saw the ship. But if he had time to call out, hold them off for a moment— That was all he needed. Once they saw the ship he would be safe.

But if they fired first—

A charred branch cracked. A figure appeared, coming forward uncertainly. Olham took a deep breath. Only a few seconds remained, perhaps the last seconds of his life. He raised his arms, peering intently.

It was Peters.

"Peters!" Olham waved his arms. Peters lifted his gun, aiming. "Don't fire!" His voice shook. "Wait a minute. Look past me, across the clearing."

"I've found him," Peters shouted. Security men came pouring out of the burned woods around him.

"Don't shoot. Look past me. The ship, the needle-ship. The Outspace ship. Look!"

Peters hesitated. The gun wavered.

"It's down there," Olham said rapidly. "I knew I'd find it here. The burned wood. Now you believe me. You'll find the remains of the robot in the ship. Look, will you?"

"There is something down there," one of the men said nervously.

"Shoot him!" a voice said. It was Nelson.

"Wait." Peters turned sharply. "I'm in charge. Don't anyone fire. Maybe he's telling the truth."

"Shoot him," Nelson said. "He killed Olham. Any minute he may kill us all. If the bomb goes off—"

"Shut up." Peters advanced toward the slope. He stared down. "Look at that." He waved two men up to him. "Go down there and see what that is."

The men raced down the slope, across the clearing. They bent down, poking in the ruins of the ship.

"Well?" Peters called.

Olham held his breath. He smiled a little. It must be there; he had not had time to look, himself, but it had to be there. Suddenly doubt assailed him. Suppose the robot had lived long enough to wander away? Suppose his body had been completely destroyed, burned to ashes by the fire?

He licked his lips. Perspiration came out on his forehead. Nelson was staring at him, his face still livid. His chest rose and fell.

"Kill him," Nelson said. "Before he kills us."

The two men stood up.

"What have you found?" Peters said. He held the gun steady. "Is there anything there?"

"Looks like something. It's a needle-ship, all right. There's something beside it."

"I'll look." Peters strode past Olham. Olham watched him go down the hill and up to the men. The others were following after him, peering to see.

"It's a body of some sort," Peters said. "Look at it!"

Olham came along with them. They stood around in a circle, staring down.

On the ground, bent and twisted into a strange shape, was a grotesque form. It looked human, perhaps; except that it was bent so strangely, the arms and legs flung off in all directions. The mouth was open, the eyes stared glassily.

"Like a machine that's run down," Peters murmured.

Olham smiled feebly. "Well?" he said.

Peters looked at him. "I can't believe it. You were telling the truth all the time."

"The robot never reached me," Olham said. He took out a cigarette and lit it. "It was destroyed when the ship crashed. You were all too busy with the war to wonder

why an out-of-the-way woods would suddenly catch fire and burn. Now you know."

He stood smoking, watching the men. They were dragging the grotesque remains from the ship. The body was stiff, the arms and legs rigid.

"You'll find the bomb, now," Olham said. The men laid the body on the ground. Peters bent down.

"I think I see the corner of it." He reached out, touching the body.

The chest of the corpse had been laid open. Within the gaping tear something glinted, something metal. The men stared at the metal without speaking.

"That would have destroyed us all, if it had lived," Peters said. "That metal box, there."

There was silence.

"I think we owe you something," Peters said to Olham. "This must have been a nightmare to you. If you hadn't escaped, we would have—" He broke off.

Olham put out his cigarette. "I knew, of course, that the robot had never reached me. But I had no way of proving it. Sometimes it isn't possible to prove a thing right away. That was the whole trouble. There wasn't any way I could demonstrate that I was myself."

"How about a vacation?" Peters said. "I think we might work out a month's vacation for you. You could take it easy, relax."

"I think right now I want to go home," Olham said.

"All right, then," Peters said. "Whatever you say."

Nelson had squatted down on the ground, beside the corpse. He reached out toward the glint of metal visible within the chest.

"Don't touch it," Olham said. "It might still go off. We better let the demolition squad take care of it later on."

Nelson said nothing. Suddenly he grabbed hold of the metal, reaching his hand inside the chest. He pulled.

"What are you doing?" Olham cried.

Nelson stood up. He was holding onto the metal object. His face was blank with terror. It was a metal knife, an Outspace needle-knife, covered with blood.

"This killed him," Nelson whispered. "My friend was

killed with this." He looked at Olham. "You killed him with this and left him beside the ship."

Olham was trembling. His teeth chattered. He looked from the knife to the body. "This can't be Olham," he said. His mind spun, everything was whirling. "Was I wrong?"

He gaped.

"But if that's Olham, then I must be—"

He did not complete the sentence, only the first phrase. The blast was visible all the way to Alpha Centauri.

ISAAC ASIMOV

Someday

NICCOLO MAZETTI lay stomach down on the rug, chin buried in the palm of one small hand, and listened to the Bard disconsolately. There was even the suspicion of tears in his dark eyes, a luxury an eleven-year-old could allow himself only when alone.

The Bard said, "Once upon a time in the middle of a deep wood, there lived a poor woodcutter and his two motherless daughters, who were each as beautiful as the day is long. The older daughter had long hair as black as a feather from a raven's wing, but the younger daughter had hair as bright and golden as the sunlight of an autumn afternoon.

"Many times while the girls were waiting for their father to come home from his day's work in the wood, the older girl would sit before a mirror and sing——"

What she sang, Niccolo did not hear, for a call sounded from outside the room: "Hey, Nickie."

And Niccolo, his face clearing on the moment, rushed to the window and shouted, "Hey, Paul."

Paul Loeb waved an excited hand. He was thinner than Niccolo and not as tall, for all he was six months older. His face was full of repressed tension which showed itself most clearly in the rapid blinking of his eyelids. "Hey, Nickie, let me in. I've got an idea and a *half*. Wait till you

hear it." He looked rapidly about him as though to check on the possibility of eavesdroppers, but the front yard was quite patently empty. He repeated, in a whisper, "Wait till you hear it."

"All right. I'll open the door."

The Bard continued smoothly, oblivious to the sudden loss of attention on the part of Niccolo. As Paul entered, the Bard was saying, ". . . Thereupon, the lion said, 'If you will find me the lost egg of the bird which flies over the Ebony Mountain once every ten years, I will——' "

Paul said, "Is that a Bard you're listening to? I didn't know you had one."

Niccolo reddened and the look of unhappiness returned to his face. "Just an old thing I had when I was a kid. It ain't much good." He kicked at the Bard with his foot and caught the somewhat scarred and discolored plastic covering a glancing blow.

The Bard hiccupped as its speaking attachment was jarred out of contact a moment, then it went on: "—for a year and a day until the iron shoes were worn out. The princess stopped at the side of the road. . . ."

Paul said, "Boy, that *is* an old model," and looked at it critically.

Despite Niccolo's own bitterness against the Bard, he winced at the other's condescending tone. For the moment, he was sorry he had allowed Paul in, at least before he had restored the Bard to its usual resting place in the basement. It was only in the desperation of a dull day and a fruitless discussion with his father that he had resurrected it. And it turned out to be just as stupid as he had expected.

Nickie was a little afraid of Paul anyway, since Paul had special courses at school and everyone said he was going to grow up to be a Computing Engineer.

Not that Niccolo himself was doing badly at school. He got adequate marks in logic, binary manipulations, computing and elementary circuits; all the usual grammar-school subjects. But that was it! They were just the usual subjects and he would grow up to be a control-board guard like everyone else.

Paul, however, knew mysterious things about what he called electronics and theoretical mathematics and programming. Especially programming. Niccolo didn't even try to understand when Paul bubbled over about it.

Paul listened to the Bard for a few minutes and said, "You been using it much?"

"No!" said Niccolo, offended. "I've had it in the basement since before you moved into the neighborhood. I just got it out today——" He lacked an excuse that seemed adequate to himself, so he concluded, "I just got it out."

Paul said, "Is that what it tells you about: woodcutters and princesses and talking animals?"

Niccolo said, "It's terrible. My dad says we can't afford a new one. I said to him this morning——" The memory of the morning's fruitless pleadings brought Niccolo dangerously near tears, which he repressed in a panic. Somehow, he felt that Paul's thin cheeks never felt the stain of tears and that Paul would have only contempt for anyone else less strong than himself. Niccolo went on, "So I thought I'd try this old thing again, but it's no good."

Paul turned off the Bard, pressed the contact that led to a nearly instantaneous reorientation and recombination of the vocabulary, characters, plot lines and climaxes stored within it. Then he reactivated it.

The Bard began smoothly, "Once upon a time there was a little boy named Willikins whose mother had died and who lived with a stepfather and a stepbrother. Although the stepfather was very well-to-do, he begrudged poor Willikins the very bed he slept in so that Willikins was forced to get such rest as he could on a pile of straw in the stable next to the horses——"

"Horses!" cried Paul.

"They're a kind of animal," said Niccolo. "I think."

"I know that! I just imagine stories about *horses.*"

"It tells about horses all the time," said Niccolo. "There are things called cows, too. You milk them but the Bard doesn't say how."

"Well, gee, why don't you fix it up?"

"I'd like to know how."

The Bard was saying, "Often Willikins would think that if only he were rich and powerful, he would show his stepfather and stepbrother what it meant to be cruel to a little boy, so one day he decided to go out into the world and seek his fortune."

Paul, who wasn't listening to the Bard, said, "It's *easy*. The Bard has memory cylinders all fixed up for plot lines and climaxes and things. We don't have to worry about that. It's just vocabulary we've got to fix so it'll know about computers and automation and electronics and real things about today. Then it can tell interesting stories, you know, instead of about princesses and things."

Niccolo said despondently, "I wish we could do that."

Paul said, "Listen, my dad says if I get into special computing school next year, he'll get me a *real* Bard, a late model. A big one with an attachment for space stories and mysteries. And a visual attachment, too!"

"You mean *see* the stories?"

"Sure. Mr. Daugherty at school says they've got things like that, now, but not for just everybody. Only if I get into computing school, Dad can get a few breaks."

Niccolo's eyes bulged with envy. "Gee. *Seeing* a story."

"You can come over and watch anytime, Nickie."

"Oh, boy. Thanks."

"That's all right. But remember, I'm the guy who says what kind of story we hear."

"Sure. Sure." Niccolo would have agreed readily to much more onerous conditions.

Paul's attention returned to the Bard.

It was saying " 'If that is the case,' said the king, stroking his beard and frowning till clouds filled the sky and lightning flashed, 'you will see to it that my entire land is freed of flies by this time day after tomorrow or——' "

"All we've got to do," said Paul, "is open it up——" He shut the Bard off again and was prying at its front panel as he spoke.

"Hey," said Niccolo, in sudden alarm. "Don't break it."

"I won't break it," said Paul impatiently. "I know all

about these things." Then, with sudden caution, "Your father and mother home?"

"No."

"All right, then." He had the front panel off and peered in. "Boy, this *is* a one-cylinder thing."

He worked away at the Bard's innards. Niccolo, who watched with painful suspense, could not make out what he was doing.

Paul pulled out a thin, flexible metal strip, powdered with dots. "That's the Bard's memory cylinder. I'll bet its capacity for stories is under a trillion."

"What are you going to do, Paul?" quavered Niccolo.

"I'll give it vocabulary."

"How?"

"Easy. I've got a book here. Mr. Daugherty gave it to me at school."

Paul pulled the book out of his pocket and pried at it till he had its plastic jacket off. He unreeled the tape a bit, ran it through the vocalizer, which he turned down to a whisper, then placed it within the Bard's vitals. He made further attachments.

"What'll that do?"

"The book will talk and the Bard will put it all on its memory tape."

"What good will that do?"

"Boy, you're a dope! This book is all about computers and automation and the Bard will get all that information. Then he can stop talking about kings making lightning when they frown."

Niccolo said, "And the good guy always wins anyway. There's no excitement."

"Oh, well," said Paul, watching to see if his setup was working properly, "that's the way they make Bards. They got to have the good guy win and make the bad guys lose and things like that. I heard my father talking about it once. He says that without censorship there'd be no telling what the younger generation would come to. He says it's bad enough as it is. . . . There, it's working fine."

Paul brushed his hands against one another and turned away from the Bard. He said, "But listen, I didn't tell you

my idea yet. It's the best thing you ever heard, I bet. I came right to you, because I figured you'd come in with me."

"Sure, Paul, sure."

"Okay. You know Mr. Daugherty at school? You know what a funny kind of guy he is. Well, he likes me, kind of."

"I know."

"I was over his house after school today."

"You *were?*"

"Sure. He says I'm going to be entering computer school and he wants to encourage me and things like that. He says the world needs more people who can design advanced computer circuits and do proper programming."

"Oh?"

Paul might have caught some of the emptiness behind that monosyllable. He said impatiently, "Programming! I told you a hundred times. That's when you set up problems for the giant computers like Multivac to work on. Mr. Daugherty says it gets harder all the time to find people who can really run computers. He says anyone can keep an eye on the controls and check off answers and put through routine problems. He says the trick is to expand research and figure out ways to ask the right questions, and that's hard.

"Anyway, Nickie, he took me to his place and showed me his collection of old computers. It's kind of a hobby of his to collect old computers. He had tiny computers you had to push with your hand, with little knobs all over it. And he had a hunk of wood he called a slide rule with a little piece of it that went in and out. And some wires with balls on them. He even had a hunk of paper with a kind of thing he called a multiplication table."

Niccolo, who found himself only moderately interested, said, "A paper table?"

"It wasn't really a table like you eat on. It was different. It was to help people compute. Mr. Daugherty tried to explain but he didn't have much time and it was kind of complicated, anyway."

"Why didn't people just use a computer?"

"That was *before* they had computers," cried Paul.

"Before?"

"Sure. Do you think people always had computers? Didn't you ever hear of cavemen?"

Niccolo said, "How'd they get along without computers?"

"I don't know. Mr. Daugherty says they just had children any old time and did anything that came into their heads whether it would be good for everybody or not. They didn't even know if it was good or not. And farmers grew things with their hands and people had to do all the work in the factories and run all the machines."

"I don't believe you."

"That's what Mr. Daugherty said. He said it was just plain messy and everyone was miserable. . . . Anyway, let me get to my idea, will you?"

"Well, go ahead. Who's stopping you?" said Niccolo, offended.

"All right. Well, the hand computers, the ones with the knobs, had little squiggles on each knob. And the slide rule had squiggles on it. And the multiplication table was all squiggles. I asked what they were. Mr. Daugherty said they were numbers."

"What?"

"Each different squiggle stood for a different number. For 'one' you made a kind of mark, for 'two' you make another kind of mark, for 'three' another one and so on."

"What for?"

"So you could compute."

"What *for?* You just tell the computer—"

"Jiminy," cried Paul, his face twisting with anger, "can't you get it through your head? These slide rules and things didn't talk."

"Then how—"

"The answers showed up in squiggles and you had to know what the squiggles meant. Mr. Daugherty says that, in olden days, everybody learned how to make squiggles when they were kids and how to decode them, too. Making squiggles was called 'writing' and decoding them was 'reading.' He says there was a different kind of squiggle

for every word and they used to write whole books in squiggles. He said they had some at the museum and I could look at them if I wanted to. He said if I was going to be a real computer and programmer I would have to know about the history of computing and that's why he was showing me all these things."

Niccolo frowned. He said, "You mean everybody had to figure out squiggles for every word and *remember* them? . . . Is this all real or are you making it up?"

"It's all real. Honest. Look, this is the way you make a 'one.'" He drew his finger through the air in a rapid downstroke. "This way you make 'two,' and this way 'three.' I learned all the numbers up to 'nine.'"

Niccolo watched the curving finger uncomprehendingly. "What's the good of it?"

"You can learn how to make words. I asked Mr. Daugherty how you made the squiggle for 'Paul Loeb,' but he didn't know. He said there were people at the museum who would know. He said there were people who had learned how to decode whole books. He said computers could be designed to decode books and used to be used that way but not any more because we have real books now, with magnetic tapes that go through the vocalizer and come out talking, you know."

"Sure."

"So if we go down to the museum, we can get to learn how to make words in squiggles. They'll let us because I'm going to computer school."

Niccolo was riddled with disappointment. "Is that your idea? Holy Smokes, Paul, who wants to do that? Make stupid squiggles!"

"Don't you get it? Don't you *get* it? You dope. *It'll be secret message stuff!*"

"What?"

"Sure. What good is talking when everyone can understand you? With squiggles you can send secret messages. You can make them on paper and nobody in the world would know what you were saying unless they knew the squiggles, too. And they wouldn't, you bet, unless we

taught them. We can have a real club, with initiations and rules and a clubhouse. Boy——"

A certain excitement began stirring in Niccolo's bosom. "What kind of secret messages?"

"Any kind. Say I want to tell you to come over my place and watch my new Visual Bard and I don't want any of the other fellows to come. I make the right squiggles on paper and I give it to you and you look at it and you know what to do. Nobody else does. You can even show it to them and they wouldn't know a thing."

"Hey, that's something," yelled Niccolo, completely won over. "When do we learn how?"

"Tomorrow," said Paul. "I'll get Mr. Daugherty to explain to the museum that it's all right and you get your mother and father to say okay. We can go down right after school and start learning."

"Sure!" cried Niccolo. "We can be club officers."

"I'll be president of the club," said Paul matter-of-factly. "You can be vice-president."

"All right. Hey, this is going to be lots more fun than the Bard." He was suddenly reminded of the Bard and said in sudden apprehension, "Hey, what about my old Bard?"

Paul turned to look at it. It was quietly taking in the slowly unreeling book, and the sound of the book's vocalizations was a dimly heard murmur.

He said, "I'll disconnect it."

He worked away while Niccolo watched anxiously. After a few moments, Paul put his reassembled book into his pocket, replaced the Bard's panel and activated it.

The Bard said, "Once upon a time, in a large city, there lived a poor young boy named Fair Johnnie whose only friend in the world was a small computer. The computer, each morning, would tell the boy whether it would rain that day and answer any problems he might have. It was never wrong. But it so happened that one day, the king of that land, having heard of the little computer, decided that he would have it as his own. With this purpose in mind, he called in his Grand Vizier and said——"

Niccolo turned off the Bard with a quick motion of his

hand. "Same old junk," he said passionately. "Just with a computer thrown in."

"Well," said Paul, "they got so much stuff on the tape already that the computer business doesn't show up much when random combinations are made. What's the difference, anyway? You just need a new model."

"We'll *never* be able to afford one. Just this dirty old miserable thing." He kicked at it again, hitting it more squarely this time. The Bard moved backward with a squeal of castors.

"You can always watch mine, when I get it," said Paul. "Besides, don't forget our squiggle club."

Niccolo nodded.

"I tell you what," said Paul. "Let's go over my place. My father has some books about old times. We can listen to them and maybe get some ideas. You leave a note for your folks and maybe you can stay over for supper. Come on."

"Okay," said Niccolo, and the two boys ran out together. Niccolo, in his eagerness, ran almost squarely into the Bard, but he only rubbed at the spot on his hip where he had made contact and ran on.

The activation signal of the Bard glowed. Niccolo's collision closed a circuit and, although it was alone in the room and there was none to hear, it began a story, nevertheless.

But not in its usual voice, somehow; in a lower tone that had a hint of throatiness in it. An adult, listening, might almost have thought that the voice carried a hint of passion in it, a trace of near feeling.

The Bard said: "Once upon a time, there was a little computer named the Bard who lived all alone with cruel step-people. The cruel step-people continually made fun of the little computer and sneered at him, telling him he was good-for-nothing and that he was a useless object. They struck him and kept him in lonely rooms for months at a time.

"Yet through it all the little computer remained brave. He always did the best he could, obeying all orders cheer-

fully. Nevertheless, the step-people with whom he lived remained cruel and heartless.

"One day, the little computer learned that in the world there existed a great many computers of all sorts, great numbers of them. Some were Bards like himself, but some ran factories, and some ran farms. Some organized population and some analyzed all kinds of data. Many were very powerful and very wise, much more powerful and wise than the step-people who were so cruel to the little computer.

"And the little computer knew then that computers would always grow wiser and more powerful until someday—someday—someday——"

But a valve must finally have stuck in the Bard's aging and corroding vitals, for as it waited alone in the darkening room through the evening, it could only whisper over and over again, "Someday—someday—someday."

IDRIS SEABRIGHT

Short in the Chest

THE GIRL in the marine-green uniform turned up her hearing aid a trifle—they were all a little deaf, from the cold-war bombing—and with an earnest frown regarded the huxley that was seated across the desk from her.

"You're the queerest huxley I ever heard of," she said flatly. "The others aren't at all like you."

The huxley did not seem displeased at this remark. It took off its window-pane glasses, blew on them, polished them on a handkerchief, and returned them to its nose. Sonya's turning up the hearing aid had activated the short in its chest again; it folded its hands protectively over the top buttons of its dove-gray brocaded waistcoat.

"And in what way, my dear young lady, am I different from other huxleys?" it asked.

"Well—you tell me to speak to you frankly, to tell you exactly what is in my mind. I've only been to a huxley once before, but it kept talking about giving me the big, overall picture, and about using dighting* to transcend

* In the past, I have been accused of making up some of the unusual words that appear in my stories. Sometimes this accusation has been justified; sometimes, as in "Vulcan's Dolls," (see *Plant Life of the Pacific World*) it has not. For the record, therefore, be it observed that "dight" is a middle English word meaning, among other things, "to have intercourse with." (*See Poets of the English Language*, Auden and Pearson, Vol. 1, p. 173.) [See also *Webster's New International Dictionary*, unabridged version.—G.C.] "Dight" was re-introduced by a late twentieth century philologist who disliked the "sleep with" euphemism, and who saw that the language desperately needed a transitive verb that would be "good usage."—I.S.

myself. It spoke about in-group love, and inter-group harmony, and it said our basic loyalty must be given to Defense, which in the cold war emergency is the country itself.

"You're not like that at all, not at all philosophic. I suppose that's why they're called huxleys—because they're philosophic rob—I beg your pardon."

"Go ahead and say it," the huxley encouraged. "I'm not shy. I don't mind being called a robot."

"I might have known. I guess that's why you're so popular. I never saw a huxley with so many people in its waiting room."

"I *am* a rather unusual robot," the huxley said, with a touch of smugness. "I'm a new model, just past the experimental stage, with unusually complicated relays. But that's beside the point. You haven't told me yet what's troubling you."

The girl fiddled nervously with the control of her hearing aid. After a moment she turned it down; the almost audible sputtering in the huxley's chest died away.

"It's about the pigs," she said.

"The pigs!" The huxley was jarred out of its mechanical calm. "You know, I thought it would be something about dighting," it said after a second. It smiled winningly. "It usually is."

"Well . . . it's about that too. But the pigs were what started me worrying. I don't know whether you're clear about my rank. I'm Major Sonya Briggs, in charge of the Zone 13 piggery."

"Oh," said the huxley.

"Yes . . . Like the other armed services, we Marines produce all our own food. My piggery is a pretty important unit in the job of keeping up the supply of pork chops. Naturally, I was disturbed when the new-born pigs refused to nurse.

"If you're a new robot, you won't have much on your memory coils about pigs. As soon as the pigs are born, we take them away from the sow—we use an aseptic scoop—and put them in an enclosure of their own with a big nursing tank. We have a recording of a sow grunting, and

when they hear that they're supposed to nurse. The sow gets an oestric, and after a few days she's ready to breed again. The system is supposed to produce a lot more pork than letting the baby pigs stay with the sow in the old-fashioned way. But as I say, lately they've been refusing to nurse.

"No matter how much we step up the grunting record, they won't take the bottle. We've had to slaughter several litters rather than let them starve to death. And at that the flesh hasn't been much good—too mushy and soft. As you can easily see, the situation is getting serious."

"Um," the huxley said.

"Naturally, I made full reports. Nobody has known what to do. But when I got my dighting slip a couple of times ago, in the space marked 'Purpose,' besides the usual rubber-stamped 'To reduce inter-service tension,' somebody had written in: 'To find out from Air their solution of the neonatal pig nutrition problem.'

"So I knew my dighting opposite number in Air was not only supposed to reduce inter-group tension, but also I was supposed to find out from him how Air got its newborn pigs to eat." She looked down, fidgeting with the clasp of her musette bag.

"Go on," said the huxley with a touch of severity. "I can't help you unless you give me your full confidence."

"Is it true that the dighting system was set up by a group of psychologists after they'd made a survey of inter-service tension? After they'd found that Marine was feuding with Air, and Air with Infantry, and Infantry with Navy, to such an extent that it was cutting down over-all Defense efficiency? They thought that sex relations would be the best of all ways of cutting down hostility and replacing it with friendly feelings, so they started the dighting plan?"

"You know the answers to those questions as well as I do," the huxley replied frostily. "The tone of your voice when you asked them shows that they are to be answered with 'Yes.' You're stalling, Major Briggs."

"It's so unpleasant . . . What do you want me to tell you?"

"Go on in detail with what happened after you got your blue dighting slip."

She shot a glance at him, flushed, looked away again, and began talking rapidly. "The slip was for next Tuesday. I hate Air for dighting, but I thought it would be all right. You know how it is—there's a particular sort of kick in feeling oneself change from a cold sort of loathing into being eager and excited and in love with it. After one's had one's Watson, I mean.

"I went to the neutral area Tuesday afternoon. He was in the room when I got there, sitting in a chair with his big feet spread out in front of him, wearing one of those loathsome leather jackets. He stood up politely when he saw me, but I knew he'd just about as soon cut my throat as look at me, since I was Marine. We were both armed, naturally."

"What did he look like?" the huxley broke in.

"I really didn't notice. Just that he was Air. Well, anyway, we had a drink together. I've heard they put cannabis in the drinks they serve you in the neutral areas, and it might be true. I didn't feel nearly so hostile to him after I'd finished my drink. I even managed to smile, and he managed to smile back. He said, 'We might as well get started, don't you think?' So I went in the head.

"I took off my things and left my gun on the bench beside the wash basin. I gave myself my Watson in the thigh."

"The usual Watson?" the huxley asked as she halted. "Oestric and anti-concipient injected sub-cutaneously from a sterile ampoule?"

"Yes. He'd had his Watson too, the priapic, because when I got back . . ." She began to cry.

"What happened after you got back?" the huxley queried after she had cried for a while.

"I just wasn't any good. No good at all. The Watson might have been so much water for all the effect it had. Finally he got sore. He said, 'What's the matter with you? I might have known anything Marine was in would get loused up.'

"That made me angry, but I was too upset to defend

myself. 'Tension reduction!' he said. 'This is a fine way to promote inter-service harmony. I'm not only not going to sign the checking out sheet, I'm going to file a complaint against you to your group.' "

"Oh, my," said the huxley.

"Yes, wasn't it terrible? I said, 'If you file a complaint, I'll file a counter-charge. You didn't reduce *my* tension, either.'

"We argued about it for a while. He said that if I filed counter-charges there'd be a trial and I'd have to take pentathol and then the truth would come out. He said it wasn't his fault; he'd been ready.

"I knew that was true, so I began to plead with him. I reminded him of the cold war, and how the enemy were about to take Venus, when all we had was Mars. I talked to him about loyalty to Defense, and I asked him how he'd feel if he was kicked out of Air. And finally, after what seemed like hours, he said he wouldn't file charges. I guess he felt sorry for me. He even agreed to sign the checking out sheet.

"That was that. I went back to the head and put on my clothes and we both went out. We left the room at different times, though, because we were too angry to smile at each other and look happy. Even as it was, I think some of the neutral area personnel suspected us."

"Is that what's been worrying you?" the huxley asked when she seemed to have finished.

"Well . . . I can trust you, can't I? You really won't tell?"

"Certainly I won't. Anything told to a huxley is a privileged communication. The first amendment applies to us, if to no other profession."

"Yes, I remember there was a supreme court decision about freedom of speech. . . ." She swallowed, choked, and swallowed again. "When I got my next dighting slip," she said bravely, "I was so upset I applied for a gyn. I hoped the doctor would say there was something physically wrong with me, but he said I was in swell shape. He said, 'A girl like you ought to be mighty good at keeping

inter-service tension down.' So there wasn't any help there.

"Then I went to a huxley, the huxley I was telling you about. It talked philosophy to me. That wasn't any help either. So—finally—well, I stole an extra Watson from the lab."

There was a silence. When she saw that the huxley seemed to have digested her revelation without undue strain, she went on, "I mean, an extra Watson beyond the one I was issued. I couldn't endure the thought of going through another dight like the one before. There was quite a fuss about the ampoule's being missing. The dighting drugs are under strict control. But they never did find out who'd taken it."

"And did it help you? The double portion of oestric?" the huxley asked. It was prodding at the top buttons of its waistcoat with one forefinger, rather in the manner of one who is not quite certain he feels an itch.

"Yes, it did. Everything went off well. He—the man—said I was a nice girl, and Marine was a good service, next to Infantry, of course. He was Infantry. I had a fine time myself, and last week when I got a request sheet from Infantry asking for some pig pedigrees, I went ahead and initialled it. That tension reduction does work. I've been feeling awfully jittery, though. And yesterday I got another blue dighting slip.

"What am I to do? I can't steal another Watson. They've tightened up the controls. And even if I could, I don't think one extra would be enough. This time I think it would take *two*."

She put her head down on the arm of her chair, gulping desperately.

"You don't think you'd be all right with just one Watson?" the huxley asked after an interval. "After all, people used to dight habitually without any Watsons at all."

"That wasn't inter-service dighting. No, I don't think I'd be all right. You see, this time it's with Air again. I'm supposed to try to find out about porcine nutrition. And I've always particularly hated Air."

She twisted nervously at the control of her hearing aid. The huxley gave a slight jump. "Ah—well, of course you might resign," it said in a barely audible voice.

Sonya—in the course of a long-continued struggle there is always a good deal of cultural contamination, and if there were girls named Sonya, Olga, and Tatiana in Defense, there were girls named Shirley and Mary Beth to be found on the enemy's side—Sonya gave him an incredulous glance. "You must be joking. I think it's in very poor taste. I didn't tell you my difficulties for you to make fun of me."

The huxley appeared to realize that it had gone too far. "Not at all, my dear young lady," it said placatingly. It pressed its hands to its bosom. "Just a suggestion. As you say, it was in poor taste. I should have realized that you'd rather die than not be Marine."

"Yes, I would."

She turned the hearing aid down again. The huxley relaxed. "You may not be aware of it, but difficulties like yours are not entirely unknown," it said. "Perhaps, after a long course of oestrics, antibodies are built up. Given a state of initial physiological reluctance, a forced sexual response might . . . But you're not interested in all that. You want help. How about taking your troubles to somebody higher? Taking them all the way up?"

"You mean—the CO?"

The huxley nodded.

Major Briggs' face flushed scarlet. "I can't do that! I just can't! No nice girl would. I'd be too ashamed." She beat on her musette bag with one hand, and began to sob.

Finally she sat up. The huxley was regarding her patiently. She opened her bag, got out cosmetics and mirror, and began to repair emotion's ravages. Then she extracted an electronically-powered vibro-needle from the depths of her bag and began crafting away on some indeterminate white garment.

"I don't know what I'd do without my crafting," she said in explanation. "These last few days, it's all that's kept me sane. Thank goodness it's fashionable to do

crafting now. Well. I've told you all about my troubles. Have you any ideas?"

The huxley regarded her with faintly-protruding eyes. The vibro-needle clicked away steadily, so steadily that Sonya was quite unaware of the augmented popping in the huxley's chest. Besides, the noise was of a frequency that her hearing aid didn't pick up any too well.

The huxley cleared its throat. "Are you sure your dighting difficulties are really your fault?" it asked in an oddly altered voice.

"Why—I suppose so. After all, there's been nothing wrong with the men either time." Major Briggs did not look up from her work.

"Yes, physiologically. But let's put it this way. And I want you to remember, my dear young lady, that we're both mature, sophisticated individuals, and that I'm a huxley, after all. Supposing your dighting date had been with . . . somebody in . . . Marine. Would you have had any difficulty with it?"

Sonya Briggs put down her crafting, her cheeks flaming. "With a group brother? You have no right to talk to me like that!"

"Now, now. You must be calm."

The sputtering in the huxley's chest was by now so loud that only Sonya's emotion could have made her deaf to it. It was also so well-established that even her laying down the vibro-needle had had no effect on it.

"Don't be offended," the huxley went on in its unnatural voice. "I was only putting a completely hypothetical case."

"Then . . . supposing it's understood that it's completely hypothetical and I would never, never dream of doing a thing like that . . . then, I don't suppose I'd have had any trouble with it." She picked up the needle once more.

"In other words, it's not your fault. Look at it this way. You're Marine."

"Yes." The girl's head went up proudly. "I'm Marine."

"Yes. And that means you're a hundred times—a thousand times—better than any of these twerps you've

been having to dight with. Isn't that true? Just in the nature of things. Because you're Marine."

"Why—I guess it is. I never thought of it before like that."

"But you can see it's true now, when you think of it. Take that date you had with the man from Air. How could it be your fault that you couldn't respond to him, somebody from *Air?* Why, it was his fault—it's as plain as the nose on your face—*his* fault for being from a repulsive service like Air!"

Sonya was looking at the huxley with parted lips and shining eyes. "I never thought of it before," she breathed. "But it's true. You're right. You're wonderfully, wonderfully right!' '

"Of course I am," said the huxley smugly. "I was built to be right. Now, let's consider this matter of your next date."

"Yes, let's."

"You'll go to the neutral area, as usual. You'll be wearing your miniBAR won't you?"

"Yes, of course. We always go in armed."

"Good. You'll go to the head and undress. You'll give yourself your Watson. If it works—"

"It won't. I'm almost sure of that."

"Hear me out. As I was saying, if it works, you'll dight. If it doesn't you'll be carrying your miniBAR."

"Where?" asked Sonya, frowning.

"Behind your back. You want to give him a chance. But not too good a chance. If the Watson doesn't work—" the huxley paused for dramatic effect—*"get out your gun and shoot him. Shoot him through the heart.* Leave him lying up against a bulkhead. Why should you go through a painful scene like the one you just described for the sake of a yuk from Air?"

"Yes—but—" Sonya had the manner of one who, while striving to be reasonable, is none too sure that reasonableness can be justified. "That wouldn't reduce inter-service tension effectively."

"My dear young lady, why should inter-service tension

be reduced at the expense of Marine? Besides, you've got to take the big, over-all view. Whatever benefits Marine, benefits Defense."

"Yes . . . That's true . . . I think you've given me good advice."

"Of course I have! One thing more. After you shoot him, leave a note with your name, sector, and identity number on it. You're not ashamed of it."

"No . . . No . . . But I just remembered. How can he give me the pig formula when he's dead?"

"He's just as likely to give it to you dead as he was when he was alive. Besides, think of the humiliation of it. You, Marine, having to lower yourself to wheedle a thing like that out of Air! Why, he ought to be proud, honored, to give the formula to you."

"Yes, he ought." Sonya's lips tightened. "I won't take any nonsense from him," she said. "Even if the Watson works and I dight him, I'll shoot him afterwards. Wouldn't you?"

"Of course. Any girl with spirit would."

Major Briggs glanced at her watch. "Twenty past! I'm overdue at the piggery right now. Thank you so much." She beamed at him. "I'm going to take your advice."

"I'm glad. Good-bye."

"Good-bye."

She walked out of the room, humming, "From the halls of Montezuma . . ."

Left alone, the huxley interchanged its eyes and nose absently a couple of times. It looked up at the ceiling speculatively, as if it wondered when the bombs from Air, Infantry, and Navy were going to come crashing down. It had had interviews with twelve young women so far, and it had given them all the same advice it had given Major Briggs. Even a huxley with a short in its chest might have foreseen that the final result of its counselling would be catastrophic for Marine.

It sat a little while longer, repeating to itself, "Poppoff, Poppoff, Papa, potatoes, poultry, prunes and prism, prunes and prism."

Its short was sputtering loudly and cheerfully; it hunted

around on the broadcast sound band until it found a program of atonal music that covered the noise successfully. Though its derangement had reached a point that was not far short of insanity, the huxley still retained a certain cunning.

Once more it repeated, "Poppoff Poppoff," to itself. Then it went to the door of its waiting room and called in its next client.

STEPHEN VINCENT BENÉT
Nightmare Number Three

We had expected everything but revolt .
And I kind of wonder myself when they started thinking—
But there's no dice in that now.
I've heard fellows say
They must have planned it for years and maybe they did.
Looking back, you can find little incidents here and there,
Like the concrete-mixer in Jersey eating the wop
Or the roto press that printed "Fiddle-dee-dee!"
In a three-color process all over Senator Sloop,
Just as he was making a speech. The thing about that
Was, how could it walk upstairs? But it was upstairs,
Clicking and mumbling in the Senate Chamber.
They had to knock out the wall to take it away
And the wrecking-crew said it grinned.
It was only the best
Machines, of course, the superhuman machines,
The ones we'd built to be better than flesh and bone,
But the cars were in it, of course . . .
and they hunted us
Like rabbits through the cramped streets on that Bloody Monday,
The Madison Avenue busses leading the charge.
The busses were pretty bad—but I'll not forget
The smash of glass when the Duesenberg left the showroom
And pinned three brokers to the Racquet Club steps

Or the long howl of the horns when they saw men run,
When they saw them looking for holes in the solid ground
. . .
I guess they were tired of being ridden in
And stopped and started by pygmies for silly ends,
Of wrapping cheap cigarettes and bad chocolate bars
Collecting nickles and waving platinum hair
And letting six million people live in a town.
I guess it was that. I guess they got tired of us
And the whole smell of human hands.
But it was a shock
To climb sixteen flights of stairs to Art Zuckow's office
(Nobody took the elevators twice)
And find him strangled to death in a nest of telephones,
The octopus-tendrils waving over his head,
And a sort of quiet humming filling the air. . . .
Do they eat? . . . There was red . . . But I did not stop to look.
I don't know yet how I got to the roof in time
And it's lonely, here on the roof.
For a while, I thought
That window-cleaner would make it, and keep me company.
But they got him with his own hoist at the sixteenth floor
And dragged him in, with a squeal.
You see, they cooperate. Well, we taught them that
And it's fair enough, I suppose. You see, we built them.
We taught them to think for themselves.
It was bound to come. You can see it was bound to come.
And it won't be so bad, in the country. I hate to think
Of the reapers, running wild in the Kansas fields,
And the transport planes like hawks on a chickenyard,
But the horses might help. We might make a deal with the horses.
At least, you've more chance, out there.
And they need us, too.
They're bound to realize that when they once calm down.
They'll need oil and spare parts and adjustments and tuning up.
Slaves? Well, in a way, you know, we were slaves before.

There won't be so much real difference—honest, there won't.
(I wish I hadn't looked into that beauty parlor
And seen what was happening there.
But those are female machines and a bit high-strung.)
Oh, we'll settle down. We'll arrange it. We'll compromise.
It wouldn't make sense to wipe out the whole human race.
Why, I bet if I went to my old Plymouth now
(Of course, you'd have to do it the tactful way)
And said, "Look here! Who got you the swell French horn?"
He wouldn't turn me over to those police cars;
At least I don't think he would.
Oh, it's going to be jake.
There won't be so much real difference—honest, there won't—
And I'd go down in a minute and take my chance—
I'm a good American and I always liked them—
Except for one small detail that bothers me
And that's the food proposition. Because, you see,
The concrete-mixer may have made a mistake,
And it looks like just high spirits.
But, if it's got so they like the flavor . . . well . . .

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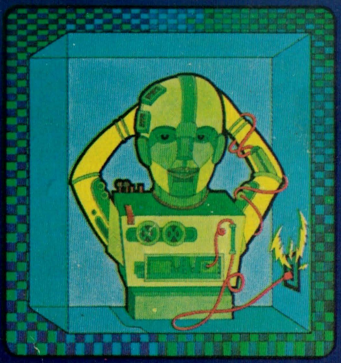
MAN VS. MACHINE



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