

Swarm

Crystal Express

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“I WILL MISS your conversation during the rest of the voyage,” the alien said.

Captain-Doctor Simon Afriel folded his jeweled hands over his gold-embroidered waistcoat. “I regret it also, ensign,” he said in the alien’s own hissing language. “Our talks together have been very useful to me. I would have paid to learn so much, but you gave it freely.”

“But that was only information,” the alien said. He shrouded his bead-bright eyes behind thick nictitating membranes. “We Investors deal in energy, and

precious metals. To prize and pursue mere knowledge is an immature racial trait.” The alien lifted the long ribbed frill behind his pinhole-sized ears.

“No doubt you are right,” Afriel said, despising him. “We humans are as children to other races, however; so a certain immaturity seems natural to us.” Afriel pulled off his sunglasses to rub the bridge of his nose. The starship cabin was drenched in searing blue light, heavily ultraviolet. It was the light the Investors preferred, and they were not about to change it for one human passenger.

“You have not done badly,” the alien said magnanimously. “You are the kind of race we like to do business with: young, eager, plastic, ready for a wide variety of goods and experiences. We would have contacted you much earlier, but your technology was still too feeble to afford us a profit.”

“Things are different now,” Afriel said. “We’ll make you rich.”

“Indeed,” the Investor said. The frill behind his scaly head flickered rapidly, a sign of amusement. “Within two hundred years you will be wealthy enough to buy from us the secret of our starflight. Or perhaps your Mechanist faction will discover the secret through research.”

Afriel was annoyed. As a member of the Reshaped faction, he did not appreciate the reference to the rival Mechanists. “Don’t put too much stock in mere technical expertise,” he said. “Consider the aptitude for languages we Shapers have. It makes our faction a much better trading partner. To a Mechanist, all Investors look alike.”

The alien hesitated. Afriel smiled. He had appealed to the alien’s personal ambition with his last statement, and the hint had been taken. That was where the Mechanists always erred. They tried to treat all Investors consistently, using the same programmed routines each time. They lacked imagination.

Something would have to be done about the Mechanists, Afriel thought. Something more permanent than the small but deadly confrontations between isolated ships in the Asteroid Belt and the ice-rich Rings of Saturn. Both factions maneuvered constantly, looking for a decisive stroke, bribing away each other’s best talent, practicing ambush, assassination, and industrial espionage.

Captain-Doctor Simon Afriel was a past master of these pursuits. That was why the Reshaped faction had paid the millions of kilowatts necessary to buy his passage. Afriel held doctorates in biochemistry and alien linguistics, and a master’s degree in magnetic weapons engineering. He was thirty-eight years old and had been Reshaped according to the state of the art at the time of his conception. His hormonal balance had been altered slightly to compensate for long periods spent in free-fall. He had no appendix. The structure of his heart had been redesigned for greater efficiency, and his large intestine had been altered to produce the vitamins normally made by intestinal bacteria. Genetic engineering and rigorous training in childhood had given him an intelligence quotient of one hundred and eighty. He was not the brightest of the agents of the Ring Council, but he was one of the most mentally stable and the best trusted.

“It seems a shame,” the alien said, “that a human of your accomplishments should have to rot for two years in this miserable, profitless outpost.”

“The years won’t be wasted,” Afriel said.

“But why have you chosen to study the Swarm? They can teach you nothing, since they cannot speak. They have no wish to trade, having no tools or

technology. They are the only spacefaring race that is essentially without intelligence.”

“That alone should make them worthy of study.”

“Do you seek to imitate them, then? You would make monsters of yourselves.” Again the ensign hesitated. “Perhaps you could do it. It would be bad for business, however.”

There came a fluting burst of alien music over the ship’s speakers, then a screeching fragment of Investor language. Most of it was too high-pitched for Afriel’s ears to follow.

The alien stood, his jeweled skirt brushing the tips of his clawed birdlike feet. “The Swarm’s symbiote has arrived,” he said.

“Thank you,” Afriel said. When the ensign opened the cabin door, Afriel could smell the Swarm’s representative; the creature’s warm yeasty scent had spread rapidly through the starship’s recycled air.

Afriel quickly checked his appearance in a pocket mirror. He touched powder to his face and straightened the round velvet hat on his shoulder-length reddish-blond hair. His earlobes glittered with red impact-rubies, thick as his thumbs’ ends, mined from the Asteroid Belt. His knee-length coat and waistcoat were of gold brocade; the shirt beneath was of dazzling fineness, woven with red-gold thread. He had dressed to impress the Investors, who expected and appreciated a prosperous look from their customers. How could he impress this new alien? Smell, perhaps. He freshened his perfume.

Beside the starship’s secondary airlock, the Swarm’s symbiote was chittering rapidly at the ship’s commander. The commander was an old and sleepy Investor, twice the size of most of her crewmen. Her massive head was encrusted in a jeweled helmet. From within the helmet her clouded eyes glittered like cameras.

The symbiote lifted on its six posterior legs and gestured feebly with its four clawed forelimbs. The ship’s artificial gravity, a third again as strong as Earth’s, seemed to bother it. Its rudimentary eyes, dangling on stalks, were shut tight against the glare. It must be used to darkness, Afriel thought.

The commander answered the creature in its own language. Afriel grimaced, for he had hoped that the creature spoke Investor. Now he would have to learn another language, a language designed for a being without a tongue.

After another brief interchange the commander turned to Afriel. “The symbiote is not pleased with your arrival,” she told Afriel in the Investor language. “There has apparently been some disturbance here involving humans, in the recent past. However, I have prevailed upon it to admit you to the Nest. The episode has been recorded. Payment for my diplomatic services will be arranged with your faction when I return to your native star system.”

“I thank Your Authority,” Afriel said. “Please convey to the symbiote my best personal wishes, and the harmlessness and humility of my intentions...” He broke off short as the symbiote lunged toward him, biting him savagely in the calf of his left leg. Afriel jerked free and leapt backward in the heavy artificial gravity, going into a defensive position. The symbiote had ripped away a long shred of his pants leg; it now crouched quietly, eating it.

“It will convey your scent and composition to its nestmates,” said the commander. “This is necessary. Otherwise you would be classed as an invader, and the Swarm’s warrior caste would kill you at once.”

Afriel relaxed quickly and pressed his hand against the puncture wound to stop the bleeding. He hoped that none of the Investors had noticed his reflexive action. It would not mesh well with his story of being a harmless researcher.

“We will reopen the airlock soon,” the commander said phlegmatically, leaning back on her thick reptilian tail. The symbiote continued to munch the shred of cloth. Afriel studied the creature’s neckless segmented head. It had a mouth and nostrils; it had bulbous atrophied eyes on stalks; there were hinged slats that might be radio receivers, and two parallel ridges of clumped wriggling antennae, sprouting among three chitinous plates. Their function was unknown to him.

The airlock door opened. A rush of dense, smoky aroma entered the departure cabin. It seemed to bother the half-dozen Investors, who left rapidly. “We will return in six hundred and twelve of your days, as by our agreement,” the commander said.

“I thank Your Authority,” Afriel said.

“Good luck,” the commander said in English. Afriel smiled.

The symbiote, with a sinuous wriggle of its segmented body, crept into the airlock. Afriel followed it. The airlock door shut behind them. The creature said nothing to him but continued munching loudly. The second door opened, and the symbiote sprang through it, into a wide, round stone tunnel. It disappeared at once into the gloom.

Afriel put his sunglasses into a pocket of his jacket and pulled out a pair of infrared goggles. He strapped them to his head and stepped out of the airlock. The artificial gravity vanished, replaced by the almost imperceptible gravity of the Swarm’s asteroid nest. Afriel smiled, comfortable for the first time in weeks. Most of his adult life had been spent in free-fall, in the Shapers’ colonies in the Rings of Saturn.

Squatting in a dark cavity in the side of the tunnel was a disk-headed furred animal the size of an elephant. It was clearly visible in the infrared of its own body heat. Afriel could hear it breathing. It waited patiently until Afriel had launched himself past it, deeper into the tunnel. Then it took its place in the end of the tunnel, puffing itself up with air until its swollen head securely plugged the exit into space. Its multiple legs sank firmly into sockets in the walls.

The Investors’ ship had left. Afriel remained here, inside one of the millions of planetoids that circled the giant star Betelgeuse in a girdling ring with almost five times the mass of Jupiter. As a source of potential wealth it dwarfed the entire solar system, and it belonged, more or less, to the Swarm. At least, no other race had challenged them for it within the memory of the Investors.

Afriel peered up the corridor. It seemed deserted, and without other bodies to cast infrared heat, he could not see very far. Kicking against the wall, he floated hesitantly down the corridor.

He heard a human voice. “Dr. Afriel!”

“Dr. Mirny!” he called out. “This way!”

He first saw a pair of young symbiotes scuttling toward him, the tips of their clawed feet barely touching the walls. Behind them came a woman wearing goggles

like his own. She was young, and attractive in the trim, anonymous way of the genetically reshaped.

She screeched something at the symbiotes in their own language, and they halted, waiting. She coasted forward, and Afriel caught her arm, expertly stopping their momentum.

“You didn’t bring any luggage?” she said anxiously.

He shook his head. “We got your warning before I was sent out. I have only the clothes I’m wearing and a few items in my pockets.”

She looked at him critically. “Is that what people are wearing in the Rings these days? Things have changed more than I thought.”

Afriel glanced at his brocaded coat and laughed. “It’s a matter of policy. The Investors are always readier to talk to a human who looks ready to do business on a large scale. All the Shapers’ representatives dress like this these days. We’ve stolen a jump on the Mechanists; they still dress in those coveralls.”

He hesitated, not wanting to offend her. Galina Mirny’s intelligence was rated at almost two hundred. Men and women that bright were sometimes flighty and unstable, likely to retreat into private fantasy worlds or become enmeshed in strange and impenetrable webs of plotting and rationalization. High intelligence was the strategy the Shapers had chosen in the struggle for cultural dominance, and they were obliged to stick to it, despite its occasional disadvantages. They had tried breeding the Superbright—those with quotients over two hundred—but so many had defected from the Shapers’ colonies that the faction had stopped producing them.

“You wonder about my own clothing,” Mirny said.

“It certainly has the appeal of novelty,” Afriel said with a smile.

“It was woven from the fibers of a pupa’s cocoon,” she said. “My original wardrobe was eaten by a scavenger symbiote during the troubles last year. I usually go nude, but I didn’t want to offend you by too great a show of intimacy.”

Afriel shrugged. “I often go nude myself, I never had much use for clothes except for pockets. I have a few tools on my person, but most are of little importance. We’re Shapers, our tools are here.” He tapped his head. “If you can show me a safe place to put my clothes...”

She shook her head. It was impossible to see her eyes for the goggles, which made her expression hard to read. “You’ve made your first mistake, Doctor. There are no places of our own here. It was the same mistake the Mechanist agents made, the same one that almost killed me as well. There is no concept of privacy or property here. This is the Nest. If you seize any part of it for yourself—to store equipment, to sleep in, whatever—then you become an intruder, an enemy. The two Mechanists—a man and a woman—tried to secure an empty chamber for their computer lab. Warriors broke down their door and devoured them. Scavengers ate their equipment, glass, metal, and all.”

Afriel smiled coldly. “It must have cost them a fortune to ship all that material here.”

Mirny shrugged. “They’re wealthier than we are. Their machines, their mining. They meant to kill me, I think. Surreptitiously, so the warriors wouldn’t be upset by a show of violence. They had a computer that was learning the language of the springtails faster than I could.”

“But you survived,” Afriel pointed out. “And your tapes and reports—especially the early ones, when you still had most of your equipment—were of tremendous interest. The Council is behind you all the way. You’ve become quite a celebrity in the Rings, during your absence.”

“Yes, I expected as much,” she said.

Afriel was nonplused. “If I found any deficiency in them,” he said carefully, “it was in my own field, alien linguistics.” He waved vaguely at the two symbiotes who accompanied her. “I assume you’ve made great progress in communicating with the symbiotes, since they seem to do all the talking for the Nest.”

She looked at him with an unreadable expression and shrugged. “There are at least fifteen different kinds of symbiotes here. Those that accompany me are called the springtails, and they speak only for themselves. They are savages, Doctor, who received attention from the Investors only because they can still talk. They were a spacefaring race once, but they’ve forgotten it. They discovered the Nest and they were absorbed, they became parasites.” She tapped one of them on the head. “I tamed these two because I learned to steal and beg food better than they can. They stay with me now and protect me from the larger ones. They are jealous, you know. They have only been with the Nest for perhaps ten thousand years and are still uncertain of their position. They still think, and wonder sometimes. After ten thousand years there is still a little of that left to them.”

“Savages,” Afriel said. “I can well believe that. One of them bit me while I was still aboard the starship. He left a lot to be desired as an ambassador.”

“Yes, I warned him you were coming,” said Mirny. “He didn’t much like the idea, but I was able to bribe him with food... I hope he didn’t hurt you badly.”

“A scratch,” Afriel said. “I assume there’s no chance of infection.”

“I doubt it very much. Unless you brought your own bacteria with you.”

“Hardly likely,” Afriel said, offended. “I have no bacteria. And I wouldn’t have brought microorganisms to an alien culture anyway.”

Mirny looked away. “I thought you might have some of the special genetically altered ones... I think we can go now. The springtail will have spread your scent by mouth-touching in the subsidiary chamber, ahead of us. It will be spread throughout the Nest in a few hours. Once it reaches the Queen, it will spread very quickly.”

She jammed her feet against the hard shell of one of the young springtails and launched herself down the hall. Afriel followed her. The air was warm and he was beginning to sweat under his elaborate clothing, but his antiseptic sweat was odorless.

They exited into a vast chamber dug from the living rock. It was arched and oblong, eighty meters long and about twenty in diameter. It swarmed with members of the Nest.

There were hundreds of them. Most of them were workers, eight-legged and furred, the size of Great Danes. Here and there were members of the warrior caste, horse-sized furry monsters with heavy fanged heads the size and shape of overstuffed chairs.

A few meters away, two workers were carrying a member of the sensor caste, a being whose immense flattened head was attached to an atrophied body that was mostly lungs. The sensor had great platelike eyes, and its furred chitin sprouted

long coiled antennae that twitched feebly as the workers bore it along. The workers clung to the hollowed rock of the chamber walls with hooked and suckered feet.

A paddle-limbed monster with a hairless, faceless head came sculling past them, through the warm reeking air. The front of its head was a nightmare of sharp grinding jaws and blunt armored acid spouts. "A tunneler," Mirny said. "It can take us deeper into the Nest—come with me." She launched herself toward it and took a handhold on its furry, segmented back. Afriel followed her, joined by the two immature springtails, who clung to the thing's hide with their forelimbs. Afriel shuddered at the warm, greasy feel of its rank, damp fur. It continued to scull through the air, its eight fringed paddle feet catching the air like wings.

"There must be thousands of them," Afriel said.

"I said a hundred thousand in my last report, but that was before I had fully explored the Nest. Even now there are long stretches I haven't seen. They must number close to a quarter of a million. This asteroid is about the size of the Mechanists' biggest base—Ceres. It still has rich veins of carbonaceous material. It's far from mined out."

Afriel closed his eyes. If he was to lose his goggles, he would have to feel his way, blind, through these teeming, twitching, wriggling thousands. "The population's still expanding, then?"

"Definitely," she said. "In fact, the colony will launch a mating swarm soon. There are three dozen male and female alates in the chambers near the Queen. Once they're launched, they'll mate and start new Nests. I'll take you to see them presently." She hesitated. "We're entering one of the fungal gardens now."

One of the young springtails quietly shifted position. Grabbing the tunneler's fur with its forelimbs, it began to gnaw on the cuff of Afriel's pants. Afriel kicked it soundly, and it jerked back, retracting its eyestalks.

When he looked up again, he saw that they had entered a second chamber, much larger than the first. The walls around, overhead, and below were buried under an explosive profusion of fungus. The most common types were swollen barrel-like domes, multibranching massed thickets, and spaghetti-like tangled extrusions that moved very slightly in the faint and odorous breeze. Some of the barrels were surrounded by dim mists of exhaled spores.

"You see those caked-up piles beneath the fungus, its growth medium?" Mirny said.

"Yes."

"I'm not sure whether it is a plant form or just some kind of complex biochemical sludge," she said. "The point is that it grows in sunlight, on the outside of the asteroid. A food source that grows in naked space! Imagine what that would be worth, back in the Rings."

"There aren't words for its value," Afriel said.

"It's inedible by itself," she said. "I tried to eat a very small piece of it once. It was like trying to eat plastic."

"Have you eaten well, generally speaking?"

"Yes. Our biochemistry is quite similar to the Swarm's. The fungus itself is perfectly edible. The regurgitate is more nourishing, though. Internal fermentation in the worker hindgut adds to its nutritional value."

Afriel stared. “You grow used to it,” Mirny said. “Later I’ll teach you how to solicit food from the workers. It’s a simple matter of reflex tapping—it’s not controlled by pheromones, like most of their behavior.” She brushed a long lock of clumped and dirty hair from the side of her face. “I hope the pheromonal samples I sent back were worth the cost of transportation.”

“Oh, yes,” said Afriel. “The chemistry of them was fascinating. We managed to synthesize most of the compounds. I was part of the research team myself.” He hesitated. How far did he dare trust her? She had not been told about the experiment he and his superiors had planned. As far as Mirny knew, he was a simple, peaceful researcher, like herself. The Shapers’ scientific community was suspicious of the minority involved in military work and espionage.

As an investment in the future, the Shapers had sent researchers to each of the nineteen alien races described to them by the Investors. This had cost the Shaper economy many gigawatts of precious energy and tons of rare metals and isotopes. In most cases, only two or three researchers could be sent; in seven cases, only one. For the Swarm, Galina Mirny had been chosen. She had gone peacefully, trusting in her intelligence and her good intentions to keep her alive and sane. Those who had sent her had not known whether her findings would be of any use or importance. They had only known that it was imperative that she be sent, even alone, even ill-equipped, before some other faction sent their own people and possibly discovered some technique or fact of overwhelming importance. And Dr. Mirny had indeed discovered such a situation. It had made her mission into a matter of Ring security. That was why Afriel had come.

“You synthesized the compounds?” she said. “Why?”

Afriel smiled disarmingly. “Just to prove to ourselves that we could do it, perhaps.”

She shook her head. “No mind-games, Dr. Afriel, please. I came this far partly to escape from such things. Tell me the truth.”

Afriel stared at her, regretting that the goggles meant he could not meet her eyes. “Very well,” he said. “You should know, then, that I have been ordered by the Ring Council to carry out an experiment that may endanger both our lives.”

Mirny was silent for a moment. “You’re from Security, then?”

“My rank is captain.”

“I knew it... I knew it when those two Mechanists arrived. They were so polite, and so suspicious—I think they would have killed me at once if they hadn’t hoped to bribe or torture some secret out of me. They scared the life out of me, Captain Afriel... You scare me, too.”

“We live in a frightening world, Doctor. It’s a matter of faction security.”

“Everything’s a matter of faction security with your lot,” she said. “I shouldn’t take you any farther, or show you anything more. This Nest, these creatures—they’re not *intelligent*, Captain. They can’t think, they can’t learn. They’re innocent, primordially innocent. They have no knowledge of good and evil. They have no knowledge of *anything*. The last thing they need is to become pawns in a power struggle within some other race, light-years away.”

The tunneler had turned into an exit from the fungal chambers and was paddling slowly along in the warm darkness. A group of creatures like gray, flattened basketballs floated by from the opposite direction. One of them settled on

Afriel's sleeve, clinging with frail whiplike tentacles. Afriel brushed it gently away, and it broke loose, emitting a stream of foul reddish droplets.

"Naturally I agree with you in principle, Doctor," Afriel said smoothly. "But consider these Mechanists. Some of their extreme factions are already more than half machine. Do you expect humanitarian motives from them? They're cold, Doctor—cold and soulless creatures who can cut a living man or woman to bits and never feel their pain. Most of the other factions hate us. They call us racist supermen. Would you rather that one of these cults do what we must do, and use the results against us?"

"This is double-talk." She looked away. All around them workers laden down with fungus, their jaws full and guts stuffed with it, were spreading out into the Nest, scuttling alongside them or disappearing into branch tunnels departing in every direction, including straight up and straight down. Afriel saw a creature much like a worker, but with only six legs, scuttle past in the opposite direction, overhead. It was a parasite mimic. How long, he wondered, did it take a creature to evolve to look like that?

"It's no wonder that we've had so many defectors, back in the Rings," she said sadly. "If humanity is so stupid as to work itself into a corner like you describe, then it's better to have nothing to do with them. Better to live alone. Better not to help the madness spread."

"That kind of talk will only get us killed," Afriel said. "We owe an allegiance to the faction that produced us."

"Tell me truly, Captain," she said. "Haven't you ever felt the urge to leave everything—everyone—all your duties and constraints, and just go somewhere to think it all out? Your whole world, and your part in it? We're trained so hard, from childhood, and so much is demanded from us. Don't you think it's made us lose sight of our goals, somehow?"

"We live in space," Afriel said flatly. "Space is an unnatural environment, and it takes an unnatural effort from unnatural people to prosper there. Our minds are our tools, and philosophy has to come second. Naturally I've felt those urges you mention. They're just another threat to guard against. I believe in an ordered society. Technology has unleashed tremendous forces that are ripping society apart. Some one faction must arise from the struggle and integrate things. We Shapers have the wisdom and restraint to do it humanely. That's why I do the work I do." He hesitated. "I don't expect to see our day of triumph. I expect to die in some brush-fire conflict, or through assassination. It's enough that I can foresee that day."

"But the arrogance of it, Captain!" she said suddenly. "The arrogance of your little life and its little sacrifice! Consider the Swarm, if you really want your humane and perfect order. Here it is! Where it's always warm and dark, and it smells good, and food is easy to get, and everything is endlessly and perfectly recycled. The only resources that are ever lost are the bodies of the mating swarms, and a little air. A Nest like this one could last unchanged for hundreds of thousands of years. Hundreds... of thousands... of years. Who, or what, will remember us and our stupid faction in even a thousand years?"

Afriel shook his head. "That's not a valid comparison. There is no such long view for us. In another thousand years we'll be machines, or gods." He felt the top of his head; his velvet cap was gone. No doubt something was eating it by now.

The tunneler took them deeper into the asteroid's honeycombed free-fall maze. They saw the pupal chambers, where pallid larvae twitched in swaddled silk; the main fungal gardens; the graveyard pits, where winged workers beat ceaselessly at the soupy air, feverishly hot from the heat of decomposition. Corrosive black fungus ate the bodies of the dead into coarse black powder, carried off by blackened workers themselves three-quarters dead.

Later they left the tunneler and floated on by themselves. The woman moved with the ease of long habit; Afriel followed her, colliding bruisingly with squeaking workers. There were thousands of them, clinging to ceiling, walls, and floor, clustering and scurrying at every conceivable angle.

Later still they visited the chamber of the winged princes and princesses, an echoing round vault where creatures forty meters long hung crooked-legged in midair. Their bodies were segmented and metallic, with organic rocket nozzles on their thoraxes, where wings might have been. Folded along their sleek backs were radar antennae on long sweeping booms. They looked more like interplanetary probes under construction than anything biological. Workers fed them ceaselessly. Their bulging spiracled abdomens were full of compressed oxygen.

Mirny begged a large chunk of fungus from a passing worker, deftly tapping its antennae and provoking a reflex action. She handed most of the fungus to the two springtails, which devoured it greedily and looked expectantly for more.

Afriel tucked his legs into a free-fall lotus position and began chewing with determination on the leathery fungus. It was tough, but tasted good, like smoked meat—a delicacy he had tasted only once. The smell of smoke meant disaster in a Shaper's colony.

Mirny maintained a stony silence.

"Food's no problem," Afriel said. "Where do we sleep?"

She shrugged. "Anywhere... there are unused niches and tunnels here and there. I suppose you'll want to see the Queen's chamber next."

"By all means."

"I'll have to get more fungus. The warriors are on guard there and have to be bribed with food."

She gathered an armful of fungus from another worker in the endless stream, and they moved on. Afriel, already totally lost, was further confused in the maze of chambers and tunnels. At last they exited into an immense lightless cavern, bright with infrared heat from the Queen's monstrous body. It was the colony's central factory. The fact that it was made of warm and pulpy flesh did not conceal its essentially industrial nature. Tons of predigested fungal pap went into the slick blind jaws at one end. The rounded billows of soft flesh digested and processed it, squirming, sucking, and undulating, with loud machinelike churnings and gurglings. Out of the other end came an endless conveyorlike blobbed stream of eggs, each one packed in a thick hormonal paste of lubrication. The workers avidly licked the eggs clean and bore them off to nurseries. Each egg was the size of a man's torso.

The process went on and on. There was no day or night here in the lightless center of the asteroid. There was no remnant of a diurnal rhythm in the genes of these creatures. The flow of production was as constant and even as the working of an automated mine.

"This is why I'm here," Afriel murmured in awe. "Just look at this, Doctor. The Mechanists have cybernetic mining machinery that is generations ahead of ours. But here—in the bowels of this nameless little world, is a genetic technology that feeds itself, maintains itself, runs itself, efficiently, endlessly, mindlessly. It's the perfect organic tool. The faction that could use these tireless workers could make itself an industrial titan. And our knowledge of biochemistry is unsurpassed. We Shapers are just the ones to do it."

"How do you propose to do that?" Mirny asked with open skepticism. "You would have to ship a fertilized queen all the way to the solar system. We could scarcely afford that, even if the Investors would let us, which they wouldn't."

"I don't need an entire Nest," Afriel said patiently. "I only need the genetic information from one egg. Our laboratories back in the Rings could clone endless numbers of workers."

"But the workers are useless without the Nest's pheromones. They need chemical cues to trigger their behavior modes."

"Exactly," Afriel said. "As it so happens, I possess those pheromones, synthesized and concentrated. What I must do now is test them. I must prove that I can use them to make the workers do what I choose. Once I've proven it's possible, I'm authorized to smuggle the genetic information necessary back to the Rings. The Investors won't approve. There are, of course, moral questions involved, and the Investors are not genetically advanced. But we can win their approval back with the profits we make. Best of all, we can beat the Mechanists at their own game."

"You've carried the pheromones here?" Mirny said. "Didn't the Investors suspect something when they found them?"

"Now it's you who has made an error," Afriel said calmly. "You assume that the Investors are infallible. You are wrong. A race without curiosity will never explore every possibility, the way we Shapers did." Afriel pulled up his pants cuff and extended his right leg. "Consider this varicose vein along my shin. Circulatory problems of this sort are common among those who spend a lot of time in free-fall. This vein, however, has been blocked artificially and treated to reduce osmosis. Within the vein are ten separate colonies of genetically altered bacteria, each one specially bred to produce a different Swarm pheromone."

He smiled. "The Investors searched me very thoroughly, including X-rays. But the vein appears normal to X-rays, and the bacteria are trapped within compartments in the vein. They are undetectable. I have a small medical kit on my person. It includes a syringe. We can use it to extract the pheromones and test them. When the tests are finished—and I feel sure they will be successful, in fact I've staked my career on it—we can empty the vein and all its compartments. The bacteria will die on contact with air. We can refill the vein with the yolk from a developing embryo. The cells may survive during the trip back, but even if they die, they can't rot inside my body. They'll never come in contact with any agent of decay. Back in the Rings, we can learn to activate and suppress different genes to

produce the different castes, just as is done in nature. We'll have millions of workers, armies of warriors if need be, perhaps even organic rocket-ships, grown from altered alates. If this works, who do you think will remember me then, eh? Me and my arrogant little life and little sacrifice?"

She stared at him; even the bulky goggles could not hide her new respect and even fear. "You really mean to do it, then."

"I made the sacrifice of my time and energy. I expect results, Doctor."

"But it's kidnapping. You're talking about breeding a slave race."

Afriel shrugged, with contempt. "You're juggling words, Doctor. I'll cause this colony no harm. I may steal some of its workers' labor while they obey my own chemical orders, but that tiny theft won't be missed. I admit to the murder of one egg, but that is no more a crime than a human abortion. Can the theft of one strand of genetic material be called 'kidnapping'? I think not. As for the scandalous idea of a slave race—I reject it out of hand. These creatures are genetic robots. They will no more be slaves than are laser drills or cargo tankers. At the very worst, they will be our domestic animals."

Mirny considered the issue. It did not take her long. "It's true. It's not as if a common worker will be staring at the stars, pining for its freedom. They're just brainless neuters."

"Exactly, Doctor."

"They simply work. Whether they work for us or the Swarm makes no difference to them."

"I see that you've seized on the beauty of the idea."

"And if it worked," Mirny said, "if it worked, our faction would profit astronomically."

Afriel smiled genuinely, unaware of the chilling sarcasm of his expression. "And the personal profit, Doctor... the valuable expertise of the first to exploit the technique." He spoke gently, quietly. "Ever see a nitrogen snowfall on Titan? I think a habitat of one's own there—larger, much larger than anything possible before... A genuine city, Galina, a place where a man can scrap the rules and discipline that madden him..."

"Now it's you who are talking defection, Captain-Doctor."

Afriel was silent for a moment, then smiled with an effort. "Now you've ruined my perfect reverie," he said. "Besides, what I was describing was the well-earned retirement of a wealthy man, not some self-indulgent hermitage... there's a clear difference." He hesitated. "In any case, may I conclude that you're with me in this project?"

She laughed and touched his arm. There was something uncanny about the small sound of her laugh, drowned by a great organic rumble from the Queen's monstrous intestines... "Do you expect me to resist your arguments for two long years? Better that I give in now and save us friction."

"Yes."

"After all, you won't do any harm to the Nest. They'll never know anything has happened. And if their genetic line is successfully reproduced back home, there'll never be any reason for humanity to bother them again."

"True enough," said Afriel, though in the back of his mind he instantly thought of the fabulous wealth of Betelgeuse's asteroid system. A day would come,

inevitably, when humanity would move to the stars en masse, in earnest. It would be well to know the ins and outs of every race that might become a rival.

"I'll help you as best I can," she said. There was a moment's silence. "Have you seen enough of this area?"

"Yes." They left the Queen's chamber.

"I didn't think I'd like you at first," she said candidly. "I think I like you better now. You seem to have a sense of humor that most Security people lack."

"It's not a sense of humor," Afriel said sadly. "It's a sense of irony disguised as one."

There were no days in the unending stream of hours that followed. There were only ragged periods of sleep, apart at first, later together, as they held each other in free-fall. The sexual feel of skin and body became an anchor to their common humanity, a divided, frayed humanity so many light-years away that the concept no longer had any meaning. Life in the warm and swarming tunnels was the here and now; the two of them were like germs in a bloodstream, moving ceaselessly with the pulsing ebb and flow. Hours stretched into months, and time itself grew meaningless.

The pheromonal tests were complex, but not impossibly difficult. The first of the ten pheromones was a simple grouping stimulus, causing large numbers of workers to gather as the chemical was spread from palp to palp. The workers then waited for further instructions; if none were forthcoming, they dispersed. To work effectively, the pheromones had to be given in a mix, or series, like computer commands; number one, grouping, for instance, together with the third pheromone, a transferral order, which caused the workers to empty any given chamber and move its effects to another. The ninth pheromone had the best industrial possibilities; it was a building order, causing the workers to gather tunnelers and dredgers and set them to work. Others were annoying; the tenth pheromone provoked grooming behavior, and the workers' furry palps stripped off the remaining rags of Afriel's clothing. The eighth pheromone sent the workers off to harvest material on the asteroid's surface, and in their eagerness to observe its effects the two explorers were almost trapped and swept off into space.

The two of them no longer feared the warrior caste. They knew that a dose of the sixth pheromone would send them scurrying off to defend the eggs, just as it sent the workers to tend them. Mirny and Afriel took advantage of this and secured their own chambers, dug by chemically hijacked workers and defended by a hijacked airlock guardian. They had their own fungal gardens to refresh the air, stocked with the fungus they liked best, and digested by a worker they kept drugged for their own food use. From constant stuffing and lack of exercise the worker had swollen up into its replete form and hung from one wall like a monstrous grape.

Afriel was tired. He had been without sleep recently for a long time; how long, he didn't know. His body rhythms had not adjusted as well as Mirny's, and he was prone to fits of depression and irritability that he had to repress with an effort. "The Investors will be back sometime," he said. "Sometime soon."

Mirny was indifferent. "The Investors," she said, and followed the remark with something in the language of the springtails, which he didn't catch. Despite his linguistic training, Afriel had never caught up with her in her use of the

springtails' grating jargon. His training was almost a liability; the springtail language had decayed so much that it was a pidgin tongue, without rules or regularity. He knew enough to give them simple orders, and with his partial control of the warriors he had the power to back it up. The springtails were afraid of him, and the two juveniles that Mirny had tamed had developed into fat, overgrown tyrants that freely terrorized their elders. Afriel had been too busy to seriously study the springtails or the other symbiotes. There were too many practical matters at hand.

"If they come too soon, I won't be able to finish my latest study," she said in English.

Afriel pulled off his infrared goggles and knotted them tightly around his neck. "There's a limit, Galina," he said, yawning. "You can only memorize so much data without equipment. We'll just have to wait quietly until we can get back. I hope the Investors aren't shocked when they see me. I lost a fortune with those clothes."

"It's been so dull since the mating swarm was launched. If it weren't for the new growth in the alates' chamber, I'd be bored to death." She pushed greasy hair from her face with both hands. "Are you going to sleep?"

"Yes, if I can."

"You won't come with me? I keep telling you that this new growth is important. I think it's a new caste. It's definitely not an alate. It has eyes like an alate, but it's clinging to the wall."

"It's probably not a Swarm member at all, then," he said tiredly, humoring her. "It's probably a parasite, an alate mimic. Go on and see it, if you want to. I'll be here waiting for you."

He heard her leave. Without his infrareds on, the darkness was still not quite total; there was a very faint luminosity from the steaming, growing fungus in the chamber beyond. The stuffed worker replete moved slightly on the wall, rustling and gurgling. He fell asleep.

When he awoke, Mirny had not yet returned. He was not alarmed. First, he visited the original airlock tunnel, where the Investors had first left him. It was irrational—the Investors always fulfilled their contracts—but he feared that they would arrive someday, become impatient, and leave without him. The Investors would have to wait, of course. Mirny could keep them occupied in the short time it would take him to hurry to the nursery and rob a developing egg of its living cells. It was best that the egg be as fresh as possible.

Later he ate. He was munching fungus in one of the anterior chambers when Mirny's two tamed springtails found him. "What do you want?" he asked in their language.

"Food-giver no good," the larger one screeched, waving its forelegs in brainless agitation. "Not work, not sleep."

"Not move," the second one said. It added hopefully, "Eat it now?"

Afriel gave them some of his food. They ate it, seemingly more out of habit than real appetite, which alarmed him. "Take me to her," he told them.

The two springtails scurried off; he followed them easily, adroitly dodging and weaving through the crowds of workers. They led him several miles through the network, to the alates' chamber. There they stopped, confused. "Gone," the large one said.

The chamber was empty. Afriel had never seen it empty before, and it was very unusual for the Swarm to waste so much space. He felt dread. "Follow the food-giver," he said. "Follow the smell."

The springtails snuffled without much enthusiasm along one wall; they knew he had no food and were reluctant to do anything without an immediate reward. At last one of them picked up the scent, or pretended to, and followed it up across the ceiling and into the mouth of a tunnel.

It was hard for Afriel to see much in the abandoned chamber; there was not enough infrared heat. He leapt upward after the springtail.

He heard the roar of a warrior and the springtail's choked-off screech. It came flying from the tunnel's mouth, a spray of clotted fluid bursting from its ruptured head. It tumbled end over end until it hit the far wall with a flaccid crunch. It was already dead.

The second springtail fled at once, screeching with grief and terror. Afriel landed on the lip of the tunnel, sinking into a crouch as his legs soaked up momentum. He could smell the acrid stench of the warrior's anger, a pheromone so thick that even a human could scent it. Dozens of other warriors would group here within minutes, or seconds. Behind the enraged warrior he could hear workers and tunnelers shifting and cementing rock.

He might be able to control one enraged warrior, but never two, or twenty. He launched himself from the chamber wall and out an exit.

He searched for the other springtail—he felt sure he could recognize it, since it was so much bigger than the others—but he could not find it. With its keen sense of smell, it could easily avoid him if it wanted to.

Mirny did not return. Uncountable hours passed. He slept again. He returned to the alates' chamber; there were warriors on guard there, warriors that were not interested in food and brandished their immense serrated fangs when he approached. They looked ready to rip him apart; the faint reek of aggressive pheromones hung about the place like a fog. He did not see any symbiotes of any kind on the warriors' bodies. There was one species, a thing like a huge tick, that clung only to warriors, but even the ticks were gone.

He returned to his chambers to wait and think. Mirny's body was not in the garbage pits. Of course, it was possible that something else might have eaten her. Should he extract the remaining pheromone from the spaces in his vein and try to break into the alates' chamber? He suspected that Mirny, or whatever was left of her, was somewhere in the tunnel where the springtail had been killed. He had never explored that tunnel himself. There were thousands of tunnels he had never explored.

He felt paralyzed by indecision and fear. If he was quiet, if he did nothing, the Investors might arrive at any moment. He could tell the Ring Council anything he wanted about Mirny's death; if he had the genetics with him, no one would quibble. He did not love her; he respected her, but not enough to give up his life, or his faction's investment. He had not thought of the Ring Council in a long time, and the thought sobered him. He would have to explain his decision...

He was still in a brown study when he heard a whoosh of air as his living airlock deflated itself. Three warriors had come for him. There was no reek of

anger about them. They moved slowly and carefully. He knew better than to try to resist. One of them seized him gently in its massive jaws and carried him off.

It took him to the alates' chamber and into the guarded tunnel. A new, large chamber had been excavated at the end of the tunnel. It was filled almost to bursting by a black-splattered white mass of flesh. In the center of the soft speckled mass were a mouth and two damp, shining eyes, on stalks. Long tendrils like conduits dangled, writhing, from a clumped ridge above the eyes. The tendrils ended in pink, fleshy pluglike clumps.

One of the tendrils had been thrust through Mirny's skull. Her body hung in midair, limp as wax. Her eyes were open, but blind.

Another tendril was plugged into the braincase of a mutated worker. The worker still had the pallid tinge of a larva; it was shrunken and deformed, and its mouth had the wrinkled look of a human mouth. There was a blob like a tongue in the mouth, and white ridges like human teeth. It had no eyes.

It spoke with Mirny's voice. "Captain-Doctor Afriel..."

"Galina..."

"I have no such name. You may address me as Swarm."

Afriel vomited. The central mass was an immense head. Its brain almost filled the room.

It waited politely until Afriel had finished.

"I find myself awakened again," Swarm said dreamily. "I am pleased to see that there is no major emergency to concern me. Instead it is a threat that has become almost routine." It hesitated delicately. Mirny's body moved slightly in midair; her breathing was inhumanly regular. The eyes opened and closed. "Another young race."

"What are you?"

"I am the Swarm. That is, I am one of its castes. I am a tool, an adaptation; my specialty is intelligence. I am not often needed. It is good to be needed again."

"Have you been here all along? Why didn't you greet us? We'd have dealt with you. We meant no harm."

The wet mouth on the end of the plug made laughing sounds. "Like yourself, I enjoy irony," it said. "It is a pretty trap you have found yourself in, Captain-Doctor. You meant to make the Swarm work for you and your race. You meant to breed us and study us and use us. It is an excellent plan, but one we hit upon long before your race evolved."

Stung by panic, Afriel's mind raced frantically. "You're an intelligent being," he said. "There's no reason to do us any harm. Let us talk together. We can help you."

"Yes," Swarm agreed. "You will be helpful. Your companion's memories tell me that this is one of those uncomfortable periods when galactic intelligence is rife. Intelligence is a great bother. It makes all kinds of trouble for us."

"What do you mean?"

"You are a young race and lay great stock by your own cleverness," Swarm said. "As usual, you fail to see that intelligence is not a survival trait."

Afriel wiped sweat from his face. "We've done well," he said. "We came to you, and peacefully. You didn't come to us."

“I refer to exactly that,” Swarm said urbanely. “This urge to expand, to explore, to develop, is just what will make you extinct. You naively suppose that you can continue to feed your curiosity indefinitely. It is an old story, pursued by countless races before you. Within a thousand years—perhaps a little longer—your species will vanish.”

“You intend to destroy us, then? I warn you it will not be an easy task—”

“Again you miss the point. Knowledge is power! Do you suppose that fragile little form of yours—your primitive legs, your ludicrous arms and hands, your tiny, scarcely wrinkled brain—can *contain* all that power? Certainly not! Already your race is flying to pieces under the impact of your own expertise. The original human form is becoming obsolete. Your own genes have been altered, and you, Captain-Doctor, are a crude experiment. In a hundred years you will be a relic. In a thousand years you will not even be a memory. Your race will go the same way as a thousand others.”

“And what way is that?”

“I do not know.” The thing on the end of the Swarm’s arm made a chuckling sound. “They have passed beyond my ken. They have all discovered something, learned something, that has caused them to transcend my understanding. It may be that they even transcend being. At any rate, I cannot sense their presence anywhere. They seem to do nothing, they seem to interfere in nothing; for all intents and purposes, they seem to be dead. Vanished. They may have become gods, or ghosts. In either case, I have no wish to join them.”

“So then—so then you have—”

“Intelligence is very much a two-edged sword, Captain-Doctor. It is useful only up to a point. It interferes with the business of living. Life, and intelligence, do not mix very well. They are not at all closely related, as you childishly assume.”

“But you, then—you are a rational being—”

“I am a tool, as I said.” The mutated device on the end of its arm made a sighing noise. “When you began your pheromonal experiments, the chemical imbalance became apparent to the Queen. It triggered certain genetic patterns within her body, and I was reborn. Chemical sabotage is a problem that can best be dealt with by intelligence. I am a brain replete, you see, specially designed to be far more intelligent than any young race. Within three days I was fully self-conscious. Within five days I had deciphered these markings on my body. They are the genetically encoded history of my race... within five days and two hours I recognized the problem at hand and knew what to do. I am now doing it. I am six days old.”

“What is it you intend to do?”

“Your race is a very vigorous one. I expect it to be here, competing with us, within five hundred years. Perhaps much sooner. It will be necessary to make a thorough study of such a rival. I invite you to join our community on a permanent basis.”

“What do you mean?”

“I invite you to become a symbiote. I have here a male and a female, whose genes are altered and therefore without defects. You make a perfect breeding pair. It will save me a great deal of trouble with cloning.”

“You think I’ll betray my race and deliver a slave species into your hands?”

“Your choice is simple, Captain-Doctor. Remain an intelligent, living being, or become a mindless puppet, like your partner. I have taken over all the functions of her nervous system; I can do the same to you.”

“I can kill myself.”

“That might be troublesome, because it would make me resort to developing a cloning technology. Technology, though I am capable of it, is painful to me. I am a genetic artifact; there are fail-safes within me that prevent me from taking over the Nest for my own uses. That would mean falling into the same trap of progress as other intelligent races. For similar reasons, my life span is limited. I will live for only a thousand years, until your race’s brief flurry of energy is over and peace resumes once more.”

“Only a thousand years?” Afriel laughed bitterly. “What then? You kill off my descendants, I assume, having no further use for them.”

“No. We have not killed any of the fifteen other races we have taken for defensive study. It has not been necessary. Consider that small scavenger floating by your head, Captain-Doctor, that is feeding on your vomit. Five hundred million years ago its ancestors made the galaxy tremble. When they attacked us, we unleashed their own kind upon them. Of course, we altered our side, so that they were smarter, tougher, and, naturally, totally loyal to us. Our Nests were the only world they knew, and they fought with a valor and inventiveness we never could have matched...Should your race arrive to exploit us, we will naturally do the same.”

“We humans are different.”

“Of course.”

“A thousand years here won’t change us. You will die and our descendants will take over this Nest. We’ll be running things, despite you, in a few generations. The darkness won’t make any difference.”

“Certainly not. You don’t need eyes here. You don’t need anything.”

“You’ll allow me to stay alive? To teach them anything I want?”

“Certainly, Captain-Doctor. We are doing you a favor, in all truth. In a thousand years your descendants here will be the only remnants of the human race. We are generous with our immortality; we will take it upon ourselves to preserve you.”

“You’re wrong, Swarm. You’re wrong about intelligence, and you’re wrong about everything else. Maybe other races would crumble into parasitism, but we humans are different.”

“Certainly. You’ll do it, then?”

“Yes. I accept your challenge. And I will defeat you.”

“Splendid. When the Investors return here, the springtails will say that they have killed you, and will tell them to never return. They will not return. The humans should be the next to arrive.”

“If I don’t defeat you, they will.”

“Perhaps.” Again it sighed. “I’m glad I don’t have to absorb you. I would have missed your conversation.”

