

ROBERT REED

A PLACE WITH SHADE

The old man was corpulent like a seal, muscle clothed in fat to guarantee warmth, his skin smooth and his general proportions -- stocky limbs and a broad chest -- implying a natural, almost unconscious power. He wore little despite the damp chill. The brown eyes seemed capable and shrewd. And humorless. We were standing on a graveled beach, staring at his tiny sea; and after a long silence, he informed me, "I don't approve of what you do, Mr. Locum. It's pretentious and wasteful, this business of building cruel places. You're not an artist, and I think it's healthy for both of us to know my objections to your presence here."

I showed a grin, then said, "Fine. I'll leave." I had spent three months inside cramped quarters, but I told him, "Your shuttle can take me back to the freighter. I'll ride out with the iron."

"You misunderstand, Mr. Locum." His ham e was Provo Lei, the wealthiest person fora light-month in any direction. "I have these objections, but you aren't here for me. You're a gift to my daughter. She and I have finally agreed that she needs a tutor, and you seem qualified. Shall we dispense with pretenses? You are a toy. This isn't what you would call a lush commission, and you'd prefer to be near a civilized world, building some vicious forest for society people who want prestige and novelty. Yet you need my money, don't you? You're neither a tutor nor a toy, but your debts outweigh your current value as an artist. Or am I wrong?"

I attempted another grin, then shrugged. "I can work on a larger scale here." I'm not someone who hesitates or feels insecure, but I did both just then. "I've had other offers --"

"None of substance," Provo interrupted.

I straightened my back, looking over him. We were in the middle of his house -- a sealed hyperfiber tent covering ten thousand hectares of tundra and ice water -- and beyond the tent walls was an entire world, earth-size but less massive. Not counting robots, the world's population was two. Counting me, three. As we stood there enjoying impolite conversation, an army of robots was beneath the deep water-ice crust, gnawing at rock, harvesting metals to be sold at a profit throughout the district.

"What do you think of my little home, Mr. Locum? Speaking as a professional terraformer, of course."

I blinked, hesitating again.

"Please. Be honest."

"It belongs to a miser." Provo didn't have propriety over bluntness. "This is cheap Arctic package. Low diversity, a rigorous durability, and almost no upkeep. I'm guessing, but it feels like the home of a man who prefers solitude.

And since you've lived here for two hundred years, alone most of the time, I don't think that's too much of a guess."

He surprised me, halfway nodding.

"Your daughter's how old? Thirty?" I paused, then said, "Unless she's exactly like you, I would think that she would have left by now. She's not a child, and she must be curious about the rest of the Realm. Which makes me wonder if I'm an inducement of some kind. A bribe. Speaking as a person, not a terraformer, I think she must be frighteningly important to you. Am I correct?"

The brown eyes watched me, saying nothing.

I felt a brief remorse. "You asked for my opinion," I reminded him.

"Don't apologize. I want honesty." He rubbed his rounded chin, offering what could have been confused for a smile. "And you're right, I do bribe my daughter.

In a sense. She's my responsibility, and why shouldn't I sacrifice for her happiness?"

"She wants to be a terraformer?"

"Of the artistic variety, yes."

I moved my feet, cold gravel crunching under my boots.

"But this 'cheap package,' as you so graciously described it, is a recent condition. Before this I maintained a mature Arctic steppe, dwarf mammoths here and a cold-water reef offshore. At no small expense, Mr. Locum, and I'm not a natural miser."

"It sounds like Beringa," I muttered.

"My home world, yes." Beringa was a giant snowball terraformed by commercial souls, carpeted with plastics and rock and rich artificial soils, its interior still frozen while billions lived above in a kind of perpetual summer, twenty-hour days but limited heat. The natives were built like Provo, tailored genes keeping them comfortably fat and perpetually warm. In essence, Beringa was an inspired apartment complex, lovely in every superficial way.

The kind of work I hated most, I was thinking.

"This environment," I heard, "is very much makeshift."

I gestured at the tundra. "What happened?"

"Ula thought I would enjoy a grove of hot-sap trees."

Grimacing, I said, "They wouldn't work at all." Ecologically speaking. Not to mention aesthetically.

"Regardless," said Provo, "I purchased vats of totipotent cells, at no small cost, and she insisted on genetically tailoring them. Making them into a new species."

"Easy enough," I whispered.

"And yet." He paused and sighed. "Yet some rather gruesome metabolites were produced. Released. Persistent and slow toxins that moved through the food web.

My mammoths sickened and died, and since I rather enjoy mammoth meat, having been raised on little else --"

"You were poisoned," I gasped.

"Somewhat, yes. But I have recovered nicely." The non-smile showed again, eyes pained. Bemused. "Of course she was scared for me and sorry. And of course I had

to pay for an extensive cleanup, which brought on a total environmental failure.

This tundra package was an easy replacement, and besides, it carries a warranty against similar troubles."

Popular on toxic worlds, I recalled. Heavy metals and other terrors were shunted away from the human foods.

"You see? I'm not a simple miser."

"It shouldn't have happened," I offered.

Provo merely shrugged his broad shoulders, admitting "I do love my daughter. And

you're correct about some things. But the situation here, like anywhere, is much more complicated than the casual observer can perceive."

I looked at the drab hyperfiber sky -- the illusion of heavy clouds over a waxy low sun -- and I gave a quick appreciative nod.

"The area around us is littered with even less successful projects," Provo warned me.

I said, "Sad."

The old man agreed. "Yet I adore her. I want no ill to befall her, and I mean that as an unveiled warning. Ula has never existed with ordinary people. My hope

is that I live long enough to see her mature, to become happy and normal, and perhaps gain some skills as a terraformer too. You are my best hope of the moment. Like it or not, that's why I hired you."

I stared out at his little sea. A lone gull was circling bleating out complaints about the changeless food.

"My daughter will become infatuated with you," I heard. "Which might be a good thing. Provided you can resist temptation, infatuation will keep her from being disillusioned. Never, never let her become disillusioned."

"No?"

"Ula's not her father. Too much honesty is a bad thing."

I felt a momentary, inadequate sense of fear.

"Help her build one workable living place. Nothing fancy, and please, nothing too inspired." He knelt and picked up a rounded stone. "She has an extensive lab and stocks of totipotent cells. You'll need nothing. And I'll pay you in full, for your time and your imaginary expertise."

I found myself cold for many reasons, staring skyward. "I've been to Beringa," I told Provo. "It's ridiculously cheery. Giant flowers and giant butterflies, mammoths and tame bears. And a clear blue sky."

"Exactly," he replied, flinging the stone into the water. "And I would have kept my blue sky, but the color would have been dishonest."

A mosquito landed on my hand, tasting me and discovering that I wasn't a caribou, flying off without drawing blood.

"Bleak fits my mood, Mr. Locum."

I looked at him.

And again he offered his non-smile, making me feel, if only for an instant, sorry for him.

Beauty, say some artists, is the delicious stew made from your subject's flaws.

Ula Lei was a beautiful young woman.

She had a hundred hectare tent pitched beside her father's home, the place filled with bio stocks and empty crystal wombs and computers capable of modeling any kind of terraforming project. She was standing beside a huge reader, waving and saying "Come here," with the voice people use on robots. Neither polite nor intimidating.

I approached, thinking that she looked slight. Almost underfed. Where I had expected an ungraceful woman-child, I instead found a mannerly but almost distant professional- was she embarrassed to need a tutor? Or was she unsure how to act with a stranger? Either way, the old man's warning about my "toy" status seemed overstated. Taking a frail, pretty hand, feeling the polite and passionless single shake, I went from wariness to a mild funk, wondering if I had failed some standard. It wounded me when she stared right through me,

asking

with a calm dry voice, "What shall we do first?"

Funk became a sense of relief, and I smiled, telling her, "Decide on our project, and its scale."

"Warm work, and huge."

I blinked. "Your father promised us a thousand hectare tent, plus any of his robots --"

"I want to use an old mine," she informed me.

"With a warm environment?"

"It has a rock floor, and we can insulate the walls and ceiling with field charges, then refrigerate as a backup." She knew the right words, at least in passing. "I've already selected which one. Here. I'll show you everything."

She was direct like her father, and confident. But Ula wasn't her father's child. Either his genes had been suppressed from conception, or they weren't included. Lean and graced with the fine features popular on tropical worlds, her

body was the perfect antithesis of provo's buttery one. Very black, very curly hair. Coffee-colored skin. And vivid green eyes. Those eyes noticed that I was wearing a heavy work jersey; I had changed clothes after meeting with Provo, wanting this jersey's self-heating capacity. Yet the temperature was twenty degrees warmer than the tundra, and her tropical face smiled when I pulled up my sleeves and pocketed my gloves. The humor was obvious only to her.

Then she was talking again, telling me, "The main chamber is eight kilometers by fifty, and the ceiling is ten kilometers tall in the center. Pressurized ice. Very strong." Schematics flowed past me. "The floor is the slope of a dead volcano. Father left when he found better ores."

A large operation, I noted. The rock floor would be porous and easily eroded, but rich in nutrients. Four hundred square kilometers? I had never worked on that scale, unless I counted computer simulations.

A graceful hand called up a new file. "Here's a summary of the world's best-guess history. If you're interested."

I was, but I had already guessed most of it for myself. Provo's World was like thousands of other sunless bodies in the Realm. Born in an unknown solar system,

it had been thrown free by a near-collision, drifting into interstellar space, its deep seas freezing solid and its internal heat failing. In other regions it

would have been terraformed directly, but our local district was impoverished when it came to metals. Provo's World had rich ores, its iron and magnesium, aluminum and the rest sucked up by industries and terraformers alike. A healthy

green world requires an astonishing amount of iron, if only to keep it in hemoglobin. The iron from this old mine now circulated through dozens of worlds;

and almost certainly some portion of that iron was inside me, brought home now within my own blood.

"I've already sealed the cavern," Ula informed me. "I was thinking of a river down the middle, recirculating, and a string of waterfalls --"

"No," I muttered.

She showed me a smile. "No?"

"I don't like waterfalls," I warned her.

"Because you belong to the New Traditionalist movement. I know." She shrugged her shoulders. "'Waterfalls are cliches,' you claim. 'Life, done properly, is never pretty in simple ways.'"

"Exactly."

"Yet," Ula assured me, "this is my project."

I had come an enormous distance to wage a creative battle. Trying to measure my opponent, I asked, "What do you know about NTs?"

"You want to regain the honesty of the original Earth. Hard winters. Droughts. Violent predation. Vibrant chaos." Her expression became coy, then vaguely wicked. "But who'd want to terraform an entire world according to your values? And who would live on it, given the chance?"

"The fight people," I replied, almost by reflex.

"Not Father. He thinks terraforming should leave every place fat and green and pretty. And iron-hungry too."

"Like Beringa."

She nodded, the wickedness swelling. "Did you hear about my little mistake?"

"About the hot-sap trees? I'm afraid so."

"I guess I do need help." Yet Ula didn't appear contrite. "I know about you, Mr.

Locum. After my father hired you -- I told him NTs work cheap -- I ordered holos of every one of your works. You like working with jungles, don't you?"

Jungles were complex and intricate. And dense. And fun.

"What about Yanci's jungle?" she asked me. "It's got a spectacular waterfall, if memory serves."

A socialite had paid me to build something bold, setting it inside a plastic cavern inside a pluto-class world. Low gravity; constant mist; an aggressive assemblage of wild animals and carnivorous plants. "Perfect," Yanci had told me.

Then she hired an old-school terraformer -- little more than a plumber -- to add one of those achingly slow rivers and falls, popular on every low-gravity world in the Realm.

"Yes, Mr. Locum?" she teased. "What do you want to say?"

"Call me Hann," I growled.

My student pulled her hair away from her jungle-colored eyes. "I've always been interested in New Traditionalists. Not that I believe what you preach . . . not entirely . . . but I'm glad Father hired one of you."

I was thinking about my ruined jungle. Fifty years in the past, and still it made my mouth go dry and my heart pound.

"How will we move water without a river and falls?"

"Underground," I told her. "Through the porous rock. We can make a string of pools and lakes, and there won't be erosion problems for centuries."

"Like this?" She called up a new schematic, and something very much like my idea appeared before us. "I did this in case you didn't like my first idea."

A single waterfall was at the high end of the cavern.

"A compromise," she offered. Enlarging the image, she said, "Doesn't it look natural?"

For a cliché, I thought.

"The reactor and pumps will be behind this cliff, and the water sounds can hide any noise --"

"Fine," I told her.

-- and the entranceway too. You walk in through the falls."

Another cliché, but I said, "Fine." Years of practice had taught me to compromise with the little points. Why fight details when there were bigger wars to wage?

"Is it all right, Mr. Locum?" A wink. "I want both of us happy when this is done. Hann, I mean."

For an audience of how many? At least with shallow socialites, there were hundreds of friends and tagalongs and nobodys and lovers. And since they rarely had enough money to fuel their lifestyles, they would open their possessions to the curious and the public.

But here I could do my best work, and who would know?

"Shall we make a jungle, Hann?"

I would know, I told myself.

And with a forced wink, I said, "Let's begin."

Terraforming is an ancient profession.

Making your world more habitable began on the Earth itself, with the first dancing fire that warmed its builder's cave; and everything since -- every green

world and asteroid and comet -- is an enlargement on that first cozy cave. A hotter fusion fire brings heat and light, and benign organisms roam inside standardized biomes. For two hundred and ten centuries humans have expanded the

Realm, mastering the tricks to bring life to a nearly dead universe. The frontier is an expanding sphere more than twenty light-years in radius -- a great peaceful firestorm of life -- and to date only one other living world has

been discovered. Pitcairn. Alien and violent, and gorgeous. And the basic inspiration/or the recent New Traditionalist movement. Pitcairn showed us how bland and domesticated our homes had become, riddled with cliches, every world essentially like every other world. Sad, sad, sad.

Here I found myself with four hundred square kilometers of raw stone. How long would it take to build a mature jungle? Done simply, a matter of months. But novelty would take longer, much to Provo's consternation. We would make fresh species, every ecological tie unique. I anticipated another year on top of the months, which was very good. We had the best computers, the best bio-stocks, and

thousands of robots eager to work without pause or complaint. It was an ideal situation, I had to admit to myself. Very nearly heaven.

We insulated the ice ceiling and walls by three different means. Field charges enclosed the heated air. If they were breached, durable refrigeration elements were sunk into the ice itself. And at my insistence we added a set of emergency

ducts, cold compressed air waiting in side caverns in case of tragedies. Every organism could go into a sudden dormancy, and the heat would be sucked into the

huge volumes of surrounding ice. Otherwise the ceiling might sag and collapse, and I didn't want that to happen. Ula's jungle was supposed to outlast all of us. Why else go to all of this bother?

We set the reactor inside the mine shaft, behind the eventual cliché. Then lights were strong, heating the cavern's new air, and we manufactured rich soils

with scrap rock and silt from Provo's own little sea. The first inhabitants were

bacteria and fungi set free to chew and multiply, giving the air its first living scent. Then robots began assembling tree-shaped molds, sinking hollow roots into the new earth and a sketchwork of branches meshing overhead, beginning the future canopy.

We filled the molds with water, nutrients, and nourishing electrical currents, then inoculated them with totipotent cells. More like baking than gardening, this was how mature forest could be built from scratch. Living cells divided at

an exponential rate, then assembled themselves into tissue-types -- sapwood and

heartwood, bark and vascular tubes. It's a kind of superheated cultivation, and

how else could artists like me exist? Left to Nature's pace, anything larger than a terrarium would consume entire lives. Literally.

Within five months -- on schedule -- we were watching the robots break up the molds, exposing the new trees to the air. And that's a symbolic moment worth a

break and a little celebration, which we held.

Just Ula and me.

I suggested inviting Provo, but she told me, "Not yet. It's too soon to show him yet."

Perhaps. Or did she want her father kept at a distance?

I didn't ask. I didn't care. We were dining on top of a rough little hill, at the midpoint of the cavern, whiteness above and the new forest below us, leafless, resembling thousands of stately old trees pruned back by giant shears.

Stubby, enduring trees. I toasted our success, and Ula grinned, almost singing when she said, "I haven't been the bother you expected, have I?"

No, she hadn't been.

"And I know more about terraforming than you thought."

More than I would admit. I nodded and said, "You're adept, considering you're self-taught."

"No," she sang, "you're the disappointment."

"Am I?"

"I expected . . . well, more energy. More inspiration." She rose to her feet, gesturing at our half-born creation. "I really hoped an NT would come up with bizarre wonders --"

"Like an eight-legged terror?"

"Exactly."

It had been her odd idea, and I'd dismissed it twenty times before I realized it

was a game with her. She wanted an organism wholly unique, and I kept telling her that radical tailoring took too much time and too frequently failed. And besides, I added, our little patch of jungle wasn't large enough for the kind of predator she had in mind.

"I wish we could have one or two of them," she joked.

I ignored her. I'd learned that was best.

"But don't you agree? Nothing we've planned is that new or spectacular."

Yet I was proud of everything. What did she want? Our top three camivores were being tailored at that moment -- a new species of fire-eagle; a variation on black nightcats; and an intelligent, vicious species of monkey. Computer models

showed that only two of them would survive after the first century. Which two depended on subtle, hard-to-model factors. That was one of the more radical, unpopular NT principles. "The fit survive." We build worlds with too much diversity, knowing that some of our creations are temporary. And unworthy. Then

we stand aside, letting our worlds decide for themselves.

"I wish we could have rainstorms," she added. It was another game, and she waved her arms while saying "Big winds. Lightning. I've always wanted to see lightning."

"There's not enough energy to drive storms," I responded. The rains were going to be mild events that came in the night. When we had nights, in a year. "I don't want to risk -- "

"-- damaging the ice. I know." She sat again, closer now, smiling as she said, "No, I don't care. It's coming along perfectly."

I nodded, gazing up at the brilliant white sky. The mining robots had left the ice gouged and sharp, and somehow that was appropriate. An old violence was set against a rich new order, violent in different ways. A steamy jungle cloaked in ice; an appealing even poetic dichotomy. And while I looked into the distance, hearing the sounds of molds being tom apart and loaded onto mag-rails, my partner came even closer, touching one of my legs and asking, "How else have I surprised you?"

She hadn't touched me in months, even in passing.

It took me a moment to gather myself, and I took her hand and set it out of the way, with a surety of motion.

She said nothing, smiling and watching me.

And once again, for the umpteenth time, I wondered what Ula was thinking. Because I didn't know and couldn't even guess. We had been together for months, our relationship professional and bloodless. Yet I always had the strong impression that she showed me what she wanted to show me, and I couldn't even guess how much of that was genuine.

"How else?" she asked again.

"You're an endless surprise," I told her.

But instead of appearing pleased, she dipped her head, the smile changing to a concentrated stare, hands drawing rounded shapes in the new soil, then erasing them with a few quick tiger swipes.

I met Provo behind the waterfall, in the shaft, his sturdy shape emerging from the shadows; and he gave me a nod and glanced at the curtain of water, never pausing, stepping through and vanishing with a certain indifference. I followed, knowing where the flow was weakest --where I would be the least soaked -- and stepped out onto a broad rock shelf, workboots gripping and my dampened jersey starting to dry itself.

The old man was gazing into the forest.

I asked, "Would you like a tour?" Then I added, "We could ride one of the mag-rails, or we could walk."

"No," he replied. "Neither."

Why was he here? Provo had contacted me, no warning given. He had asked about his daughter's whereabouts. "She's in the lab," I had said, "mutating beetles."

Leave her alone, he had told me. Provo wanted just the two of us for his first inspection.

Yet now he acted indifferent to our accomplishments, dropping his head and walking off the rock shelf and stopping then looking back at me. And over the sound of tumbling water, he asked, "How is she?"

"Ula's fine."

"No troubles with her?" he inquired.

It was several weeks after our hilltop celebration, and I barely remembered the hand on my leg. "She's doing a credible job."

Provo appeared disappointed.

I asked him, "How should she be?"

He didn't answer. "She likes you, Mr. Locum. We've talked about you. She's told me, more than once . . . that you're perfect."

I felt a sudden warmth, and I smiled.

Disappointment faded. "How is she ? Speaking as her teacher, of course."

"Bright. Maybe more than bright." I didn't want to praise too much, lifting his expectations. "She has inspirations, as she calls them. Some are workable, and some are even lovely."

"Inspirations," he echoed.

I readied some examples. I thought Provo would want them, enjoying this chance to have a parent's pride. But instead he looked off into the trees again, the stubby branches sprouting smaller branches and fat green leaves. He seemed to be hunting for something specific, old red eyes squinting. Finally he said, "No." He said, "I shouldn't tell you."

"Tell me?"

"Because you don't need to know." He sighed and turned, suddenly older and almost frail. "If she's been on her best behavior, maybe I should keep my mouth shut."

I said nothing for a long moment.

Provo shuffled across the clearing, sitting on a downed log with a certain gravity. The log had been grown in the horizontal position, then killed. Sitting next to him, I asked, "What is it, Mr. Lei?"

"My daughter."

"Yes?"

"She isn't."

I nodded and said, "Adopted."

"Did she tell you?"

"I know genetics. And I didn't think you'd suppress your own genes."

He looked at the waterfall. It was extremely wide and not particularly tall, spilling onto the shelf and then into a large pond. A pair of mag-rails earned equipment in and out on the far shore. Otherwise little moved. I noticed a tiny

tag-along mosquito who wouldn't bite either of us. It must have come from the tundra, and it meant nothing. It would die in a few hours, I thought; and Provo

suddenly told me, "Adopted, yes. And I think it's fair to tell you the circumstances."

Why the tension?

"I'm quite good at living alone, Mr. Locum. That's one of the keys to my success." He paused, then said, "I came to this world alone. I charted it and filed my claims and defended it from the jealous mining corporations. Every moment of my life has gone into these mines, and I'm proud of my accomplishments. Life. My metals have brought life and prosperity to millions, and I make no apologies. Do you understand me?"

I said, "Yes."

"Few people come here. Like that freighter that brought you, most of the ships are unmanned." Another pause. "But there are people who make their livelihood tiding inside the freighters. Perhaps you've known a few of them."

I hadn't, no.

"They are people. They exist on a continuum. All qualities of human beings live inside those cramped quarters, some of them entirely decent. Honest. Capable of more compassion than I could hope to feel."

I nodded, no idea where we were going.

"Ula's biological parents weren't at that end of the continuum. Believe me. When

I first saw her . . . when I boarded her parents' ship to supervise the loading

. . . well, I won't tell you what I saw. And smelled. And learned about the capacities of other human beings. Some things are best left behind, I think. Let's forget them. Please."

"How old was Ula?"

"A child. Three standard years, that time." A small strong hand wiped at his sweating face. "Her parents purchased loads of mixed metals from me, then sold them to one of the water worlds near Beringa. To help plankton bloom, I imagine.

And for two years, every day, I found myself remembering that tiny girl, pitying her, a kind of guilt building inside me because I'd done nothing to help her, nothing at all." Again the hands tried to dry his face, squeezed drops of perspiration almost glittering on them. "And yet, Mr. Locum, I was thankful too.

Glad that I would never see her again. I assumed . . . I knew . . . that space itself would swallow them. That someone else would save her. That her parents would change. That I wouldn't be involved again, even if I tried --"

"They came back," I muttered.

Provo straightened his back, grimacing as if in pain. "Two years later, yes." Brown eyes closed, opened. "They sent me word of their arrival, and in an instant a plan occurred to me. All at once I knew the right thing to do." Eyes closed and stayed closed. "I was onboard, barely one quick glance at that half-starved child, and with a self-righteous voice I told the parents, 'I want to adopt her. Name your price.'"

"Good," I offered.

He shook his head. "You must be like me. We assume, and without reasons, that those kinds of people are simple predatory monsters. Merely selfish. Merely cruel." The eyes opened once again. "But what I realized since is that Ula . . .

Ula was in some way essential to that bizarre family. I'm not saying they loved her. It's just that they couldn't sell her anymore than they could kill her. Because if she died, who else would they have to torture?"

I said nothing.

"They couldn't be bought, I learned. Quickly." Provo swallowed and grabbed the log, knuckles pale as the hands shook. "You claim my daughter is well-behaved, and I'm pleased. You say she's bright, and I'm not at all surprised. And since you seem to have her confidence and trust, I think it's only fair to tell you about her past. To warn you."

"How did you adopt her?"

He took a deep breath and held it.

"If they couldn't be bribed. . . .?" I touched one of the thick arms. "What happened?"

"Nothing." A shrug of the shoulders, then he said, "There was an accident. During the loading process. The work can be dangerous, even deadly, when certain equipment fails."

I felt very distant, very calm.

"An accident," he repeated.

I gave him a wary glance, asking. "Does she know what happened?"

Provo's eyes opened wide, almost startled. "About the accident? Nothing! About her past life? She remembers, I'm sure . . . nothing. None of it." Just the suggestion of memories caused him to nearly panic. "No, Mr. Locum . . . you

see,
once I had legal custody . . . even before then . . . I paid an expert from Beringa to come here and examine her, and treat her . . . with every modern technique --"

"What kind of expert?"

"In psychology, you idiot! What do you think I mean?" Then he gave a low moan, pulling loose a piece of fibrous bark. "To save her. To wipe away every bad memory and heal her, which he did quite well. A marvelous job of it. I paid him a bonus. He deserved it." He threw the bark onto the pond. "I've asked Ula about her past, a thousand times . . . and she remembers none of it. The expert said she might, or that it might come out in peculiar ways . . . but she doesn't and has no curiosity about those times . . . and maybe I shouldn't have told you, I'm sorry . . .!"

I looked at the pond, deep and clear, some part of me wondering how soon we would inoculate it with algae and water weeds.

Then Provo stood again, telling me, "Of course I came to look around, should she ask. And tell her . . . tell her that I'm pleased . . ."

I gave a quick compliant nod.

"It's too warm for my taste." He made a turn, gazing into the jungle and saying,
"But shady. Sometimes I like a place with shade, and it's pleasant enough, I suppose." He swallowed and gave a low moan, then said, "And tell her for me, please . . . that I'm very much looking forward to the day it's done. . . ."

Terraformers build their worlds at least twice.

The first time it is a model, a series of assumptions and hard numbers inside the best computers; and the second time it is wood and flesh, false sunlight and honest sound. And that second incarnation is never the same as the model. It's an eternal lesson learned by every terraformer, and by every other person working with complexity.

Models fail.

Reality conspires.

There is always, always some overlooked or mismeasured factor, or a stew of factors. And it's the same for people too. A father and a teacher speak about the daughter and the student, assuming certain special knowledge; and together they misunderstand the girl, their models having little to do with what is true.

Worlds are easy to observe.

Minds are secretive. And subtle. And molding them is never so easy and clear as the molding of mere worlds, I think.

Ula and I were working deep in the cavern, a few days after Provo's visit,

teaching our robots how and where to plant an assortment of newly tailored saplings. We were starting our understory, vines and shrubs and shade-tolerant trees to create a dense tangle. And the robots struggled, designed to wrestle metals from rocks, not to baby the first generations of new species. At one point I waded into the fray, trying to help, shouting and grabbing at a mechanical arm while taking a blind step, a finger-long spine plunging into my ankle.

Ula laughed, watching me hobble backward. Then she turned sympathetic, absolutely convincing when she said, "Poor darling." She thought we should move to the closest water and clean out my wound. "It looks like it's swelling Hann."

It was. I had designed this plant with an irritating protein, and I joked about the value of field testing, using a stick as my impromptu crutch. Thankfully we were close to one of the ponds, and the cool spring water felt wondrous, Ula removing my boot and the spine while I sprawled out on my back, eyes fixed on the white expanse of ice and lights, waiting for the pain to pass.

"If you were an ordinary terraformer," she observed, "this wouldn't have happened."

"I'd be somewhere else, and rich," I answered.

She moved from my soaking foot to my head, sitting beside me, knees pulled to her face and patches of perspiration darkening her lightweight work jersey. "Red of tooth and claw," she quoted.

A New Traditionalist motto. We were building a wilderness of spines and razored leaves; and later we'd add stinging wasps and noxious beetles, plus a savage biting midge that would attack in swarms. "Honest testing nature," I muttered happily.

Ula grinned and nodded, one of her odd expressions growing. And she asked, "But why can't we do more?"

More?

"Make the fire eagles attack us on sight, for instance. If we're after bloody claws --"

"No," I interrupted. "That has no ecological sense at all." Fire eagles were huge, but they'd never prey on humans.

"Oh, sure. I forgot."

She hadn't, and both of us knew it. Ula was playing another game with me.

I looked across the water, trying to ignore her. The far shore was a narrow stretch of raw stone, and the air above it would waver, field charges setting up their barrier against the heat. Beyond, not twenty meters beyond, was a rigid and hard-frozen milky wall that lifted into the sky, becoming the sky, part of me imagining giant eagles flying overhead, hunting for careless children.

"What's special about the original Earth?" I heard. "Tell me again, please, Hann."

No, I wouldn't. But even as I didn't answer, I answered. In my mind I was thinking about three billion years of natural selection, amoral and frequently short-sighted . . . and wondrous in its beauty, power, and scope . . . and how we in the Realm had perfected a stupefying version of that wonder, a million worlds guaranteed to be safe and comfortable for the trillions of souls clinging to them.

"Here," said Ula, "we should do everything like the original Earth."

I let myself ask, "What do you mean?"

"Put in things that make ecological sense. Like diseases and poisonous snakes, for instance."

"And we can be imprisoned for murder when the first visitor dies."

"But we aren't going to have visitors," she warned me. "So why not? A viper with a nerve toxin in its fangs? Or maybe some kind of plague carried by those biting midges that you're so proud of."

She was joking, I thought. Then I felt a sudden odd doubt.

Ula's entire face smiled, nothing about it simple. "What's more dangerous? Spines or no spines?"

"More dangerous?"

"For us." She touched my ankle, watching me.

"Spines," I voted.

"Back on Earth," she continued, "there were isolated islands. And the plants that colonized them would lose their spines and toxic chemicals, their old enemies left behind. And birds would lose their power of flight. And the tortoises grew huge, nothing to compete with them. Fat, easy living."

"What's your point, teacher?"

She laughed and said, "We arrived. We brought goats and rats and ourselves, and the native life would go extinct."

"I know history," I assured her.

"Not having spines is more dangerous than having them."

I imagined that I understood her point, nodding now and saying, "See? That's what NTs argue. Not quite in those terms --"

"Our worlds are like islands, soft and easy."

"Exactly." I grinned and nodded happily. "What I want to do here, and everywhere --"

"You're not much better," she interrupted.

No?

"Not much at all," she grumbled, her expression suddenly black. Sober. "Nature is so much more cruel and honest than you'd ever be."

Suddenly I was thinking about Provo's story, that non-description of Ula's forgotten childhood. It had been anything but soft and easy, and I felt pity; and I felt curiosity, wondering if she had nightmares and then, for an instant, wondering if I could help her in some important way.

Ula was watching me, reading my expression.

Without warning she bent close, kissing me before I could react and then sitting up again, laughing like a silly young girl.

I asked, "Why did you do that?"

"Why did I stop, you mean?"

I swallowed, saying nothing.

Then she bent over again, kissing me again, pausing to whisper, "Why don't we?"

I couldn't find any reason to stop.

And suddenly she was removing her jersey, and mine, and I looked past her for an instant, blinding myself with the glare of lights and white ice, all at once full of reasons why we should stop and my tongue stolen out of my mouth.

I was Ula's age when I graduated from the Academy. The oldest teacher on the staff invited me into her office, congratulated me for my good grades, then asked me in a matter-of-fact way, "Where do these worlds we build actually live,

Mr. Locum? Can you point to where they are?"

She was cranky and ancient, her old black flesh turning white from simple age.

I assumed that she was having troubles with her mind, the poor woman. A shrug; a gracious smile. Then I told her, "I don't know, ma'am. I would think they live where they live."

A smartass answer, if there ever was.

But she wasn't startled or even particularly irritated by my non-reply, a long lumpy finger lifting into the air between us, then pointing at her own forehead.

"In our minds, Mr. Locum. That's the only place they can live for us, because where else can we live?"

"May I go?" I asked, unamused.

She said, "Yes."

I began to rise to my feet.

And she told me, "You are a remarkably stupid man, I think, Mr. Locum. Untalented and vain and stupid in many fundamental ways, and you have a better chance of success than most of your classmates."

"I'm leaving" I warned her.

"No." She shook her head. "You aren't here even now."

We were one week into our honeymoon -- sex and sleep broken up with the occasional bout of work followed with a swim -- and we were lying naked on the shore of the first pond. Ula looked at me, smiling and touching me, then saying

"You know, this world once was alive."

Her voice was glancingly saddened, barely audible over the quiet clean splash of

the cliché. I nodded, saying "I realize that." Then I waited for whatever would

follow. I had learned about her lectures during the last seven days.

"It was an ocean world, just three billion years ago." She drew a planet on my chest. "Imagine if it hadn't been thrown away from its sun. If it had evolved complex life. If some kind of intelligent, tool-using fish had built spaceships

--"

"Very unlikely," I countered.

She shrugged and asked, "Have you seen our fossils?"

No, but I didn't need to see them. Very standard types. The Realm was full of once-living worlds.

"This sea floor," she continued, "was dotted with hot-water vents, and bacteria

evolved and lived by consuming metal ions --"

-- which they laid down, making the ore that you mine," I interrupted. With growing impatience, I asked, "Why tell me what I already know, Ula?"

"How do you think it would feel? Your world is thrown free of your sun, growing cold and freezing over . . . nothing you can do about it . . . and how would you feel . . .?"

The vents would have kept going until the planet's tepid core grew cold, too little radioactivity to stave off the inevitable. "But we're talking about bacteria," I protested. "Nothing sentient. Unless you've found something bigger in the fossil record."

"Hardly," she said. Then she sat upright, small breasts catching the light and my gaze. "I was just thinking."

I braced myself.

"I remember when Father showed me one of the old vents . . . the first one I

ever saw . . ."

I doubly braced myself.

"I was five or six, I suppose, and we were walking through a new mine, down a dead rift valley, two hundred kilometers under the frozen sea. He pointed to mounds of dirty ore, then he had one of his robots slice into one of them, showing me the striations . . . how layers of bacteria had grown, by the trillion . . . outnumbering the human race, he said . . . and I cried. . . ."

"Did you?"

"Because they had died." She appeared close to tears again, but one hand casually scratched her breasts. Then the face brightened, almost smiling as she asked, "What's your favorite world?"

Changing subjects? I couldn't be sure.

"Your own world, or anyone's. Do you have favorites?"

Several of them, yes. I described the most famous world -- a small spinning asteroid filled with wet forest -- and I told her about the artists, all tetraformers who had journeyed to the alien world of Pitcairn. They were the first New Traditionalists. I had never seen the work for myself, ten light-years between us and it, but I'd walked through the holos, maybe hundreds of times. The artists had been changed by Pitcairn. They never used alien lifeforms -- there are tough clear laws against the exporting of Pitcairn life -- but they had twisted earthly species to capture something of the strangeness and strength of the place. And I couldn't do it justice. I found myself blabbering about the quality of light and the intensity of certain golden birds . . . and at some point I quit speaking, realizing that Ula wasn't paying attention to me.

She heard silence and said, "It sounds intriguing." Then with a slow, almost studied pose, she said, "Let me tell you about something even more fascinating."

I felt a moment of anger. How dare she ignore me! Then the emotion evaporated, betraying me, leaving me to wait while she seemed to gather herself, her face never more serious or composed. Or focused. Or complete.

"It was the second world that I built," I heard. "My first world was too large and very clumsy, and I destroyed it by accident. But no matter. What I did that second time was find a very small abandoned mine, maybe a hectare in size, and I reinforced the ice walls and filled the chamber with water, then sank a small reactor into the rock, opening up the ancient plumbing and inoculating the water with a mixture of bacteria --"

"Did you?" I sputtered.

"-- and reestablishing one vent community. After three billion years of sleep. I fueled the reactor with a measured amount of deuterium, and I enriched the warming water with the proper metals." A pause. "New striations formed.

Superheated black goo was forced from the fossil tubes. And I dressed in a strong pressure suit and walked into that world, and I sat just like we're sitting here, and waited."

I swallowed. "Waited?"

"The reactor slowed, then stopped." Ula took a breath and said, "I watched. With the lights on my suit down low, I watched the black goo stop rising, and the water cooled, and eventually new ice began to form against the walls. I moved to the center, sitting among the tubes . . . for days, for almost two weeks . . . the ice walls closing in on me --"

"That's crazy," I blurted.

And she shrugged as if to say, "I don't care." A smile emerged, then vanished, and she turned and touched me, saying, "I allowed myself to be frozen into that new ice, my limbs locked in place, my power packs running dry --"

"But why?" I asked. "So you'd know how it felt?"

And she didn't seem to hear me, tilting her head, seemingly listening to some distant sound worthy of her complete attention. Eventually she said, "Father missed me." A pause. "He came home from a tour of distant mines, and I was missing, and he sent robots out to find me, and they cut me free just before I would have begun to truly suffer."

The girl was insane. I knew it.

She took a dramatic breath, then smiled. Her haunted expression vanished in an instant, without effort, and again she was a student, the youngster, and my lover. A single bead of perspiration was rolling along her sternum, then spreading across her taut brown belly; and I heard myself asking, "Why did you do that shit?"

But the youngster couldn't or wouldn't explain herself, dipping her head and giggling into my ear.

"You could have died," I reminded her.

She said, "Don't be angry, darling. Please?"

An unstable, insane woman-child, and suddenly I was aware of my own heartbeat.

"Are you angry with sweet me?" She reached for me, for a useful part of me, asking. "How can I make you happy, darling?"

"Be normal," I whispered.

"Haven't you paid attention?" The possessed expression reemerged for an instant.

"I'm not and never have been. Normal. My darling."

My excuse, after much thought and practice, was a conference with her father.

"I want us to have a backup reactor. In case."

She dismissed the possibility out of hand. "He won't give us one."

"And I want to walk on the surface. For a change of scenery." I paused, then camouflaged my intentions by asking "Care to walk with me?"

"God, no. I've had enough of those walks, thank you."

Freed for the day, I began by visiting the closest caverns and one deflated tent, poking through dead groves and chiseling up samples of soil and frozen pond water. The cold was absolute. The sky was black and filled with stars, a few dim green worlds lost against the chill. Running quick tests, I tried to identify what had gone wrong and where. Sometimes the answer was obvious; sometimes I was left with guesses. But each of her worlds was undeniably dead, hundreds and thousands of new species extinct before they had any chance to prosper.

Afterward I rode the mag-rail back to Provo's house, finding where the hot-sap trees had been planted, the spot marked with a shallow lake created when the permafrost melted. I worked alone for twenty minutes, then the owner arrived. He seemed unhurried, yet something in his voice or his forward tilt implied a genuine concern. Or maybe not. I'd given up trying to decipher their damned family.

Pocketing my field instruments, I told Provo, "She's a good tailor. Too good." No greetings. No preparatory warning. I just informed him, "I've watched her, and you can't tell me that she'd introduce a toxic metabolite by accident. Not Ula."

The old man's face grew a shade paler, his entire body softening; and he leaned against a boulder, telling me without the slightest concern, "That possibility has crossed my mind, yes."

I changed topics, Ula-fashion. "When we met you warned me not to get too close to her. And not to be too honest."

"I remember."

"How do you know? Who else has been here?"

No answer.

"She's had another tutor, hasn't she?"

"Never."

"Then how can you know?"

"Twice," Provo told me, "my daughter has taken lovers. Two different crew members from separate freighters. Dullards, both of them. With each there was a period of bliss. They stayed behind and helped Ula with her work, then something would go wrong. I don't know any details. I refuse to spy on my own daughter. But with the man, her first lover . . . he expressed an interest in leaving I believe . . . in returning to his vocation. . . ."

"What happened?"

"Ula pierced the wall of the tent. A year's work was destroyed in a few

minutes." The man sighed, betraying a huge fatigue. "She told me that it was an accident, that she intended just to scare him --"

"She murdered him?" I managed.

And Provo laughed with relief. "No, no. No, the dullard was able to climb into an emergency suit in time, saving himself."

"What about the other lover?"

"The woman?" A strong shrug of the shoulders, then he said, "A fire. Another accident. I know less, but I surmise they had had a spat of some kind. A ridiculous, wasteful fit of anger. Although Ula claimed not to have started the blaze. She acted thoroughly innocent, and astonishingly unrepentant."

I swallowed, then whispered, "Your daughter is disturbed."

Provo said, "And didn't I warn you? Did you not understand me?" The Soft face was perspiring despite the chill air. A cloud of mosquitoes drifted between us, hunting suitable game. "How much forewarning did you require, Mr. Locum?"

I said nothing.

"And you've done so well, too. Better than I had hoped possible, I should tell you."

I opened my mouth, and I said nothing.

"She told me . . . yesterday, I think . . . how important you are to her education --"

"The poison," I interrupted.

Provo quit speaking.

"There's a residue here. In the soil." I showed him a molecule displayed on my portable reader. "It's a synthetic alkaloid. Very messy, very tough. And very, very intentional, I think." A moment's pause, then I asked him, "Has it occurred to you that she was trying to murder you?"

"Naturally," he responded, in an instant.

"And?"

"And she didn't try. No."

"How can you feel sure?"

"You claim that my daughter is bright. Is talented. If she wanted to kill me, even if she was an idiot, don't you think that right now I would be dead?"

Probably true, I thought.

"Two people alone on an empty world. Nothing would be simpler than the perfect murder, Mr. Locum."

"Then what did she want?" I gestured at the little lake. "What was this about?"

Provo appeared disgusted, impatient.

He told me, "I might have hoped that you could explain it to me."

I imagined Ula on the bottom of a freezing sea, risking death in some bid to understand . . . what? And three times she had endangered others . . . which left another dozen creations that she had killed . . . and was she alone in each of them when they died . . .?

"Discover her purpose, Mr. Locum, and perhaps I'll give you a bonus. If that's permissible."

I said nothing.

"You have been following my suggestions, haven't you? You aren't becoming too entangled with her, are you?"

I looked at Provo.

And he read my face, shaking his head with heavy sadness, saying, "Oh, my, Mr. Locum. Oh, my."

A PURPOSE

The possibility gnawed at me. I assumed some kind of madness lay over whatever her rationale, and I wished for a degree in psychiatry, or maybe some life experience with insanity. Anything would help. Riding the mag-rail back into our cavern, replaying the last few months in my mind, I heard part of me begging for me to flee, to turn now and take refuge where I could, then stow away on the first freighter to pass --

-- which was impossible, I realized in the same instant. Not to mention dangerous. Acting normal was important, I told myself. Then aloud, I said, "Just keep her happy."

I have never been more terrified of a human being.

Yet Ula seemed oblivious. She greeted me with a kiss and demanded more, and I failed her, nervousness and a sudden fatigue leaving me soft. But she explained it away as stress and unimportant, cuddling up next to me on the shady jungle floor. She said, "Let's sleep," and I managed to close my eyes and drift into a broken dreamy sleep, jerking awake to find myself alone.

Where had the girl gone?

I called her on our corn-line, hearing her voice and my voice dry and clumsy, asking her, "Where are you?"

"Mutating treefrogs, darling."

Which put her inside her home. Out of my way. I moved to the closest

workstation, asking its reader to show me the original schematics and everything that we had done to date; and I opened up my jersey -- I was still wearing my heavy, cold-weather jersey -- drops of salty water splattering on the reader. I was hunting for anything odd or obviously dangerous. A flaw in the ice roof? None that I could find. A subtle poison in our young trees? None that showed in the genetic diagrams. But just to be sure, I tested myself. Nothing wrong in my blood, I learned. What else? There was one oddity, something that I might have noticed before but missed. The trees had quirks in their chemistry. Nothing deadly. I was studying a series of sugars, wondering when Ula had slipped them into the tailoring process, and why; and just then, as if selecting the perfect moment, she said, "Darling," with a clear close voice. Then, "What are you doing.?"

I straightened my back, and I turned.

Ula was standing behind me, the smile bright and certain. And strange. She said, "Hello?" and then, "What are you doing, darling?"

I blanked the reader.

Then with the stiffest possible voice, I told her, "Nothing. Just checking details."

She approached, taking me around my waist.

I hugged her, wondering what to do.

Then she released me, pulling back her hair while asking "What did you and my father decide?"

Swallowing was impossible, my throat full of dust.

"I forgot to ask before. Do we get a second reactor?"

I managed to shake my head. No.

"An unnecessary expense," she said, perfectly mimicking her father's voice. She couldn't have acted more normal, walking around me while asking "Has the nap helped?"

I watched her undress as she moved.

"Feel like fun?"

Why was I afraid? There weren't any flaws in our work, I knew, and as long as she was with me, nude and in my grasp, what could she do to me? Nothing, and I became a little confident. At least confident enough to accomplish the task at hand, the event feeling robotic and false, and entirely safe.

Afterward she said, "That was the best," and I knew -- knew without doubt -- that Ula was lying. "The best ever," she told me, kissing my nose and mouth and

upturned throat. "We'll never have a more perfect moment. Can I ask you something?"

"What . . .?"

She said, "It's something that I've considered. For a long while, I've been wondering --"

"What?"

"About the future." She straddled me, pressure on my stomach. The grin was sly and expectant. "When Father dies, I inherit this world. All of it and his money too, and his robots. Everything."

A slight nod, and I said, "Yes?"

"What will I do with it?"

I had no idea.

"What if I bought an artificial sun? Not fancy. And brought it here and put it in orbit. I've estimated how long it would take to melt this sea, if I hurried things along by seeding the ice with little reactors --"

"Decades," I interrupted.

"Two or three, I think. And then I could terraform an entire world." She paused, tilting her head and her eyes lifting. "Of course all of this would be destroyed. Which is sad." She sighed, shrugging her shoulders. "How many people have my kind of wealth, Hann? In the entire Realm, how many?"

"I don't know."

"And who already own a world too. How many?"

"Very few."

"And who have an interest in tetraforming, of course." She giggled and said, "I could be one of a kind. It's possible."

It was.

"What I want to ask," she said, "is this. Would you, Hann Locum, like to help me? To remake all of this ice and rock with me?"

I opened my mouth, then hesitated.

"Because I don't deserve all the fun for myself," she explained, climbing off me. "Wouldn't that be something? You might be the first NT tetraformer with your own world. Wouldn't that make you the envy of your peers?"

"Undoubtedly," I whispered.

Ula walked to her clothes, beginning to dress. "Are you interested?"

I said, "Yes. Sure." True or not, I wanted to make agreeable sounds. Then I made myself add, "But your father's in good health. It could be a long time before --"

"Oh, yeah." A glib shrug of her shoulders, a vague little-girl smile. "I hope it's years and years away. I do."

I watched the girl's face, unable to pierce it. I couldn't guess what she was really thinking not even when she removed the odd control from one of her deep pockets. A simple device, homemade and held in her right hand; and now she winked at me, saying, "I know."

Know?

"What both of you talked about today. Of course I know."

The pressure on my chest grew a thousandfold.

"The mosquitoes? Some aren't. They're electronic packages dressed up as mosquitoes, and I always hear what Father says --"

Shit.

-- and have for years. Always."

I sat upright, hands digging into the damp black soil.

She laughed and warned me, "You're not the first person to hear his confession.

I am sorry. He has this guilt, and he salves it by telling people who can't threaten him. I suppose he wanted you to feel sorry for him, and to admire him --"

"What do you remember?"

"Of my parents? Nothing." She shook her head. "Everything." A nod and the head tilted, and she told me, "I do have one clear image. I don't know if it's memory or if it's a dream, or what. But I'm a child inside a smelly freighter, huddled in a corner, watching Provo Lei strangle my real mother. He doesn't know I'm there, of course." A pause. "If he had known, do you suppose he would have strangled me too? To save himself, perhaps?"

"I'm sorry," I muttered.

And she laughed, the sound shrill. Complex. "Why? He's a very good father, considering. I love him, and I can't blame him for anything." A pause, then with a caring voice she told me, "I love him quite a lot more than I love you, Hann."

I moved, the ground under my butt creaking; and I had to say, "But you poisoned him anyway."

Ula waved her control with a flourish, telling me, "I poisoned everything. All I wanted was for Father to watch." A shrug. "I tried to make him understand . . ."

.
to comprehend . . . but I don't think he could ever appreciate what I was
trying
to tell him. Never."

I swallowed, then asked, "What were you telling him?"

Her eyes grew huge, then a finger was waved at me. "No. No, you don't." She
took
a small step backward, shaking her head. "I think it's just a little too soon
for that. Dear."

I waited.

Then she waved the control again, saying "Look up, Hann. Will you? Now?"

"Up?" I whispered.

"This direction." She pointed at the canopy. "This is up."

My gaze lifted, the solid green ceiling of leaves glowing, branches like veins
running through the green, and she must have activated the control, a distinct
click followed by her calm voice saying, "I left out parts of the schematics,
Hann. Intentionally. Before you were even hired, you should know."

There was a distant rumbling noise.

The ground moved, tall trees swaying for an instant; then came a flash of
light
with instant thunder, a bolt of electricity leaping down the long cavern, the
force of it swatting me down against the forest floor, heat against my face
and
chest, every hair on my body lifting for a terrible long instant.

Then it was gone again.

Everything was.

The lights had failed, a perfect seamless night engulfing the world; and twice
I
heard a laugh, close and then distant.

Then nothing.

And I screamed, the loudest sound I could muster lost in the leaves and
against
the tree trunks, fading into echoes and vanishing as if it had never existed
at
all.

My jersey . . . where was my jersey . . . ?

I made myself stand and think, perfectly alert, trying to remember where it
had
lain and counting steps in my mind . . . one step, and two, and three. Then I
knelt and found nothing in reach, nothing but the rich new soil, and for a
terrified instant I wondered if Ula had stolen my clothes, leaving me naked as
well as blind.

But another step and grope gave me my boots, then the jersey. I dressed and

found my various equipment in the pockets and pouches. The portable reader had been cooked by the lightning but the glowglobes were eager. I ignited one of them and released it; it hovered over me, moving with a faint dry hum as it emitted a yellowish light.

I walked to the closest mag-rail.

Inoperative.

Nearby were a pair of robots standing like statues.

Dead.

I started to jog uphill, moving fast. Where was Ula? Had she gone somewhere, or was she nearby, watching

It was fifteen kilometers to the waterfall, the exit. The trees seemed larger in the very weak light, the open jungle floor feeling rather like a place of worship. A cathedral. Then came a wall of vines and thorny brush -- our earliest plantings -- and I burrowed into them, pushing despite the stabs at my skin, breaking into an open unfinished glade and pausing. Something was wrong I thought. Against my face was cold air, bitter and sudden. Of course the field generators were down. And the refrigeration elements. What remained 'was the passive emergency system, heat rising into high ducts while others released cubic kilometers of stored air from below.

How long would the process take?

I couldn't remember, could scarcely think about anything. My jersey automatically warmed me, and I helped keep warm by running fast, pulling ahead of my glowglobe, my frantic shadow gigantic and ethereal.

In my head, in simple terms, I handled the mathematics.

Calories; volume; turbulence; time.

Halfway to the waterfall, feeling the distance and the grade, I had a terrible sudden premonition.

Slowing, I said, "Where are your"

Then I screamed, "Ula! Ula!?"

In the chill air my voice carded, and when it died there was a new sound, clear and strong and very distant. A howl; a wild inhuman moan. I took a weak step sideways and faltered. Somehow I felt as if I should know the source . . . and I remembered Ula's eight-legged predator, swift and smart and possibly on the hunt now. She had made it . . .!

There was a motion, a single swirling something coming out of the gloom at me. I grunted and twisted, falling down, and a leaf landed at my feet. Brown and cold. Partly cooked by the lightning, I realized. It crumbled when my hand closed

around it. Then came the howl again, seemingly closer, and again I was running, sprinting uphill, into another band of prickly underbrush and starting to sob with the authority of a beaten child.

The ambient temperature was plummeting.

My breath showed in my glowglobe's yellow light, lifting and thinning and mixing with more falling leaves. The forest was slipping into dormancy. A piece of me was thankful, confident that it at least would survive whatever happened; and most of me was furious with Ula -- a simple, visceral fury -- as I imagined my escape and the filing of criminal complaints. Attempted murder. Malicious endangerment. And straight murder charges on Provo, me as witness for the prosecution and their lives here finished. Extinguished. Lost.

"I'm going to escape," I muttered at the shadows. "Ula? Are you listening? Ula?"

I pulled gloves from a pocket, covering my cold hands and them knitting into my sleeves. Then I unrolled my jersey's simple hood, tying it flush against my head, enjoying the heat of the fabric. Leaves were falling in a steady brown blizzard. They covered the freezing earth, crunching with each footfall, and sometimes in the crunches I thought I heard someone or something else moving. Pausing, I would listen. Wait. The predator? Or Ula? But the next howl seemed distant and perhaps confused, and it had to be the girl whom I heard. Who wouldn't be fooled with my stop and then go and stop again tricks.

The cavern's upper end was bitter cold. One of our emergency ducts had opened up beside the entranceway, robbing the heat from the water and ground and trees. Already the pond was freezing, the ice clear and hard, very nearly flawless. I ran on its shore, squinting into the gloom, believing that at least the cliché, the falls, would have stopped flowing when the power failed. Not in an instant, no. But its reservoir was relatively small -- Ula had shown me her plans -- and for a glorious instant I was absolutely convinced that my escape was imminent.

What was that? From the gloom came an apparent wall of marble, white and thick and built where the cliché had been. Frozen . . . the waerfall had frozen clear through . . .!

I moaned, screamed, and slowed.

Beside the pond was one of the useless robots. I moved to it, my breath freezing against the ceramic skin, and with a few desperate tugs I managed to pry free one of its hands. The hand was meant for cutting, for chopping and I held it like an axe, growling at my audience. "What did you think? That I'd just give up now?"

No answer. The only sounds were the falling of leaves and the occasional creaking pop as sap froze inside the sleeping trees.

I moved to the icy shelf at the base of the falls, shuffling to where I

normally

walked through, where the ice should be thinnest. Three times I swung, twice without force and the third blow hard and useless, the ice as tough as marble and more slippery. My axe slid sideways, twisting me. Then my boots moved, my balance lost, and I hit the icy shelf, slid, and fell again.

The pond caught me. The ice beneath gave with the impact, a slight but deep cracking sound lasting for an age. But I didn't fall through. And when I could breathe again, with pain, I stood and hobbled over to the shore, trying very hard not to give in.

"Is this what you did to the others?" I asked.

Silence.

"Is this how you treat lovers, Ula?"

A howl, almost close, sudden and very shrill.

A primeval thought came to me. I made myself approach the black jungle, scooping up leaves by the armful and building a substantial pile of them where I had sat with Provo, against the downed log. And I lit them and the log on fire with a second glowglobe, putting it on overload and stepping back and the globe detonating with a wet sizzle, the dried leaves exploding into a smoky red fire.

The odd sugars loved to burn, the flames hot and quick and delicious. They ignited the log within minutes, giving me a sense of security. The canopy didn't reach overhead. I made doubly sure that the surrounding ground had no leaves, no way for the fire to spread; then I set to work, armfuls of fresh leaves piled against the cliché, tamped them down with my boots until there was a small hill spilling onto the pond.

Heat versus ice.

Equations and estimates kept me focused, unafraid.

Then I felt ready, using the axe to knock loose a long splinter of burning log.

I carried the cold end, shouting, "See? See? I'm not some idiot. I'm not staying in your trap, Ula!" I touched the leaf pile in a dozen places, then retreated, keeping at what felt like a safe distance but feeling waves regardless, dry and solid heat playing over me, almost nourishing me for the moment.

Those sugars were wonderfully potent. Almost explosive.

Ula must have planned to burn me alive, I kept thinking. She would have lit the leaf litter when it was deep enough . . . only I'd beaten her timetable, hadn't I?

"I'll file charges," I promised the red-lit trees. "You should have done a

better job, my dear."

A sharp howl began, then abruptly stopped. It was as if a recording had been turned off in its middle.

Then came a crashing sound, and I turned to see a single chunk of softened ice breaking free of the cliche, crashing into my fire and throwing sparks in every direction. Watching the sparks, I felt worry and a sudden fatigue. What's wrong? My eyes lifted, maybe out of instinct, and I noticed a single platter-sized leaf still rising, glowing red and obviously different from the other leaves. It was burning slowly, almost patiently. It practically soared overhead. Just like a fire eagle, it rode a thermal . . . and didn't it resemble an eagle? A little bit? One species of tree among hundreds, and Ula must have designed it, and she must have seen that it was planted here --

-- such an elaborate, overly complicated plan. Contrived and plainly artificial, I was thinking. Part of me felt superior and critical. Even when I knew the seriousness of everything, watching that leaf vanish into great blackness overhead . . . out of the thermal now, gliding off in some preplanned direction, no doubt . . . even then I felt remarkably unafraid, knowing that that leaf would surely reach the canopy somewhere, igniting hundreds of leaves and the sappy young branches . . . and part of me wanted nothing more than to take my student aside, ann around her shoulders, while I said, "Now listen. This is all very clever, and I'm sure it's cruel, but this is neither elegant nor artful and show me another way to do it. By tomorrow. That's your assignment, Ula. Will you do it for me, please?"

The forest caught fire.

I heard the fire before I saw the ruddy glow of it. It sounded like a grinding wind, strong and coming nearer; then came the crashing of softened ice, blocks and slush dropping onto my fire and choking it out completely.

I didn't have time or the concentration to build another fire

Towering red flames were streaking through the cavern, first in the canopy and then lower, igniting whole trunks that would explode. I heard them, and I felt the detonations against my face and through my toes. The air itself began to change, tasting warm and sooty, ashes against my teeth and tongue. Transfixed, I stood in the clearing beside the pond, thick and twisting black columns of smoke rising the ceiling lit red and the smoke pooling against it, forming an inverted lake full of swirling superheated gases.

Over the rumble and roar of the fire, I heard someone speaking, close and harsh . . . and after a few moments of hard concentration I realized it was my voice,

senseless angry sounds bubbling out of me . . . and I clamped a hand over my mouth, fingers into a cheek and tears mixed with the stinking ash . . . I was crying . . . I had been crying for a very long while. . . .

I would die here.

Always crying, I struggled with prosaic calculations. Calories from combustion; oxygen consumed; the relative toughness of human flesh. But my numbers collapsed, too much stress and too little time remaining. Part of the firestorm was coming back at me now, trunks burning and splitting open as the fiery sap boiled; but I wouldn't burn to death, I decided. Because what felt like a finger struck me on top of my head, in my hair, and I looked up just as a second gooey drop of water found me. It dripped between the fingers of my clamping hand, and I tasted it --smoke and ash mixed with a sharp, almost chemical aftertaste --

-- melted ice from the faraway roof --

-- unfrozen, ancient seawater.

The black lake of churning smoke was its deepest straight above me, and those first drops became multitudes, fat and forceful. Like rain, then harder. They hammered me to the ground, my head dropping and my hands held above it, shielding very little, and squinting eyes able to see the oncoming fire begin to slow, to drown.

I thought of the falls melting with this onslaught, but I couldn't stand, much less move. The mud under me seemed to suck, holding me in place. I was squarely beneath an enormous waterfall -- no cliché -- and I would have laughed, given the breath.

Funny, fun Ula.

Perhaps the largest waterfall in the Realm, I was thinking. For this moment, at least. And my mind's eye lent me a safe vantage point, flames and water straggling for the world. And destroying it too. And somewhere I realized that by now I had to be dead, that breathing had to be impossible, that I only believed I was breathing because death had to be a continuation of life, a set of habits maintained. What a lovely, even charming wonder. I felt quite calm, quite happy. Hearing the roar of water, aware of the soil and trees and rock itself being obliterated . . . my bones and pulverized meat mixed into the stew . . . and how sweet that I could retain my limbs, my face and mouth and heart, as a ghost. I thought. Touching myself in the noisy blackness, I found even my soaked jersey intact . . . no, not total blackness; there was a dim glow from above . . . and I began to sit upright, thinking like a ghost, wondering about my powers and wishing that my soul could lift now, lift and fly away.

But instead, with unghostly force, my head struck a solid surface.

Thunk.

I staggered, groaned, and reached out with both hands, discovering a blister

of
transparent hyperglass above me. Enclosing me. Larger than a coffin, but not
by
much . . . it must have been deployed at the last possible instant, air pumped
in from below, seals designed to withstand this abuse . . . a safety mechanism
not shown on any schematic, obviously . . . and I was alive, slippery wet and
numb but undeniably organic. . . .

. . . and unalone as well.

Rising from the mud beside me, visible in that thin cool light, was a naked
form
-- artist; torturers Nature Herself -- who calmly and with great dignity wiped
the mud from her eyes and grinning mouth. And she bent, the mouth to my ear,
asking me over the great roar, "So what have you learned today, student?"

I couldn't speak, could barely think.

Opening my jersey, she kissed my bare chest. "The eight-legged howler was just
noise. Just my little illusion."

Yet in my head it was real, even now.

"I would never intentionally hurt," she promised. "Not you, not anyone."

I wanted to believe her.

"I always watched over you, Hann. I never blinked."

Thank you.

"I'm not cruel." A pause. "It's just --"

Yes?

"-- I wanted to show you --"

What?

"-- what? What have I shown you, darling?"

Squinting, I gazed up through the thick blister, the black water churning more
slowly, cooling and calming itself. My mind became lucid, answers forming and
my
mouth opening and her anticipating the moment, her hand tasting of earth as it
closed my mouth again.

We lay quietly together, as if in a common grave.

For two days we waited, the water refreezing around us and neither of us
speaking, the creaking of new ice fading into a perfect silence. A
contemplative, enlightening silence. I built worlds in my head -- great and
beautiful and true, full of the frailties and powers of life -- then came the
gnawing and pounding of robots. Half-burned trees were jerked free and tossed
aside. The ice itself was peeled away from the blister. I saw motions, then
stars. Then a familiar stocky figure. Provo Lei peered in at us, the round
face
furious and elated in equal measures; and as he began to cut us free, in those
last moments of solitude, I turned to Ula and finally spoke.

"You never wanted to terraform worlds," I blurted.

"Worlds are tiny," she said with contempt. Her liquid smile was lit by the cutting laser, and a green eye winked as she said, "Tell me, Hann. What do I care about?"

Something larger than worlds, I knew

-- and I understood, in an instant --

-- but as I touched my head, ready to tell, Provo burst through the hyperglass and stole my chance. Suddenly Ula had changed, becoming the pouting little girl,
her lower lip stuck out and a plaintive voice crying, "Oh, Father. I'm such a clumsy goof, Father. I'm sorry, so sorry. Will you ever forgive me? Please, please?"