CHILDREN STAR

Joan Slonczewski

PHOENIK PICK



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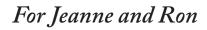
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ONE

across towers and avenues to the hillside, through the window of a shack, to the eyelids of six-year-old 'jum. The sunbeams teased 'jum to wake up and look out upon Reyo City, and count the many lightcraft rising to meet the ships in orbit around L'li. But when she woke, her belly gnawed inside. Above Reyo, one glowing lightcraft rose, another came down...not the thousands she used to count. So she counted the sunbeams instead. So many sunbeams peeked out through the skyline that even 'jum could never count them all.

From behind she heard a scratching sound. In the corner scrabbled a rat, its nose twitching. 'jum watched the rat. Blood pounded in her ears, and her belly gnawed harder.

She felt in her pocket and grasped a stone, a good heavy one, while her eye still fixed on the rat. With all her strength she flung the stone.

Red lights flashed across her eyes, and her ears rang. But the rat lay there, twitching and squeaking, so she dragged herself over to it. After she broke its neck it lay still.

From outside came the cry of a crow, the whine of a beggar, the grating of a wheelbarrow up the steep path. Once, the shacks that crowded the hillside would have all been stirring by now, with sweepers, garbage pickers, a seller of tin scrap in the doorway. Now all were gone.

The wheelbarrow grated again and came to rest just outside. A hoarse voice called, "Any dead?"

The call had become a part of the morning routine, since the "creeping" had spread. The creeping began as a numbness in the fingers and toes that crept upward over several months. It spread among people living together; how, 'jum did not know.

"Any dead?" The call came closer now, and the barrow came to a halt just outside. Usually, 'jum's mother would call to her from her bed, for 'jum to go out and answer. Of course, if no one answered, the man would just come in. Such a man with such a barrow had come in before, first for her sister, then her brother, then at last her father. Then the factory where 'jum worked had found out and sent her home. No more days of counting strange bits of metal to piece together, one thousand twenty-one, one thousand twenty-two; only the lightcraft to be counted, and the windows in the proud towers that reared opposite the hillside.

With an effort 'jum pulled herself up and pulled the paper back from the doorway. The man's grayish brown arms poked like sticks through his cloak. His cart already held two twisted bodies. Now he stared back at 'jum.

'jum closed her lips tight and shook her head.

Expressionless, the man picked up the two handles of the barrow. The wheels creaked: *one-and...two-and...*'jum held on to their rhythmic sound. One always comes before two, and the digits of any number divisible by three add up to be divisible by three. As her family had subtracted, one by one, 'jum had added and multiplied, creating families of factors in her head. Six hundred ninety-three was a family of four: a seven, eleven, and twin threes...

'jum bit into the rat, tearing out its flesh as best she could. Then she thought of her mother, who could no longer rise from her sleeping mat and needed 'jum to feed her. 'jum felt her way across the room, lighted only by the window, to the mat where her mother slept, covered by a sack 'jum had salvaged from the factory still bearing the sign of Hyalite Nanotech. Her mother's hand lay across it in the same position as the night before. Yet something had changed; the color of her hand was different, grayer. 'jum reached over and touched her mother's hand.

The hand was a frozen claw. 'jum shivered all over, as if the cold from the hand seeped through her body.

The next thing she knew, she was standing outside, leaning against the shack. Her breath heaved, and her heart thumped as if it would burst from her chest. Behind her, the shack had filled with a chill emptiness that reached for her next.

She tried to run, but the effort of rushing outside had exhausted her. She stared out over the roofs of the shacks that clung to the hillside, to the office towers of Reyo. From the top of one tower a lightcraft grew a golden cone and rose to the sky. Above the towers shone a bright star. Her

mother had called it the Children Star, a faraway paradise that children were born to when they died.

A cloud dimmed the sun, and now 'jum's eyes could make out the windows in the towers. Broken panes hinted that even the most well-off had not escaped the creeping. 'jum calmed herself the one way she knew how, by counting the windows up and across; five times nine made forty-five, three times ten made thirty, and so on. In the old days at the factory she could have spent all day thus, counting the metal parts.

As 'jum counted, a man in a pale hooded robe climbed up the hill, along the rutted path that the carts barely managed. The man strode purposefully. For a moment he paused, as if looking for someone. Then he resumed his pace and came over deliberately to face 'jum. His figure towered over her, blocking the sun and the city. One so erect and strong could scarcely be mortal; he must be a god. Perhaps the very god of Death.

"Is that your home, little one?" Death's voice was low, and his accent had a foreign edge. 'jum could only stare wonderingly. The hooded apparition half turned, as if uncertain. Then he said, "Is your mother home?"

So that was it. Death himself had come for her mother.

But this time, 'jum decided, he would fail. She drew herself up straight, planting her feet before the entrance to the shack. Her left hand dug deep into her pocket for the largest stone she had. As she clasped it, her eye judged her aim for the critical part of his anatomy.

Death awaited her reply. Hearing none, he took something from his cloak and held it out to her. It was a chunk of bread.

The smell of the bread overpowered her, so that she nearly fainted. She took the bread and tried to stuff it whole into her mouth, then she choked, as her throat was so dry. Expecting this, he produced a flask of water, miraculously clear and fresh. For the next few minutes she applied herself to consuming the bread and water, forgetting anything else existed. She barely noticed as the man passed her to enter the shack, then came out.

"Child," he said, putting his hood back so that wisps of hair blew across his face. "What is your name?"

'jum did not answer. Her name meant "pig urine," which her mother had intended to discourage evil spirits after losing two previous infants. But now she scanned the man's face. He was younger than she had thought, his cheeks smooth and tanned, with a neatly cropped beard. His blue eyes fairly glowed.

Something glinted on his chest, something hung on a chain. It was a transparent stone, as blue as his eyes. A sunbeam struck it, revealing a hidden star within, a star composed of three intercepting shafts. The star

could define six triangles, with six sides shared and six outside, and seven connecting points.

"You may call me Brother Rod." His voice interrupted her study of the stone. "Come with me," said Brother Rod. "You'll always have enough to eat, where we're going. It's a different world, far from here, at a far star."

At that, 'jum's lips parted and her eyes widened. "The Children Star." He smiled, like her older brother used to. "The Children Star," he repeated. "That would be a good name for it."

By this time two beggars had found Brother Rod, and they grasped his cloak, whining for bread. He took out more bread and distributed it, while leading 'jum up the path to the top of the hill. When the bread was gone he spread his hands, but the beggars keened after him. So he gave them some coins, and his watch. Then he drew himself up and sketched a strange sign in the air. "The Spirit be with you, Citizens." His voice was firm, and the muscles rippled in his forearm. The beggars moved off.

At the top of the hill Brother Rod came to a halt. In the sky a glowing disk descended beneath a cone of boiling air. As the lightcraft came near, it hissed ever louder, and its heat baked 'jum's face. But she stood there bravely until the craft settled upon the hill.

The lightcraft rose on its beam of microwaves, lifting Brother Rhodonite and the child toward the ship that would soon cross the space folds. His last child that year, Rod realized with a wrench in his heart. L'li had once been a beautiful world, but its forty billion humans had long ago tilled its last acre and filled its last air with haze. Only the "creeping" had finally reversed its growth and started a ghastly decline. Elsewhere, citizens of the other six worlds of the Free Fold either shrugged in despair, or felt secret relief that something at last would curb the L'liite population. Rod sketched a starsign and silently prayed the Spirit to heal them all.

The Sacred Order of the Spirit was the most ancient religious order in the Fold. Their roots reached back before the Free Fold, to Valedon, the gemstone world, in an age when world warred against world. Each Spirit Caller wore on his neck a Valan sapphire star. The star's three shafts of light spelled the threefold call of truth, grace, and spirit; and wherever these were needed, Spirit Callers went. Brother Rod had been called to L'li.

"Thanks for the smooth ride," he told the lightcraft. Foreign money kept L'liite transport running for the tourists, but declined to cure her citizens.

"You're welcome, Citizen." The lightcraft was an electronic sentient, no mere servo machine. Modern Valedon was known for both, and Rod knew better than to miss the difference. "I don't often take passengers from that hill; and if things keep getting worse, I'll quit the planet altogether. Do you return to Valedon, Brother Rhodonite?"

"No, Citizen. To Prokaryon."

Prokaryon was a virginal frontier world, at a star two space folds away. With his fellow Callers, Rod collected dying orphans from L'li to join a small colony on Prokaryon. The child he had just collected was pale with fear; Rod held her close, wishing he could explain the wonders her future held on a world full of food, free of "creeping."

"Prokaryon!" exclaimed the lightcraft. "Are you human? I hope your cells have good arsenic pumps."

Rod smiled. "They do." Unlike Valedon, Prokaryon was not terraformed, for today the Fold forbade alien ecocide. But Prokaryon's alien ecology, full of arsenic and triplex DNA, poisoned human bodies. Unless, of course, they were lifeshaped, their genes modified to survive. Lifeshaping took best in young children.

Out the viewport, the boarding station loomed ahead, its hull displaying the vista of ancient L'liite temples. The lightcraft docked, and its round door fused to that of the station like two mouths kissing. An entrance opened through the fused doors and widened into a corridor.

Above the corridor, floating fingers pointed to Rod's feet. "Watch your step," a voice whispered in six languages.

Rod caught the child's hand, remembering that she might never have seen such a place. He ignored the virtual newscaster announcing new jump holes through the space folds, and new Elysian bank deals to finance copper mines on Prokaryon. Virtual doorways juxtaposed Reyo City's nightlife with that of Elysium—the wealthiest world of the Fold, where people stayed young for a thousand years. Rod himself had toured the hot spots of Elysium, as a young Guardsman on leave. But he had left all that behind ten years ago, to follow the Spirit.

At his cabin, the door molded itself open. Rod sketched a starsign to his fellow traveler, Brother Geode.

"Back at last, Brother." One of Geode's six limbs sketched the star in return. "What kept you so long?" Like the lightcraft, Brother Geode was a sentient. Self-aware machines were called "sentients" ever since their revolt against their human creators two centuries before. Sentients were built of nanoplast, trillions of microscopic servos. Geode himself had a torso of nanoplast about the size and shape of a pillow, with his star sap-

phire nearly buried in blue fur. His nanoplastic limbs could extend and mold themselves to any length and thinness. His limbs sported fur in each of the primary colors, giving him the appearance of a giant multicolored tarantula.

At the moment, Brother Geode had one red furry limb cupped to cradle a tiny infant, while a yellow limb fed it cultured breast milk. Three other infants slept in nanoplastic nooks nearby; the entire ship itself was a sentient. Brother Rod had brought all four of the infants from an orphanage in Reyo. The orphanage had run out of formula months ago; the infants, just left there that day, would not have lasted the week.

"I found one more Spirit child."

The girl flexed her toes in the carpet and stared wide-eyed at the sight of Geode.

From a nook in the wall, a baby several weeks old awoke with a cry and stretched his trembling arms. Rod went over and swaddled him, then tucked him under his arm, as a bottle slid out from the dispensary window. The bottle held breast milk as "real" as a mother's, including cultured lymphocytes. The infant soon settled against his chest, gazing upward into Rod's eyes. With barely more weight on him than the newborns, his limbs were wobbly sticks, but the milk would bring him round. How resilient infants were

Geode's two eyestalks rose from his torso like periscopes and trained on the girl. "An *older* child?" He spoke in Elysian, the language sentients preferred; they, like Elysians, were forever young. "An older child—not again. You've grown soft, Brother."

"She looks barely two."

"Malnourished. She's six if I'm a day. An older child," Geode repeated. "You know what the Reverend Mother will say."

The Reverend Mother Artemis had founded their colony on Prokaryon. It was she who first called Rod to the Spirit, in his final year at the Guard Academy. He still could not think of her except with a sense of awe.

"The Reverend Mother will say we cast our nets well," Rod replied. "I climbed the hill and brought what I found. Not a child under five was left alive."

"She'll spend a year in the gene clinic, vomiting half the time," Geode added, "and we'll be the next ten years paying her off." Infants up to eighteen months could be processed in a couple of weeks; older children took much longer, and adults might never make it. Rod himself had spent three years in treatment, yet he still could eat nothing grown on Prokaryon.

Was Geode right? he wondered. The child's eyes had arrested him, there on that hill; those eyes had clutched his heart against his reason.... But the Spirit within had called to him, saying, This is the one.

Rod adjusted the baby in his arms, holding up the tiny head. Then he turned to the girl. "See, child," he told her in L'liite. "This will be your new brother on Prokaryon. You'll have thirty-nine brothers and sisters—think of it. You'll grow your own food, and even mine your own gemstones."

Geode's eyestalks twisted quizzically. "She hasn't taken her eyes off me. What must she be thinking, to go off with such strangers?"

"What child was not born to strangers?"

Two of Geode's limbs began to mold themselves into probes to examine the girl's health. "I was never born. I was built—to precise specifications. I make fewer mistakes than one byte in a trillion trillions."

Rod smiled. "You had to be taught to think."

Ignoring this jibe, Geode extended a long, slender tendril out of his furry limb toward the girl, who moved back a step. Brother Rod put his arm around her. "Let Geode treat you, child. He will help your stomach feel better. Then we'll have a good bath, and a good dinner."

The tendril wound around the girl's arm, inserting a microscopic probe which she would not feel. The probe would sample her blood for her own DNA and proteins, as well those of any pathogens. "Her name is 'jum G'hana," Geode announced, matching the gene sequence with his database.

The girl blinked at the sound of her name amidst the foreign gibberish. A sharp mind, Rod thought.

"She was first sampled at approximate age three, upon hiring full-time at Hyalite Nanotech. Father died of 'creeping,' mother alive, age—"

"Her mother's dead," Rod corrected. "Creeping" sickness was caused by prions, misfolded proteins that directed normal ones to mimic their structure and accumulate in the motor neurons. Paralysis crept from the limbs and inward. Other types of prion infection were contained in the nervous system, but the dreaded "creeping" prions leaked out in secretions and infected others.

"She has lice and worms," continued Geode. "And prions, though not yet irreversible." So she did have the disease, as Rod suspected from her mottled legs. Even her relatives, had she any, would never claim her. The emigration forms would go straight through.

The cure for creeping was to inject millions of nanoservos, microscopic servo machines, into the bloodstream to methodically search and

reshape the misfolded proteins. It was effective, but expensive. On Prokaryon, the Fold paid to cure colonists, to encourage human settlement.

"She wasn't badly nourished, her first three years." Geode's infant had done feeding and was now bouncing in one coiled limb. "Maybe she's not even brain-damaged. Say, 'jum," the sentient demanded in L'liite, "did you go to school? Can you read?"

'jum slowly shook her head.

"Can you count your factory wages?"

At that, 'jum did not answer but gave the sentient an intent look.

"What's one plus one?"

She frowned, as if this were a very difficult problem. "Not quite one and a half," she said in a voice so low that Rod barely heard.

Geode twined his eyestalks disparagingly.

"What do you expect? She's never been to school. Is your workup done? She needs a bath."

"Definitely," the sentient agreed with emphasis. "I don't know, though. I wonder sometimes if we're not half-crazy, trying to settle a frontier with starving babies."

"It's the cheapest way," Rod said ironically, for that was the reason of the Fold.

"But—look, you know, it's not just any world, by Torr. It's *Prokaryon*." Prokaryon was named for its unique "prokaryotic" life-forms. Animal or vegetable, all Prokaryan cells contained circular chromosomes, free of nuclear membranes—like bacteria, *prokaryotes*. But Prokaryan cells were ring-shaped as well. And the higher structure of all the multicellular organisms was toroid, from the photosynthetic "phycoids" that grew tall as trees, to the tire-shaped "zoöids" that rolled over the fields they grazed—or preyed upon those that did.

"And I don't care what the Free Fold says," Geode added. "There *are* intelligent natives running Prokaryon. Somewhere."

Rod held the baby tighter in his arm. "Don't spread rumors, Brother." Such stories arose whenever a new world was settled, even on Valedon long after it was boiled and terraformed.

Geode snaked an eyestalk toward him. "Can you explain how Prokaryon has all those rows of forest, one after another, all across the continent? Who tends the garden?"

"The Elysian scientists have been looking for years. They found no one, and the Fold certified the planet empty of intelligence. Do you want to get our colony evicted?"

"The truth is what I seek, Brother," insisted Geode. "You explain how the weather stays the same all year, only raining at night, or a cloudburst to put out a fire."

Looking away, Rod placed the sleeping infant gently at the wall, where the nanoplast obligingly molded inward to cradle it.

"Humans," Geode added with bemusement. "Will humans ever know an 'intelligent' creature, if they find one? They took centuries just to recognize us sentients, out of their own factories."

TWO

dren endured their week-long journey through the space folds to Prokaryon. Of course, none of them could yet set foot on their new home. Merely inhaling Prokaryan air would expose their unprepared lungs to poison; for the native life-forms had evolved all sorts of things that the ordinary human body was not designed to encounter, much less digest for food. Their triplex chromosomes were mutagenic, their "proteins" contained indigestible amino acids, and their membranes were full of arsenic. Prokaryan cells were not exactly good to eat—unless you were Prokaryan.

So the children's first stop was a satellite, the Fold Council Station for Xenobiotic Research and Engineering. "Station" was actually a giant sentient whose brain directed the investigation of Prokaryan life-forms, as well as the transport and lifeshaping of colonists. Station's lifeshapers would inject the new children with nanoservos, microscopic machines to put special genes into the cells of the liver and intestines. The special genes would teach their cells how to detoxify unfamiliar Prokaryan molecules, and to eat them as food, as easily as they ate the nutrients from their own world. For adults the lifeshaping was slow and inefficient; thus, most Prokaryan colonies depended heavily on sentients.

Rod often wondered how the rest of the Fold's worlds would ever have gotten settled, had they all tried to avoid terraforming. Valedon, and all but two of the other worlds, had been boiled off and reseeded with human-compatible life-forms. But today people called that "planetary ecocide." Rod himself had been skeptical, until he came to Prokaryon and fell in love with its mysterious beauty. He could not imagine terraforming such a world.

The cylindrical bulk of Station grew until it dwarfed the approaching ship. "All passengers prepare to disembark." The voice of the great sentient vibrated throughout the ship, as she extended her docking tube.

Rod tensed at her greeting. Besides her gene clinic, Station directed scientists from all the worlds of the Fold who came to study Prokaryon's biosphere and confirm its absence of intelligent natives, a legal requirement for exploitation. Above all, she governed Prokaryan settlement on behalf of the Fold. She set each colony's immigration quota, and determined when each lifeshaped immigrant was ready to settle.

Brother Geode crawled out on three of his furry limbs, carrying babies in his other three, while Rod carried two and 'jum gamely managed one. The tube rotated steadily, generating about half a unit of centrifugal force, enabling them to walk while keeping their baggage light. But the sense of weight loss alarmed the babies, for their stomachs told them they were falling, no matter how hard Rod clutched them in his arms. The little bundles stiffened, then emptied their lungs to howl. Overhead, upside down in the cylinder, two or three travelers stretched their necks at this unusual scene. A gorilla face stared down at Rod; a simian hybrid woman wearing a student's backpack. Rod stared back, for simians were rare out here.

Beneath Rod's feet the floor shifted sickeningly. That meant the lock had engaged, and they now stood in the innermost ring of Station. The babies sucked in their breaths and wailed.

"Brother Geode, immigration officer of the Spirit Colony." Station's voice boomed, ever-present within the satellite. "Six new colonists?"

"Yes, Station." Geode bounced the three infants in his arms, trying to quiet them.

"You exceed your quota again."

"Yes, Station."

It was Rod's fault that they always pushed the immigration limit. In his days at the Guard, he had always tried to steal one last round of shooting beyond regulations; now, he always took one more dying child. "They're all healthy," Rod insisted. "They'll be productive citizens."

"And one is an *older* child," Station emphasized. "Brother Geode, you will see me for consultation."

"I will," said Rod. They always got away with it before.

"Please sign the release for each."

On the wall a bright rectangle appeared, its text scrolling absurdly fast. Rod had no need to read the contents. The release form required all immigrants to acknowledge that Prokaryon's biosphere was only partly understood, and its climate not yet controlled, and that the appearance of

any plague threatening the Fold might require defensive action—before all inhabitants could be evacuated. Rod despised the provision, and its authors in the Fold Council, who feared another prion plague. Prions arose from human bodies, not from a world where humans could barely live.

Geode held up his infants to press the document with their toes, and Rod did likewise.

"Reverend Mother is here," said Geode. Sentients communicated by internal radio.

At the gate stood the Reverend Mother Artemis. Her face was a screen across which her "features" shaped and reshaped in ever-changing colors. Her sapphire star gleamed where a human neck would be. Around her face twined restless strands of nanoplastic "hair," as if individually alive. Below her neck hung multiple breasts, and her robe revealed skirts full of holographic bears, lions, even flying fish from the Elysian ocean. Children were her life-work, ever since she herself had been manufactured to raise wealthy Elysians. After earning her freedom as a sentient, she had joined the Sacred Order.

The Reverend Mother's nanoplastic hand traced a six-point star. "Brother Rod. You return with your nets full." She took the two little ones, who quieted as they stared.

Rod returned the sign. "I wish it could be otherwise."

"So do we all." Strands of her hair twisted upward. "We call on the Spirit to hear the agony of the L'liites. But this mystery has endless depth and no shore."

"How are the children back home?"

"All well, thank the Spirit. The phycoids are ready for harvest, and T'kun found a perfect pink crystal in the stream."

"Well, we bring you future harvesters."

Geode warned in Elysian, "One of them will cost us a bundle."

"And which *one* would that be?" The Reverend Mother scooped up another infant from him. "Which one would you refuse?"

'jum was watching her skirt, mesmerized by the rearing bear. Rod squeezed 'jum's hand encouragingly. "This is the Reverend Mother of the Spirit Colony of Prokaryon. You will be our own child."

The Reverend Mother spread her arms and spoke in clear L'liite. "'jum G'hana, are you my little bird singing in the tree?" Her voice had just the right rhythm, as if she had been born and raised in the streets of Reyo.

'jum ran to her, immediately to be swept up in the arms and skirt. Mother Artemis was always like that.

"There, my little bird. It's too soon for you to talk, isn't it, but won't you shape for me?" Mother Artemis stepped over to the holostage.

Above the holostage a ball of light appeared, as if suspended by magic. Mother Artemis reached to it with her hands and shaped it like a lump of clay. It formed the shape of a flower, with a dozen petals that she pulled one by one, each perfect as a teardrop.

Then a second ball of light appeared. "It's your turn, 'jum. Won't you try? Shape me something from your home."

'jum put out a tentative finger. She poked the ball, and a depression remained. Encouraged, she pulled it into a tall oblong shape and poked more holes in an orderly array, eight across, row upon row, more than a dozen.

"That's lovely," Mother Artemis exclaimed. "Was that your house where you lived?"

'jum shook her head. She paused as if in thought. Then abruptly she squeezed the light into an amorphous lump and began shaping again, with precise details. Her sureness suggested that her fingers had shaped such an object before, perhaps many times. It was a box with three prongs at right angles to one another, and two unidentified levers at the side. It looked so realistic, one might pluck it solid from the air.

"What have we here?" Mother Artemis spoke in a low voice. She trained her visual sensors on the object; her true "eyes," set at her neckline, rather than her apparent eyes in her face. She called up a vast database from all seven worlds of the Fold.

Above the three-pronged image, a shape of red light appeared, similar in form to the one 'jum had made. The red shape descended and merged with the white one; it was nearly a perfect fit.

"It's a lanthanide extractor," the Reverend Mother explained in Elysian. "Of course," said Geode. "She must have assembled them at the Hyalite plant—thousands of them."

Rod eyed the device sternly. "They're illegal."

"Not their manufacture," said the Reverend Mother. "Only the use to which some are put." Lanthanide extractors were used to sort rare-earth minerals from rock. All the inhabited worlds had long ago exhausted their natural supplies of rare-earth elements, prized for many uses in nanocircuitry. So the main place left to use extractors was new planets. But that was against the law of the Fold. A world could be mined only after scientists had established, and the Secretary of the Free Fold decreed, that no intelligent natives had prior claim.

Still, who could police the universe? The Hyalite House, an ancient and respectable firm based on Valedon, put its assembly plant in a decaying L'liite city where starving six-year-olds would not recognize the device, and no one would ask where it ended up.

Geode extended an arm. "They can't use them here." On Prokaryon, mining was permitted only with macroscopic implements, and only up to one percent of the planetary resource, until the new world gained independence and could choose for itself.

Mother Artemis turned to 'jum. "You must have made many of those pieces, little bird."

"Two thousand five hundred and thirty-one," the girl murmured.

"What a number. And you counted every one?"

'jum nodded. "It's a family without children."

Mother Artemis nodded. "You like numbers, don't you. I'll bet you know all your sums."

'jum lowered her eyes. Then she looked up. "Three plus four is five."

At this unaccountable calculation, Mother Artemis paused. "How about three *times* four?"

"Three times four is twelve."

"Eight times thirteen?"

"One hundred and four."

"What are the factors of three thousand and three?" When 'jum hesitated, she added, "The 'children'?"

"Three, seven, eleven, and thirteen. A family of four children." Then abruptly she burst into tears, crying for her mother. Mother Artemis held her close, knowing she would have a lot more crying to do before she could face a new life. Two of the infants started crying, too.

"I wonder how she's adding," Mother Artemis said in Elysian. "Never mind; she'll learn as fast as a sentient."

Geode's limbs snaked out to lift and comfort the agitated infants. "At least that part of our job will come easy."

"No—much harder," the Reverend Mother warned.

"Humans," groaned Geode, his fifth limb shaking a milk bottle. "How did I ever get into this?" The woolly armed sentient had shepherded Spirit children for a decade, thought Rod with a smile.

Mother Artemis was whispering to 'jum. "Geode will take good care of you at Station, until you're set to join us. You can call me anytime you like, on the holostage. Behold—as one of our family, you have a new name: 'jum G'hana Spirit. And here is your sign." She pinned to 'jum's

ragged shirt a sapphire, a tiny pink gem one of the children had strained from the gravel bed. A sapphire from Prokaryon.

The children would stay at Station with Geode, for their treatments. This left the Spirit Colony understaffed, with only Rod, Mother Artemis, and Brother Patella, a sentient physician, to manage the children on Prokaryon. But within a month the babies could come home. What to do with 'jum thereafter would have to be worked out. They could not afford a skinsuit, to protect her on Prokaryon until she was lifeshaped.

Before leaving, Rod transferred his holocube of 'jum's home in Reyo to the brain of Station. Station obligingly shaped a room whose shape and colors roughly matched the shack, plus a comfortable mat on the floor, and the food synthesizer put out an "authentic" L'liite meal. Later the child would have to make do with the same inexpensive food pellets that Rod did, until her lifeshaping reached the point that she could eat native crops.

As Rod and the Reverend Mother took their leave, Brother Geode had stretched and lengthened three of his limbs and tied them into an elaborate knot for 'jum. "First off, which is my right arm?" He wiggled the three fuzzy ends projecting from the knot.

'jum inspected closely, then tapped one end. The entire limb turned yellow throughout the knot, revealing its hidden structure.

"Right!" exclaimed the sentient. "Now let's see, how would you undo it?"

Rod felt proud. A child who learned fast—she might even become the doctor someday, like their own Brother Patella. He had listened well, when the Spirit called him upon that hill.

To reach the planet, the Spirit Colony leased a lightcraft from Station. The craft, a reconditioned economy model, was not sentient, only programmed to shuttle up and down. Its rectenna had darkened all around, and it bore an acrid smell. Two worn seats held Rod and Mother Artemis. The craft shuddered as it launched, and a small holostage at eye level showed the satellite shrinking away. Beyond in the blackness appeared the neutrino receiver, a giant silver sphere full of water to detect the massless particles carrying signals through the space folds.

"Brother Patella will be glad to see you back," the Reverend Mother observed. "T'kun smuggled a baby four-eyes into the nursery. And a 'tumble-round' has grown well into the garden; it's looking in at Haemum's window!"

Rod smiled remorsefully. "I've been away too long—and only bring back more trouble."

"Why else are we here?"

The lightcraft whined as it entered the atmosphere, the air above heating into plasma. Above the holostage, the image of Prokaryon expanded, its greens and blues cloaked in cloud, beautiful and terrifying, yet vulnerable, like a woman's eye. As the surface neared, a brilliant expanse of ocean met the shore of their continent, Spirilla, a twisted spiral of green and gray. The world rotated slowly downward beneath the lightcraft. In the western arm of Spirilla, pale scars marked the copper mines. To the east rolled the uncharted interior, circled by glacial mountains.

As the craft fell toward the green, curious patterns emerged. Long dark bands ran in parallel rows, winding like a string picture. The dark bands were singing-tree forests. Each band of forest alternated with a paler band of wheelgrass, merging into wetland, which gave way to the next band of forest. Over and over the same pattern repeated, ceasing only at the mountains.

What Spirit had dipped a finger in the ink of foliage and drawn those lines? And whose hand tended them still? Not a seed of wheelgrass could a human plant on forest land, even with the singing-trees cleared; yet singing-tree pods would only wither where the wheelgrass grew.

The old lightcraft dipped and veered suddenly, caught in a gust of wind. Rod gripped his chair automatically, though it made little difference, as its nanoplastic limbs held him fast. "I hope at least it lands us in the right band." The craft had been known to miss the band of wheelgrass that contained the colony, leaving the passengers to hike through several kilometers of singing-trees.

"Patella doesn't answer," said the Reverend Mother. "Who knows what the young ones are up to."

No answer from Patella? That was odd. Wherever he was, Brother Patella could hear Mother Artemis from the lightcraft, then send out Haemum or one of the ten-year-olds with the llamas for them to ride home.

As it happened, they landed in wheelgrass, not far from the trail. The wheelgrass spread in waves all around them. A welcome scent of ginger blew in from the distant singing-trees, always a sign he was really home.

High in the ever-blue sky shone Prokaryon's sun, Iota Pavonis, proud as an albino peacock. The thin ozone layer blocked less of the sun's ultraviolet than on other worlds supporting life. That might be one reason triple-stranded chromosomes had evolved here, to protect DNA from mu-

tation. Prokaryan weather, like its landscape, had a predictable pattern: sunshine every day, with gentle rain in the evening.

But far to the east, past the dark line of hills, the clouds could burst into unexpected storms. And above those clouds hovered the peaks of Mount Anaeon and Mount Helicon. The tallest peaks had been named for the twelve floating cities of Elysium, who had bankrolled the first explorers. They may have regretted the naming, for the mountains proved unlucky, full of landslides and other accidents for hapless prospectors. Many colonists blamed Prokaryon's "hidden masters," a claim hard to disprove.

Still there was no sign of Haemum's llama, its ears pointing out like flags, its broad feet bred specially to tramp the loopleaves down. Rod turned to Mother Artemis. "No word yet from Brother?"

"He must be running after Gaea and T'kun again."

That would not keep Patella from answering. Patella, like Geode and Mother Artemis, could manage several tasks at once. Unless he was conducting a very complex operation...Rod felt a chill at his neck. "I'll go ahead and send the llama back for you."

The Reverend Mother smoothed his shoulder. "The Spirit go with you. Excuse me while I sleep." She drew in her arms, which lost form in the shadows of her sleeves. Her figure seemed to pull itself in and turned gray all over. Rod had seen her "sleep," though she tried to hide it from the children. Sentients had to save their energy, for if their power packs ran out, their minds would die. That was their one weakness as colonists.

He returned her touch lightly, thinking, how odd that this gray shape was actually such an extraordinary person. Then he stepped outside. The sun was warm, so he took off his robe, revealing dun-colored everyday trousers much worn and stained. Tucking the robe under his arm, he strode resolutely out into the wheelgrass. The gray-green loopleaves of the wheelgrass twisted and caught his toe at every step; it took him a quarter hour just to cover the few meters to the trail. High above him buzzed several helicoids, their ring-shaped propellers clattering as if laughing at him.

Ahead, a herd of four-eyes rolled away like tire tubes, with no legs to get caught in the wheelgrass. Each four-eyes had four compound eyes spaced evenly along the "tread" of its "tire," the upper two eyes alert and watchful, the lower two asleep; the eyes took turns sleeping. In between each pair of eyes was a rasping mouth, so each mouth faced downward in turn to consume wheelgrass. Extensible suckers covered the rest of the creature's surface; to move forward, it simply contracted the foremost sucker and lifted up the hindmost, rolling over the wheelgrass. By this re-

peated motion, the little zoöid could work up a remarkable speed in either direction. Rod hoped no zoöid predator would come barreling after them and mistake him for edible prey.

Once on the clear trail he jogged easily, his feet eating up the miles. A couple of whirrs alighted on his arm, miniature helicoids the size of a pinhead. Finding no zoöid secretions to feed on, the whirrs soon left, very different from the insects he had grown up with on Valedon. The wind brought snatches of song from the singing-trees at the far edge of the wheelgrass. At last the wheelgrass gave way to brokenhearts, golden ringlets like so many lost wedding bands. The protein-rich brokenhearts were cultivated to feed the lifeshaped children.

At last the colony's nursery and dining hall appeared, jutting out of the hillside below the sapphire mine. The long mud-colored buildings were built of ring-fungus, a tough growth that could be pressed into shapes and dried hard as wood.

As he approached, twelve-year-old Haemum came running out to meet him. The founding child of the family, she now stood nearly as tall as he and seemed to be all legs. Her skirt and scarf were made of the same cloth that they all wove and dyed of fibrous loopleaves. She threw her arms around Rod, pressing her black curls to his chest. "Brother Rod, thank the Spirit you're here," she exclaimed in L'liite. "We don't know what to do—Brother Patella fell down the ravine, and he must have got 'broken."

"Broken how? Where is he now?"

Two of the boys were running out, ten-year-old Chae and four-year-old T'kun, with his arm ominously bound in a sling. Then little Gaea dragged herself through the dust on her arms, her paralyzed legs trailing behind her. Gaea had spina bifida—Brother Geode had thrown up his woolly arms when Rod picked that one, but so it was. The colony would save enough to fix her, someday.

"It was T'kun's fault," Haemum explained. "T'kun was running ahead and playing space pirate, and when I called after him he got mad. He tripped and slid down the bank, tumbling over. Brother Patella tried to get him out, but he slipped, too, and fell farther. Then he turned all gray and lumpy, and wouldn't answer."

Gaea grabbed his ankle and clung, and he nearly lost balance. "Bro-der Rod, T'kun bring home zoöid! We play with zoöid!" Zoöids in the nursery would not do; but it would have to wait.

"Did you call Station?" Rod asked Haemum.

"I did, but the medics haven't shown up yet. I finally dragged T'kun back up and set his arm as best I could...."

Rod clenched his fist, then caught it in his palm. As usual the Spirit Colony was not Station's first priority. No billion-credit shipment of ore would be lost if Patella were crippled, or worse. "Can the boys lead me out to him?"

"I will, I will," cried T'kun.

Rod patted his head. "Good—but be careful. And you, Chae, mind Gaea and the babies." He extricated his ankle from Gaea's fingers and swung her up for Chae, who staggered as he carried her off. "Haemum, you'll need to ride the llamas out for the Reverend Mother; we touched down just west of the trail. Remember, she'll be 'asleep."

Haemum raced off to fetch the llamas, her skirt flashing colors in the sun. Rod followed T'kun up the trail by the rushing stream, into the hills full of sapphires and other marketable stones. Here the wheelgrass gave way to a coarse dark shrub, with dense loopleaves. A flock of helicoids rose up suddenly, the sunlight glinting on their propellers.

"There!" T'kun shouted, and tried to point, then winced at the pain in his bound arm.

Rod caught sight of the gray shape, tumbled several meters down a steep bank. It looked nothing like Patella, whose form resembled Geode's. He froze, sick at heart. If Patella's nanoplastic body had not fixed itself by now, the news might be bad. Even if his neural circuits were intact, he would have to be shipped back to Elysium to retrain. And the colony would have to do without a doctor.

The emergency squad from Station came at last. A sleek glowing disk burned its way through the air and set itself down precisely, right on the trail that overlooked the ravine. For a moment Rod envied the sentient lightcraft, then he suppressed the unworthy thought.

From the craft emerged two medical sentients, their bodies shaped like caterpillars. They crawled down the ravine to rescue the injured doctor, not deigning to speak to Rod. As they lifted the shapeless nanoplast into their craft, Rod felt the full shock of his loss. He had worked with Patella ever since he came here; now, in an instant, his brother was gone.

Meanwhile, the older children were coming home from the gravel pit with carts full of corundum and occasional gem-quality stones. Mother Artemis, now returned, was nursing the four youngest ones, including the twins Pima and Pomu, whom Rod had picked up last year. Then she called the older children over for writing lessons.

Rod checked T'kun's arm, which Haemum seemed to have bound up reasonably straight, as far as he could tell. He would bring the boy up to

Station the next day for a scan. In the meantime, the watering tubes for the vegetables had broken down, helicoids hung by their sucker mouths from the gutters, and besides, a tumbleround had invaded the garden.

"Look at it, Brother Rod," Haemum exclaimed. "It's the biggest tumbleround I ever saw."

The tire shape of the tumbleround looked partly deflated, its lower half collapsed into the ground. Twisted loopleaves stuck out in all directions, some extended to root in the ground. The plant-creature smelled like glue and invariably attracted clouds of thirsty whirrs. A tumbleround generally rooted and grew in one spot for a long while; but under certain conditions, perhaps nitrogen deficiency, some of its vines would root themselves in the ground at one edge, then contract, pulling the organism to tumble it over slightly. More vines then rooted down, and so forth; once the tumbleround got going, it could travel several meters per day, trampling and digesting whatever vegetation crossed its path. Scientists disputed whether they were more animal or plant, zoöid or phycoid; "phycozoöid" was the term in favor. Whether plant or animal, this one was as tall as Rod and perhaps twice his weight.

"It's been there for the longest time, just outside the fence, you remember." Haemum pointed to the long slimy trail full of broken tendril loops, leading in through the crushed fence. "After you left, one night it just started to move, and kept coming until..."

The scent blew toward them. For a moment Rod felt light-headed, and he caught himself up just in time. Then he realized that he had not gotten around to eating anything since breakfast on the ship. He shook himself and straightened. "Well, Sister—what shall we do with our guest?"

Haemum put her hands on her hips. "We could chop it up. If we chop the pieces small enough, they won't grow back. We can scoop them out and dry the hide to make shoes."

A tedious, gruesome task, but it would work. And yet...Why had this thing come to peek in the window? What if this whirr-clouded beast really was one of the planet's hidden masters? Station said no, tumblerounds had no IQ to speak of.

"We'll dig it out and haul it off," Rod decided. So they set to work with the shovels, all the while brushing whirrs out of their eyes and mouths, taking breaks when the fumes overpowered them. A sentient lifter could have done it in a minute, but the colony could not afford such. The work of one's hands was a gift to the Spirit.

At last, Rod raised the stinking creature out of its hole, where the loops of its roots lay gashed. His muscles bulged as he lifted it onto the cart,

first one side of it, then the other. Three llamas pulled the cart, spitting in protest, while the two colonists pushed from behind, driving it out as far as they could before they dumped the tumbleround out. It would root again in no time.

Just before dinner, while helping Pima and Pomu wash their faces, Rod remembered to call Geode. So he hurried off down the hall to the holostage. The twins, who immediately knew what he was after, plodded after him excitedly.

As Rod entered the cylindrical chamber, the usual column of light shone up from the stage; the twins cooed in delight. Soon Brother Geode himself appeared, full of good spirits and just as delighted to see them. "My two little dears!" the sentient exclaimed. "Alike as two parts from the same factory—and walking, already! Why, we weren't gone but three weeks."

"I thought you'd be pleased," said Rod. "But I'm sorry about Patella." "I can't believe it. I just can't bear to think of it." Three of his arms waved violently in the air, twining and untwining. He and Patella had been built to the same model and shipped from the same Hyalite plant on Valedon. Both had earned their freedom in an Elysian nursery, as had Mother Artemis. "I just hope his central processor's okay, so he can reshape himself." He shuddered all over. "How will you ever manage? I'd better come down."

"But the babies need you. How is 'jum?"

"'jum is right here. Don't shrink away, girl—look, here's Brother Rod." The light-shape of 'jum appeared, wide-eyed and uncertain. She extended her arm, then pulled it back as if remembering. Rod felt bad about leaving her, though they had no choice. "I'll come up soon to hug you, 'jum. Look," he said, nudging the twins. "See your little brothers. We all can't wait to have you home."

As he finally went in to dinner, Haemum was leading the singing at the head of one of the two long tables. Let us love only truth, desire only grace, and know only Spirit....Haemum took her devotions seriously, and planned to join the order when she came of age. The children were a cheery sight, their starstones flashing on their necks, all seated in orderly rows in their bright red-and-yellow patterned shifts. Their legs swung briskly under the chairs, and the long tables reminded Rod incongruously of mealtimes at the Guard Academy.

Soon the bowls of four-eyes stew came passing down, with red and green loop-fruits the boys had cooked up from the garden. Since Rod could not yet eat them, Chae brought him his two cakes of standard-grade

food from the synthesizer. The synthesizer reshaped organic matter at the molecular level and filtered out toxic metals. An economy model, it put out two flavors, fruit or flesh; Rod had eaten them for so long that he forgot which was which. But the first bite reminded him he was famished. He ate quickly, forgetting his usual insistence on "civilized" conversation.

Someone was kicking him beneath the table. It was T'kun, managing to eat with his left arm. "T'kun, remember your manners," Rod warned. "The Spirit is watching."

A commotion erupted at the far end. A helicoid asleep on the ceiling apparently had fallen onto someone's plate. The children were shrieking; Mother Artemis calmed them, while Rod released the helicoid outdoors. Looking upward, he saw two more helicoids hanging by their suckers from the rafters, their propeller rings turning idly. The hall really needed cleaning out.

Returning to his place, he found that T'kun had crawled under the table because he did not like the pudding for dessert.

"Come out and sit down," Rod warned, slightly raising his voice.

T'kun dutifully emerged. "I am sitting down."

Mother Artemis came over and leaned by his ear. "Rod, I've just heard from Station. Patella can't recover here—he must ship back to Elysium."

His last hope died. There was nothing they could do for the injured sentient except ship him back home. Poor Patella. "What will we do?" he whispered. It was hard enough with just the two of them managing here, until Geode brought the babies home; but even then, they needed a doctor. It would take some searching to find either a sentient willing to come, or a human physician willing to be lifeshaped, with two years in the gene tank before she or he dared set foot here without a skinsuit.

Mother Artemis said, "The Reverend Father will find someone." The Most Reverend Father of Dolomoth, a large Valan congregation, had founded their colony and was ultimately responsible for it. "Meanwhile, I could take on a medicine module. It would overload my processor somewhat and slow my reactions, but—"

Rod shook his head. "You can't do that. You have to keep alert around here—you don't want to...to get hurt like Patella."

Mother Artemis thought a moment. "There's always Sarai."

Sarai was a Sharer lifeshaper. Sharers were a human race who had settled the ocean world of Elysium ten millennia before the "immortals" did, shaping their own genes for aquatic life. Sarai, however, was a rebel among her kind. She had left her ocean home for Prokaryon, to dwell deep

within the rock of Mount Anaeon. Rod frowned. "Sarai is hard enough to reach." And not usually receptive to visitors.

"Sarai is as skilled as any Elysian doctor, and she would help the children." Mother Artemis added thoughtfully, "More contact with fellow humans will be good for Sarai."

Rod prayed the children stayed well.

Commotion erupted again, this time from Pima and Pomu, who were attempting to rise from the table. Under the table T'kun had tied their shoelaces together.

After dinner everyone gathered outside. The sun was just setting beyond the distant singing-trees. The llamas groaned at the sun, their regular habit in the evening.

Mother Artemis stood, and her nanoplastic hair waved above her head as if charged by an electrical storm. She spread her robe, and her skirts came alive with bears and lions. Strange story figures shimmered and stepped out around her; the nearer children tucked in their feet and hitched back a bit. The colors deepened to violet, in waving shades of water. Suddenly out leaped a wonderful flying fish. The fish spread its fanlike wings, and began to speak in an otherworldly voice, telling the Sharer tale of how the first fish came to fly, and why their souls were haunted, never again to rest at peace in the sea.

The children were spellbound through tale after tale, legends from Valedon and Urulan and every known world, until at last the younger ones dozed off. Rod put the twins to bed, and Haemum took T'kun. The sun was down now, but the soft remains of light diffused through the gathering clouds. A light rain was falling, as it nearly always did at this hour, as if Prokaryon's "hidden masters" were in charge. The smell of ginger increased as the soil released its fragrance. The voice of the distant singing-trees abated.

Rod was dead tired, but somehow his mind would not yet let him sleep. He strode restlessly outside the compound, letting the raindrops cool his face and sink into his robe.

He found Mother Artemis walking with him. "How was L'li?"

There was too much inside him to tell. The very edge of certain thoughts made his stomach contract. "Those who had money still have it. But some have the creeping, too—and the cure does not work on advanced cases."

"Yes," she nodded, her darkened robe swishing. "But you did not spend your time among the rich."

"The lightcraft are still running; for how much longer, I don't know. A power blackout downed several. Next time I may not even be able to reach Reyo."

She nodded again. To the east the clouds parted, revealing a large red moon whose glow filled Mother Artemis's restless snakes of hair. The moon glowed red from the sentients melting out its iron for the insatiable factories of Valedon. Prokaryon's moon had no known life, and by the next decade it would be mined down to nothing.

"The village I visited last year is deserted now," Rod continued. "The hill I climbed this year will be empty next year."

Mother Artemis kept walking.

"I gave the beggars what bread I had."

"I'm sure you gave them everything."

"My watch, and my leftover credits." The colony's own cash was scarce. "But not my pocket holostage," he added remorsefully. "They could have sold that."

"They could," she agreed. "Was that the worst thing?"

His stomach tightened unbearably. "There was a woman outside the orphanage," he forced himself to say. "She tried to make me take her baby." He could not accept children of living parents, lest the government accuse him of ethnic abduction. "Otherwise, she said, she would take it to the market, rather than see it starve." It was not a slave market.

Suddenly he retched, and his stomach finally gave up. "That was foolish," he said, wiping his mouth, thinking of the wasted food. "I must get to sleep."

"Yes, you must. Even though you want to go back and save all of L'li."

"I do," he said with a touch of anger, at the universe and at himself. "It's appalling, and we all just—live here."

"You saved six children this time; isn't that a great privilege? How many people live their entire lives without saving one soul? And the Spirit should grant you a world?"

He stopped and looked closely at her. Was she laughing at him? "Yes," he said, his mouth smiling despite himself, "the Spirit should grant me a world."

At last, finishing his nightly meditation, Rod found himself in bed. Patella came to mind, and he missed him terribly. Then came the face of his father on Valedon, reproaching him: What did you do with all your expensive schooling, to join a bunch of clerics raising orphans at a distant star? Then nameless faces and hands arose until his mind cried out.

There was a tap at the door.

"Brother Rod?" It was T'kun. "My arm hurts."

Rod pulled back the covers. T'kun was supposed to have outgrown sleeping in bed with him, but he would make an exception. The boy snuggled under the covers, his little head a miracle of softness. In an instant Rod was asleep.

THREE

From hauling the giant tumbleround the day before. Nonetheless, he felt well rested, and the sight of the cloud-cloaked mountains always brought him peace. He spent the first hour with Gaea dragging herself after him and wrapping herself around his leg at every opportunity. The Spirit callers cared equally for all, but despite himself Rod had favorites.

Haemum and Chae rose early to go uphill and dig gravel out of the mine, an old stream bed rich in corundum. They sifted the gravel through water in a fine-mesh screen, allowing the denser crystals to sink to the bottom. Then they dumped each screen over onto a table, where the younger children sorted out the crystals. Most of them were clear and not of particular value, but a few were tinted blue, yellow, or even pink; the better ones, when cut, might fetch enough to feed the colony for a week. Even Gaea picked out her share, although most turned out to be quartz.

After the midday meal, Mother Artemis treated and cut the stones, training Haemum on the lap wheel. The younger children painted little dioramas of four-eyes and singing-trees, or strung necklaces of helicoid propeller shells. Rod and Chae worked on the garden, collecting ringed pods and fruits, and replanting the rows gouged out by the visiting tumbleround. In the western field the brokenhearts were ripening fast; how would they ever get them harvested without Patella?

Chae brought back a bushel full of greens to cook up four-eyes stew for the two tables of children, all swinging their feet and twirling the vegetable pods around their fingers. Afterward, as the little ones cleared up, Mother Artemis said, "I sent the Most Reverend Father a neutrinogram." Neutrinos brought word across the space-time folds, resisting the extreme electromagnetic distortions at the connection holes. The signal was crude, never of holographic quality, but it was the fastest way. "I told the Most

Reverend Father we need another brother or sister with medical training, at least until Patella returns."

"What will we do in the meantime?" It could be weeks or months before help arrived.

Mother Artemis watched the nightly rain outside, her hair twining into knots and untwining again. "Haemum and Chae will help with the harvest. Between the two of them, now, they bring in as much as Patella did."

Rod frowned, vaguely uneasy. "They are growing up."

"Exactly." She gave him a questioning look.

"Well—I guess I've been more on the infant end of things here. I'm not sure what the Reverend Father has in mind for the older ones, as they grow into adults."

"When I was a nana in the *shon*, I raised Elysian children for Elysium. Now we raise Prokaryans. They'll grow up to maintain the colony."

"But they're also citizens of the Free Fold." He took a deep breath. "What if they choose to emigrate?"

She considered this. "If the Spirit so calls, so be it."

"But how will they ever know enough? How will they know, without—education?"

"Education is the right of every citizen," said Mother Artemis firmly. "We educate all our children. We meet the standards."

"The formal standards are too low." This was one area where Rod felt a disconcerting gap between human and sentient. "Human education takes years, even decades. We can't just plug in a new module. When I was Haemum's age, my father sent me to the Guard Academy. But it was more than soldiering—it was history, literature, mathematics."

"And your father, was he pleased with the result?"

"He was horrified." By leaving to follow the Spirit, Rod had dashed his father's hopes of continuing the family tradition in the Guard. "That's the point of education: to free a child to make choices that horrify her parents."

"So, should we send Haemum to the Guard?"

Rod smiled at the thought. "No, but she can attend school by holostage. Who knows; she might become a doctor someday. Look at how she set T'kun's arm."

"I know those programs," said Mother Artemis. "The better ones would take up most of her waking hours. But if it must be, so be it." She looked up, and her hair stretched toward him. "You're such a good father, Rod."

Rod looked away, his face warm.

As the children napped or did lessons, Rod checked the holostage to see if he could reach Geode and 'jum, but he found a call waiting. "Return call," he told the holostage.

"Which caller?" Servo machines were intentionally built to as low a sophistication as possible, to avoid the chance of their "waking up" sentient, in which case they had the right to earn freedom.

"Diorite." Diorite was the shipping agent for Colonial Corundum, a firm that worked commercial deposits in the foothills. His form appeared on the holostage, tall and lanky, and tanned even darker than Rod. He wore a Valan talar, hung with strings of his pale green namestones, and a wide-brimmed hat for shade. "Rod, you're back," he exclaimed. "I heard about your brother. My sympathies—that ravine's treacherous."

Rod nodded. "Thanks." He traced a six-point for blessing.

"Why didn't you call me? We could have brought Reverend Mother home, and had your brother up to Station in no time."

That was generous; Rod would never have asked such a favor. "Thanks, I'll remember."

"Anytime. Say, I see your old craft's still out there—you'll be shipping back soon?"

"I left six new children at the clinic. Besides, I have a load to ship." There was a sizable cargo of sapphires for Valedon, plus the craft items the children made for tourists.

"You can help us out," said Diorite. "A small package to deliver—the usual terms."

The Spirit Colony was exempt from the costly regulations and reporting requirements for commercial mining. When Diorite had new samples whose contents he did not want known to competitors, he asked Rod to take them up, for a small "donation" which greatly helped the colony. It was legal, and Mother Artemis said they ought to trust good neighbors. "Meet us in the morning," Rod agreed.

"Sure thing. Good luck to your new colonists."

In the morning Haemum and Chae strapped up five of the llamas, a broadfooted breed lifeshaped for Prokaryon. Strapping them up was tricky, for as soon as the beasts felt a heavy load they would empty their guts with streams of spit. Once harnessed, the llamas lumbered dutifully down the trail through the brokenhearts, then turned off into the treacherous wheelgrass, bleating in protest.

The old servo lightcraft was still stuck out in the wheelgrass where Rod had left it. Beside it now sat Diorite's own sleek sentient craft, its rec-

tennas mirror-smooth. Strains of popular music emanated from within, at rather high volume. As Rod approached, the music stopped, and Diorite emerged, shaking his head. "Sorry about that—Dimwit here has limited taste."

"I heard that," called the lightcraft. "Limited taste, indeed. Just you wait—only six point eight months till I draw a salary."

"Sentients," muttered Diorite. "Can't live with the dimwits, and can't live without 'em."

Rod smiled. "I'll trade you the llamas any day." Haemum fed a treat to each of the beasts. They stood there, chewing sideways.

"Well, here's the package." Diorite caught Rod's arm, and his voice sank to a whisper. "Just between us Valans—look what we found." He opened his hand beneath Rod's eyes. Between his fingers glinted a ruby, one of the largest and deepest Rod had ever seen. His father had worn such, and so had the Academy Master, whose namestones had glared fire at Rod too often.

A low chuckle escaped Diorite. "There's more where that came from—and *I'm* the only man who knows where."

Rod smiled and clapped him on the shoulder. "No Valan will forget his name if you can help it." He stowed Diorite's package carefully in his old lightcraft, while Haemum and Chae helped transfer their crates from the cart. As they worked, Diorite's lightcraft lifted off. The hiss of boiling air shattered the morning calm, startling a flock of helicoids. Upward it soared, then a lateral burst of plasma sent it streaking across the sky.

Haemum said wistfully, "I wish I could come with you."

Rod smoothed her curls and kissed her forehead; it seemed only yesterday, she'd been Gaea's age. "I could use your help," he admitted, "but the colony's short-handed." And now he had to find her a school.

"Will Brother Patella come home?"

"If the Spirit wills. But not for a while."

The old lightcraft soon left Prokaryon behind, the stripes of singing-tree forest and wheelgrass fading into the continent Spirilla, where most of the colonists had settled. Spirilla had the shape of an S, its mountain range rising out of its northern curve, while its southern curve cupped the crater from an asteroid that had fallen some hundred million years before. The continent rotated out of view as the great ocean came round, then continents and oceans blurred together, leaving the planet a bright jewel set in the black of space.

At Station, Rod docked and hoisted up his cargo, including Diorite's package. All surfaces had to be cleansed by mite-sized servos that re-

moved traces of arsenic and toxic proteins. Afterward, the ship would head off to the first extradimensional space fold, where it would "jump" several light-years. Three jumps later, it would reach the star system of Elysium and Valedon. On Valedon, the gems were always in demand for namestones. The crafts would sell better on Elysium, whose millennial inhabitants in their floating cities admired anything handmade.

While the cargo was processed, Rod hurried off to the clinic. He found Geode feeding two infants while changing a third.

"Brother, am I glad to see you." Geode's eyestalks twined in delight, and he extended his furry red arm around Rod. "You would be quite wornout with those little ones. Even I need an extra recharge."

"You've done well, I see." Rod picked up the youngest girl, T'kela. Less than a week old when he first picked her up in Reyo, she still fit comfortably in one hand. Her own wrinkled hands squirmed at odd angles, and her face had a preternaturally wizened look. She stared at Rod's face, then fell asleep, her arms still sticking out straight from the blanket. Rod put her up to his shoulder. The magic of such a tiny person always took him by surprise.

The two older ones were crawling and pulling themselves up to stand. Now that they were well fed, they acted more like toddlers than the infants the orphanage had claimed. That could mean extra costs for life-shaping—one "older child" was bad enough.

'jum was at the holostage, observing a stellated geometric solid that hovered insubstantially before her. She caught sight of Rod and stared, then came over and squeezed his hand, digging in with her fingers as if to assure herself he was really there. Her face glowed with health, her cheeks already filling out so that he might barely have known her. Rod imagined the millions of nanoservos swarming through her veins, to clear her prions and process her genes for Prokaryon.

"Hello, 'jum," said Rod. "Found any interesting numbers lately?" The girl only stared.

"Don't let her fool you," said Geode. "She can talk, all right. Say, 'jum, did you count the corners on that solid yet?"

'jum swallowed to speak. "Twelve corners pointing out, eighty pointing in. And one hundred eighty faces."

Geode groaned. "You've got the algorithm, all right. Hey you," he called to the holostage, "show us an extra dimension, will you."

"Please specify request," the holostage replied in a flat tone.

"A four-dimensional geometric solid, Dimwit."

Rod frowned. "Brother, don't talk like the miners."

"You're right," Geode replied contritely, hunching his arms. "Let us pray for mindless machines, that they be granted souls. Well, the babies are making excellent time," he told Rod. "The youngest one is taking up nanoservos twice as fast as usual. All her cells are making arsenate pumps, and her liver is nearly transformed. She'll be home within two weeks. I show them your holo image, and Mother Artemis, as often as possible," said Geode, "so they'll know you well. I show them Patella, too; I sure hope he gets home soon." His eyestalks twined anxiously.

"What will we do without him?" Rod asked softly.

"Pray. Pray without ceasing."

Rod picked the toddler Qumum up from the floor and tried to catch his gaze. After a minute Qumum suddenly smiled, a big smile with his mouth and eyes wide. Then he let out his breath with a trill. Rod laughed. "Here's someone happy. Say, 'jum, how about you? Do you like your new room at Station?" Station would be her home for some months, perhaps longer.

'jum nodded, then looked away with a guarded expression.

"I'm sure you miss the blue sky." Among other things.

'jum looked up suddenly. "Does the creeping ever reach the Children Star?"

Rod crouched to look into her face, catching her shoulders. "Never, 'jum. You will never be sick like that again."

"There's one good thing about Prokaryon," Geode reflected. "None of their little creepy-crawlies can grow inside human bodies and make you sick. You're as toxic to them as they are to you."

Rod departed at last and checked that his cargo passed inspection. An hour remained for his one indulgence: supper at the Station lounge. It was a rare chance to be surrounded by adult humans again.

The lounge was built Elysian style, with rounded nooks that could expand or contract, and tables of nanoplast that shaped themselves to accommodate those who sat there. There was even a tree full of butterflies at the center, for Elysians to meditate. But most importantly, the tables actually served differentiated food. It was all reprocessed, of course, like the packets Rod's instrument produced for his meals at the colony, but Station's model could synthesize a thousand different food items, from filet of beef to flying fish.

First he had to find a seat. The bubble-shaped dining compartments seemed more crowded than usual with miners, surveyors, and researchers. Even two or three news reporters hovered overhead, shaped like snake

eggs; some odd rumor must be up. Usually one of the nanoplastic walls would notice Rod and tunnel in to create a new space, but not today. Perhaps the dining hall had reached its volume limit. He paused uncertainly, brushing a whirr off his arm. The few that strayed out to Station seemed less picky about sustenance than those back home.

He saw a hand waving, next to an empty seat. The stranger motioned him to sit, removing her backpack from the chair across from her.

"Thanks," he said. The woman, a simian student, looked vaguely familiar

Rod sat down and placed his finger on a small window that read his fingerprint. Choosing what to order was always hard, all the more so since every minute that passed made him feel guilty for keeping himself from the colony. "Shepherd's pie, with mixed greens." His Valan home favorite

The woman opened a pocket holostage to play the news from Elysium. Rod never watched the news at home, as it distracted from his prayers. Today's story was on Prokaryon's "hidden masters." Giant tracks had appeared among the singing-trees, in a remote region west of Mount Helicon. Even on the holostage the "tracks" looked more like streambed erosion, but of course there were experts to claim otherwise. No wonder the "snake eggs" were about.

The tabletop opened, and a plate of steaming pie rose up. The odors brought him right back to his childhood; he could almost hear the gulls calling off Trollbone Point. The pleasure of the first few mouthfuls filled his attention, until the holostage again caught his eye. Another ship of illegals from L'li had tried to crash-land, this time on Elysium.

The hapless vessel hung forlornly above the Sharer ocean, in which the Elysian cities floated. Elysians had intercepted it, of course, and "repatriated" the passengers. Rod's fork froze in his hand.

The woman was watching him. "You came from L'li, didn't you?"

He recalled the simian student in the connector tube, staring down at him as he tried to keep a grip on the infants.

She closed the holostage and extended her hand. "I'm Khral, a microbiologist, just arrived from Science Park." Science Park, the top Elysian research institute, sponsored fieldwork on Prokaryon. "I've joined the singing-tree project."

"Welcome," said Rod, shaking her hand. "I'm Brother Rhodonite, of the Sacred Order of the Spirit."

"Oh yes! I've heard of Spirit Callers on Valedon. They do a ritual dance before the moon at midsummer."

"That's the 'Spirit *Brethren*," Rod corrected, much annoyed. "They split off years ago."

"I'm so sorry, I don't know much about Valedon. I'm from Bronze Sky." Bronze Sky, named for its vulcanic haze, had been terraformed four centuries before to settle excess L'liites. Today Bronze Sky was full, and there were twice as many L'liites as before—and Prokaryon was here to settle.

But Khral also showed ancestry from gorilla hybrids created as slaves on ancient Urulan. Her nose was pushed in with a wrinkle, and her heavy brow overhung her eyes, giving her a permanently serious expression. "You know, everyone gets wrong what I do, too. The students here avoid me. They think I'm here to find a plague, to give the Fold Council an excuse to terraform Prokaryon. But it's not true."

"No plague for us," agreed Rod. "Prokaryan microbes cannot live in humans."

Khral looked thoughtful. "That's an interesting question. There are reports of occasional microzoöids isolated from human tissues—and even from nanoplast."

"Microzoöids?"

"We call Prokaryan microbes 'microzoöids' because each cell is doughnut-shaped, just like the larger zoöids that roll across the fields. Each microzoöid cell runs its circular chromosome right around the doughnut hole! With their triplex DNA, microzoöids reproduce by splitting three ways down the middle, into three daughter cells."

"Whatever their DNA, they can't grow in us. We're too...foreign." Rod realized he knew nothing about it, only what the clinic had always told him.

Khral said, "The few microzoöids found in humans never grow in culture. But if they could exist for any length of time, just long enough to divide and copy their DNA, you're bound to get mutants. And some day those mutants—"

"Let's pray they don't," Rod exclaimed. "The last thing we need is an epidemic, with our doctor away."

Khral laughed, and her large teeth showed, yet somehow she looked more human. "Never fear. Even our own microbes are mostly harmless, after all; they get a bad rap. But you shouldn't be without a doctor. Doesn't Station cover you?"

"Sure, but they can take days to show up. The mining camps offer a thousand shares of stock to recruit a doctor—we can't match that. Patella came because he is a Spirit Caller. But he just had an accident..." He

stopped himself. "We'll manage. There's a lifeshaper on Mount Anaeon that we can call."

"A lifeshaper? You don't mean the Sharer, Sarai?"

"You know her?"

"I'm trying to meet her. She's one of the few people with data on microzoöids, most of it unpublished. She hasn't yet returned my call."

That was no surprise. "Sarai keeps to herself."

"I would have lots to offer her—the latest strains and methods from Science Park."

"If you're not here to find a plague, what are you here for?" Rod asked.

"I told you—the singing-trees. Singing-trees are full of microzoöids."

"They don't look sick to me."

"Neither do you—and your body carries ten times as many bacteria as human cells."

Not exactly a comforting thought.

"And we exchange bacteria all the time, no matter how much we wash our hands. You can track the same bacteria strains in a family—in mom and dad, kids, even the family dog. You could say we 'communicate' through our bacteria." She grinned excitedly. "That's my theory: The singing-trees communicate by exchanging microzoöids. That's why nobody's made contact with them yet: *Nobody's looked at their microzoöids.*"

So that was it, Rod thought, leaning back from the table. Yet another scheme to reveal "hidden masters." "Station's been pushing singing-trees for years," he told her. "They've little to show for it."

"It's different this time; we're really onto something. That's why I'm here."

Rod regarded her curiously. "Why are you scientists so anxious to find some high-IQ creature running Prokaryon? Why can't you just let it be? If someone is in charge, they'll show themselves once we prove worthy of their notice."

"That's just the point—how do we get their notice? If they've mainly studied our bacteria output ever since we got here, they must think we're pretty dumb."

That was hard to deny.

"I should think you'd be interested," said Khral. "Without that last bit of doubt about 'hidden masters,' how long before we humans would blast Prokaryon open?"

Rod thought of the moon glowing red and shrinking by the year. A sense of unease crept up his neck. "The Secretary of the Free Fold would never allow that."

"The Secretary's mate is the president of Bank Helicon. Elysian banks don't like ships of illegals. Bank Helicon wants to get Prokaryon developed—now, not centuries from now."

He would have to run to make his launch time, he realized suddenly. His finger tapped the window; the plates descended as he got up, and a nanobug cleared the crumbs. "We will pray for the president of Bank Helicon."

FOUR

the lounge. The children crowded around, then all but the twins and Gaea went off to the sapphire mine. Mother Artemis nursed the twins from two of her breasts, while Rod mended a strap of the llama's harness and tried not to let his foot go to sleep in Gaea's grasp. "Is it true," he asked the Reverend Mother, "that the Elysians want to terraform Prokaryon?" He pulled the heavy needle through the thick tumbleround hide. He never had the heart to kill a tumbleround, but one that had died naturally provided enough cured hide for a year's worth of harness straps and children's shoes.

"Some would wish to terraform," she said. "Too few humans can live here."

"So, to fill our colonies faster, they would kill all this?" The singing-trees—the helicoids—so many creations, unique to this world.

"The Sharers won't allow terraforming." The Sharers had dwelt in Elysium's ocean, long before the Elysians built their cities. "They have Elysium in their power. Their lifeshapers could easily make all the floating cities uninhabitable."

Rod thought this over. "But it's not only up to Elysium. The Free Fold—other worlds could vote to repeal the ban."

"Secretary Verid will never allow it." The Reverend Mother had worked closely with the Elysian leader Verid Anaeashon, years before, during the early sentient uprisings. Now Verid was Secretary of the Fold Council.

Pima and Pomu were scrambling down from the Reverend Mother's lap. On her skirt a bear came alive and made faces at them; they hurried over to watch and laugh. The laughter of children was worth more than gold.

"For Haemum, I've checked out the New Reyo Branch of the Interworld Free School," Mother Artemis told him. "Would it meet your requirements?"

"It's a good start." New Reyo was a larger L'liite colony on another continent, where the farming was better. The Spirit Callers had received a cheaper tract in Spirilla.

"She can enroll at any time. We'll let her try it out and see." There was a prayer answered. Mother Artemis added, "I've also been thinking of T'kun's arm. We need to have it checked, to make sure the bone is healing straight." She paused. "We'll have to call Sarai."

Rod tensed inwardly, but if the Reverend Mother had decided, so be it. Their first call produced a stall of spattering light on the holostage. Perhaps Sarai had jinxed her connection again, to ward off offending callers. But after a few minutes, the connection held. The Sharer lifeshaper emerged from the surrounding vines of enzyme secretors and other leafy assistants, all native to the ocean world from whence she came. Her skin was smooth, hairless, and purple all over, from the symbiotic breathmicrobes that stored oxygen for swimming. The effect was especially striking since, according to the custom of her aquatic race, she wore no clothes.

"You share good timing, Sister." Sarai's webbed hand held up a large pear-shaped pod, one of the living instruments of her lifeshaping. "You're just in time to see me commit genocide."

"Good evening, Sarai," said Mother Artemis, ignoring her remark. "My deep apologies for disrupting your work. Please help us. Brother Patella had a mishap and had to leave us, and now one of our children needs attention. If ever we can return assistance..."

Sarai plunged the pod into a vat of unknown liquid. "There—a billion microzoöids meet their death, that I may study their chromosomes. Who will sing their deathsong?"

"The Spirit Callers built a shrine for microbes," Mother Artemis told her. "For all the microbes killed in the name of science."

Sarai laughed. "I should have known." She waved her hand, snapping her fingerwebs. "What's your problem?"

Mother Artemis described the accident, and the boy's condition.

Sarai listened. A long-legged clickfly perched on her head to cluck its message, then it flew off again. "Enough," she said at last. "Bring the boy

up tomorrow, and I'll see him. But remember, if I'm in whitetrance, leave me alone." The holostage went blank.

"That's Sarai," said Mother Artemis. "Once she sees the boy, she'll treat him. And Sharers never take payment." She turned to Rod. "What shape is the lightcraft in?"

"To land safely on a mountain? No way." The realization sank in. He would have to travel a day down the zoöid-infested plain with a four-year-old with a broken arm, then cross a band of singing-tree forest, then hike another day up the glacial cliffs of Mount Anaeon, to reach the hanging valley where Sarai lived. Rod straightened himself and turned to her. "So be it. If you're sure you can manage here on your own."

"We'll manage. You could take Gaea, too, you know; Patella and I were discussing it. It's high time we fixed her spinal cord." She paused. "It can't hurt to ask."

Rod was up at dawn to harness the llamas for the journey. Haemum had already fed them, and they groaned toward the rising sun. She packed their provisions, pulling the straps tight, and gave one beast a pat on the side. The llama's head swayed on its long neck, its mouth a perpetual grin. Haemum looked longingly across at Rod. "I wish I could go with you."

He clasped her shoulders. "Haemum, today you will journey much farther than Mount Anaeon. You'll enroll in the New Reyo School. You'll visit times and places none of us have ever seen."

Instead of Haemum, Chae would go along to help T'kun, while Rod managed Gaea. The two boys appeared, having dressed and fed themselves. T'kun was still half-asleep with his thumb in his mouth, his arm in a fresh sling. Chae would ride one llama with T'kun behind him, while Rod rode the other with Gaea strapped to his back. Gaea was the last to be wakened, changed, and fed. The little girl beamed and clapped her hands at the sight of the llama. "Gaea go ride. Go ride, see zoöids."

Rod silently called the Spirit to keep zooids out of the way. At least the girl was starting out on her best behavior, for nothing pleased her more than to ride with her favorite parent all day.

"Here," said Mother Artemis, giving him a map cube. "Even if the trail goes bad, you can't lose your way."

Their hands each traced the starsign, the invisible stars evaporating, yet they lingered in Rod's heart. The llamas set off and paced down the trail into the wheelgrass, to the east, the opposite direction from where the craft from Station usually landed. Their specially-bred outsized feet made good time on the trail.

The air was still and clear; the distant singing-trees had not yet awoken, and the helicoids were just beginning to stir. A herd of a dozen four-eyes grazed peacefully to the east, each shape casting a long shadow back from the rising sun. The two eyes awake on top were faceted like rubies. Now and then one of the creatures rolled forward on its suction pads, extending the next of its four hungry mouths. At Rod's back, Gaea stirred and stretched. "Zoöids," she called softly.

Rod pulled the rope and called to Chae. "If anything big comes along, remember to *freeze*." Humans neither looked nor smelled like food—unless they ran.

The llamas soon reached the shore of Fork River, so named because upstream the three major tributaries from the mountains met and fed into it. The water rolled wide and lazy, barely rippling through the loopleaves that drooped over the side from bushes at the edge. A long, dark hydrazoöid undulated beneath the ripples; its body was a torus extended into a tube. Its long fin spiraled around its girth, and it swam like a corkscrew.

Rod paused. Upstream, the trail was less well kept, and the river cut across several bands of singing-tree forest. He waited for Chae to catch up. Behind him Gaea stirred and stretched. "How are you getting on?" he called back to Chae.

"Just fine." Chae traced a starsign.

From behind the ten-year-old, T'kun leaned outward and craned his neck forward. "Are we there yet?"

"Don't be a baby," said Chae. "We've barely started yet."

They continued east, along the bank of the lazy river to their right. The mountains now rose straight ahead, their fog melting away, and the peak of Mount Anaeon stood clear. On the trail, wheelgrass had grown up in patches, the tall elastic double-stems sprouting loopleaves, each of which was a snare. The llamas picked their legs straight up and down, but still they would get their hooves caught. No wonder few Prokaryan creatures had evolved projecting limbs. Once Rod caught sight of a whirr-clouded tumbleround, with its long tendril loops stretched at all angles to the ground, like a discarded tire covered with cobwebs. Its penetrating odor reached his nose. Though harmless, somehow the sight of a tumbleround always made Rod's hair stand on end.

The hollow voice of the singing-trees arose now, in waves that grew and quieted again. The tones deepened, reverberating even through the ground below. Ahead of the travelers the dense band of forest emerged and grew, resolving into deep violet singing-trees. The singing-trees rose in enormous arches, several times taller than the colony dwellings. Be-

tween each pair of "trunks" in the arch, the lower sector dipped into the ground to thrust double-roots deep into the soil. From the top branched multiple arches, sprouting loopleaves. The uppermost arches were flattened into stiff plates narrowly spaced together; these vibrated at the slightest hint of wind, "singing."

As the llamas entered the forest, the air cooled markedly, and the path lay free of wheelgrass. The upper canopy cut off most of the light, except for occasional shafts from above as if through a window. The dark arches created the atmosphere of a temple; one could well believe the planet's rulers dwelt here. As the wind lessened and the songs quieted, smaller zoöids could be heard rustling unseen. The river brooded beside them, furtive creatures slipping into its depths.

Rod stopped for water. The llamas waded into the river, while he filtered some for the children. Out of the corner of his eye Rod saw something fall from a singing-tree. A little shriek broke the calm, followed by scuffling sounds. The shriek repeated, fading slowly. Curious, Rod took a step forward to look beyond through the arch of the tree. A hoopsnake had caught a smaller zoöid in its loop, then twisted into a figure eight to strangle it. It might take a while, especially if the prey had four lung systems, as a four-eyes did. But in the end the hoopsnake would have a meal to suck the juice from.

Chae came over and caught Rod's hand. "Brother Rod, shouldn't we save it?"

He meant the little one, Rod realized. "That's nature, Chae. You wouldn't want the whole forest overrun with zoöids." He scanned the canopy, wondering what larger denizens might perhaps take aim at them. But only another hoopsnake wound itself along a branch.

As they rode deeper into the forest, the singing-trees grew larger, and their voices swelled till they drowned his own. At one point the trail headed straight under the arch of a giant, perhaps a thousand years old. Were the "masters" really watching, as Khral had said? If so, they gave no sign. At last the trees began to thin out, and the ground became more sodden, sprouting orange loops of ring-fungus. Stagnant pools appeared, full of slime, and oddly flattened helicoids whirled along the surface.

The travelers emerged into the next band of wheelgrass. Blinking in the sun, Rod scanned the horizon. Mount Anaeon rose larger than before; but just ahead, the wheelgrass was full of four-eyes. Hundreds of the creatures pressed together at the riverside. These four-eyes were blue-and-brown-striped, and larger than the breed he saw close to home.

"We don't want to get caught in that herd," he told Chae. Reluctantly he turned away from the river, hoping to get around the herd without losing too much time. There were four-eyes of every age, including paler young ones, and parents with a baby firmly seated in the inner hole, where it would feed on special polyps that grew on the parent's hide. One pair were actually coupling together, like two stacked donuts, each extending its germ cell donors into the receptacles of the other.

As the travelers were coming around the herd, a commotion erupted, nearer the river. The four-eyes started to roll, forward in one direction, then suddenly backward. Back and forth they zigzagged, the wheelgrass springing up behind them, their pungent alarm hormones filling the air. Then the ground rumbled, vibrating with the weight of some very heavy object coming near.

From across the plain rolled a megazoöid, one of the largest that Rod had ever seen, like an elephant doubled over. Four-eyes scattered before it, except for the unlucky ones who ended up in the giant's path. Two more of the megazoöids appeared, surprisingly fast once they gathered momentum. They seemed to be trying to trap the four-eyes by the river.

"Watch out!" shouted Chae behind him. "Freeze!" The boy pulled his mount to stop.

In that instant Rod realized that he had told Chae to do absolutely the worst thing. He pulled his own mount around and rode back to the boy. "Run for it," he shouted. "Or the herd will run us down." He slapped Chae's llama on the rump and sent him pacing, and prayed that T'kun could hold on. Then he followed, dodging the frantic four-eyes that already were charging into their path. His own llama stumbled once in the loopleaves. The dust and the powerful scent had him choking and his eyes streaming. Rod thought he would never get out alive.

At last he broke free of the herd. Ahead rose the next band of singing-trees. But where were Chae and T'kun? For a few agonizing minutes, he was convinced the boys lay trampled beneath the stampeding four-eyes. Then he saw the llama, standing still, with one rider.

In an instant he was at their side. Chae was seated on the llama, dazed, while T'kun lay crying on the ground where he must have fallen off. Rod helped him up and checked out the little boy's limbs as best he could.

"You said to freeze," Chae whimpered.

"I was wrong. But you did well, Chae." Rod inspected T'kun's cast, which was intact. "You saved your brother's life."

"I want to go home now."

Soon Gaea's wailing joined the chorus.

In the distance, several giant megazoöids gathered to suck the guts out of all the squashed four-eyes. One of the giants had an offspring attached snugly inside its donut hole, eating the polyps off its parent.

The travelers at last camped for the night at the edge of the singing-trees, by the river. Rod pulled a piece of solar nanoplast off his pack where it had charged all day, then he gathered it into a lump and set it glowing. Chae caught a hydrazoöid to fry; Rod thought it looked and smelled like a rubber hose, but the children devoured it. Far above in the canopy, light flashes streaked between the luminescent loopleaves in hues of yellow, green, and blue. The light show, even more than the "singing" of the singing-trees, attracted scientists in search of hidden masters.

Rod set out a nanoplastic tent stick, which promptly shaped itself into a shelter. Already the nightly drizzle was falling. The wind came up, and the trees keened so loudly that he thought he would never sleep. But he was dead tired, and, with his arms across the three of them, the night passed.

He awoke to hear Chae screaming. "Help! We're trapped!"

Still half-asleep, Rod tried to extricate himself from his sleeping bag. His limbs were sore from the hard ground, and besides there were long filaments of some sort stretched out like a curtain over him and the children. He yanked the filaments out and tried to stand. The smell of glue was overpowering, and whirrs buzzed deafeningly around his head. Something huge towered over him—

It was a tumbleround. There was no mistaking its filaments and the whirrs swarming over its stinking hide.

Rod lost no time extricating the children and as much of their camping gear as they could salvage. The llamas remained tethered nearby, feeding placidly as if the commotion was nothing to them. The tumbleround itself made no sound or rapid movement. It had no eyes, or ears; so the scientists said. It must have been rooted nearby, near enough to migrate gradually over during the night. But why? Did it need some essential nutrient from the human bodies? Or did it seek something deeper?

"Who are you?" Rod demanded aloud. "What do you want from us?" Hearing himself, he felt foolish. But it was odd how the tumbleround had migrated exactly to the point where the human travelers lay—and no farther. It could have crushed them, or sucked them dry, but instead all it wanted was...a touch? A look in at the window?

They saddled the llamas, Rod taking one last look backward at their nocturnal visitor. Perhaps Sarai might know more about tumblerounds.

Now the trail grew much steeper, for this stretch of forest extended onto the foot of Mount Anaeon, where the bands of "controlled" habitat at last gave out. Here was where the true wilderness began; where even the weather might be unpredictable, where flora and fauna seemed to obey no master save the creator of the universe.

The travelers approached the fork of Fork River, where Mother Artemis's holographic map led them up the steepest of the three tributaries. Now the water was rushing swiftly, gurgling, eddying around stones worn smooth. The trail continued along the left bank, rising ever higher above the stream itself. There stretched a vast U-shaped valley between Mount Anaeon and Mount Helicon, carved by a long-departed glacier. Now in the valley grew singing-trees even taller than those on the plain. The rising mountainside became so steep that to his right Rod looked down upon the tops of the singing-trees, while to his left, where the trailblazers had blasted through, the root systems of trees were exposed, their double-roots clinging to rocks about to fall at any moment. From far below in the valley the roar of the stream echoed upward.

Then the singing-trees shrank and thinned out, replaced by bushes of tough loopleaves, full of scarlet and golden flowers that cascaded hundreds of meters down toward the river. Above jutted rocks like the teeth of dead giants. At one point the rocks had broken and slid down onto the trail, where the llamas had to pick their way painfully across. The sun was rising, but the air grew cold. On the cliffs above clung diamond-shaped patches of snow.

A bend around the mountain, and there it was: the waterfall. Millions of tongues of foam falling, falling forever to the Fork River tributary below, from a hanging valley cut off by the ancient glacier. The waters roared on, sending billows of mist upward. Above the falls piled layers of stone, up to the snow-covered peaks.

Rod's map box chirped at him. Inside the box, the bright line took a turn off the trail, somewhere near here. Sure enough, there appeared a footpath, half-overgrown with bushes that made wheelgrass seem like a paved road. Undaunted, the travelers took the side path, heading down toward the midst of the waterfall.

Now he remembered. There would be a hole in the mountain, an opening to a tunnel behind the waterfall which powered Sarai's laboratory. "It's all right, keep up," he urged Chae, who hung back, reluctant to get soaked in the mist from the falls.

Rod dismounted, and bade Chae do likewise while they felt their way. At their left, they met sudden darkness.

An invisible cavity seemed to open. The llamas stumbled into the dark, whining in complaint. Gaea whimpered, and Rod took her out of the pack to comfort her. As his eyes adjusted, patches of green light glimmered, revealing a low ceiling. They were plants that glowed in the dark, plants with real leaves—Sharer plants.

A large long-legged insect swirled about their heads, making a clicking noise. It was a clickfly. The Sharer insect veered back down the tunnel, whose ceiling bristled with dog-tooth calcite crystals as big as Rod's thumb. "It's a messenger," Rod told Chae. "Let's follow it."

Suddenly the cavern filled with light.

"Messenger indeed." Sarai appeared, several clickflies perched on her scalp and arms. Smoothly purple from head to toe, she had not a stitch on; Rod felt embarrassed, for he had forgotten to warn the children. But Sharers somehow look clothed enough as they are. Sarai added, "I've had reports of you for the past half hour, driving those miserable beasts of yours across the rocks."

Rod sketched a star. "Thanks so much for seeing us." He introduced the children. "T'kun is the one you need to see. We are forever in your debt."

Sarai flexed her fingerwebs, and a clickfly flew off. "Bother all that." She eyed him sharply. "It's the one in your arms I need to see. What lamentable shape she's in. Child abuse."

Rod held Gaea tighter. "She needs help, too," he admitted.

Sarai turned and headed down the tunnel. "I don't know," she muttered, "I just don't know about you clerics. Raising children you can't afford." Her scalp had a fine down of hair, suggesting a Valan ancestor back a generation or two. She led them to a chamber full of tangled vines, like a greenhouse. She gestured at T'kun to sit here, and Gaea there. The vines sneaked over and twined around each of them unnervingly; undomesticated varieties could be carnivorous.

Rod patted their shoulders gently. "Sit very still." These vines, life-shaped for their task, would sample minute traces of their tissues and body fluids. The children kept still, as if awed by their strange surroundings, their wide eyes casting around them.

Sarai flicked her webbed hand at Chae, and she pointed to a bowl of fruit. "Eat something; you're too small for your age."

The messenger insect hovered above T'kun, watching. It nestled among the vines for a while, then it went to the ceiling, where it started to weave an intricate web. Sarai watched the web intently as it grew.

"The boy is full of bruises," Sarai announced. "What have you done to him?"

Rod's hands clenched. "The journey is not easy, as you know. He could only hold on with one arm."

"His bone is fine," she announced. "The bruises will also be fine."

Rod let out a long sigh. "Thanks so much. We won't trouble you any further."

"The girl will take me longer."

He blinked. "You mean—you can help her?"

Sarai fed a bit of what smelled like fish to her vines. "She needs to regenerate her spinal cord." Sarai nodded toward a particularly large vine straggling over the wall, whose blooms spanned the length of his arm. "She'll hatch from the bud in about a month."

His heart overflowed with hope, then turned cold. He watched Gaea, as Sarai's meaning sank in. Gaea must have sensed it, for suddenly she pulled out the vines and dragged herself over the floor to his feet.

"A month...here?" he repeated. "Inside a...flower?" Of a carnivorous plant? He wanted to snatch the child back.

"From the chest down. Well, what do you want? Why didn't you get her here sooner? Machines and ignorant clerics, raising infants—there ought to be a law."

"You didn't answer our calls," Rod snapped. "What do you know of children, holed up alone on this damned mountain?"

"Bro-der Rod," Gaea's voice quavered. "Gaea go home now."

Sarai was chuckling as she rearranged her scattered vines. "So the Spirit Caller has a temper. Well, well. Should I treat every impoverished infant in the Fold? Even my Sharer sisters let the Elysians drag the L'liite ships off *Shora*," she observed, using the ancient Sharer word for their home world.

"Better one than none." Rod took Gaea up in his arms. *This ocean has no shore...the Spirit should grant me a world.*

"Let them come here, then," said Sarai. "Let them find me.

"They try. A new student from Science Park tried to reach you."

"'Hidden masters' again," she replied with contempt. "They call themselves scientists, yet all they want to prove is that some great father rules the world after all."

"Do you think the singing-trees communicate?" he asked suddenly. "What about tumblerounds?"

Sarai froze still. Her inner eyelids came down like pearls. They protected Sharers' eyes underwater, but Sarai used them to hide her inner thoughts. "Why should I share my data?"

"Go home now," insisted Gaea.

Rod held the child tight, sickened by what he had to do. "Gaea, you'll have new legs when you come home."