



Illustrated by Kurt Huggins

Progress Report

Rajnar Vajra

Day 1:

Stretch. S-t-r-e-t-c-h. Claw stretch. Sniff. Bright ahead. Move into bright. Warm. Green down and ahead. Move there. Pull claws through green. Sniff, turn. Move. Noise! Stop. Watch. Motion! Food?

Stop, slow move, slow slow, stop, look—there. Something fast! Chase, chase! Jump! Miss. Food gone. Rest. Breathe. Scratch. Noise from up. Look. Motion. Jump! Can't reach.

Lie down. Stretch. Sniff. Noise. Move closer. Something big moves slowly. Not food, but. Sniff. Careful. Touch. Cold! Pull back. Sniff. Not food, but mouth wants. Stretch tongue. Cold. Mouth wants. Reach tongue. Drink! Drink.

Sounds. Follow. Sounds stop. Sniff. Tired. Lie down? Not here. Sniff green. Safe scent. Follow scent. Dark ahead. Move closer. Sniff. Food! Move into dark. Food right here! Not moving, but mouth wants. Eat. Eat. All gone. Lie down, lick fur. Close eyes.

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Day 2:

Stretch. Claw stretch. Sniff. Something. Food and something . . . else, not food but good. Brightness ahead. Shadow here. Move into brightness. Warm. Feels good. Stretch claws. Look at them. Claws from paw. Claws in, claws out. Turn paw. Thick claws, blunt, curled up. Noise from above, shadow follows below. There! High in the blue bright, something fast.

Thirsty. Follow scent to cold wet. Pull wet with tongue. Good. Enough.

Move. Green below and green around. Green on big brown things. Sniff. Rub against brown. Stretch claws and pull though brown. Feels right. Move. Sniff. Listen. Tiny things near mouth. Soft hum. Food? Leap to eat, but tiny things dart away. Chase.

Something rustles. Where? Listen. Nothing. Feel urge. Squat and push. Better but strong smell. Dig and cover. Move. Thirsty. Follow scent and go to cold wet.

Something moves. There! Food? Run, run! Leap! Something brown jumps away. Chase, chase. Stop. Something is gone. Sit and lick paws. Above, less blue. Tired. Lie down? Here feels wrong. Sniff. Follow trail back to dark. Food is here! Hungry. Eat, eat. Gone. Lick flavor. Want more. Lie down, lick paws, lick fur. Close eyes. Sound? Open eyes? Nothing. Close eyes.

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Day 3:

Open eyes. No food, but . . . smelled good smell before. Stretch. Claw stretch. Turn paw over. More claws! But thick. Dull. Can't stretch. Rub these on hardness beneath, again. No sharper. Outside, the bright blue is back but big white things float in it.

Move outside. Move, sniff. Move downhill. Look. Green below is not one thing, but many soft green claws. Green around is many different greens. Tall brown things are many browns. Rustles come from both sides but no chase. Listen. Watch. Something . . . inside . . . rustles without noise. Inside . . . *me*. A me is here! I am. I am a me.

I move, sniffing and listening. The low green is soft claws, but higher greens are paws. Many, many paws. Some fallen to the green below. Most hold to brown arms that hold to the tall brown things. Arms? A new thought.

I thirst and return to the cold wet. I drink. Odors come, some strange. A long thing wiggles near the wet. I watch but do not pounce. It slips into the wet. Was it food?

Will food be in the place where I sleep? Hungry now. I return to that place with no need to sniff. No food is there, but another scent. The scent is like mine, but darker. Stronger. I have smelled this before.

I face the bright entrance, watching things move through the blue without touching green or brown. Sometimes these land on the brown limbs clinging to the tall brown things. Soon they rise again into the blue. Their arms are wide and flat, and move fast. I stretch and look down. I, too, have arms but none so wide. I move my front ones quickly, but do not rise. As I move them, something I cannot see pushes my fur.

I return to the bright, trot almost to the cold wet, and sit. Now something stirs my fur while I do nothing. Hunger returns, and I hunt softly on the green and between the tall brown things.

Something gray with large eyes jumps from a green mound to land nearby. It sees me, makes noise, and leaps away. I chase but cannot catch. Is all food faster than me? No. Food in my sleeping place is so slow it stays still.

I see more tiny things that hum. Flat arms like the larger things high above. Only these arms move so fast that they do not seem to move. I jump and catch one in my mouth, but spit it out. Bitter.

A green paw lands near me, and I sniff it. Not food. The blue above is darker, and I return to the sleeping place. Yes! Food! Eat. I yawn and lie down and close eyes. Then I seem to run while a gray thing is trying to escape me. I make a great leap and bring it down, biting its neck. I begin to eat but open my eyes. I am not standing on fresh meat. I am in the sleeping place. My eyes close.

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Day 4:

I awake and stretch. I freeze. Fear! Something is here with me! It, too, has fur, legs, and tail, but is large enough to hunt *me*. It somehow stands on only two legs. It makes soft noises. Haven't I have heard such noises before?

I move backward and crouch. It does not follow, but makes more noises and then departs. I watch it move into the light outside. Its middle shifts. It drops to the ground and runs off on four legs. Those noises it made, they cling to my ears. I almost—no, I cannot reach.

My trembling stops. I go outside. Everything is familiar but different. From nowhere, names arrive. The blue above is *sky*, and the white shapes *clouds*. That blaze I ignore because it hurts my eyes is the *sun*. I know these things but do not understand them. More names pour into my thoughts.

Tints reveal themselves, pulled from simple colors. Now they claim separateness as orange and pink, turquoise and violet, many others.

Beauty! Everywhere. Has the world changed or have I?

Gazing all around, I return to the cold wet and find it to be a stream. Water! I drink my fill then trot along the bank until I reach a still lake. At the edge, I gaze downward. The water reflects sky, clouds, and some winged creatures above. Beneath, small creatures scaled in silver and gold fly on gauzy wings. I watch. My shadow shifts so very slowly. I become dizzy and must lie down.

I rest my eyes, and when I open them, the sky has darkened and is edged with red of many tints. I feel hunger and . . . what? I run toward my sleeping place and a new name arrives: cave. My cave. Food again? I smell it before I reach the opening. My mouth wets from hunger.

Another leap brings me to the food, and my jaws open wide, but I am more than jaws, and I close them again. What is this food? Where did it come from? The sun spits red rays into the cave. My food rests within a circle with raised walls. The light fades, but I have seen. This food is brown with something white in it. A word comes: meat, but no word comes for the white.

I will not eat yet, although I do not know why not. I back up and settle myself near one side of my cave. I close my eyes partway and wait.

Distant sounds arrive along with new words: forest, tree, glade. I hear something approaching on soft paws. I sniff quietly. A large creature on four legs enters my cave. Its middle shifts, and it stands upright. It is too dark to see clearly, but the harder I try, the more I see although the sun has not returned. This being's scent reminds me of that other, larger intruder. I sense it watching me and close eyes tightly.

Strange noises. I partly open one eye. Something small and square rests on the ground, and the noises come from it. I listen, but the sounds mean nothing.

The creature makes soft noises of its own, pushes the food closer to me, and departs. I am very hungry and must eat. I do, but before I have filled myself, I become so tired that my eyes close.

* * *

Day 5:

"By now," a soft voice said, "you might understand a little of what I'm saying."

Bright, my cave, and the bigger creature had returned. I wasn't as afraid.

"Don't expect you'll be talking yet, but if you're getting any of this, just lower your head a little."

I tilted my head, not certain why I had.

"Great! You're making real progress. Liana tells me that you refused to eat at first. Impressive, assuming you didn't have a stomachache. If you guessed about the soporific, soon you'll be teaching us. I see you looking at the soundsource cube. You got a late start to your sleep-training last night, so we let the program run later as well. I'll take it away along with your dish, and Liana will be back tonight with food and the next program. Now watch me carefully."

Those noises meant little to me, but not nothing, and they came with a flavor of friendliness that warmed me. The creature moved close to me, held a paw near my eyes, and turned the paw to show the same thick claws that I had, only larger. Then these bottom claws opened

and *wiggled*.

“Fingers. You’ve got ’em too, but using them will take practice. Keep watching. First I slip my backpack off and open it.” The creature pulled a large lump off its back that I’d thought part of its fur. “I pick up the cube with one paw and put it in the pack. Now I grab your dish and tuck that away. I close the pack and return it to my back. Try any of that without fingers!”

I turned a front paw over and tried to open the thick claws. I couldn’t.

“Don’t worry, it’ll come. Just a matter of finding the right muscles and developing them. So long for now, and I’ll join Liana tonight when she visits you. Little one, trust me. You’ll be one of those to make it, I’m counting on you.”

Thick claws—no, *fingers*—folded, back on all fours, the creature bounded from my cave.

The creature’s noises echoed in my mind and I tried to repeat them. Sounds came out of me, but not the right ones. I tried again to open my fingers, gave up, and trotted outside.

The world startled me. So many more details and textures. So lovely that I couldn’t keep from making sounds, each gently squeezing my chest.

I’d always traveled downhill from here, but now I trotted uphill. Curiosity. After a long climb, I came upon more tall things—trees!—not all brown. Some had white coverings or gray or markings in different colors. Their . . . leaves were mostly green but some were red or yellow. The land became steep and then steeper. Looking back, I could hide the lake behind one paw.

Soon, a feeling came over me to go no further, and I turned around. From here, nothing looked familiar.

I am here, but where is here? And *what am I*?

Troubled, I worked my way far, far down to the lake. No sky reflections now; tiny waves shook the surface. Still, the sun-sparkling water soothed me. Perhaps I could drink here as I did from the stream. I tried, but the taste was bad. No matter, I would drink later.

Later? Since when did I understand later and earlier? The question brought other words into focus: today, yesterday, tonight. Weren’t these pieces of something larger? I wasn’t sure.

I lay so still that a small animal with green leaf-shaped spots didn’t notice me. It even jumped over my tail in its rush to reach the water. Six legs, so I knew it lived in trees. Four limbs for ground-dwellers, six for arboreals, eight for flyers.

Where had I learned that rule? And it wasn’t true. I’d seen flying creatures with double sets of wings, two thin legs and two thin arms, but others with two wings and two legs.

The creature lowered its speckled head and lapped the lake water with a long tongue. I stirred, and it squeaked and scrambled away.

Again I made chest-squeezing sounds. Delicious.

Far from shore, a bump rose into the air, dripping. No cause for alarm until it kept expanding as more of some enormous animal surfaced. The monster floated, then sank under. It appeared again, much closer to me, and I backed away from the lake. A long mouth opened. Many teeth. A huge golden eye fixed on me, and then the creature turned and dived away at great speed. I glimpsed a massive tail covered with thin claws. Ripples spread out, higher than the little waves.

Shaking, I trotted to the stream, ended my thirst and roamed the forest until I found a bright patch of sun-warmth. There, I rested. To one side, a path with interesting odors led toward an unknown area. As I calmed, I thought: why not see where this trail led?

If a lake giant had been afraid of *me*, what could I have to fear?

The trail did not flow straight but as if stalking, wound around trees and large boulders. I followed it until I came upon tall bushes bearing truly strange leaves, some blue and others clear with flashing colors within where sunlight touched them. The air felt thin here, holding scents that made my nose itch. I sneezed.

What felt right was returning to my part of the forest. This I did and at speed. Once there, I found a glade, lay down and allowed my eyes to shut. My latest unease faded, but questions arose that I could not answer.

I opened my eyes to twilight and returned home. Food waited there, but nothing else,

including the noise-making thing. I waited, listening. Nothing happened so I ate.

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Day 6:

Awakening, much in me had changed. Many new words had appeared, but more than words. Now I understood the concept of concept. I was a new me, a me who could think about thinking, aware of awareness. Before I opened my eyes, my nose told me I wasn't alone.

Both previous visitors were resting on haunches not far from me, both regarding me with large green eyes.

"Can you understand me a bit more?" voiced the bigger one.

I tried to make the right word but only growled. Still, I remembered head-nodding yesterday to show comprehension, so I did that.

The smaller creature made a pleased sound. The bigger one spoke. "Fantastic! At this rate, you'll be talking any day now. Do you know what it means to have a *name*?"

No.

The creatures glanced at each other, and then the smaller one spoke.

"You do know what a word is?"

Nod.

"A person's name is a word that identifies that person as apart from another. We three are of one kind, but my *name* is Liana. I am female. When speaking about a female, you can use 'she' or 'her' instead of her name; *she* did this, give it to *her*. This is Ares, a male. The words 'he' and 'him' similarly follow males. What belongs to a female is hers. What belongs to a male is his. You are not yet female or male, but if you pass all Four Gates, you can someday choose to be one or the other. You, too, will have a name. But the one you'll soon remember won't be yours."

I understood—she or her—words, but not whatever she meant them to shape. I tilted my head to show response that wasn't a nod.

The Ares spoke. "Don't worry. We don't expect you to understand much at this point. Some of your confusion is caused by the way we're teaching you, and how our kind came to be. For now, you are safe and cared for. You have already passed the First Gate, and well ahead of the pack! You will face other Gates as they come. Try your best to understand me: This evening when you return here, eat right away. The food will make you sleep and sleep will help you learn."

Nod.

"Excellent! I'll see you again tomorrow morning. Liana?"

"I'll be here too. Grow and be well, little one."

Side-by-side, they trotted from my cave. Their words seemed to echo around me, but no matter how I turned each ear, I couldn't make the meanings clearer.

I moved close to a wall and stretched out, reaching as high as I could. I kept pushing forward to get higher until I stood only on my back legs with my front legs against the wall. Could I reach even higher? I tried and felt my back break. No! It hadn't broken, just changed shape. I felt fear but no pain.

I pushed away from the wall, standing as the Ares and the Liana stood! Keeping my balance wasn't easy, and when I tried moving one leg at a time, I fell. Still, this accomplishment delighted me.

Resting on my haunches like the big ones, I lifted a front paw and looked at the underside. The thick claws still wouldn't open, but I pushed them with my tongue and felt where they were connected deep inside my paw. Instead of trying to move the claws, I tried moving the connection and . . . the claws opened! Not far, but I had the right scent.

I returned to the wall and forced myself upright again. My back shifted, but now I expected it. Strange, though. I tried moving one leg again and kept balanced a little longer. A word came to me, *walking*. I was trying to walk. As I fell, I felt my back snapping into its proper place.

Outside, the sun called to me, and my cave seemed too dark and damp. Good things were happening! I could stand and almost open my claw-fingers. What would I be able to

do tomorrow? Feeling that the sun had filled my body, I ran to the lake. Bring on giants with teeth! Nothing could daunt me today.

* * *

Day 7:

When I awoke, the sun had barely risen. Both creatures were here, whispering. Their words fell into my mind with a new clarity, and I knew they were arguing.

"I'm afraid this one," the Liana said, "is coming along *too* fast. The kitten may be facing the Fourth Gate before developing scruples. I think we should titrate the dosage."

"I don't. Really, Li, have you seen aggressiveness here? Any meanness? We *expect* children to be self-absorbed; they need that for fast learning. Yes, our student will need to grow a conscience, but there's enough time."

"I'll trust your judgment for now," the Liana whispered so quietly that I strained to hear. That was a mistake.

"See that ear turn, Ares? Our student is awake."

I sensed they were distressed that I'd overheard, some alteration in body posture and scent informed me. Much to think about.

Ares, then, not *the* Ares. Just Liana. Another thing learned. The male eyes watched me as his muzzle-whiskers twitched. "Whatever you heard, try to ignore it for now. Today will be a different kind of day. Nod if you understand."

I tried to say "yes." To my joy, a sound came from me that wasn't completely wrong.

"By the Giver, was that a yes?"

This time I nodded.

"Wonderful! Thought it might be a burp. Try more words. Keep it simple. Maybe up, down, yes, and no."

I tried, and noises came out. Ugly ones. How did these two do this with such ease?

"That's not bad, considering. It will come. As I said, today will be different. Liana and I will journey with you wherever you go and teach you things you'll need to know. We'll get started after you relieve yourself."

Relieve myself? I guessed what Ares meant but had never paid attention to such things any more than I paid attention to breathing. And why relieve myself now rather than during my journey? Strange.

Then stranger yet, I remembered standing before a very large white bowl, so smooth it glistened. It held a small pool of water, and water was pouring out of me and running into the pool. The memory faded.

I'd never seen such things and yet . . .

Confused, I went to the forest to "relieve" myself and be alone. But now I was more aware of the process, and new questions arose. It seemed that confusion could track me anywhere. I returned, and we all left together.

Liana did most of the instructing. "This forest," she said as we moved along, "is near an edge of Arden Three, one of ten such areas. Long ago, the Reformers used their skills and machines to transform natural plants and animals into those that survive here today."

Her words left me desperate to ask questions, but I had no way express my feelings.

"Our kind, too, was transformed. We have always been team hunters, always clever. Yet before we were changed, we had no fingers, no true speech, and could not easily stand. The Reformers gave us . . . ourselves. We honor them and one among them most of all.

"Our transformation brought us great gifts and great losses. We cannot remain healthy outside these forests, yet cannot create more Ardens or expand any until we have mastered Reformer skills ourselves. Our benefactors left our ancestors technology and much instruction, but our ancestors had not achieved enough . . . dexterity to use the technology nor wisdom enough to preserve all instructions. Are you following this?"

I bobbed my head but at an angle, hoping Liana would understand.

She did and sounded pleased. "You comprehend some. That's all I could hope for."

Ares said only one word, "Population," before letting Liana resume. When she did, her voice

sounded less happy.

"I'm sorry, little one. I must speak of our greatest loss. The Ardens are vast, but tiny compared to lands we could roam before our transformation. A growing population would require far more. Our food supply is limited, forcing us into terrible sacrifices."

She fell silent. I felt a chill. Why had she stopped teaching?

Perhaps she smelled my urgency. "I shall speak more about this tomorrow. For now, listen carefully."

She shifted to an upright posture, walking on two legs without slowing. "First the concepts left and right. This is my left hand, this is my right. Is that clear?"

Nod.

"This direction, then, is to my left because it is closer to my left hand than to my right hand."

Nod.

"Splendid. To my right side then, we come to a brown maple, a tree from the Reformers' world, modified to survive here. To my left a new birch almost touches that smaller golden-rock, a native tree. Notice vines growing on the goldenrock's bark, intertwining upwards. These are not parasites but symbiotes, vital to much native flora."

I tried to speak but couldn't vocalize while walking. So I tried something else. . . .

"Yes, small one, I see your head moving in circles. We don't expect you to understand 'parasites' or 'symbiotes,' but you will. To continue, ahead we have a . . ."

I listened and learned, each name striking a word already within me with an impact I could almost hear. Liana finished speaking of trees and smaller plants, and stopped. She lifted her arm and raised a single thick claw . . . finger.

"What I'm doing with my hand, small one, is *pointing*. Imagine this finger as a nose aimed directly toward a scent. Look in the direction the scent would be coming from. That's right. Now I point at the sky, so look at the sky."

I did but saw nothing more than the clouds and some winged creatures.

"Animals of several different orders can fly," Liana said. "The one above you now is of a kind that evolved on the Reformers' planet, a 'bird,' modified of course. All birds on our world fly and their wings and bodies are covered in light fronds known as 'feathers.' Each bird species has a name, and the one that just flew by is a 'swallow.' Ares?"

"Liana wants me to talk about the native creatures up there, my special area of interest. Notice how steadily they soar compared to the birds. More wings permit faster, shorter wings, thus less, ah, bounce through the air. My main work is designing machines that may someday fly over land and sea while carrying people. The Reformers used such machines on their home world, but my designs follow the structures of native flyers."

The word "sea" reminded me of seeing a sparkling expanse of blue-green far below. Where could I have seen this? Confused, I barely listened while Ares spoke of tilt-wings and stretch-wings and bobbles. We'd reached the lake when I realized that he'd already fallen silent.

"It seems," Liana said, "that you've had all the instruction you can absorb for today, but pay attention just a bit longer. This is Lake Gunder, named by a Reformer, and even larger than it appears from here since that spit of land"—she did a pointing—"hides where it curves beyond our sight. It's very deep and home to many swimming creatures including some big predators. These are hunters, eaters of smaller creatures. You need not fear these because they will avoid you."

"Should we tell our student why?" Ares said.

"No."

"What harm could it do?"

"Who knows? But knowledge should follow memory, not the other way around."

Ares stared at Liana. At first he seemed angry, but the anger faded. "Perhaps I've become overeager. Suddenly I fear we will never complete the training in time."

"Never," Liana said, "had best come early this year. Keep your ears forward, engineer! Recently you had faith I lacked. Now let me share mine with you. Come, let us leave our student

for the balance of today. You and I need to reach some agreements. Little one, you are on your own for now.”

Returning to all-fours, my teachers vanished in an instant. I wandered to the stream and sat close to the water.

I *had* to learn how to talk! So many things I needed to ask, but at the least I had to master the simplest words. I decided to stay here until I'd consistently produced “yes,” “no,” “what,” and “why.”

Hard. Grunts and squeals? Yes. Groans and one startling whistle? Done. But only “yes” came out clearly. I closed my eyes to recall the teachers’ faces and remembered how their lips moved as they talked.

I made more sounds while moving my own lips. Changes, but not enough. Thirst came. I drank then returned to practicing. As I made noises, I moved my tongue to pull back wetness remaining in my mouth and heard a big difference. Speaking used the tongue! The instant I discovered this, it came to me that I'd already known it. A dizzying wave of confusion passed through me, leaving no clarity behind.

Armed with new or newly recalled knowledge, I vocalized again while experimenting with tongue and lip movements. Darkness had fallen before I felt satisfied with my little words, but I hurried home warmed by pride. Tomorrow I would surprise the visitors!

* * *

Day 8:

I awoke before the sun did. The box lay near me, emitting words and sentences that I mostly understood. Today I recognized that these words were in two languages, Nynorsk and English. How could I know such things? Was this object teaching me? Or . . . reminding me? Then I remembered something wonderful: my name.

Arvid. Arvid Lund.

There. In the mirror. Wild blond hair and a trimmed blond beard. Wide cheeks with a ruddy tint, wide jaw, blue eyes, thick eyebrows. Muscular forearms with a light coating of red-blond hair—

I glanced at my arms. Gray fur with brown streaks.

What had Liana said about my name? When I found it, it would not be mine? Almost . . . almost I understood, the knowledge lay just beyond my claw-reach, but then a whirlwind of confusion drove it away.

Practice speaking, I told myself and ignore memories of that which never happened.

“No. Yes.” Good. So much better it seemed worth trying to vocalize my teachers’ names. On “Liana,” the “L” wasn’t happening, likewise the “R” in “Ares.” “Awes” wasn’t pleasing me, although yesterday I would’ve leapt from joy at coming that close.

Perfection always retreats as we approach it. I remembered saying just that to—impossible! I couldn’t produce most of those sounds until today.

I worked on the “L.” Altering my mouth shape barely helped. But experimenting with my tongue, I found that lifting the tip to the roof of my mouth gave me “L,” and curling it slightly produced a fair “R.” Meanwhile, I only bit my tongue twice but learned that words could certainly hurt.

When my teachers arrived, I greeted each by name although in my eagerness, my words weren’t as clear as they’d sounded a short while before. Still, their response was all I could’ve wanted. Ares made a noise of pure joy then stood upright and lifted me off the ground with unfurled fingers, twirling me around before setting me down while Liana kept repeating, “Well done!”

“Today,” Ares said, “you have passed through the Second Gate, and splendidly. You continue to astonish.”

Liana sat beside me, her body pressed against my side. “Try to share your thoughts and feelings. Take your time, there’s no hurry.”

I nodded. “Why do I”—slow going and my words were fuzzy—“Arvid Lund?”

As a complete sentence that wasn’t success, but my listeners seemed to understand.

Liana chose to answer. "So you've already reached that point. Ares, we do have a prodigy."

"Have I not said so?"

"Have I denied it?" She returned attention to me. "You have had and will continue to have flashes of Lund's memories. All our kind living in the Ardens has these experiences to some degree."

"Why?" Nice and clear.

She uttered a soft cry. "We have been given a great gift, but at a terrible cost. We will tell you, but not yet. What say you, Ares?"

"I agree."

"Good. Little one, you have found the wrong name so would you like one of your own?"

My own? I forgot my disappointment at not learning more about Lund.

"Name! Please."

Liana made noises like fast breathing but with voice added to it. I'd made that sound myself, and now I had a word for it: laughter.

"Today, kitten, you've learned a new trick. Politeness. Soon you'll be saying thank you, and kindly pass the salt." Both my teachers laughed.

"Name?" I said.

"Until you select one for yourself," Liana said, "yours will be Arlie. We chose a gender-free name similar to Arvid. Acceptable?"

Couldn't she see me glowing with pleasure? I had too much to express to say anything more than "Yes."

"Splendid." She stood up. "Ares?"

"Today," he said, "we begin your training in fighting and defense. Why not warm our fur in the sunrise while we work? Come."

I followed my teachers outside, trying to phrase a complex question with simple words.

I did my best. "Why fight when all animals flee?" My "F"s sounded like a weak wind, and trying to rapidly put "F" and "L" together failed miserably.

Yet Ares understood. "Yesterday, Arlie, you learned that our species must live within the Ardens. Our food is limited, as are desirable places to build homes. There are seventy-five thousand of us. Do you understand seventy-five thousand?"

"I . . . do." Surprise. His mention of a specific number evoked strange knowledge in me. I remembered how to count. But why?

"Arlie, this is vital. If birth is unchecked, our people will soon compete for basic necessities. Our society, basically an enhanced aspect of our natural hunting methods, will vanish and no one will have time to replenish our . . . teaching materials. Then we'll lose all we've gained and never join the Reformers as fellow travelers to the stars.

"Little one, you must learn painfully sharp truths. Limited to such a small area on our world, we are vulnerable to natural disasters. So while we cannot let our population rise, we dare not let it fall. Only substantial numbers may allow us to repopulate after calamity. We *must* reproduce. Do you understand?"

"Yes." His voice carried an apologetic tone that worried me.

"But when our people give birth, we have litters: three to six children every time. The Reformers knew this, but didn't consider the implications when they modified our original forms. Do you see our problem, Arlie?"

"I—what . . . do . . . do—" I gave up.

"Patience. Every mated pair of adults is required to have two children accepted for citizenship during their lifetimes, but more are usually forbidden. Our antifertility techniques are excellent, but producing at least one litter is compulsory."

He glanced at Liana before continuing. "I'm oversimplifying but it brings us to the crux. For our survival, we cannot allow every child to live. This is our torture and our main reason to create more Ardens."

Fear made talking even harder. "How?" was all I could manage.

"To establish merit, each child must pass four tests, the Four Gates. Few succeed. Children

who fail are put to sleep and never wake up. They do not suffer but we do. Grief is the terrible price we pay.”

Ares lowered his head, and Liana took over.

“To pass the First Gate, a child must exhibit some comprehension of an association between vocalized sounds—words—and meaning. Opening the Second Gate requires a child learning to vocalize words themselves. You have done both. The final Gates await those who develop . . . certain qualities, as you have. The Third involves competition; the Fourth requires battle skills.” She turned toward Ares. “Ready to continue?”

He raised his head, gazing into my eyes in a way that evoked a feeling in me I couldn’t name. But I remembered sitting with my grandmother near the cliff’s edge behind her cottage, gazing down at ocean waves flowing over half-submerged boulders while hammering larger ones, blasting white spume high into the clean air. To my left, fireplace smoke from the little fishing village within easy walking distance played counterpoint to the fountains of spray, and I realized that my grandmother’s shawl couldn’t be keeping her warm enough. I suggested we go inside, and she looked at me with such—

The memory thinned to nothing, like the smoke I’d never seen as Ares resumed.

“Your next Gates demand agility and speed. Battle training improves both. We didn’t expect you to advance so far nearly this soon, so Liana and I need to prepare a training site before we begin. We will return when everything is ready. Li?”

My teachers bounded away as though something hungry were chasing them. Was death chasing me? Competition and fighting? Children being put to death who didn’t qualify? Horrible things to learn, and I longed for the carefree innocence of yesterday. My life seemed far too brief to end so soon.

I waited.

My teachers didn’t return to my cave but called to me from the forest’s edge. I joined them there, slowly, my body heavy with dread.

With a head gesture, Ares told me to follow as they moved between the trees, more silently than I could. We veered in a long rightward curve and stopped in a meadow I’d never visited.

A stream flowed close by, perhaps connected to the one I knew, and a few tall boulders reminded me of those in the sea near my grandmother’s cottage in Norway. Short grass softened the ground, the top of every blade flat and glistening. A word and its meaning came to me: “mowed.” I couldn’t imagine how this had been done, but it resulted in a fair-sized flat area.

Ares moved to its center. “Come closer to me, Arlie. Stop. First, we’ll practice defensive side-leaps. We have three basic side-leaps: simple, twisting, and flipping. These can be high or low, and can include a block or attack. We begin with the *simple*. I will leap toward you and try to strike you with a paw. My claws will be sheathed, but you will not enjoy being hit. Your task is to gauge my leap and avoid it by jumping directly to the side. If I come at you with my left paw, jump to your right. Otherwise, I could immediately rake you with my right paw. And the reverse with a right paw attack. Is that clear?”

It wasn’t, but he immediately galloped directly at me and sprang. It hurt when his paw struck my side. It hurt a lot.

“Your mistake,” he said when I’d stopped rolling around in pain, “wasn’t acting too slowly. You leapt prematurely and gave me time to adjust my angle of attack. Timing is crucial.”

Pain was such a familiar experience. Yet when had I ever been injured? This added confusion to another kind of pain. Ares had *hurt* me. Intentionally! I felt—I couldn’t find the word.

Ares lifted a paw, showing no front claws. “I’m sorry, Arlie. Believe me, I know what you’re feeling because I’ve been through this myself. You feel betrayed.”

That was the word.

“This teaching is cruel and if we had more time, we might find a kinder way. But reaching your developmental stage, students are only allowed a few days to prepare for competition against other children at a similar level. You’ll be the youngest in your group, and some will never reach the Fourth Gate. Remember, you’ll need fighting skills to pass the final test. This is death or life, and we dare not coddle you. Now watch carefully. Liana will attack me as

I attacked you. Observe everything.”

In an instant, Liana went from resting on the ground to flying through the air in a flash of gray and brown. I saw no way for Ares to avoid being struck, but he jumped sideways the tiniest instant before the collision, and landed safely a claw length from Liana’s outstretched paw.

Ares gazed at Liana and briefly lowered his head. He turned toward me.

“Did you notice,” he asked, “how fast she was?”

“Yes.” How could I have missed it?

“Among our kind, males are generally larger than females and our forelegs stronger. Females are usually faster and have stronger back legs. These are some factors to consider when you decide your gender.”

“But I am . . .” I struggled to express the concept “. . . already male.”

Liana laughed. “No, kitten, but we all think that at your age. Reformer Lund was male, but you are not Lund.”

“Even if you choose a sex,” Ares added, “the part of you that observes all your experiences, the truest part of you, never has gender.”

“If I choose?”

Ares made a noise, a quick hiss. “I have said too much. We must focus on your training. I will rush you again, a little slower. Avoid my attack.”

I wasn’t ready, but this time the pain wasn’t as bad because only the edge of his paw had hit me.

“Better, but this time you waited overlong. You need a clear sense of an aggressor’s reach. When I leap, my body and arms stretch out. Your timing must depend on the attacking rather than the resting shape of your opponent. Once again, faster!”

This time his paw merely brushed my fur. A warm and unexpected feeling of accomplishment filled me, fed by praise from both teachers.

The practice session stretched on until the sunrays flowed between tree trunks like water. Periodically, we all drank from the nearby stream. This was hot and thirsty work, and bruising. But I learned from my mistakes and wasn’t hit truly hard again. When my skill at simple side-jumps had improved enough, Ares began to instruct me in twisting variations, which made me feel that I was starting from scratch.

When twilight arrived, Liana announced that I’d learned enough for one day. She told me to return home, and she’d soon bring food.

“Beginning tomorrow,” she said, “you will eat two meals daily. Training is arduous, and we do not want you losing weight. Also, you are entering a time when a growth spurt is expected, and extra nutrients are needed.”

I wondered about the source of my food, which led to an extraordinary thought, which led to an extraordinary question. But I couldn’t talk well enough to ask it. Tomorrow, perhaps.

Back home, a wave of exhaustion felled me. Hunger kept screaming, but what I most wanted was sleep and lots of it. So I wasn’t surprised to find that I’d fallen asleep after Liana woke me with some gentle licks near my eyes.

The sun had just set, and the red edge of its passing cast enough light for me to see a new, larger food bowl on the floor next to the returned speech box. “Eat as much as you can. Then go back to sleep,” Liana commanded.

The bowl overflowed with good smelling meat. How could I eat even half of it?

She seemed to read my mind. “You don’t have to gobble all that at once, Arlie.” She laughed. “Eat some, rest, and then have more. The drug to make you sleep is near the bottom. Even if you can’t finish it all, try to get as many of those white granules into you as possible.”

She departed and I walked to my bowl and examined the food. So many white specks covered the surface that it reminded me of my childhood in Bergen and those little pellets of snow that would—no! What childhood in Bergen? What was Bergen? Why did I remember buildings jammed together, resting almost in the ocean’s lap, ships of many kinds like floating sentinels surrounding the peninsula? Why could I see mountains so clearly in my mind’s eye that I knew there were nine?

Faces appeared to me, dear beyond expression, yet alien and frightening.

Filled with troubling, indescribable emotions, I ate every scrap of the food, desperate for the forgetfulness sleep would bring.

* * *

Day 9:

I woke to the pattering of rain. The sky through the cave opening wore a coat of gray, spreading sunlight out into a uniform, dim sheet.

“Ares. Liana.” The words emerged clearly. I tested myself with an assortment of words. My speech lacked the smooth ease of my teachers, but it had improved wonderfully. Today, I’d have no trouble communicating. I couldn’t wait until my teachers arrived.

My food bowl had been refilled, although to my relief with not enough meat to satisfy five or six adults. I was surprised to be hungry after last night’s gluttony and found it easy to finish the entire meal.

Liana and Ares shook themselves off just outside my cave, but their fur still dripped as they entered.

“How do you feel?” Liana asked.

“I feel like asking questions.”

She laughed. “Then why wait? And my, you’ve gotten good at talking.”

“Why is the noise box gone?”

“You no longer need any memory catalyst.”

Yesterday’s extraordinary thought returned. “This world,” I asked carefully, “isn’t named . . . Jord, is it?”

She and Ares exchanged glances. “You’re right,” she said. “This isn’t Jord. I’m curious, do you know the English word for Jord?”

It came to me instantly. “Earth. But our world has a name?”

“The Reformers called it Skipbrudden. Do you understand?”

Skipbrudden. “I—almost.”

Liana spoke gently. “In English it means ‘Castaway.’ Our benefactors did not plan to spend their lives here, but the machine that carried them through the skies crashed. The Reformers could not repair it. Those among them with such skills died in the accident along with many others.”

“How many lived?”

“Fifteen had already arrived safely. Four more survived the impact, but one soon died.”

A vision, more painful in its way than any blow from yesterday’s practice, appeared. I saw a slender woman with amber hair and an elfin face smiling at me, love profound in her eyes, and then I saw her bleeding in my arms—no, in my arm. The unbroken one . . .

I couldn’t bear it and forced myself back to the present. “The Reformers,” I said, strain obvious in my voice, “were not of our species.”

“True, they were ‘humans.’ *Menneskeleg*.”

Suddenly, I felt near the brink of great discovery. “Then what species are we?”

“One of the first humans who found us named our ancestors *Skogkatts*, after a favored animal from his world. We believe that wild *Skogkatts* still thrive beyond the Ardens. But Arvid Lund, the Giver, provided a new name to those hundreds of us he transformed. You and I and Ares are *Tregul*, ‘tree gold,’ treasures of the forests.”

“But why transform us?” A more troubling question came to me. “And is this change why we are . . . restricted to the Ardens?”

She studied me before answering. “Your progress is so rapid, perhaps you could answer those questions yourself.”

“How would that be possible?”

“Don’t ask *how*, just ask yourself if you know.”

Instant vertigo tensed my muscles and narrowed my vision. I wanted to growl my denial but couldn’t deny all those visions of a life I’d never had.

Remembering the memories evoked another. My family had just moved to America, pulled

across the Atlantic by a research grant offered by Massachusetts General Hospital. My parents were given their own laboratory, staff, free housing, and impressive salaries to continue the genetics work they'd begun in Oslo. I didn't want to go and be separated from my friends and relatives, particularly my grandmother whom I loved with all my soul. My parents understood my feelings and sympathized, but felt that the potential benefit to humanity outweighed the misery of a twelve-year-old.

I had a terrible first year in Boston. American schools were nightmarish. Some children behaved like vicious animals, and several teachers failed to distinguish language difficulties from stupidity. I regretted my indifference toward mastering English. Next year, I became friends with—

I shut off the memory flood. It made no sense. My body quivered as if drying itself. Maybe this knocked something loose, because an understanding awakened.

"After the crash," I said slowly, "the Reformers knew they were stuck on a world with too little . . . oxygen, and their breathing devices would eventually fail. On Jord, tiny ocean plants produce most of the oxygen, and it is available everywhere. Here, their best hope for survival was to change an entire forest."

"Just so. Go on."

I let more truth unroll, learning even as I spoke. "The Reformers discovered our kind and believed we might someday be clear-thinking animals like them. But since we seemed so . . . adapted to the forests . . ."

"Keep going."

I looked inward and returned empty. "I can't."

"The rest," Ares said, "should come to you in time. If not, we will tell you. For now, your training takes precedence. Are you stiff and sore this morning?"

"Not much."

"Then I failed to work you enough yesterday. I, too, have lessons to learn. This day we focus on flip-leaps and techniques for jumping higher. Back to the training area!"

By midday, my energy was spent. Whenever I showed any improvement in skills, Ares made his attacks harder to avoid. Then he had me practice leaping while both of us ran. Liana joined in, and my task became avoiding them rushing at me from different angles. They struck me so often that my biggest challenge became stopping myself from running away to hide.

When I stood trembling on all legs, Ares allowed me a long rest break. After drinking a lake's worth, I lay down in a patch of sunlight, still breathing fast. Tomorrow, I thought, I'll have a different answer to those questions about stiffness and soreness.

The hum of insects and distant birdcalls soothed me. I settled into something less than a dream. . . .

After MIT granted me dual undergraduate degrees in bioengineering and microbiology, I asked my fiancée which specialty she thought I should pursue for postgraduate education.

"Why not combine them?" she said.

The suggestion left me uncomfortable. "You mean go into cybercytology?"

She made that little smile of hers and nodded wisely. "Isn't that where you've been heading all along? I know your parents practically invented the field and—"

"Exactly! So where would this—this *career* choice lead? Either to academia, no thank you, or research, which appeals except there's only one dedicated laboratory."

Mischief edged her smile. "Ever noticed how your accent comes out when you're upset?" She lifted an appeasing palm. "I understand, Arv. I wouldn't care to work with your parents either. They are . . . not sure how to put it. Not small-minded or self-centered."

I let myself be appeased. "What they are, Skye, is driven."

"Perfect! But think: by the time you've got your doctorate, other labs might have identical equipment. Or new options might emerge."

Good points. "I am interested in cybercyte technology. There's a crazy idea I've been kicking around—"

"Come, little one." Ares nudged me with his chin. "Rest time is ended, and your trials

cannot be postponed.”

That afternoon I learned that I'd only touched the surface of exhaustion in my previous training. My teachers didn't let me catch my breath as they leapt at me from so many directions that it seemed there were four of them. When my legs lost all spring, Ares set me to tree climbing, something I'd never tried but which felt natural. Still, it cost me more energy. Strange pleasure, digging claws far into bark. Backing down made me nervous at first. What kept me nervous was Liana stating that during my final test, my opponent could use climbing tactics to pounce from above.

Ares suggested we move on to attack techniques, but Liana disagreed. They went off to settle matters, leaving me on my own. For a time I couldn't even move and just hoped that the argument would be lengthy.

Finally, moving barely faster than a stretch-worm, I worked my way back to my favorite stream, drank, lay down, and discovered that beyond a point, weariness keeps me awake. Leaves of many colors had fallen overnight, and I let my groggy eyes enjoy the patterns they made and tried to forget all about Gates.

Four brown-striped animals downwind from me ran to the water in short, rapid dashes. Two were almost half my size, surely adults. One was shorter than these but wider, and the final one tiny. Something nagged at me but wouldn't come into focus.

Disappointingly but not surprisingly, my teachers easily tracked me. I remembered Tyler Marsh, our team exoecologist, saying, “The nose knows unless the nose flows.” Liana and Ares had arrived silently, yet the striped family dashed away, leaving dry leaves twisting in the air behind them. I shook my head but the false memories remained. Tyler's bony face remained vivid in my mind. Ty and Bodil had revealed the big discovery, and we—

Bodil? Big discovery? Baffling.

Liana had won the argument, and the rest of the day's training was practicing jumps until I couldn't. Night had fallen by the time my teachers let me go home. On the way, I looked up at the stars, now knowing these were suns very far away, giving me a sense of an unimaginably vast ocean of space. I felt tiny and fragile. The big moon had risen, a sliver of light at its edge illuminating my path, but the small moons still hid.

Entering home and smelling food, I wondered how it had arrived since both my teachers had been with me the entire day except for my streamside break. Yet the meat had a fresh aroma. I sniffed but couldn't smell anything but dinner, and I was ravenous.

Gobbling the entire huge meal proved easy.

* * *

Night 9:

A barrage of dreams rattled my sleep.

One wheel on my toy truck squeaked as I pushed it along the rug. I loved that blue truck but hated the squeak. Maybe, a thought came, I could fix this. I'd seen my father oil squeaky machines, so I carried the truck to our kitchen and used a stepstool to reach the olive oil. Before long, an oily pool covered half the kitchen floor, and I was in trouble. But that wheel didn't squeak. . . .

My mother occupied the passenger seat as I practiced parallel parking, advising without yelling, a skill well beyond my father's orbit. I finally managed to squeeze into the space, and mother suggested a moment of rest to recuperate from the ordeal. She turned on the radio, and a NRK reporter announced that astronomers stationed on the International Astronomy Satellite had identified seventy more planets with atmospheres and temperature ranges similar to Earth's, bringing the total to three hundred. . . .

My family watched Craig McGill's press conference, broadcast from America, on the living room telesense. McGill, captain of the first First Lander Fleet ship to return to Earth, after a journey that began long before my birth, spoke in English with a translation crawling below his image. He mentioned the theory that space-borne biologicals had been the original sources of life on Earth, and Albert Vexler's prediction that life-forms based on familiar DNA would exist on other planets. He claimed that Vexler's prophecy had been confirmed in one case. . . .

My wife, Skye-Lynn, forwarded me a report from the nineteenth returned ship, written twenty-some standard years ago but delivered to Earth yesterday. I brushed away one hundred fifty pages to read the summary. The explored planet, labeled IAD 2092-32034, had promise. DNA life abounded but no truly intelligent life, minimizing ethical issues for exploitation. Low oxygen, however. Animals had evolved to supplement their oxygen-carrying erythrocytes with certain plant spores in an elegant symbiosis. With filtering and extra O₂, humans could breathe the air. The FL report recommended a second mission to create conditions for making a permanent colony feasible. This mission would require scientists and soldiers.

Soldiers?

* * *

Day 10:

Don't want to think about day ten. More training.

* * *

Night 10:

One long dream. Skye and I were reading in bed. She enjoying a novel made of actual paper, me working through the report on IAD 2092-32034. Our twenty-pound Norwegian Forest Cat, Torbald, had deposited himself to crush my shins and kept purring to dissuade eviction.

I learned why soldiers were needed. The planet's animal life had largely proved harmless, in one case friendly. But two species, the amphibious *Phobodile* and the arboreal *Grendel*, were lethal. Three First Landers, despite being well-armed and well-trained, had died from animal attacks before a secure basecamp had been finished. Afterward, the Landers only emerged from their camp in groups of at least four. Before long, they noticed something odd.

I turned toward Skye. "This is interesting."

She hated interruptions when immersed in fiction but humored me. "What is?"

I pointed at my handheld. "Have you read this?"

"Not yet."

"Well, there's an animal on that world that's quite cat-like. Monkey-like tail. One Lander, a fellow Norwegian, named them Skogkatts. What do you think of that, Torbald?" Torbald had nothing to say on the matter.

My wife shrugged. "So far, Arvie, First Landers have found six worlds with terrestrial-analog animals. Something special about these?"

"Ja. Both parents lactate, although the product is closer to fatty blood than milk. They're team hunters and really clever. They'll carry fallen branches in their mouths to some suitable spot and stack them to create a barrier. Then working together—"

"Drive their prey into the trap. You're right. Interesting."

I smiled. "Haven't reached the juicy part. Skogkatts turned out to be . . . cat-curious about the Landers and didn't try to avoid them, let alone attack them. In turn, the Landers thought the Skogkatts were cute and some even took to feeding them."

"They tried turning alien animals into *pets*?"

"Worked pretty well, actually. Now, the weirdness. Sometimes, a hungry Grendel would swing into the basecamp area, and usually it took real effort to chase them away—the Landers wanted to study, not shoot local wildlife. If a visiting monster happened to spot a visiting Skogkatt, the Grendel would do some alien version of lip-licking and setting out the silverware, *except* some would instantly swing off into the forest, as though the *fanden* himself were chasing them."

"Huh. Perhaps the scared ones had been hunted by the alien kitties at some point."

"Doubtful. I could show you pictures, but not if you hope to sleep tonight. An adult Grendel is Kodiak-bear-sized, with two short legs but four long arms lined with teeth acting like extra sets of jaws. Gigantic bat-style ears. Skogkatts aren't much bigger than our furry leg-crusher here. They can climb trees, but why would any Grendel fear them?"

"You say Grendels eat these cat-monkeys?"

"Mostly what keeps Skogkatt numbers in check. The kitties have only one other enemy: Phobodiles. You *really* don't want to see those at bedtime. They live in deep lakes, but if

they're hungry enough, they'll hunt on land. These horrors could bite a rhino in half with a single chomp. Still, Grendels are apex predators, which makes any of them fearing Skogkatts really bizarre."

Skye shook her honey-blond head. "A mystery all right. And speaking of mysteries . . ." She rattled her book, and I let her be.

* * *

Day 11:

Better. My body had grown faster and stronger, and today my newly learned attacks weren't all clumsy. Ares had me running in fast loops around tree trunks, using my claws to tighten turns. Then he had me jumping over boxes of different heights.

Last night's dream baffled me. The only Phobodile I'd encountered had rushed away. And I'd never even seen a Grendel.

Were these dreams actual memories? As Ares put me through new and progressively harder exercises, such questions seemed less important than breathing and keeping alert for surprise attacks.

"You're doing well," Liana said when the sun had reached its daily summit. "At this point, little one, recovery time is as important as training time. Roam wherever you like, slowly, to let your body cool, and then take a nap." She laughed. "Unless you can't bear to rest."

With my chest heaving so much, I waved a paw to deny any unwillingness.

"Later," Ares added, "we'll begin working on counters and blocks. Ho! I know your thoughts. You've just envisioned a human arm sweeping sideways to ward off a human fist. Ja?"

I nodded, surprised.

He snorted. "Would that movement be wise against an opponent with claws? Blocks, for us, are done with objects. Certain attacks also rely on objects. Rest now to prepare yourself for the next lessons."

Lying streamside, listening to the gentle splashes of water flowing over half-submerged rocks, a past experience rose into my mind. . . .

Sipping coffee in our kitchen by a sea-viewing window, feeling trapped, I asked my wife if she really wanted to go.

"Only if you'll join me," she said.

"Skye. It would mean a forty-three year investment, in terms of time passing on Earth. Over forty just for travel!"

"Two years travel for us."

"Still, not trivial. Your skills would be vital, but would mine ever be needed?"

She took a sip, her eyes steady on mine over the cup's rim. "Cybercytologist is on the list. Arvie, think of how hard it might be to change the trees *enough*."

"That's where you come in."

She shook her head. "Traditional microbiology might not finish the job. We might need to operate on a . . . finer scale."

"Or I could be sitting on my ass watching everyone else work."

"That's your real concern?"

"One of them." I had to be honest. "I love our life here. Why leave our home that we've just fixed up? Or our friends. Or our cat. Ja, I know Lily would take him in a heartbeat, but think. We get back, and Torbald will be long buried and perhaps your sister as well. *If* we return. No point in sending out rescue missions four decades tardy. And what would we be coming home to?"

She put a hand on mine. "I don't want to leave either. The idea terrifies me. But isn't this the proverbial once-in-a-lifetime opportunity? What if some horrible disaster destroys Earth? Imagine us playing a part in saving humanity. Isn't that worth some big sacrifices?"

A six-winged bug flew by, and I snapped at it half-heartedly. I felt another memory trying to emerge from the back paws of the last one. Some horrible disaster had happened, only not on Earth. I forced the rest away. Still, I felt the pressure. . . .

I was glad when my teachers came to fetch me.

They took me to a place where storm-broken branches littered the ground. Learning to use fingers to pick these up took total concentration. What added extra frustration was clearly remembering *swinging* such objects. Easily. I kept trying. My arms and shoulders refused to cooperate.

Ares became almost as vexed as me. “No, Arlie! I keep telling you, the idea is to use the branch as a *shield*, not a weapon.”

One incident interrupted the misery. Liana whispered that Ares and I should stay quiet. We obeyed, and soon, six arboreals swung into the trees not far from our practice area. For a frightening moment, I thought this was my first Grendel sighting, but these were smaller beasts. And while their quadruple arms hinged open for brachiating Grendel-style, I saw no arm-teeth. The wind shifted, and the family caught our scents, leaving behind a faint chorus of mutual warnings as they vanished.

“Good,” Liana said. “I didn’t know their kind still lived in this area.”

“Why good?” I asked.

“It proves that the Reformers managed to—never mind. Back to work, little one! The sun is getting tired.”

Then Ares kept me too busy to ask questions.

* * *

Night 11:

In my sleep, memory snippets briefly rose to the surface like the mental equivalent of certain air-breathing fish I’d seen in the lake.

I remembered the shuttle ferrying us to the starship *Skidbla dnir*, to be our home for a subjective year each way. Constructed in space, the vessel was immense for practical and psychological reasons. Put forty-six people in a tin can for a year, you’d better make it a *big* can if you expect the people to come out sane.

I remembered lovemaking with my wife in the eerie glow of stars seen through a shadow-drive field as displayed in our cabin’s virtual window. . . .

I recalled standing in the ship’s microbiology laboratory with fifteen other specialists. We were working in teams of five, each team with its own 3D image of a hugely magnified real-time manipulation conducted by programmed microbots on alien plant cells. These cells, gathered by First Landers on our destination world along with soil and atmospheric samples, had been brought to Earth for analyses and genome sequencing. Earth was inconceivably distant now, and our joint task required developing a variety of super-fast-growing seedlings, which we’d plant on arrival to see which ones showed the most promise for oxygen enrichment.

My expertise wasn’t called for, but Skye had put me on her team to see the specific genetic changes involved in case cybercyte intervention was eventually needed.

Give me another decade, I thought sadly, and I’d have cybercytes doing every operation displayed on the screen but a hundred times faster. . . .

The next memory seemed harmless at first, like the tip of a Phobodile’s snout poking from a lake.

We’d arrived. The *Skidbla dnir* hadn’t been designed to land on planets. Instead, the ship’s giant-sized longboat would make as many spiraling trips as needed to ferry people and equipment to the chosen basecamp area.

The first trip carried life-domes, six scientists, an MD, three armed soldiers, and three huge conbots to inflate domes and set up atmosphere-enriching gear. The next trip brought food-tanks, medical equipment, two semi-inflatable all-terrain vehicles, and more people. . . .

The full memory surfaced. My shock forced most of it back under, leaving ugly bubbles as reminders of what I’d lost.

The sudden jolt, squeezing me against the safety harness. The twisting. Screams. The unbelievable violence of the crash, tearing my seat off its bolts, sending me flying across the cabin. If it hadn’t flipped in midair, I would’ve been crushed when it hit the wall. Removing the

harness, with bones jutting from one arm. Holding my bleeding wife in my usable arm while she died . . .

I couldn't endure even these fragments and passed out more than returned to sleep. For a time I drifted, bruised.

Then another dream came as if to comfort me.

Doctor Drew Adams, surgeon and general practitioner, had declared me fit to leave the hospital dome if I remembered to baby my flex-banded arm. Feeling nothing but sick and empty, I thanked her and stepped outside into blue-tinged sunlight. A contingent—a bevy? a herd?—of Skogkatts had already made themselves at home, some lazing on the too-green grasses, others draped over crates.

Victor Hornso, a plant geneticist I'd become fond of, and Tyler Marsh, our only surviving exoecologist stood nearby, flanked by two soldiers keeping wary eyes on the nearby trees. When the scientists saw me, they rushed over to offer condolences, which I tried to accept with good grace.

Then I gestured toward the felines. "I'd read that these creatures were friendly, but isn't this . . . odd?"

Tyler nodded so vigorously I'd thought he'd sprain his neck. "When the FL team arrived, Skogkatts were curious about them but cautious. *This* behavior I can't explain. Over forty years have passed here since every human left, yet I'd swear these critters recognize us. With fondness! The FL report claimed that kitties have short lifespans, so none of these could be old enough to remember us. Besides, this camp is nearly forty kilometers from the old basecamp."

"Strange."

Victor snorted. "There's more. While you've been lazing, we got our food-tanks running, and have even harvested a batch of green vegetables. Carrots, starchy veggies, and synthmeat should be ready tomorrow. We were lucky the food-printers came down in the first shipment."

"Right," I said, not feeling at all lucky.

"Wait for it, Arv. Three tanks, right? Different shapes. Before we'd even activated the cloning stage, we had kitties hanging around just one tank. Care to guess which one?"

A spark of life in the form of curiosity returned to me. "I see where you're headed, but wouldn't synthmeat poison native animals?"

"Possibly. But the same tank can synthesize local proteins. That's how the First Landers fed their pets."

"So we've got three mysteries now: the two you've mentioned and the original."

Victor looked puzzled, but Tyler understood. "Why some Grendels avoid Skogkatts while others try to have them for dinner."

"Exactly."

"I'll be looking into all that and maybe a fourth mystery. We've spotted only one Grendel since we've been here, which retreated as soon as it noticed the cats. But they were a constant worry for the FL team."

"Maybe they never lived in this area."

"Maybe. Care to help me do some research? The doc released you, so I assume your arm is better."

"Getting there, Ty. Bones soldered, skin sewn up, and shot so full of quick-heal meds that I can hear the slosh. But like Tyr himself, I've got one good arm. What can I do to help?"

Right before I woke up, a bittersweet memory stirred. Everyone had voted and out of pity had elected me to give this world a name. No other survivor had lost a mate. Most couples on board the *Skidbladnir* had been killed in the crash, having insisted on making the final longboat trip together.

I chose *Skipbrudden*. Castaway.

* * *

Day 12:

Morning. Not so hungry after that kind of night, but my teachers insisted I eat. They added nothing new to my training that day but increased the intensity and gave me two long rest breaks.

Liana made only one personal comment. “You seem . . . remote, little one. Do you feel we’re pushing you too hard?”

“Bad dreams,” is all I said.

That night I had no dreams I could remember. Perhaps they, too, had become withdrawn.

* * *

Day 13:

After I ate and emptied my wastes in the forest, my teachers led me toward the lake, but veered off in a direction that put the sun on our tails. I got the impression they were both anxious, but couldn’t get a claw into why I felt that way.

“Where are we going?” I asked after following an unusually clear trail for a very long time.

Ares answered. “To the road. Almost there.”

Road?

We stopped at the forest edge, and a wide flat surface lay before us. Very disorienting. But not as much as seeing an enormous machine approaching us on this surface, rolling along on huge soft-looking wheels, a Tregul stranger in front, visible behind a clear—a *window*. It stopped.

“Notice those tanks along the roof,” Liana said. “They allow us to breathe comfortably inside such vehicles. Plenty of oxygen right here, but not everywhere along the route. Five other students will be onboard today, and the tanks are pressurized but only hold so much good air.”

“That’s why,” Ares took over, “only one teacher will accompany each student. Liana and I have decided that I’ll go with you.”

“But what’s all this for?” My voice sounded shrill. “What’s happening today?”

Liana pressed her side against mine. “The Third Gate, little Arlie. Trust yourself and do the best you can.”

Ares nudged me. “Come, the doors will open as we approach. Make haste.”

Fearful but obedient out of habit, I exceeded my teacher’s pace as we forded the pavement. A door folded open, and I bounded up the steps, Ares on my back paws. The door refolded, and the vehicle began moving. The male Tregul standing behind a large ring—*steering-wheel!*—glanced at me but showed no further interest. I stared at him, only the third of my kind I’d seen, and the first with orange fur. . . .

“Might as well get comfortable,” Ares said, nudging me along with a light touch of his nose. “Choose any seat.”

The “seats” were a long series of paired boxes with recessed sitting areas on top. I hopped onto one beside a window and found that it had been padded with something soft. Ares settled into the box next to mine. I stared at the passing scenery, my thoughts whirling.

“We—I mean Tregul . . . we didn’t built this machine or the road, did we?”

“Yes and no, Arlie. Reformers built the bus, but its motors are powered by methane generated by our septic systems using our techniques. We salvaged the air tanks from the longboat wreckage. Our compressors fill them. As for this surface, you can thank tiny Reformer devices, microbots. Yet we’ve extended the original road greatly using Reformer magnetic dust, which tells the devices where to build.”

Microbots. Yes. I remembered. Conbots were full-scale construction robots. The miniature versions were microbots, used to create artifacts out of their own self-replicating bodies.

With a shock it came to me, a third kind of robot, entirely biological and small enough to travel inside veins and arteries: cybercytes. My life’s work.

I shivered. A dreadful secret lay just beyond claw-reach, or perhaps I didn’t want to reach it. . . .

Softer memories arose of far wider roads, seeming to stretch forever, with great cities like

complex, giant crystals visible in the distance. I remembered riding on a mag-lev train, feeling excited. Ten of Norway's best science students, ages thirteen to fifteen, had been chosen to attend the International Science Symposium, this year held in Stockholm. I was the only thirteen-year-old, having skipped two grades, but my fellow paragons seemed to accept me as one of their own. A collection of eccentrics, we were. The girl next to me wasn't so much sitting as practicing to be a contortionist, her rainbow-dyed hair shifting colors as . . .

Ares said, "First stop coming up." Perhaps this road wasn't tremendously long. Wouldn't the Reformers have located all ten Ardens in the same general territory? That seemed much smarter than trying to create them in areas the First Landers hadn't explored.

Wait. Why *ten* Ardens? Surely one or two would've given them enough actual breathing room. Did they plan to have children and start a human colony? What had gone wrong? Something warned me not to ask, that I wouldn't like the answer.

"Here we are," he announced.

"This is a different Arden?"

Ares didn't laugh much, but now he did. "No, little one. Same forest, different part. Every student joining us today has been training in isolated areas of Arden Three, beyond sight and sound of either city."

"We have *cities*?"

"Unlike those on Earth. We cannot clear many trees where we hope to breathe, so we build our homes among or in them. Observe! Here's your first competitor and its teacher. Do not introduce yourself."

"Why not?"

"It's considered bad form to know the names of those that may be . . . put down as the result of one's success."

I'd never seen a Tregul child, and the interest was obviously mutual. The student's coloration fascinated me. Until today, I'd assumed all my kind were gray or brown or a combination. This one had golden fur nearly as shiny and metallic as some lake fish I'd watched in happier days. Its female teacher had similar golden fur. I glanced at my teacher. Brown fur. The exact shade of brown as parts of mine. And Liana's was gray and brown. Just like mine.

The two strangers revealed their feelings through ear and head positions, and tension around their eyes. Both were anxious but the teacher also seemed sad. She gazed over at Ares, and where I might've expected some hint of competitive challenge, all I saw was sympathy.

Before the sun had the chance to stalk much further into the sky, four other students had climbed on board. Two appeared uncertain and fearful, but the final pair carried a hostile scent that shocked me. Their teachers moved stiffly and wouldn't meet anyone's eyes. Both students were much larger than me, one with a shiny green pelt, the other furred in gray and white. Passing down the aisle, gray-and-white banged against the box where the golden-furred student lay. I looked to see if Ares had noticed, and he murmured, "Aggression will not open the Third Gate." I didn't miss noticing that, again, the teachers' fur closely matched their students.

Soon, the driver announced that we'd reached the competition area, and everyone else disembarked. The bus accelerated away, and a Tregul with entirely gray fur led the group through dense forest to a meadow partly obscured by fences of varying heights and large hollow tubes. A wide, grassy trail lay open at both ends of the meadow.

The gray-furred adult rose to stand before us and said, "The first test will be a simple race. You will all line up there, side by side." She pointed at the wide path to my left. "When I say 'go,' run as quickly as you can until you reenter this space from the other side."

She waited until we were in position and a moment longer. "Go!"

At first we seemed reasonably matched, and I noticed that the trail had been prepared with rough areas and small obstacles to compensate for any advantage to being on the sides. I'd hoped to start on the far right, realizing that reaching the finish line would require more right curves than left ones. The gray-white student shoved me aside to take my favored position, but as we ran it became obvious that more obstacles had been placed on the right.

After we were beyond sight of any teacher, I felt a hard push from my left, and I stumbled, falling behind the green-pelted pusher. Anger put more energy into my legs and I nearly caught up, but thought better of it. Smarter, I figured, to run slightly behind to avoid getting shoved again and then make a last-instant sprint. My golden companion joined me behind the pack, another victim of the green one. Then I remembered Ares saying that aggression wouldn't win the day here. Perhaps this race wasn't intended to test speed and coordination. . . .

The golden student and I crossed the finish line last. Catching Ares's eye, I sensed his approval, which boosted my confidence no end. From then on, through the many tests that followed, I tried hard but remained careful to avoid interfering with any other competitor. The two aggressive students performed the best, but whenever I glanced at their teachers, they seemed more frantic despite trying to hide it.

The challenges continued into the late afternoon, and I was exhausted when the vehicle returned to pick us up. No one spoke during the entire trip. Ares and I were last to be dropped off, and Liana waited for us at the forest edge.

"Well?" she demanded.

"Passed the Third Gate, tail flying." The joy and pride in his voice amazed me. I hadn't realized how much he cared.

Liana practically glowed with happiness. I was glowing myself. It seemed I'd be waking up in the morning.

* * *

Day 14:

I yearned for a day of rest before resuming training.

"Now," Ares said, "you'll learn how to kill Treguls."

It took a moment to realize I was sputtering in my native Norwegian, and longer to remember that Norwegian wasn't exactly my native language.

I studied Ares but learned nothing from the set of his whiskers or the tilt of his head.

"Why?" I finally asked.

Liana answered. "The Fourth Gate, I'm sorry to say, is a fight to the death between two candidates who've passed the Third."

I felt too horrified to even sputter. Was I supposed to fight and kill my golden friend from yesterday? Or the green-furred aggressive one?

Gently, Liana stroked a soft paw across my back. "We've been unlucky to draw the particular opponent you'll be facing tomorrow."

Tomorrow?

"This student," she continued, "is . . . unusual. Larger and stronger than anyone from yesterday's group. You'll have to be smarter and faster."

So I wouldn't be facing golden or green fur. Probably foolish, but I felt so much relief it freed my voice.

"Who else in my group passed?" Please, let it be golden fur.

Ares, who'd been standing, dropped to all fours. "Only two failed. I imagine you know which two never developed Lund's empathy, but rather the more . . . selfish aspects of human nature. Let's get to work. First step, claw shaping techniques."

An ugly day it was. Liana taught me the craft of using rocks to get the very tips of my claws needle-sharp, although I'd never seen a needle. If too much claw were thinned, it could break off in battle. Ares set me to slashing low-hanging branches with fore and rear paws while jumping from different directions. Then he demonstrated various death-strokes and had me try those on him with sheathed claws. I learned that fingers could have emergency uses in a fight aside from lifting objects as shields. A quick, hard tug on a tail could briefly disable an opponent, or turn them to allow a claw attack.

My heart wasn't in it, but my teachers took my bad attitude with good grace.

At noon, they let me relax. I wandered to my favorite streamside spot and drifted off. As if to make up for this nasty turn in my life, a pleasant dream soothed me.

My mother and I sat in bed, she reading a favorite book to me about a little black girl who had magic powers, but only when it rained. I identified with that girl with all my young heart. Like her, I was small for my age and had been uprooted from a cozy little town where most of my relatives lived and transplanted into a metropolis, in my case Oslo. I, too, was considered odd by my new classmates, too smart for my own good, and an intellectual showoff. Her race and gender meant nothing to me. The only real difference between us, I thought, is that I'm not magical, not even in the rain. Rain! An association triggered another memory so energy-charged that my eyes snapped open and my fur partly stood on end.

I'd been sitting outside on a chair I'd crafted from local lumbar, suspecting an upcoming drizzle and watching Skogkatt kittens at play. Then I saw two of my favorite people sprinting up the gentle slope to my dome, the security guard responsible for them huffing away, trying to keep up with the older folks. I watched with interest, having never seen Bodil Christophersen run, and hadn't thought Tyler Marsh still capable of it.

They practically screeched to a stop in front of me, and I looked from face to face, and then to face as the guard, Daniel Connor, caught up.

I smiled. "Exciting news?"

Tyler's expression turned slightly rueful. "Bo solved it."

Bodil brushed her hair back. "But Ty proved it."

"Tremendous," I said. "I couldn't be more pleased. Unless, of course, someone would tell me what got solved."

Tyler chuckled. "The mysteries, Arv. What else?"

I caught some of their enthusiasm. "Really? You can finally explain the scared Grendels?"

Bodil nodded. "And why the Skogs were so friendly and—and knowledgeable when our team showed up. We're reasonably sure, anyway."

"Let's go inside and talk. Starting to sprinkle, and I listen better with dry ears."

We four perched on chairs I'd crafted over the last decade, with me in the oldest, crudest, and least comfortable of them. Daniel had pulled off his rifle and carefully leaned it against the bubble-filled wall before seating himself.

"Tea, anyone?" I offered. No takers. "In that case, I'm listening."

Bodil and Tyler looked at each other and through the kind of esoteric communication that Skye and I once took for granted, they decided to let Tyler begin the explaining.

"Assumptions," he said, "are our enemies. This world and Earth are like siblings, right? DNA and RNA here match terrestrial forms so closely that we could prepare altered seedlings and appropriate mutagens from samples before we'd even set foot on this planet. Think of it!" His eyes blazed despite the dim light. "Right now, our conbots are seeding enough extra territory to support a large human colony in case—"

"Assumptions," Bodil murmured.

"Right. We've forgotten this *is* an alien world, and some things are very different. Everyone but Bo, I should say. That initial Skog friendliness seemed so, ah, inexplicable because we assumed the native life couldn't possibly remember visitors so long absent, visitors who'd never been within kilometers from here.

"Bo thought differently, beginning with the idea that the Skogs did remember us, and the mystery was how they could. A few local years back, she came to me with a—care to take over, dear? Your theory, your glory."

Bodil laughed her deep laugh. "Fine. Just a simple thought. What if genetic differences between Earth and Castaway organisms allow animals here to pass along memories to their offspring?"

I felt stunned. "That," I said sincerely, "is a remarkable concept. But the mechanism?"

"We're thinking mostly brain structure. But *both* parents in every pseudo-mammalian species here lactate."

"Hah! You suspect some information is . . . expressed through the milk? Have you tested these ideas?"

"Ty did the memory tests. We haven't confirmed my milk theory. "

Tyler leaned forward. "I built a tricky maze, and then captured a dozen *klomus* to train, only keeping the males and females. I wanted small rodent-types for their quick reproductive cycle. Yes, Arv, I know you're not fond of the *klomus*."

"Don't mind the mouse aspect," I corrected. "My issue is how the damn claws tear into our stuff. If it weren't for our Skogs, we'd be overrun."

"For once, the rodents have served us. When they'd mastered the maze, no easy task, I placed them in a large cage far from camp. After they'd done the expected, I took the newborns and raised them for a month away from the parents. Guess what happened when I put them in the maze."

How disappointing. Could Tyler really be this silly? "They followed the leftover scent of their parents to beat the maze."

Both scientists burst out laughing. "I *predicted* you'd say that," Tyler announced when they'd quieted down. "This was an entirely new maze following the old design, and every clawmouse reached the food without a single error."

I leaned back as much as my bungled chair would allow and mulled it over. What a discovery . . .

"So we're thinking," I said slowly, "that Skogs hunt baby Grendels when the parent are absent, and if a baby Grendel saw another baby caught and eaten, it could become afraid of Skogs, and pass that fear on to subsequent generations."

"Explains a lot, no?" Tyler said, grinning. "If the memories don't get too, ah, diluted, eventually every Grendel will be wary of Skogs."

My teachers pulled me back to the present, and training resumed. Still, even while abusing branches and tree bark, I sensed some chilling realization just about to leap on me and dreaded sleep almost as much as the coming combat.

* * *

Night 14:

Perhaps my teachers understood my mood. They commanded me to eat and didn't leave until I'd conquered food mountain. From the latest memories to unfold, I guessed that the meat in my distended stomach had come from a Reformer vat, not an animal. I hoped so. The thought of two deaths resulting from the Gate Three competition, and what I had to do to open Gate Four, made the idea of killing any creature a bitterness in my heart. My brooding ended when the soporific sprang at me with invisible claws.

The first dream was brief but powerful.

Tyler had called a general meeting. He acted stressed. I gazed around at the crowd, depressed by how few we'd become. We'd been here ten Earth years although thirty-odd actual years, total, had elapsed on Earth. And aside from the soldiers and me, those of us who'd arrived safely had already been middle-aged or older.

The crash had destroyed our gerontological biomedical, and we could only cobble together inferior substitutes, so we'd lost good people due to failing health, along with those who'd died from accidents and animal attacks. I'd set up a modest cybercytology lab and had saved a few lives with cybercytes programmed to reverse atherosclerosis and certain forms of cancer. But humanity would soon be extinct on this world, barring new arrivals.

"The road to disaster is paved with good intentions," Tyler said quietly. "Victor here just returned from checking on bioforming progress in the adjacent forest. When our conbots answered his call, he learned that their programming had, ah, glitched. Instead of seeding half of one other woodland, per instructions, they'd fully seeded nine." He waited until the unhappy noises had died down. "We've disabled the conbots, but every forest within twenty kilometers is now pumping extra oxygen. Almost as bad, our mechanical allies have spread enough surfacing microbots to pave several kilometers of highway. More ecological consequences."

"The Skogs will have nowhere to go!" Daniel Connor said, generating a second burst of groans and proving that soldiers can be quick on the uptake.

“He’s right,” Bodil affirmed. “So this explains that recent surge in O₂ readings. Victor?”

Victor Hornso stood to address the group. “The vegetation is changing faster than we’d expected or wanted. And the spore count is already down 10 percent. At this rate, all higher animals in bioformed areas will die within a few years. Not enough time for them to adapt. Suggestions?”

Drew Adams stated what everyone was thinking. “Looking around, I count eight geneticists and one cybercytologist.” Everyone looked at me. Only cybercytes could quickly modify multiple species at once.

“I’ll get right to work,” I said, thinking out loud. “I’ll have to tailor the cytes for individual species, so I’ll need tissue samples from everything from klomus to Grendels. If we can—”

“The primary issue,” Drew interrupted, “isn’t oxygen.”

“Of course,” I said, annoyed by the obvious comment. “It’s the spore reduction. More O₂ will actually help if I can tweak erythrocytes a bit.”

“You haven’t heard about my latest research, Arv. Spores don’t merely supplement the wildlife’s red blood cells. They play a vital part in digestion, tissue repair, and immune response.”

“Oh. That does complicate my problem.”

“Our problem. We all have work ahead.” She gestured toward the Skogkatts lying so near us, clearly longing for an unscheduled treat. “I think our . . . *food-weather* friends have real potential. What a loss if they never become fully sentient thanks to us.”

The memory faded as I returned to the deeper waters of sleep.

* * *

Day 15:

Bad memories must exert a special pressure. I awoke far too early, and with a crushing sense of failure. Still exhausted but restless, I moved to the cave entrance and looked upward. For an eerie moment that left me shivering, the stars seemed wrong, lurking in alien constellations.

Some greater connection had been made, and I *knew*. Not everything by any means, but enough. It had been a comedy of errors except for being the opposite of funny, reminding me of failing to get a table level despite repeatedly shortening one leg at time.

After over nine years of intense effort, about the time Earth might be expecting our return home if anyone still cared, we’d only managed to modify half the local animal species. We hadn’t captured let alone sampled a single Grendel, and all First Lander samples had been lost in the crash. We were sick with frustration, and our community now stood at a precarious ten, mostly elderly members, some quite elderly. Karin Waters, our only specialist in animal behavior, had reached eighty-seven.

Only one bright note: by dissecting dead Skog brains, Bo believed she’d identified the unique structures permitting memory sharing.

I tried to comfort myself by thinking how proud my parents would’ve been if they’d known what I’d accomplished under these circumstances. We’d dusted the altered forests with cybercyte mutagens, and so far every transformation had gone as planned.

Yet no matter how many times Vic ran his calculations, his conclusion remained grim. We’d done horrific damage to the local ecosystem, and only a handful of the species we’d worked so hard to modify would survive. Most troubling was that the food supply would soon become too limited to support enough klomus to support a viable Skog breeding population. The First Landers had explored only a tiny fraction of this continent. For all we knew, the Skogkatt species would shortly be erased.

I couldn’t let that happen, but it seemed inevitable.

We held countless meetings trying to solve the unsolvable, and ideas flowed fast and thick, but none would flap let alone fly. Then Bo, bless her bright heart, offered a suggestion showing more desperation than brilliance.

“Can it be done, Arv?” she asked me after a long and pitying group silence.

Perhaps, I thought, but what good would it do? Then a twist on her idea hit me. “Maybe I

could make them better hunters,” I said, stalling to consider the twist. “But Vic tells us there won’t be many animals around to hunt.”

“What about making klomus reproduce faster?”

Vic snorted. “And what would *they* eat? Rebalancing an ecosystem is no simple matter.”

“There’s another way to go,” I said tentatively. “If our main goal is preserving the Skogkatts, we could improvise more food tanks and train Skogs to operate them.”

Ty gaped at me. “So Bo’s idea isn’t the silliest one we’ll hear today.”

“You are the Prince of Tact, Professor Marsh,” Bo responded.

Ty pretended he hadn’t heard, but his ears reddened. “Really, Arv? You think animals could manage the delicate adjustments, nutrient balancing, and repairs? Prehensile tails and claws aren’t fingers.”

I faked confidence. “So I’ll modify their pads into fingers.” Inspiration blazed. “Then they could throw spears or shoot arrows! Hmm. They’ll need to be standing to throw efficiently . . . or use a bow and arrow. What if I modify their hips and spines? But maybe they should still be able to run on all fours for speed, so the new joints will need greater flexibility than . . .”

I stopped. Everyone gaped at me.

“Arv,” Bo said. “Even with those . . . impossible changes, how could Skogs learn the necessary biochemistry?”

“Simple.” An obese lie. “I’ll make them smarter, increasing their brain size, which probably means increasing their overall size. Extend their lifespan as well.” An incredible idea struck me. “*Gud!* They’ve already got vocal folds and make all sorts of noises; with some minor articulator changes, they could eventually learn human languages!”

“You truly can perform these miracles?” Bo insisted.

A touch of honesty returned to me. “Maybe. Tweaking blood cells is simple by comparison, and all modifications have to be inheritable. If I can even develop cybercytes this sophisticated, such radical changes require a heavy dose, so dusting forests is out. Injection is in.”

“Why do I get the feeling,” Vic said, “we’ll be spending our twilight years trapping and training Skogs?”

I shook my head. “Only young kittens. Adult bones are too rigid, adults wouldn’t survive the alterations. I’ll need a *lot* of kittens.”

An almost unfamiliar voice piped up. Karin Waters, our animal behaviorist, seemed half asleep at meetings and hardly spoke. Now she regarded me dourly. “If you give them fingers, lad, how do you plan on teaching animals that have never had fingers to use them?”

Hadn’t thought that far ahead. “I guess we’ll need a brilliant training protocol. Feeling brilliant, Karin?”

“I’m feeling old, Arvid. But I can try. I’ve been useless for too long. You know, with proper reinforcement, you can teach a chicken to play chess. Trouble is, the chicken will always lose.”

Everyone chuckled, mostly a relief valve for tension, I suspected.

“One thing in our favor,” Bo added, “is that since memory is inheritable here, the next generations won’t need training. If we succeed, the Skogs could endure indefinitely after we’re gone. Who knows how far they’ll go?”

I began contemplating the final bad jokes in the comedy of errors when my teachers appeared, outlined by the sun’s first rays. My food bowl hadn’t been filled, and they’d arrived empty-pawed.

“In battle,” Liana explained, “a full stomach will slow you both mentally and physically. And if you suffer deep abdominal gouges, infections can more easily set in.”

Ares said, “We enriched your dinner last night with enough extra calories to last you until this evening. No matter what happens today, Arlie, you will not be returning here.”

For a surprising moment, a stab of loss drowned out my anxiety about the upcoming battle. In my real life, this had been my only home.

“Today, you must follow some combat rules,” Liana said. “No attack on eyes or ears is permitted. If you run away, past whatever limits the Gatekeeper sets, that will be counted as

losing, and you will be put down. Cutting limb tendons and evisceration is permissible but a kill will not be awarded without severing the spinal cord or neck arteries. Are these things clear?”

Depressingly so, although the ban against going after eyes and ears, in a battle to the death, seemed ridiculous. But I just nodded.

“Since Fourth Gate competitors may never have the chance to become adults, all are granted honorary adulthood. Tradition requires you to assign yourself a theoretical gender, just for today. This will not bind you to that gender when the time comes to take on sexual characteristics.”

The logic to this escaped me, but it gave me a chance to clarify something. “Liana, I think most of Arvid Lund’s memories have come to me now. Isn’t it true that all of us, every Tregul, remember living his life?”

“Yes, but to greatly varying degrees.”

“Since we all remember being male, who would chose to be female?”

“I see. You have the knowledge but haven’t fully explored the feelings. Gender, little one, lies higher on the surface of identity than you think. Ask yourself if Lund, deep down where consciousness lives, ever *felt* male. His essence, like yours and mine, was sexless.”

“Each Tregul gender,” Ares said, “has advantages. Females tend to be faster, have stronger hind legs, better fine motor skills, and usually live longer. Only females give birth, although unlike humans, both sexes feed newborns with nutritive body fluids. Males tend to have stronger forelegs, stronger hands, and are less prone to certain diseases.”

Liana leaned over to nudge her partner gently with her forehead. “We’re out of time, Ares. Arlie, go rid yourself of all wastes and run to meet us where we met the vehicle before. It’s crucial not to be late. Go now.”

She conveyed such urgency that I arrived at the “bus” stop even before my teachers. The process had been accelerated thanks to fear, which had loosened my bowels. My guts still felt watery.

The vehicle carried three extra air tanks so I wasn’t surprised when Ares informed me that today’s journey would be longer than the previous one. This time, the driver troubled himself to look directly at me, for a moment. His whiskers twitched, and he shook his head slightly as I passed him. I had no idea how to interpret this, but it didn’t ease my anxiety. Both of my teachers followed me in.

Liana, seated in the box next to mine, cautioned me against speaking with my opponent, and muttered again that she wished I’d drawn a different student. That also failed to boost my confidence.

“Do you choose to be an honorary male or female for this contest?” she asked.

I didn’t care, but randomly picked male.

The thought of killing a fellow child made me ill, and the thought that I might be killed turned every thought pitch-black. We passed the places where we’d picked up other Third Gate competitors, and then passed the spot where we’d all disembarked to compete. Shortly after that, we stopped.

I assumed the person entering the bus was a smallish but heavysset adult until two larger Tregul followed, clearly teachers. Now I understood just how unlucky I’d been. The student’s neck-ruff put mine to shame, more mane than ruff. Getting my teeth or claws through that would be a chore. Worse, my opponent was nearly double my size, nearly as big as Liana, and sprang halfway down the aisle in a single leap with no apparent effort. I felt completely intimidated.

As the bus rolled on, the four teachers held an inaudible conference. When it ended, Liana returned and told me that my opponent was an honorary female and should be referred to as such for today.

Despite my terror or maybe because of it, the vehicle’s rumbling and rattling made me increasingly sleepy, and I drifted off into semi-dreamy reminiscence. . . .

The project had begun badly. Trying to save their species, I’d killed twelve Skog kittens in

twelve different, and I fear horribly painful, ways. I had no modeling software for such massive genetic changes and had to code my own. If my current generation of cybercytes hadn't been capable of interpretive self-programming based on general instructions, and reproduce as needed, the task would've been impossible.

Four wretched years later, I had effective cytes, although by then I'm sure everyone thought of me as a combination sadist and mass murderer, including me. The breakthrough had involved limiting the brain-size increase while building in a gradual generational improvement. So no instant geniuses, but the latest batch of modified kittens seemed healthy and at least somewhat teachable. Feeling reluctant but also that time was running out, I injected the rest. My colleagues and I had amassed three hundred and twelve cuties, with heavy costs to us. Daniel, our last soldier, had been killed by a phobodile while defending Trevor, and we lost Drew to one of the few Grendels still surviving in the forest. As their food supply diminished, more Skogs drifted our way to join the growing community, which made our collecting increasingly easier.

Karin Waters, although frail and sickly, applied the protocols she'd worked out for teaching Skogs to stand, and to use their unnatural fingers. This seemed to revive her, but fearing that her vitality might soon run dry, she trained us all in her methods. Most Skogs responded well enough, and I decided they deserved a new name. "Tregul" seemed perfect.

Our Treguls reached maturity in two years, twice as long as their Skog parents. That's when we learned the next human-made disaster had already struck.

We released all surviving subjects to live among us and found that only a few knew how or when to operate the time-locked food dispensers we'd set up in hopes that Skogs would stop pestering us to feed them. Their parents had been born knowing.

Experiments confirmed the ruinous truth: boosting Skog intelligence had come at a staggering price. Treguls could only remember *some* of their ancestors' experiences. Cybercyte-based imaging techniques I'd developed to substitute for MRI scans revealed why. Treguls retained the memory-replication structures unique to animals here, but the brain expansion had separated these structures, limiting communication between them.

We'd planned to teach these young minds food tank science, and train them to train subsequent generations. What put the "un" in unmitigated disaster was that our Treguls knew so little. Why would a species with carbon-copy memories need more than a few primitive instincts? This meant we had to teach them survival basics for their own world before we could begin their higher education. With decades to spare, we might've pulled it off.

As things stood, all success would only be temporary.

I felt utterly depressed. Saving these beautiful creatures and giving them a chance to reach their potential had become my life's work. All for nothing. For days, my heart bled sorrow, and I couldn't even talk about it with my comrades.

When an answer came to me, it meant making the hardest decision of my life. . . .

Liana nudged me softly. "We're here. Let your opponent exit first, and study its hind—I mean *her* hindquarters, as she goes by. Look for signs of weakness or unbalance."

I studied my brains out. "All I saw were big muscles," I admitted.

Ares, now standing near the bus doors gestured that we should leave but Liana stalled.

"Still, you have advantages. She's got size and weight working in her favor, but you should be more agile. Use that." She jumped down from her box, and I joined her in the aisle.

"One more thing," she said in a near whisper before heading toward the exit, "you've recalled your life as Lund much faster and better than other students. Perhaps something in that life could aid you."

This Gatekeeper awaited us on a mild rise in a small meadow, her fur a faded yellow, tipped with white. She supported herself with a wooden cane, and a scabbard for it hung from her back. She seemed ancient, surely at least twenty years old.

Her voice, though, remained firm as she went over every Fourth Gate rule my teachers had listed, only adding that a crimson ribbon had been wound around the combat area, and going beyond it would disqualify a competitor, with fatal consequences.

I listened, but more of my attention stayed on my opponent, while her emerald eyes studied me from paws to ears. I'd never seen a Tregul like her. Aside from that astonishing ruff, her legs were disproportionately long and thick, but her arms were barely larger than mine. Her torso was practically a cylinder, with minimal taper from chest to abdomen. Her tail had almost no fur. Despite all this strangeness, a sense of familiarity reached me, a hint of significance just beyond my claws, something I'd known in my human life. Unfortunately, it remained a gap in my present one.

The Gatekeeper finished her recitation by suggesting that this might be the last chance for us students to thank our teachers, and we'd be granted a short time to do so.

Liana, Ares, and I said our goodbyes, and both teachers told me they loved me and rubbed against my jaw fur with their own. By now, I felt sure these were my parents, but said nothing about it. At the end, Liana whispered one syllable in my ear.

The Gatekeeper called us back and sent us in opposite directions. We were to keep moving until we reached the ribbon and then would be free to stalk and kill each other.

Strange trees grew here; very tall, with multi-colored leaves in green and orange, and innumerable branches. Shafts of sunlight pierced the foliage as golden tubes scintillating with dust motes. I cherished the beauty while I still could.

Liana had whispered "Arv" so furtively that I knew she'd done something forbidden. She'd offered a similar hint in the bus. What was she scratching at?

I spotted the ribbon ahead and heard a soft crunch from behind me. Instinctively, I jumped to one side. I was a fool! While I'd been meandering, my opponent must've run to the ribbon on her side and then run to attack me here. Her leap missed, but when I whirled around to face her, she pounced again. Only a desperate roll saved me. Even so, sharp claws lightly scraped my side. Pain came an instant later, and I felt a warm drip of blood. Ears back, tail laid forward on my back so she couldn't grab it, I bounded away at top speed, running parallel to the ribbon. I could hear her, mere inches behind me. I seemed faster, but not by much.

I headed toward a tight cluster of saplings, and darted between them knowing she wouldn't fit. That got me some breathing room, so I kept going, using the same trick to get increasingly ahead. Soon, she was nowhere in sight, and as silently as possible, I scrambled up the tallest nearby tree until I reached the middle branches.

For a time I sat there, panting. Then I checked on my wound, making sure no blood dripped to the ground. The cut was barely a nick, far more painful than serious, and bleeding had stopped despite my furious running. I licked the remainder off my fur, amazed that I'd gotten off so lightly. I could've sworn she'd been close enough for those claws to really tear into me. . . .

For this quiet moment, I was safe. But she'd be following my scent and—wait! I hadn't been *that* far ahead. Why wasn't she here already? A fresh blast of fear set me shaking.

Think, Arv! I told myself. And in a twilight instant before remembering that I wasn't Arv, a slight modification he'd incorporated into the Tregul design came to me like a flash of hope.

I looked upward. Every branch appeared too healthy for my purposes, but then I noticed a section of wind or ice damaged ones high above. A sound from below snapped my eyes downward. She squatted on her haunches, emerald eyes sunlight-blazing, staring at her prey, me. Her claws sprang out as she leapt to the tree and began climbing.

Again, my lighter frame helped me. She was still climbing as I reached my chosen perch: a dying branch two body-lengths directly below a dead one. I lost sight of my opponent as I scrambled out on the limb as far as I dared. Carefully but quickly, I turned around to face the tree's trunk.

She reached my elevation and hesitated, back claws sunk into the tree trunk, front paw-fingers tightly gripping my branch. If she guessed my plan, she could shake me off the tree with no danger to her. If she leaped on me, we'd surely fall together.

For a long moment we remained statue-still, eyes locked, ears back. Then with liquid grace, she eased onto my branch and worked her way toward me. I made a show of looking for another branch to jump to. The nearby ones were clearly too fragile to trust.

Not yet, I told myself as she drew closer. But doing nothing made me crazy, too aware that if she suddenly sped up and got her claws into me, nothing could save me.

She kept approaching slowly. Maybe she felt suspicious, unsure that cornering myself had simply been idiotic or suicidal. Then she was close enough.

I reached up with my tail, wrapped it around the dead branch above, and tugged with all my strength. It broke off with an incredible snap and was so heavy that I couldn't wield it but only nudge it in midair so that it didn't hit me while I guided it down on her. Then I had to let it go.

"When strategy fails," Ares had said during one training session, "improvisation may succeed."

She plummeted, apparently not completely stunned because she managed to slow her fall somewhat by reaching out and clawing branches in passing. But we'd been a long way from the ground. She hit hard and lay utterly still. I could see her breathing. If she wasn't faking unconsciousness, this had to be my only chance to win the contest.

Hurriedly backing down the tree trunk, a taste of bile filled my mouth. I desperately wanted to live, but the thought of killing another person appalled me.

I approached her slowly and silently, ready to spring away. Muscles trembling with tension, I intentionally scraped a claw against a fallen twig. The sound drew no reaction. Neither did repeatedly nudging her face with my tail.

Lund had added an extra instruction set to the cybercytes he'd brewed to turn Skogkatts into Treguls. Digging up ancient bones, Lund's team had discovered something I'd remembered just in time: Skogkatts had once been six-limbed arboreals. While easing into land-based living, my kind had evolved to combine our two bottom limbs into a prehensile tail, still useful in trees, but a crucial balance-aid while running down prey. Lund had chosen to strengthen our tails to accommodate Tregul weight, should we ever feel an urge to hang from branches again. As a result, I was alive. And stalling.

No way to avoid the final test. I jumped on my opponents back. Still no reaction. She really was out. All I had to do was bite through her ruff and then her spinal cord, and I'd keep living. Small as I was, I had the teeth and jaws to do it.

Instead, I stood frozen, paws warmed by the body heat of my fallen enemy, aghast and baffled by my inability to save myself.

Slowly, the understanding . . .

It had taken me weeks to convince Bo, and she finally convinced the others. Our intervention on this world had been a disaster, and the only fix I could imagine was . . . expensive. We knew that Tregul retained all the physical and electrochemical mechanisms needed to receive memories from their ancestors. What they lacked was a means for those mechanisms to communicate with each other.

I'd already solved part of that problem by programming cybercytes to disassemble into molecular form to pass brain-blood barriers, map certain aspects of a living brain, and then reassemble themselves outside the brain, bearing retrievable information. If I had a team of cybercytologists here with access to a real lab, perhaps cytes could eventually be developed to act as a communications bridge.

But I had no team or major lab, and limited time. Also no clue if Tregul milk carried Bo's still-theoretical extra information.

What I *could* do was to program cytes to map *my* brain deeply enough to store some of my memories, and then exit my body and keep replicating, information included. The product could be injected or, if I included enteric protection, fed into Treguls. The cytes should then take up residence in Tregul brains, feeding their stored data directly into the waiting memory-retrieval systems. Foolproof?

Hardly. First, this wouldn't provide Treguls generational memory, just endlessly replicate mine. Second, the programming involved would be horrendously complicated and might easily fail. Third, variations among Treguls would likely produce varying results. Fourth, and literally the killer, to gain access to my memories rather than simply map my lobes, the cytes

would have to, essentially, dissolve my brain. A poor hope, for sure, but the only one.

After everyone had so very reluctantly agreed to the plan, it took me over a year to prepare the cytes, and then Victor and others volunteered to get the lethal injection.

But this was my life's work, my responsibility, and I would allow no one else to take my place.

As I lay dying, surrounded by friends, memories fading, an unexpected clarity arose in me. It was as if layers of paint were being stripped off of a brilliant light. . . .

Here, Arvin's inward-spiraling awakenings became too profound or perhaps too simple for me to follow. Something about identity. But one lesser realization blazed in his heart, and now in mine, with a humorously ironic warmth.

In one valid sense, Lund had, through dying, accidentally made himself immortal. So long as Treguls existed and passed along his memory-containing cybercytes to their offspring, aspects of his personality would be reborn over and over.

My teachers had admitted that, to a greater or lesser degree, every Tregul became Arvid Lund. Killing my opponent would be tantamount to killing myself.

Intellectually, I knew that would make no difference, since she was me just as I was her, and that shared part of us would continue no matter what. And I so desired to keep living in this body. But I just couldn't commit suicide through murder even though I was committing suicide by not murdering.

I stepped to the ground and tried to tell Liana and Ares how sorry I was to have failed them. But my throat had clamped tight, and speaking wasn't possible.

A frustrating surprise, but Arv's knowledge explained it, at least partly.

Grendels, equipped with huge ears, located their prey largely through sound. So a Skogkatt's best friend when a Grendel appeared was enforced muteness. Apparently, Treguls had inherited this instinct, but with us, it seemed any strong-enough emotion could shut us up.

Then my teachers tried to talk and could only squeak faintly. I bowed my head in mute acceptance as they tried to console me by rubbing their sides against mine. Finally, Liana gave me a significant nudge, and I obediently followed my teachers through the woods. I glanced back and got another surprise. My opponent and her teachers were already walking in the opposite direction. She not only seemed perfectly healthy, but she practically bounced along. She noticed me noticing her and bared her teeth, not threateningly, but in a feeble imitation of a human grin.

Confused and upset by what might've been intended as a smirk, I continued on until we came to another road, another carpet of microbots. A different vehicle waited there, smaller than the first.

We climbed on board, and the female driver nodded to me as I passed her. We who are about to die nodded back. The passenger boxes were no roomier than those on the previous bus, but Liana squeezed next to me in mine. A tight fit, but comforting. I stared out the window and tried to quiet my terror and misery.

I thought about my life, an ephemeral and mostly pleasant one, on top of a long life rich with both happiness and grief. We were connected, Arv and I, indirectly through the transformation of my ancestors and these forests, directly through his memories, and physically because the white dust I'd been eating with every meal were his cybercytes, inherently part of him.

Breathe slower and deeper, I told myself, again borrowing human knowledge. Remember that an important part of me will not vanish with the death of this body.

Perhaps this helped. When I tried speaking, my voice sounded strange, but words emerged. "Where are we going?" I asked. "Is there some . . . special place where the failures are put down?"

Ares made a choked noise while Liana's muscles, pressed against my side, tightened. She twisted her neck enough so that her eyes could meet mine. Hers were very bright. She managed to squeak some words herself.

“Little one! We are going home. You’ve passed the Fourth Gate, and proved yourself worthy to join society.”

I was too stunned to respond, too stunned to feel any relief. “What?” I finally managed. “But I didn’t kill that child!”

“If you had tried hard enough you would’ve failed the test. Cruel, but necessary. We’ve told you that our kind has terribly limited resources and living space. Our society is very delicately balanced. Until we can expand our territories, we can’t afford members eager to murder in order to save themselves.”

Ares found his own voice. “That was no child, Arlie, but a specially trained proctor, Remsigne, by name.”

“She’s an *adult*?”

“Yes but not a ‘she. Or a ‘he’ for that matter.” Ares produced one of his rare laughs. “Due to preconceptions based on Lund’s youthful memories, our younger children have never realized, on their own, that Treguls have *three* voluntary sexes: male, female, and guardian. You’ve progressed so incredibly quickly that we weren’t sure you’d stay ignorant for long enough. So we invented that honorary-gender nonsense to keep your mind locked into the misconception. Didn’t want you remembering about our third sex and discovering our deception. Remsigne, of course, is a guardian.”

“I don’t understand.”

“Our test would’ve been meaningless if you knew you were facing an adult. Listen. Many Tregul generations have lived since Lund died, and we’ve had time to . . . refine our citizenship trials. For Gate Four, we’ve found it best to put the student under maximum stress by pitting them against an obviously far superior peer who then can fake losing the battle, although in your case Remsigne had to do very little acting. What a strategy you came up with!”

“I still—”

“Guardians are smaller than reproductive adults, but stronger, tougher, and faster. Longer claws and they can *jump*.”

“So she—whatever the word—let me win. What if I’d bitten through its neck?”

Now Liana laughed. “Fake ruff with armor beneath. Fake unconsciousness, too. Guardians barely notice a fall from that height.”

Finally, relief flooded into me. But as fear faded, it left an underlying unhappiness exposed.

“I must ask,” I said, trying hard to sound calm, “are you my parents?”

They both looked at me in surprise.

“We were just about to tell you,” Ares said. “Again, you surpass our expectations, so swift to comprehend that you are far ahead of your siblings, leaving us free to spend so much time with you. We are so proud of you.”

I spat it out. “But how can you be willing to . . . risk your *own children*?”

“Willing?” Liana asked gently. “This is heartbreak but dire necessity. And most of us consider it best to give our loved ones what we can while we can. We’ve had previous litters, dear one, and nothing but terrible losses. You’re our first child to have passed every test. I can’t even believe it’s real yet. But welcome, welcome to your family! Now your real education begins. Be as joyful as you can. Life is hard, but we can all be thankful that you’ll have one.”