

Orphans of the Void

by Michael Shaara, 1928-1988

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Finding a cause worth dying for is no great trick—the Universe is full of them. Finding one worth living for is the genuine problem!

In the region of the Coal Sack Nebula, on the dead fourth planet of a star called Tyban, Captain Steffens of the Mapping Command stood counting buildings. Eleven. No, twelve. He wondered if there was any significance in the number. He had no idea.

„What do you make of it?“ he asked.

Lieutenant Ball, the executive officer of the ship, almost tried to scratch his head before he remembered that he was wearing a spacesuit.

„Looks like a temporary camp,“ Ball said. „Very few buildings, and all built out of native materials, the only stuff available. Castaways, maybe?“

Steffens was silent as he walked up onto the rise. The flat weathered stone jutted out of the sand before him.

„No inscriptions,“ he pointed out.

„They would have been worn away. See the wind grooves? Anyway, there’s not another building on the whole damn planet. You wouldn’t call it much of a civilization.“

„You don’t think these are native?“

Ball said he didn’t. Steffens nodded.

Standing there and gazing at the stone, Steffens felt the awe of great age. He had a hunch, deep and intuitive, that this was old—too old. He reached out a gloved hand, ran it gently over the smooth stone ridges of the wall. Although the atmosphere was very thin, he noticed that the buildings had no airlocks.

Ball’s voice sounded in his helmet: „Want to set up shop, Skipper?“

Steffens paused. „All right, if you think it will do any good.“

„You never can tell. Excavation probably won’t be much use. These things are on a raised rock foundation, swept clean by the wind. And you can see that the rock itself is native—“ he indicated the ledge beneath their feet—„and was cut out a long while back.“

„How long?“

Ball toed the sand uncomfortably. „I wouldn’t like to say off-hand.“

„Make a rough estimate.“

Ball looked at the captain, knowing what was in his mind. He smiled wryly and said: „Five thousand years? Ten thousand? I don’t know.“

Steffens whistled.

Ball pointed again at the wall. „Look at the striations. You can tell from that alone. It would take even a brisk Earth wind at least several thousand years to cut that deep, and the wind here has only a fraction of that force.“

The two men stood for a long moment in silence. Man had been in interstellar space for three hundred years and this was the first uncovered evidence of an advanced, space-crossing, alien race. It was an historic moment, but neither of them was thinking about history.

Man had been in space for only three hundred years. Whatever had built these had been in space for thousands of years.

Which ought to give them, thought Steffens uncomfortably, one hell of a good head-start.

While the excav crew worked steadily, turning up nothing, Steffens remained alone among the buildings. Ball came out to him, looked dryly at the walls.

„Well,“ he said, „whoever they were, we haven’t heard from them since.“

„No? How can you be sure?“ Steffens grunted. „A space-borne race was roaming this part of the Galaxy while men were still pitching spears at each other, that long ago. And this planet is only a parsec from Varius II, a civilization as old as Earth’s. Did whoever built these get to Varius? Or did they get to Earth? How can you know?“ He kicked at the sand distractedly. „And most important, where are they now? A race with several thousand years...“

„Fifteen thousand,“ Ball said. When Steffens looked up, he added: „That’s what the geology boys say. Fifteen thousand, at the least.“

Steffens turned to stare unhappily at the buildings. When he realized now how really old they were, a sudden thought struck him.

„But why buildings? Why did they have to build in stone, to last? There’s something wrong with that. They shouldn’t have had a need to build, unless they were castaways. And castaways would have left something behind. The only reason they would need a camp would be—“

„If the ship left and some of them stayed.“

Steffens nodded. „But then the ship must have come back. Where did it go?“ He ceased kicking at the sand and looked up into the blue-black midday sky. „We'll never know.“

„How about the other planets?“ Ball asked.

„The report was negative. Inner too hot, outer too heavy and cold. The third planet is the only one with a decent temperature range, but it has a CO2 atmosphere.“

„How about moons?“

Steffens shrugged. „We could try them and find out.“

The third planet was a blank, gleaming ball until they were in close, and then the blankness resolved into folds and piling clouds and dimly, in places, the surface showed through. The ship went down through the clouds, falling the last few miles on her brakes. They came into the misty gas below, leveled off and moved along the edge of the twilight zone.

The moons of this solar system had yielded nothing. The third planet, a hot, heavy world which had no free oxygen and from which the monitors had detected nothing, was all that was left. Steffens expected nothing, but he had to try.

At a height of several miles, the ship moved up the zone, scanning, moving in the familiar slow spiral of the Mapping Command. Faint dark outlines of bare rocks and hills moved by below.

Steffens turned the screen to full magnification and watched silently.

After a while he saw a city.

The main screen being on, the whole crew saw it. Someone shouted and they stopped to stare, and Steffens was about to call for altitude when he saw that the city was dead.

He looked down on splintered walls that were like cloudy glass pieces rising above a plain, rising in a shattered circle. Near the center of the city, there was a huge, charred hole at least three miles in diameter and very deep. In all the piled rubble, nothing moved.

Steffens went down low to make sure, then brought the ship around and headed out across the main continent into the bright area of the sun. The rocks rolled by below, there was no vegetation at all, and then there were more cities—all with the black depression, the circular stamp that blotted away and fused the buildings into nothing.

No one on the ship had anything to say. None had ever seen a war, for there had not been war on Earth or near it for more than three hundred years.

The ship circled around to the dark side of the planet. When they were down below a mile, the radiation counters began to react. It became apparent, from the dials, that there could be nothing alive.

After a while Ball said: „Well, which do you figure? Did our friends from the fourth planet do this, or were they the same people as these?“

Steffens did not take his eyes from the screen. They were coming around to the daylight side.

„We'll go down and look for the answer,“ he said. „Break out the radiation suits.“

He paused, thinking. If the ones on the fourth planet were alien to this world, they were from outer space, could not have come from one of the other planets

here. They had starships and were warlike. Then, thousands of years ago. He began to realize how important it really was that Ball's question be answered.

When the ship had gone very low, looking for a landing site, Steffens was still by the screen. It was Steffens, then, who saw the thing move.

Down far below, it had been a still black shadow, and then it moved. Steffens froze. And he knew, even at that distance, that it was a robot.

Tiny and black, a mass of hanging arms and legs, the thing went gliding down the slope of a hill. Steffens saw it clearly for a full second, saw the dull ball of its head tilt upward as the ship came over, and then the hill was past.

Quickly Steffens called for height. The ship bucked beneath him and blasted straight up; some of the crew went crashing to the deck. Steffens remained by the screen, increasing the magnification as the ship drew away. And he saw another, then two, then a black gliding group, all matched with bunches of hanging arms.

Nothing alive but robots, he thought, robots. He adjusted to full close up as quickly as he could and the picture focused on the screen. Behind him he heard a crewman grunt in amazement.

A band of clear, plasticlike stuff ran round the head—it would be the eye, a band of eye that saw all ways. On the top of the head was a single round spot of the plastic, and the rest was black metal, joined, he realized, with fantastic perfection. The angle of sight was now almost perpendicular. He could see very little of the branching arms of the trunk, but what had been on the screen was enough. They were the most perfect robots he had ever seen.

The ship leveled off. Steffens had no idea what to do; the sudden sight of the moving things had unnerved him. He had already sounded the alert, flicked out the defense screens. Now he had nothing to do. He tried to concentrate on what the League Law would have him do.

The Law was no help. Contact with planet-bound races was forbidden under any circumstances. But could a bunch of robots be called a race? The Law said nothing about robots because Earthmen had none. The building of imaginative robots was expressly forbidden. But at any rate, Steffens thought, he had made contact already.

While Steffens stood by the screen, completely bewildered for the first time in his space career, Lieutenant Ball came up, hobbling slightly. From the bright new bruise on his cheek, Steffens guessed that the sudden climb had caught him unaware. The exec was pale with surprise.

„What were they?“ he said blankly. „Lord, they looked like robots!“

„They were.“

Ball stared confoundedly at the screen. The things were now a confusion of dots in the mist.

„Almost humanoid,“ Steffens said, „but not quite.“

Ball was slowly absorbing the situation. He turned to gaze inquiringly at Steffens.

„Well, what do we do now?“

Steffens shrugged. „They saw us. We could leave now and let them quite possibly make a ... a legend out of our visit, or we could go down and see if they tie in with the buildings on Tyban IV.“

„Can we go down?“

„Legally? I don't know. If they are robots, yes, since robots cannot constitute a race. But there's another possibility.“ He tapped his fingers on the screen confusedly. „They don't have to be robots at all. They could be the natives.“

Ball gulped. „I don't follow you.“

„They could be the original inhabitants of this planet—the brains of them, at least, protected in radiation-proof metal. Anyway,“ he added, „they're the most perfect mechanicals I've ever seen.“

Ball shook his head, sat down abruptly. Steffens turned from the screen, strode nervously across the Main Deck, thinking.

The Mapping Command, they called it. Theoretically, all he was supposed to do was make a closeup examination of unexplored systems, checking for the presence of life-forms as well as for the possibilities of human colonization. Make a check and nothing else. But he knew very clearly that if he returned to Sirius base without investigating this robot situation, he could very well be court-martialed one way or the other, either for breaking the Law of Contact or for dereliction of duty.

And there was also the possibility, which abruptly occurred to him, that the robots might well be prepared to blow his ship to hell and gone.

He stopped in the center of the deck. A whole new line of thought opened up. If the robots were armed and ready ... could this be an outpost?

An outpost!

He turned and raced for the bridge. If he went in and landed and was lost, then the League might never know in time. If he went in and stirred up trouble...

The thought in his mind was scattered suddenly, like a mist blown away. A voice was speaking in his mind, a deep calm voice that seemed to say:

„Greetings. Do not be alarmed. We do not wish you to be alarmed. Our desire is only to serve...“

„Greetings, it said! Greetings!“ Ball was mumbling incredulously through shocked lips.

Everyone on the ship had heard the voice. When it spoke again, Steffens was not sure whether it was just one voice or many voices.

„We await your coming,“ it said gravely, and repeated: „Our desire is only to serve.“

And then the robots sent a picture.

As perfect and as clear as a tridim movie, a rectangular plate took shape in Steffens' mind. On the face of the plate, standing alone against a background of red-brown, bare rocks, was one of the robots. With slow, perfect movement, the robot carefully lifted one of the hanging arms of its side, of its right side, and extended it toward Steffens, a graciously offered hand.

Steffens felt a peculiar, compelling urge to take the hand, realized right away that the urge to take the hand was not entirely his. The robot mind had helped.

When the picture vanished, he knew that the others had seen it. He waited for a while; there was no further contact, but the feeling of the robot's urging was still strong within him. He had an idea that, if they wanted to, the robots could control his mind. So when nothing more happened, he began to lose his fear.

While the crew watched in fascination, Steffens tried to talk back. He concentrated hard on what he was saying, said it aloud for good measure, then held his own hand extended in the robot manner of shaking hands.

„Greetings,“ he said, because it was what they had said, and explained: „We have come from the stars.“

It was overly dramatic, but so was the whole situation. He wondered baffledly if he should have let the Alien Contact crew handle it. Order someone to stand there, feeling like a fool, and think a message?

No, it was his responsibility; he had to go on:

„We request—we respectfully request permission to land upon your planet.“

Steffens had not realized that there were so many.

They had been gathering since his ship was first seen, and now there were hundreds of them clustered upon the hill. Others were arriving even as the skiff landed; they glided in over the rocky hills with fantastic ease and power, so that Steffens felt a momentary anxiety. Most of the robots were standing with the silent immobility of metal. Others threaded their way to the fore and came near the skiff, but none touched it, and a circle was cleared for Steffens when he came out.

One of the near robots came forward alone, moving, as Steffens now saw, on a number of short, incredibly strong and agile legs. The black thing paused before him, extended a hand as it had done in the picture. Steffens took it, he hoped, warmly; felt the power of the metal through the glove of his suit.

„Welcome,“ the robot said, speaking again to his mind, and now Steffens detected a peculiar alteration in the robot's tone. It was less friendly now, less—Steffens could not understand—somehow less interested, as if the robot had been—expecting someone else.

„Thank you,“ Steffens said. „We are deeply grateful for your permission to land.“

„Our desire,“ the robot repeated mechanically, „is only to serve.“

Suddenly, Steffens began to feel alone, surrounded by machines. He tried to push the thought out of his mind, because he knew that they should seem inhuman. But...

„Will the others come down?“ asked the robot, still mechanically.

Steffens felt his embarrassment. The ship lay high in the mist above, jets throbbing gently.

„They must remain with the ship,“ Steffens said aloud, trusting to the robot's formality not to ask him why. Although, if they could read his mind, there was no need to ask.

For a long while, neither spoke, long enough for Steffens to grow tense and uncomfortable. He could not think of a thing to say, the robot was obviously waiting, and so, in desperation, he signaled the Aliencon men to come on out of the skiff.

They came, wonderingly, and the ring of robots widened. Steffens heard the one robot speak again. The voice was now much more friendly.

„We hope you will forgive us for intruding upon your thought. It is our—custom—not to communicate unless we are called upon. But when we observed that you were in ignorance of our real—nature—and were about to leave our planet, we decided to put aside our custom, so that you might base your decision upon sufficient data.“

Steffens replied haltingly that he appreciated their action.

„We perceive,“ the robot went on, „that you are unaware of our complete access to your mind, and would perhaps be—dismayed—to learn that we have been gathering information from you. We must—apologize. Our only purpose

was so that we could communicate with you. Only that information was taken which is necessary for communication and—understanding. We will enter your minds henceforth only at your request.”

Steffens did not react to the news that his mind was being probed as violently as he might have. Nevertheless it was a shock, and he retreated into observant silence as the Aliencon men went to work.

The robot which seemed to have been doing the speaking was in no way different from any of the others in the group. Since each of the robots was immediately aware of all that was being said or thought, Steffens guessed that they had sent one forward just for appearance's sake, because they perceived that the Earthmen would feel more at home. The picture of the extended hand, the characteristic handshake of Earthmen, had probably been borrowed, too, for the same purpose of making him and the others feel at ease. The one jarring note was the robot's momentary lapse, those unexplainable few seconds when the things had seemed almost disappointed. Steffens gave up wondering about that and began to examine the first robot in detail.

It was not very tall, being at least a foot shorter than the Earthmen. The most peculiar thing about it, except for the circling eye-band of the head, was a mass of symbols which were apparently engraved upon the metal chest. Symbols in row upon row—numbers, perhaps—were upon the chest, and repeated again below the level of the arms, and continued in orderly rows across the front of the robot, all the way down to the base of the trunk. If they were numbers, Steffens thought, then it was a remarkably complicated system. But he noticed the same pattern on the nearer robots, all apparently identical. He was forced to conclude that the symbols were merely decoration and let it go tentatively at that, although the answer seemed illogical.

It wasn't until he was on his way home that Steffens remembered the symbols again. And only then did he realized what they were.

After a while, convinced that there was no danger, Steffens had the ship brought down. When the crew came out of the airlock, they were met by the robots, and each man found himself with a robot at his side, humbly requesting to be of service. There were literally thousands of the robots now, come from all over the barren horizon. The mass of them stood apart, immobile on a plain near the ship, glinting in the sun like a vast, metallic field of black wheat.

The robots had obviously been built to serve. Steffens began to feel their pleasure, to sense it in spite of the blank, expressionless faces. They were almost like children in their eagerness, yet they were still reserved. Whoever had built them, Steffens thought in wonder, had built them well.

Ball came to join Steffens, staring at the robots through the clear plastic of his helmet with baffledly widened eyes. A robot moved out from the mass in the field, allied itself to him. The first to speak had remained with Steffens.

Realizing that the robot could hear every word he was saying, Ball was for a while apprehensive. But the sheer unreality of standing and talking with a multi-limbed, intelligent hunk of dead metal upon the bare rock of a dead, ancient world, the unreality of it slowly died. It was impossible not to like the things. There was something in their very lines which was pleasant and relaxing.

Their builders, Steffens thought, had probably thought of that, too.

„There’s no harm in them,“ said Ball at last, openly, not minding if the robots heard. „They seem actually glad we’re here. My God, whoever heard of a robot being glad?“

Steffens, embarrassed, spoke quickly to the nearest mechanical: „I hope you will forgive us our curiosity, but—yours is a remarkable race. We have never before made contact with a race like yours.“ It was said haltingly, but it was the best he could do.

The robot made a singularly human nodding motion of its head.

„I perceive that the nature of our construction is unfamiliar to you. Your question is whether or not we are entirely ›mechanical‹. I am not exactly certain as to what the word *mechanical* is intended to convey—I would have to examine your thought more fully—but I believe that there is fundamental similarity between our structures.“

The robot paused. Steffens had a distinct impression that it was disconcerted.

„I must tell you,“ the thing went on, „that we ourselves are—curious.“ It stopped suddenly, struggling with a word it could not comprehend. Steffens waited, listening with absolute interest. It said at length:

„We know of only two types of living structure. Ours, which is largely metallic, and that of the Makers, which would appear to be somewhat more like yours. I am not a—doctor—and therefore cannot acquaint you with the specific details of the Makers’ composition, but if you are interested I will have a doctor brought forward. It will be glad to be of assistance.“

It was Steffens’ turn to struggle, and the robot waited patiently while Ball and the second robot looked on in silence. The Makers, obviously, were whoever or whatever had built the robots, and the „doctors,“ Steffens decided, were probably just that—doctor-robots, designed specifically to care for the apparently flesh-bodies of the Makers.

The efficiency of the things continued to amaze him, but the question he had been waiting to ask came out now with a rush:

„Can you tell us where the Makers are?“

Both robots stood motionless. It occurred to Steffens that he couldn’t really be sure which was speaking. The voice that came to him spoke with difficulty.

„The Makers—are not here.“

Steffens stared in puzzlement. The robot detected his confusion and went on:

„The Makers have gone away. They have been gone for a very long time.“

Could that be pain in its voice, Steffens wondered, and then the spectre of the ruined cities rose harsh in his mind.

War. The Makers had all been killed in that war. And these had not been killed.

He tried to grasp it, but he couldn’t. There were robots here in the midst of a radiation so lethal that nothing, nothing could live; robots on a dead planet, living in an atmosphere of carbon dioxide.

The carbon dioxide brought him up sharp.

If there had been life here once, there would have been plant life as well, and therefore oxygen. If the war had been so long ago that the free oxygen had since gone out of the atmosphere—good God, how old were the robots? Steffens looked at Ball, then at the silent robots, then out across the field to where the rest of them stood. The black wheat. Steffens felt a deep chill.

Were they immortal?

„Would you like to see a doctor?“

Steffens jumped at the familiar words, then realized to what the robot was referring.

„No, not yet,“ he said, „thank you.“ He swallowed hard as the robots continued waiting patiently.

„Could you tell me,“ he said at last, „how old you are? Individually?“

„By your reckoning,“ said his robot, and paused to make the calculation, „I am forty-four years, seven months, and eighteen days of age, with ten years and approximately nine months yet to be alive.“

Steffens tried to understand that.

„It would perhaps simplify our conversations,“ said the robot, „if you were to refer to me by a name, as is your custom. Using the first—letters—of my designation, my name would translate as Elb.“

„Glad to meet you,“ Steffens mumbled.

„You are called ‚Stefi,“ said the robot obligingly. Then it added, pointing an arm at the robot near Ball: „The age of—Peb—is seventeen years, one month and four days. Peb has therefore remaining some thirty-eight years.“

Steffens was trying to keep up. Then the life span was obviously about fifty-five years. But the cities, and the carbon dioxide? The robot, Elb, had said that the Makers were similar to him, and therefore oxygen and plant life would have been needed. Unless—

He remembered the buildings on Tyban IV.

Unless the Makers had not come from this planet at all.

His mind helplessly began to revolve. It was Ball who restored order.

„Do you build yourselves?“ the exec asked.

Peb answered quickly, that faint note of happiness again apparent, as if the robot was glad for the opportunity of answering.

„No, we do not build ourselves. We are made by the—“ another pause for a word—„by the Factory.“

„The Factory?“

„Yes. It was built by the Makers. Would you care to see it?“

Both of the Earthmen nodded dumbly.

„Would you prefer to use your—skiff? It is quite a long way from here.“

It was indeed a long way, even by skiff. Some of the Aliencon crew went along with them. And near the edge of the twilight zone, on the other side of the world, they saw the Factory outlined in the dim light of dusk. A huge, fantastic block, wrought of gray and cloudy metal, lay in a valley between two worn mountains. Steffens went down low, circling in the skiff, stared in awe at the size of the building. Robots moved outside the thing, little black bugs in the distance—moving around their birthplace.

The Earthmen remained for several weeks. During that time, Steffens was usually with Elb, talking now as often as he listened, and the Aliencon team roamed the planet freely, investigating what was certainly the strangest culture in history. There was still the mystery of those buildings on Tyban IV; that, as well as the robots' origin, would have to be cleared up before they could leave.

Surprisingly, Steffens did not think about the future. Whenever he came near a robot, he sensed such a general, comfortable air of good feeling that it warmed him, and he was so preoccupied with watching the robots that he did little thinking.

Something he had not realized at the beginning was that he was as unusual to the robots as they were to him. It came to him with a great shock that not one of the robots had ever seen a living thing. Not a bug, a worm, a leaf. They did not know what flesh was. Only the doctors knew that, and none of them could readily understand what was meant by the words „organic matter.“ It had taken them some time to recognize that the Earthmen wore suits which were not parts of their bodies, and it was even more difficult for them to understand why the suits were needed.

But when they did understand, the robots did a surprising thing.

At first, because of the excessive radiation, none of the Earthmen could remain outside the ship for long, even in radiation suits. And one morning, when Steffens came out of the ship, it was to discover that hundreds of the robots, working through the night, had effectively decontaminated the entire area.

It was at this point that Steffens asked how many robots there were. He learned to his amazement that there were more than nine million. The great mass of them had politely remained a great distance from the ship, spread out over the planet, since they were highly radioactive.

Steffens, meanwhile, courteously allowed Elb to probe into his mind. The robot extracted all the knowledge of matter that Steffens held, pondered over the knowledge and tried to digest it, and passed it on to the other robots. Steffens, in turn, had a difficult time picturing the mind of a thing that had never known life.

He had a vague idea of the robot's history—more, perhaps, than they knew themselves—but he refrained from forming an opinion until Aliencon made its report. What fascinated him was Elb's amazing philosophy, the only outlook, really, that the robot could have had.

„What do you do?“ Steffens asked.

Elb replied quickly, with characteristic simplicity: „We can do very little. A certain amount of physical knowledge was imparted to us at birth by the Makers. We spend the main part of our time expanding that knowledge wherever possible. We have made some progress in the natural sciences, and some in mathematics. Our purpose in being, you see, is to serve the Makers. Any ability we can acquire will make us that much more fit to serve when the Makers return.“

„When they return?“ It had not occurred to Steffens until now that the robots expected the Makers to do so.

Elb regarded him out of the band of the circling eye. „I see you had surmised that the Makers were not coming back.“

If the robot could have laughed, Steffens thought it would have, then. But it just stood there, motionless, its tone politely emphatic.

„It has always been our belief that the Makers would return. Why else would we have been built?“

Steffens thought the robot would go on, but it didn't. The question, to Elb, was no question at all.

Although Steffens knew already what the robot could not possibly have known—that the Makers were gone and would never come back—he was a long time understanding. What he did was push this speculation into the back of his mind, to keep it from Elb. He had no desire to destroy a faith.

But it created a problem in him. He had begun to picture for Elb the structure of human society, and the robot—a machine which did not eat or sleep—listened gravely and tried to understand. One day Steffens mentioned God.

„God?“ the robot repeated without comprehension. „What is God?“

Steffens explained briefly, and the robot answered:

„It is a matter which has troubled us. We thought at first that you were the Makers returning—“ Steffens remembered the brief lapse, the seeming disappointment he had sensed—„but then we probed your minds and found that you were not, that you were another kind of being, unlike either the Makers or ourselves. You were not even—“ Elb caught himself—„you did not happen to be telepaths. Therefore we troubled over who made you. We did detect the word ›Maker‹ in your theology, but it seemed to have a peculiar—“ Elb paused for a long while—„an untouchable, intangible meaning which varies among you.“

Steffens understood. He nodded.

The Makers were the robots' God, were all the God they needed. The Makers had built them, the planet, the universe. If he were to ask them who made the Makers, it would be like their asking him who made God.

It was an ironic parallel, and he smiled to himself.

But on that planet, it was the last time he smiled.

The report from Aliencon was finished at the end of the fifth week. Lieutenant Ball brought it in to Steffens in his cabin, laid it on the desk before him.

„Get set,“ Ball advised stiffly, indicating the paper. There was a strained, brittle expression on his face. „I sort of figured it, but I didn't know it was this bad.“

When Steffens looked up in surprise, Ball said:

„You don't know. Read it. Go ahead.“ The exec turned tautly and left the room.

Steffens stared after him, then looked down at the paper. The hint he had of the robots' history came back into his mind. Nervously, he picked up the report and started to read.

The story unfolded objectively. It was clear and cold, the way formal reports must always be. Yet there was a great deal of emotion in it. Even Aliencon couldn't help that.

What it told was this:

The Makers had been almost humanoid. Almost, but with certain notable exceptions. They were telepaths—no doubt an important factor in their remarkable technological progress—and were equipped with a secondary pair of arms. The robot-doctors were able to give flawless accounts of their body chemistry, which was similar to Earth-type, and the rubble of the cities had given a certain amount of information concerning their society and habits. An attached paper described the sociology, but Steffens put it aside until sometime later.

There had been other Factories. The remains of them had been found in several places, on each of the other continents. They had been built sometime prior to the war, and all but one of the Factories had subsequently been destroyed.

Yet the Makers were not, as Steffens had supposed, a warlike people. Telepathy had given them the power to know each other's minds and to

interchange ideas, and their record of peace was favorable, especially when compared with Earth's. Nevertheless, a war had begun, for some reason Aliencon could not find, and it had obviously gotten out of hand.

Radiation and bacteria eventually destroyed the Makers; the last abortive efforts created enough radiation to destroy life entirely. There were the germs and the bombs and the burning rays, and in the end everything was blasted and died—everything, that is, but the one lone Factory. By a pure, blind freak, it survived.

And, naturally, it kept turning out robots.

It was powered by an atomic pile, stocked with materials which, when combined with the returning, worn-out robots, enabled it to keep producing indefinitely. The process, even of repair, was entirely automatic.

Year after year, the robots came out in a slow, steady stream. Ungoverned, uninstructed, they gathered around the Factory and waited, communicated only rarely among themselves. Gradually the memory of war, of life—of everything but that which was imprisoned in their minds at birth—was lost.

The robots kept coming, and they stood outside the Factory.

The robot brain, by far the finest thing the Makers had ever built, was variable. There was never a genius brain, and never a moron brain, yet the intelligence of the robots varied considerably in between. Slowly, over the long years, the more intelligent among them began to communicate with each other, to inquire, and then to move away from the Factory, searching.

They looked for someone to serve and, of course, there was no one. The Makers were gone, but the crime was not in that alone. For when the robots were built, the Makers had done this:

Along with the first successful robot brain, the Makers had realized the necessity of creating a machine which could never turn against them. The present robot brain was the result. As Steffens had already sensed, the robots could feel pain. Not the pain of physical injury, for there were no nerves in the metal bodies, but the pain of frustration, the pressure of thwarted emotion, mental pain.

And so, into the robot brain, the Makers had placed this prime Directive: the robots could only feel content, free from the pain, as long as they were serving the Makers. The robots must act for the Makers, must be continually engaged in carrying out the wishes of the Makers, or else there was a slowly growing irritation, a restlessness and discontent which mounted as the unerving days went by.

And there were no more Makers to serve.

The pain was not unbearable. The Makers themselves were not fully aware of the potentialities of the robot brain, and therefore did not risk deranging it. So the pressure reached a peak and leveled off, and for all of the days of the robots' lives, they felt it never-ending, awake and aware, each of them, for fifty-five years.

And the robots never stopped coming.

A millenium passed, during which the robots began to move and to think for themselves. Yet it was much longer before they found a way in which to serve.

The atomic pile which powered the Factory, having gone on for almost five thousand years, eventually wore out. The power ceased. The Factory stopped.

It was the first event in the robots' history. Never before had there been a time when they had known anything at all to alter the course of their lives,

except the varying weather and the unvarying pain. There was one among them now that began to reason.

It saw that no more robots were being produced, and although it could not be sure whether or not this was as the Makers had ordained, it formed an idea. If the purpose of the robots was to serve, then they would fail in that purpose if they were to die out. The robot thought this and communicated it to the others, and then, together, they began to rebuild the pile.

It was not difficult. The necessary knowledge was already in their minds, implanted at birth. The significance lay in the fact that, for the first time in their existence, the robots had acted upon their own initiative, had begun to serve again. Thus the pain ceased.

When the pile was finished, the robots felt the return of the pain and, having once begun, they continued to attempt to serve. A great many examined the Factory, found that they were able to improve upon the structure of their bodies, so that they might be better able to serve the Makers when they returned. Accordingly, they worked in the Factory, perfecting themselves—although they could not improve the brains—and many others left the Factory and began to examine mathematics and the physical universe.

It was not hard for them to build a primitive spaceship, for the Makers had been on the verge of interstellar flight, and they flew it hopefully throughout the solar system, looking to see if the Makers were there. Finding no one, they left the buildings on Tyban IV as a wistful monument, with a hope that the Makers would some day pass this way and be able to use them.

Millenia passed. The pile broke down again, was rebuilt, and so the cycle was repeated. By infinitesimal steps, the robots learned and recorded their learning in the minds of new robots. Eventually they reached the limits of their capability.

The pain returned and never left.

Steffens left his desk, went over and leaned against the screen. For a long while he stood gazing through the mists of carbon air at the pitiful, loyal mechanicals who thronged outside the ship. He felt an almost overwhelming desire to break something, anything, but all he could do was swear to himself.

Ball came back, looked at Steffens' eyes and into them. His own were sick.

„Twenty-five thousand years,“ he said thickly, „that's how long it was. Twenty-five thousand years...“

Steffens was pale and wordless. The mass of the robots outside stood immobile, ageless among rock which was the same, hurting, hurting. A fragment of an old poem came across Steffens' mind. „They also serve who only stand and wait...“

Not since he was very young had he been so deeply moved. He stood up rigidly and began to talk to himself, saying in his mind:

It is all over now. To hell with what is past. We will take them away from this place and let them serve and, by God...

He faltered. But the knowledge of what could be done strengthened him. Earthmen would have to come in ships to take the robots away. It would be a little while, but after all those years a little while was nothing, less than nothing. He stood there thinking of the things the robots could do, of how, in the Mapping Command alone, they would be invaluable. Temperature and atmosphere meant nothing to them. They could land on almost any world, could mine and build and develop...

And so it would be ended. The robots would serve Man.

Steffens took one long, painful breath. Then he strode from the room without speaking to Ball, went forward to the lockers and pulled out a suit, and a moment later he was in the airlock.

He had one more thing to do, and it would be at once the gladdest and most difficult job that he had ever attempted. He had to tell the robots.

He had to go out into the sand and face them, tell them that all of the centuries of pain had been for nothing, that the Makers were dead and would never return, that every robot built for twenty-five thousand years had been just surplus, purposeless. And yet—and this was how he was able to do it—he was also coming to tell them that the wasted years were over, that the years of doing had begun.

As he stepped from the airlock he saw Elb standing, immobile, waiting by the ship. In the last few seconds Steffens realized that it was not necessary to put this into words.

When he reached the robot, he put forth a hand and touched Elb's arm, and said very softly:

„Elb, my friend, you must look into my mind—“

And the robot, as always, obeyed.

