

Network

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Analog (1994-02)

Neither forcible reeducation of citizens who have chosen to leave civilization, nor the effects of the unchecked expansion of their low technology communities is consistent with Trimusian values. Therefore, the Trimus Planetary Council hereby approves and directs the transportation to Aurum III of such residents of the Trimus natural reserve regions who do not voluntarily opt to accept and behave according to the environmental and social restrictions of the Compact and Charter of the Planet Trimus. The Aurum III planetary bioforming project will be redirected toward this end.

—Signed 4704 TF: Bo Flor, Kleth/Karen Olsen, Earth/Gori'allolub, Do'utia

The severed head of a Kleth scientist, displayed with other evidence in a transparent case in the lobby of the presentation dome, set the mood for the gathering in the Trimusian capital, Triapolis. Lieutenant Drinnil'ib of the Trimus Planet Monitors looked at it with forensic curiosity and over half a macroyear's experience. The eyes were unusually far apart, almost half a doci, for a Kleth, and the two notches in the Kleth's crest signified a warm weather birth; a congenital feature, if Drin remembered correctly. *A wonder of the universe that that tiny skull had contained a brain as powerful in life as his own.* The plumage had been black, with the sun-bleached tips of a field worker, or avian athlete.

Drin settled himself down on a free pad. A human about one-sixth Drin's length, probably Councilor Karen Olsen, sat on the edge of a pad three aisles down. A fellow Do'utian male had settled in comfortably far behind and to his right; it was Councilor Gori'allolub, Monitor General, smelling grim. His tail hung over the standard charter unit length pad. Likely eight-squared and six doci's. No one, Drin thought, cast votes based on size, but, somehow, the big bulls of-ten rose to the top. Drin waved the top of his own, somewhat shorter, tail in respectful greeting to the other Do'utian. Other humans and Do'utians occupied other pads, but no Kleth were to be seen. Such meetings were not their style.

The ready tone echoed across the roomy dome soaring three charter units above him. On Trimus, humans got their pronounceable language, Kleth got their convenient octal numbers, and Do'utians got room to breathe. Drin blinked to look at the sonic afterimage and sensed the different textures of the surfaces; hard bright arching ribs above with deep black between. When he opened his eyes, for all appearances the dome was now transparent, and he was eavesdropping on an Aurum III biological team, eight-squared days ago, near a bioforming station on a north-ern island. The sensors had been set up to monitor animal behavior in the station area—and they may have done just that.

A human and two Kleth were in the area.

"So they're coming *anyway*," the human, biologist Theric Soames, re-marked.

Drin judged the inflection of Theric Soames's voice as hostile, and swiveled an eye toward Councilor Olsen, a firm advocate of resettling the primitives. She showed no reaction to this opposition but then Drin wouldn't have expected her to show surprise as freely as her daughter, his Monitor colleague Mary, and many subtle changes in humans were mysteries to him. But he knew there was substantial human opposition to re-settlement, both from fatalist liberals willing to let things evolve as they would, and hard-beaked conservationists like himself.

"I knew it but I didn't want to believe it," Soames continued. "The council is going to turn two centuries of work, a whole new planet, over to irresponsible children."

"We not design Aurum III from start for primitives," a Kleth re-marked, looking up from her seed-lings. Ko Kor was her name, Drin remembered; wide-eyed, smooth crested, and gold tinted.

"No. But we adjust. Some chance now," her mate answered. That would have been Sha Ton. Drin knew the head; the rest was a large, nearly human length male whose sun-frosted black coat gave him an almost spidery look.

"It's premature," Soames said. "We still had a lot to learn from our original ecological design."

"Like Kleth monkey-bats and Earth pine cones," Ko Kor boomed in accord. "If works, maybe help reforest Southern Islands on Trimus after primitivists gone. Monkey-bats good eating, too."

Drin sympathized. He still felt out-rage at what the polluting primitivists had done to some of those islands in the areas of Trimus that were supposed to have been left alone.

"Oh, yes," Sha Ton concurred with his mate. "Lunch time. Got some for Theric, too."

The Kleth leaped into the air and with strong wing-beats sped toward the station.

"Hey, wait a minute," Soames yelled. "Stay out of my food; I'll get it later." Desperately? Drin wondered.

The station, a geodesic dome, was tiny by the majestic Do'utian-compatible standards of the capital city, but it was meant only for Kleth and human. A circular patch appeared in a pentagonal panel halfway up. A loud, startling crash came next, faithfully reproduced.

Sha Ton back-winged in surprise and hovered over the collapsing building in the smoke.

Another hole appeared closer to its top, with even a louder noise. There were sparks from severed power leads and a fire started. Debris flew and spots of grass started steaming here and there.

And, for no reason anyone could see, Sha Ton's head fell off. His wings continued to beat once, twice. Then his body, no longer knowing what to do, simply fell through the hole into the fire.

Ko Kor screamed and launched herself after her mate.

The human grabbed for her and got a leg in his hand. She slashed a claw at it, knocking it off.

"My life is in there!" Ko Kor screamed and flew at the building, diving into the flames.

The human stared at his bleeding arm. A biologist, Drin thought, should have known better than to try to keep half a Kleth team alive. Soames vanished from view and the scene showed smoking wreckage for a minute, then faded to gray.

If there were any clue in this, Drin didn't recognize it. He gave a low rumble of frustration, pushed his massive frame off the pad, and turned to face the Councilors, already discussing the crisis. The human Councilor, Karen Olsen, looked at him and opened her mouth as if to say something, then appeared to change her mind, shaking her head. She nodded to Drin and left, giving Gori'allolub a respectful pat on a leg as she went by; friends on opposite sides of a very complicated issue.

The Do'utian Councilor dipped his beak to the departing human and approached Drin.

"Lieutenant," the Councilor intoned with full authority. "I know your views."

Drin dipped his beak in assent. There was no need for Gori'allolub to tell Drin what low tech population pressure was doing to the reserved area of Trimus, nor of the reluctance—misplaced in Drin's mind—to reeducate the polluting idiots.

"But I also know your intelligence and your dedication to our civilization. We felt it best that a Do'utian be in charge of the investigation. Also, for impartiality's sake, it does not hurt that the most likely suspect be pursued by one of similar bent on this issue. The focus must be on the deed, or accident, not the politics. Your answers will have more credibility among the opposition. There must be a solution that strengthens our unity, not divides us."

"Agreed."

"The human, Soames, has disappeared. The rest were evacuated. You will be the first Do'utian to

visit, in person, a world built in part for Do'utian settlement. That is a historic responsibility."

And a historic adventure, Drin thought. There was no elevator down to Aurum III—it spun too slowly—so he would command the first Do'utian landing-craft built in several macro-years. A tantalizing foreshadowing of vir-gin beaches and uncharted seas wafted through his mind.

"I am ready for the challenge."

"Good. The schedule for resettlement of the human and Do'utian primitivist populations depends on your success." The Councilor hesitated, then asked, "is your life complete?"

So the Councilor thought he faced more than normal danger. Drin raised his beak, and opened it slightly; a Do'utian ready for anything. "Nothing of consequence is undone."

"That is best. In such a case, sacrifices are sometimes needed. Those are troubled waters, Monitor. Go quiet them if you can."

Lieutenant Drinnil'ib touched his beak to the floor, accepting the duty.

The base mass unit of Trimus shall be the "dom," the mass of a cube of water one doci-charter unit (1dc), 10^{-2} charter units (cu), (8^2 cu base twelve or ten) on a side, at maximum density. Equivalent units are: Kleth, 102 eggs; Earth, 3.68 (base ten) kilo-grams; Do'utia, 1.07×10^{-5} (base twelve) cube. Subordinate units shall be derived from basic physical formulae. A cue (charter unit of energy), for instance, is one dom-cu²/beat²

—Compact and Charter of Planet Trimus, Technical Appendix

The English prefixes "macro" and "mini" shall have specific meanings in the octal numeric system of Trimus. Macro shall be used for an exponent of three, and mini for an exponent of minus three. For larger triads, the prefixes di(2), tri(3), and so on may be added and the last syllable dropped. Thus the prefix for 10^6 shall be "dima," and for 10^{-6} shall be "dimi." This is exactly analogous to the Kleth suffixes Ψ^ and Ψ_i , as used in "no Ψ^* "(10^6), and "no Ψ "(10^{-6}).*

—Compact and Charter of Planet Trimus, Language Appendix

Gradually, pronounceable Kleth and Do'utian words—or direct translations such as "cube" slip from Do'utian for cubic tail, or no no, from Kleth for 10^{-11} . penetrated Trimus English. Also, some human decimal and even more ancient duodecimal words, such as "century" (144 years) or "dozen" (14 of anything) that worked in other cultures—continued to be used.

—Go Zom's notes on the Compact of Trimus

Spacecraft work was painstaking, but experience had shown that a second set of eyes, and a mind that swam in different seas, often saw things other minds did not. Also, in the tradition of Do'utian space voyagers, Drin intended to know his ship. It was, in essence, a steam rocket with an exhaust velocity of eight-cubed charter units per beat. Water was stored in the great tank that also served as Drin's quarters. It was pump-fed through antihydrogen mass converters to make steam, each converter a porous bed of very high temperature refractory alloys that surrounded an annihilation chamber.

The Egg contained half a minidom of antihydrogen ice, distributed among three eighths of electrostatic dewars. He intended to check the quintuply redundant isolation and feed systems on each of them. These systems had to store the antihydrogen and deliver it to the annihilation chamber in near perfect isolation from the world of ordinary matter. But near-perfect, for Drin, meant a leakage rate that would be fatal to his Kleth and human partners. Do'utia was young for a life-evolving world and natural fission reactors were an occasional and unremarkable feature of its geology. Scale and opportunity had dictated that Do'utian space flight had been nuclear powered from the beginning, and experience made

their designs the best in the known universe, if the criteria were performance.

But he had to meet human and Kleth safety needs here, and wanted to be absolutely sure.

An underwater hatch cycled, clanging in the back of Drin's consciousness, so he was not completely surprised when human Monitor Mary Pierce swam up beneath him and pulled herself onto his back. "Welcome, little one." Out of view to even his swiveling, bifocal eyes, she was a nice warm spot on his neck. "Our ship looks very sound so far."

"Oh it's good to see you, Drin. What a relief!"

"How did the negotiations go?" She had just returned from duty with the team informing the largest of the human primitivist communities of their imminent relocation, and trying to secure their voluntary cooperation. It didn't take a marine biologist to tell him the short answer was "not well."

"Not well. One self-styled Lord That is still having the time of his life and doesn't want to budge, and his primitive empire is growing despite everything. He even objected to our taking some people he'd enslaved back with us."

Unlike Kleth and Do'utians who, unless maimed, could eat off the sea and fly or swim around the planet, humans needed technology for transportation. And their primitive alpha males controlled all the transportation from their stinking settlements. Eccentrics and idealists living alone or in small groups on the tropical islands around the inner Pole had been captured, and, having abandoned their links with Trimusian civilization, had found themselves having to play slave or starve.

Drin fumed. "That idiot has 3 percent of the human population of Trimus and is producing 30 percent of the effluents—untreated sewage!—in an area that's supposed to be completely free of such things. One can't even swim near his area without having tongue stunk, eyes stung, and starving for lack of anything uncontaminated to eat!"

"They're certainly a much worse problem than the Sea Lords," Mary sighed.

"Bah! Reeducate those thoughtless, live-for-today hedonistic buccaneering beachmasters too!" he grumbled. Human degenerates were one thing—he could look on them from an analytical distance, but mention of the renegades of his own species touched a nerve. Slavery was mild compared to what the rogue beachmasters had done to their often unsuspecting harem recruits. "What do you think will happen in a few macroyears when this mindless interspecies Petri dish we are creating on Aurum III boils out into the rest of the universe?"

"Drin, some feel we've solved too many problems for our own good on Trimus. Eternal lives of cyberservant-supported study and art just aren't stimulating enough for some of the people our biology produces. There needs to be an outlet for this, but we shouldn't have to live with their consequences. So, according to the Council, they get their own planet, to relearn all the lessons the hard way. Speaking of eternity. I could lie on your nice soft blubber forever, but," she climbed to her feet, "I need to prep the upper decks for me and our Kleth partners."

"Yes. I'll do the visual on the hull while you check the penthouse."

He helped her up the ladder, dove below, through the waterlock and into the sea. It was a warm day near the inner pole, the great crescent of infrared Ember hot under the disk of gold-tinted Aurum.

It was so enervating that he lost his concentration and almost missed it: a clogged exhaust vent; a dark spot in audio where the others shone like regular rows of stars. The ship hadn't reported it.

"System B, code 73147," he sent immediately, ordering a wholesale system swap. Meanwhile, three beats of his tail got him up to the fouled vent.

It looked almost like a spiderstar nest; the seaweed and muck inside hadn't grown there—someone or something had deliberately filled the vent with debris.

"Code complete," the ship confirmed. "We have a blocked vent, ordinal 3472—"

"I have it and am cleaning it," Drin interrupted. "Why didn't your predecessor see it?"

The answer came with cybernetic speed. "My predecessor was instructed to ignore it by an authorized maintenance simulation command that stayed in the command register, and so didn't show up in the discrepancy checks."

Drin growled at a frequency that caused the hull to resonate. "What's the status on the other command registers on the A side?"

"Clean now."

Drin hated himself for what he had to ask next, but the logical suspicion had to be removed.

"Check the source of the anomalous command. Code 72537, Commander only. Check against Planet Monitor Mary Pierce for code, voice, and date."

"The code matches but not the voice, and the date was 124.2." So someone other than Mary had gotten Mary's access code and, ten days ago, inserted a highly technical and innocuous command that allowed whoever had clogged the rocket vent to do so undetected last night.

"Any other 'ignore maintenance data' commands active?"

"None."

Someone, presumably someone opposed to resettlement of primitivists, had tried something subtle to delay their mission. Or scare them out of it. If they knew Mary's code, they might have access to other mission information. Are we going to be controlled by this? he asked himself.

Also, even if he could convince headquarters to let them launch, his Planet Monitor's judgment said that it would not be a good idea to go right on schedule. Someone was after them. Best take the initiative.

"Tell Mary to start the final prep, with a hold at three eights. We're going to take off as soon as we physically can. Also, don't let this change off ship. Send data that simulates business as usual."

Drin sank to the pad on the bottom of the tank. He slipped his interface headband on over his ears and eyes in a quick motion. Vision fields cleared and it was as if all the ship structure around him had vanished and he was lying on a platform at the bottom of a bubble in the sea.

That was a little too unnerving, so he adjusted the sonic contrast up a notch until the *Eggs* ribs and upper cabin became detectable as a sort of transparent gray ghost. A simulated control panel floated in front of him, and he imagined a simulated tongue flicking out to touch the various ethereal controls. This human innovation bothered some Do'utians, but Drin had always liked it—with this, in an emergency, he could react almost as fast as a human.

"Clear here," he announced.

There was a whine of pumps and then a roaring sound that reminded him of being directly under where Go Stohn Falls plunged a dozen charter units into the ocean. The ship stopped rocking as it lifted up on a bed of steam and the thrust feedback system damped out all motion. Then the pressure went up like he'd just dived twenty charter units instead of two. Full acceleration.

"OK, Mary?" he sent.

"Yes...I'm...fine," she answered, though obviously sounding like she was in discomfort. Well, it wouldn't last. Windstream noise peaked, then began to fall as they left the atmosphere.

The engines gulped water. His effective depth rose rapidly as the water level in the tank around him fell. His hearts increased their beat and his tail tip flicked nervously. This was not a stately elevator ride.

A call came in; "*Trimus Egg*, L2 traffic control. Are you safe?" A Kleth voice, not a computer. Of course! It was Do Tor.

"Do Tor, Lieutenant Drin, greetings. Can we dock early? Or should we modify our trajectory?"

"No traffic, clear to dock. We were supposed to warn you to hold launch because Do'utian protest group in the area. Moot now. How you knew?"

"We had an external anomaly and we decided we'd be safer up here. The question is how did they know?"

"Drin," Mary's voice joined them from her station in the conical cabin of the spacecraft, "that may be my fault. I had a human partner on the negotiation team, really opposed to resettlement. We shared quarters so he knew my key. I'm sorry, I feel rotten about it. My stupid mating instincts."

Another Monitor opposed to resettlement Drin thought. But where did that lead? Connections here, connections there. To what?

"Instincts not stupid by definition," Do Tor offered. "And instinctual behavior not human-only. Elsewhere Ko Kor would have waited to tell us what happened before completion of fate."

Completion of fate, Drin thought: another Do'utian philosophical concept which had percolated through-out Trimus culture. The Kleth could not conceive of continuing life after the death of a mate, but could contemplate prolonging death for a sufficient purpose. They told the tale of an ancient Zan Zor who avenged her mate's murder by feeding herself slowly enough to her children that she was able to name the killer to visitors four days later.

The water surface dropped past him and down into the grate below; what little they needed from now on was in bladder tanks that would work in zero acceleration. If things went according to plan, he was done with swimming until they reached Aurum III.

The inner system of the K2 star, Aurum, is dominated by the "brown dwarf" Ember. Trimus, of course, is a satellite of Ember. Two small terrestrial worlds, perhaps tidally ejected outer satellites of Ember, share Ember's orbit.

Aurum II is a small world at the L4 resonance point with a strong magnetic field and a resulting hot exosphere that precludes a dense atmosphere.

Aurum's third planet, at the L5 resonance point, is about half the mass of Trimus, but denser and smaller and so has similar surface gravity (0.76 Do'utia, 0.37 Earth, 0.60 Kleth). It rotates slowly, once every five Trimus days (15 Do'utia, 7 Earth, 10 Kleth) and so has almost no magnetosphere. Prior to bioforming, it had a very thick carbon dioxide atmosphere and a surface temperature near the boiling point of its sterile oceans despite being warmed only by Aurum. Since bioforming, the average surface temperature has stabilized at just over the freezing point of water and the atmospheric pressure at 1.32 Standard Trimus Pressure (2.4 Do'utia, 1.7 Earth, 0.74 Kleth).

—Aurum III Settlement Guide (Draft), Introduction

On approach Drin viewed the orbiting ring of equipment that had done most of the physical work of bioforming Aurum III. Aurum System was a deliberate backwater among local galactic culture, but for eight-squared Trimusian years Aurum III had been one of the most active industrial nodes of the Galaxy, importing quadrocubes of oxygen and spewing out trimadoms of carbon dioxide ice. They'd built a space power facility as large as that of any major transportation node and the attention that attracted down-current, Drin thought, might eventually end their solitude. But for now, with the bioforming job almost done, the machines were surplus and the power system waited for starships that didn't yet know it existed.

Meanwhile, two Kleth scientists had been killed down there.

Aurum III's relatively low mass and extensive atmosphere made for a reasonably gentle maneuver of about twice Trimusian normal gravity. The *Egg* flew broad end first into the first wisps of haze at six times eight-squared macro-units altitude. Its engine exhaust formed a relatively cool layer between the ship and the atmosphere, pushing the hottest part of the entry plume off of the bottom of the ship.

Gradually, Drin's weight built up as the exhaust of the *Egg's* engines was pushed back into a pad of gas in front of them. The ship tipped its nose down ever so slightly giving it just enough negative lift to counteract the centrifugal effect of their passage around the small planet.

He got heavier and heavier, until he was definitely uncomfortable.

This, he thought, was what a trip to Mary's Earth would be like. No, thank you. To think that her people had evolved in such a field!

Just when he thought that this was approaching his limit of uncomplaining endurance, it started to let up. He watched the horizon tilt back toward the base of the *Egg* and felt his weight return to almost normal. Terminal velocity. He looked down through the hull and the engines, rendered insubstantial to his view-screen-covered eyes, and saw the breakers surrounding the target island. Then he made out the charred ruins of the bioforming station.

That hint of scale was all it took. Involuntarily, he groaned. This was exactly like the simulation and it wasn't at all like the simulation. He knew he really *was* falling from a fatal height. Stare *up*, stare up, he told himself. A roar of rockets and a shock of heaviness and pressure hit him. The ship groaned and creaked as it tilted and the rockets roared in compensation.

His beak opened and an involuntary death-wail emerged from his gaping mouth.

Then, almost suddenly, they were quietly floating in an alien sea. Drin spouted in relief as pumps began flooding the tank with minimally filtered external water, for ballast and in case they would have to leave quickly. He sampled the new seawater, and although it was filtered, he got a whiff of a strange smell-set and began, almost unconsciously, to try to deconstruct it. He quickly noticed the lack of the human pollution that had diffused to every corner of Trimus's oceans, but there were other differences.

Drin knew that some minor changes had been made to the species mix that had so far proved successful on Trimus; for instance, Aurum III had no really hot climate zone and lacked warm-water sea life. Nor, due to the dense atmosphere and high axial tilt, was there much glaciation outside of the highest polar mountain ranges. So there was little of anything fetid and less of the ice-melt taste. But what was *that*?

"Lieutenant Drinnil'ib OK?" Go Ton wanted to know, presumably responding to his earlier death-wail.

"Just a traditional new-planet-challenge," Drin covered. Well, he'd used it on every new planet *he'd* landed on. "Everything's fine except there's something funny in the water." What *was* it? "Be right up." Drin slipped off the headband and swam to the top of the rising surface. The three others were at the rail, ready in their field gear—Mary in a sleek gray and white amphibious "second skin" coverall, Go Ton in a loose bright coverall matching her plumage, while Do Tor was in a less conspicuous sky blue.

"Something dangerous?" Mary asked.

"I don't know. I can't identify it."

"Maybe when you get out, it will get clearer."

"Much as I want to get out of this can, we're going to have to be very careful from here on out—help is a long way away. I suggest you take the aircraft ashore with Go Ton and Do Tor and make a first pass at the station ruin. I'll hold the ship in readiness in case we have to leave quickly."

"Sure." She reached toward him and he flipped his tongue toward her and held her hand momentarily. Then she looked right at him, and did something she had never done before; she briefly stroked the upper surface of his second finger, almost as intimate a gesture as could be made from her species to his. Then, without saying anything, she let go, waved, and bounded up the catwalk to the upper part of the *Egg*.

Drin drew his branches back into his beak and in the privacy of his mouth, touched the Mary-anointed finger with the head of his other branch. Had she been a Do'utian woman, the gesture

would have been an invitation to quicken her ovaries, risk her life, and merge their heri-tages.

She must know. Did he dare discuss it with her? What did this mean when they were so different biologically? She was three centuries old now; not much younger than he, and perhaps, having experienced everything within the normal bounds of behavior was curious about what might lie just over the line.

As he was.

But what shame he would feel if one like Councilor Gori'allolub ever found out that he had considered ex-changing such sensual intimacies with a human. He shuddered; his tail would grow no longer at that! No, no, *no*.

The mathematical model of con-vergent evolution has itself evolved independently among most of the spacefaring races. Despite wide varia-tion in biological form, the common laws of physics determine which tool-creating behaviors won't work and thus constrain the set of reason-ing and future-imaging abilities that produce technology. So too did the consequences of competitive strug-gle induce certain necessary similari-ties, which quantitative sociologists like to call evolutionary attractors, in the games logic of resource territoriality, group cooperation, and bar-gaining behavior. This theory of fun-damental common behavioral moti-vation underlay the Trimus experi-ment in multispecies planetary culture.

—Go Zom's notes on the Compact and Charter of Trimus

"Here's what we found," Mary told him. She sat straddling his neck, lean-ing forward with her chin resting on the top of his head. "The station ruins were already being overgrown with ivy, but there clearly was an explo-sion. Go Ton found the detonator right next to the blackened remains of Ko Kor's body. Play the recording."

The *Egg* sounded a tone and the screens at the top of his tank shifted their image from the sea to the out-side to the ruined bioforming station. The ivy had overgrown parts of it, but otherwise it looked just as it had at the end of the earlier video record. Their view, recorded from Go Ton's camera, zoomed into the dome through the gaping holes in its top, and after scanning burned benches, empty cages with their doors swing-ing open and ruined gestation vats, it steadied on the carbonized remains of a Kleth, and a small blackened box. Go Ton's hushed voice narrated.

"Memory of Zan Zor, she let flames consume her while she searched for this. She *did* try to tell us, and the idiot rescue party missed it!"

"Oh, yes." Do Tor added in an un-accustomed here and now second voice. "Possible bomb blew off a piece of dome that took head off."

Drin couldn't confirm that from the record; however, he couldn't dismiss it. A freak shrapnel accident? A frag-ment of dome panel, viewed edge on, would be below the threshold of the recording's resolution. The orienta-tion, however, would have had to be just wrong. And, even if invisible to one sensor, it should have been visi-ble to others. Maybe if the piece was small enough? Drin reviewed Go Ton's recording again, in slow mo-tion. The scorched, partly legible la-bels of the cages caught his eye;

Canis-----pus?-----rsus midden-----?

A piece of the dome roof lay in the burnt wreckage *inside* the dome.

"Aircraft ready," Do Tor's voice an-nounced.

Things were stable here so it was time to go see for himself.

"Coming," Mary answered. "See you outside, Drin."

He finished packing his pouch kit, released the ship to itself, and dove for the tank door.

Once out of the ship, the newness of the Aurum III seas assaulted his senses. The smells of species were clear and distinct, like the notes of a major chord compared to the white noise of Trimus's oceans. It reminded him that ecological control needed to be reestablished here before a random pattern of adaptive radiation took hold—one in which the planned human and Do'utian components might not fit so well.

It also puzzled him that there were still a couple of notes in this simple olfactory harmony that he could not identify. Then he recognized one of them as not dissimilar to the Earth sawfish he had enjoyed so often on Trimus. Of course, he thought. Its diet would be slightly different here and its excretion likewise.

He had a lot to learn, and looked forward to it.

Free of the spacecraft propellant tank, Drin stretched his muscles and shot through the water with enormous, powerful tail strokes, closing his eyes to shield them from the pressure of his passage. In front, his bony nose cleaved a sea that felt almost as dense as flesh from the violence of his speed.

Out of breath, he shot for the surface, and with a mighty and well-timed tail crack shot out of the surface, reaching a full two charter units above the watertops. Oh, the exhilaration of it! Oh, the freedom.

He expelled his old air in a mighty bass note, and felt the reaction push him back like a steam rocket.

"Gesundheit!" Mary radioed from the aircraft, a double teardrop in a rounded delta wing hovering on its wing fans only a few meters higher than he had leapt.

He twisted in midair to take the impact on his back and protect his legs. The tremendous splash scraped his back clean and no doubt stunned a lunch's worth of fish.

"More care, Lieutenant. Aircraft not submarine capable," a worried Do Tor honked.

"Oh, no," his mate added.

"Wow! How old did you say you were?" Mary laughed. Then stopped abruptly. "Drin! The ship!"

He bent to the right and looked back.

A great hole had suddenly appeared in the rounded upper dome of the tank, just below the conical cabin, only a docu or two above the waterline. Then as he watched there was a flash of steam and another one appeared next to it. The conical cabin, deprived of support, began to sag into it.

The aircraft accelerated, banked, and started to turn back toward the ship.

"No!" Drin roared. "Do Tor, ditch! Now! Take the aircraft into the sea!"

"Say WHAT!?" Do Tor protested.

"Dive!" Drin shouted. "Get that egg-polluting thing under water!"

For no reason that Drin could see, a part of the aircraft's wing fell off before it knifed down into the waves.

A cone of air over the dying space-craft, blasted into luminescence by gamma radiation, was now much brighter than distant, cloud-filtered Aurum. Just as he dove after the aircraft, he felt an enormous sting near the base of his tail. A piece of the ship? Or had something bitten him? But what?

No time for that now. He doubled back on himself and slammed water behind him sprinting toward the sinking aircraft.

The bubble canopy was filling rapidly with water, but his comrades seemed all conscious, with their heads above the water level. The impact had torn away the wings, but for that the aircraft seemed intact. He dove alongside, matched sinking rates, twisted, and grabbed the machine between his front legs. Then, cradling it much as an Earth-otter might cradle a shellfish or a young otter, he rose back to a depth of about half a charter unit. The bubble in the canopy expanded and Mary nodded at him as if to say, "we're OK."

The sky above the ocean was insanely bright and filtered down as a hellish blue-white. There should be, he thought, no reason anyone should suspect that they survived that blast. For avoiding another attack, that might give them some breathing room, but for rescue, it could be a problem.

Sentient omnivores were designed into the Trimus ecological system from the beginning, and size limits were engineered into its subsentient carnivores. There were no big cats or U'ulatan spear-tooth packs on land, no great white sharks in the oceans, no deathspores in its skies; nothing large, numerous or vicious enough to threaten unarmed members of the three sentient species in their own element. The birthrates of some large herbivores were lowered as well, and a certain amount of culling by traditional hunting methods was a design expectation.

—Planet Monitor's Handbook, Ecological Appendix

Mary could pack twice her mass for long treks without complaining. Do Tor could fly with a burden almost as massive as he was. Drin's folk, however, did very well to manage their own bulk on land and even his finely honed, athletic Planet Monitor's body would have been quickly worn down by a burden only one-fourth his own mass. And after eight squared days in near-zero gravity, about the best he could manage comfortably for long periods was about one-eighth more than he weighed.

Therefore, because that eighth was easily eight times more than Mary, Do Tor, and Go Ton combined could carry, Drin carried *everything*, including Mary. Absolute size matters.

Besides, there wasn't that much left to carry. A medical kit salvaged from the aircraft. The core of its cybersystem and its communications equipment. Emergency tents and blankets. Dart gun ammunition. Containers for boiling liquids. A rotary generator. An analyzer.

All the electronics were powered off. The first thing that had occurred to all of them was that electronic noise was one common denominator with respect to whatever had attacked the bio-station, the spacecraft, and the aircraft. Another common denominator was location, and they were making a reasonable effort at changing that before powering anything.

Do Tor suggested a cave. Drin had replied that that made sense, but it had better be a big one. So Do Tor and Go Ton were off looking along the banks of a deep river on the other side of the island.

The forest was cool and moist; the trees wetted him as he pushed through them, following a small creek. Aurum was haze dimmed and the chill polar wind kept him comfortably cool. He would need to eat well in a dozen days or so, but for now the enforced abstinence was good for him. The smells were the smells of wild wood; Earth pine with its sharp needles, broad olli'ulstican leaves, light and bright with a fruity bouquet, stolid aspen. The animal community came with a breeze from some nearby trail; nimble six-legged squirrels from Kleth, a whiff of Earth dog, running free. The ripe droppings of the carrion-gull from his grandparent world. The smells were familiar, but in a new, free, clean environment.

In fact, given their situation, he was feeling unreasonably good except for his back.

"Mary, could I ask you something very personal?"

"Sure."

"My back still itches where something bit me after the ship blew. Would you scratch the scar?"

"OK." She yawned. Then he felt her skitter down his rolling back past the equipment pallet to the base of his tail. She went immediately to the right place, which surprised him. It should be well healed by now.

"Drin," her voice was much sharper now. "I don't want to scare you, but there's something still in there, and it's pretty deep."

"Oh?" he rumbled and stopped, then bent his head back in a painful contortion to look. There was indeed a deep long gash in his blubber, still oozing. Pollution! He should do something about that. It was

time for a rest anyway, Aurum had come out from its cloudy veil, the wind had slacked, and he needed to stop generating body heat and let his temperature back off for a bit.

"I think we have the med kit. Do you want to try to dig it out now? I could use a rest, and I won't feel much unless it gets below the fatty layer. What is it?"

"It looks like a silvery wire. Maybe some kind of monofilament."

"Pollution!" Drin lowered himself to his belly and held himself motionless. Every movement he'd made for the last hour had probably worked the thing in deeper. "Talk about vicious sabotage! No wonder Soames didn't surrender...Look, the forceps in the kit are solid diamond, they should be able to handle it, even if it is monofilament. And Mary, remember that what looks like a horrendous wound to you may be a minor nick to me. So even if whatever it is cuts in deeper, please keep your fingers away from it!"

"Roger that." After lots of "umms," "ahs," and "uh huhs," she declared victory. "OK, I have it. Long, thin, silvery thing." She held up the forceps. Drin could see nothing.

"You'll have to bring it closer for me."

"I'll put it in a sample jar and tape you up, first."

Drin grumbled as she squeezed fluids from tubes, tugged here and there. Then Mary was in front of his left eye with a shallow clear diamond sample jar. He sent a branch of his tongue out to take it.

The lens of Drin's eye was almost as wide as the jar, and evolution in and out of the water had given him the focusing ability and retina to take full advantage of that aperture. With the fingers on the other branch, he removed the lid, stuck the forceps in, and moved the filament around.

It didn't seem to be a single strand, but something rather more complex. And, just on the limit of his vision, there appeared to be nodules or grains of some kind. He managed to isolate one, lift it up, and shake it. For a moment, it caught the light just right, and it looked like a net of some kind.

"A spider web?" Mary asked, her voice soft with wonder. "What kind of spider? What kind of web?"

"Possibly monofilament," Drin guessed, "a fullerene, or a string of some kind of nanites. We'd need more equipment to find out, but I suspect from the video of the attack that, all spread out, the thing is a circle about a quarter character unit in diameter. If it lands on something, the nodes work their way through it, pulling the filament along between them."

"Organic, or mechanical?"

"Or organomechanic. No polluting way to tell just now." Drin put the lid back on the sample jar. "I'd guess from what we've seen that it makes short work of hard composites and metals, but gets bogged down after a few eight-digits in soft wet stuff. Like me."

"Or sea water?"

"That's what you and I are, mostly. Seawater and pollution. Well, we have a clue."

"But," Mary asked, "is this something a fanatic saboteur could concoct at a bioforming base? Why both the bomb *and* the spiderwebs? Or did they come from somewhere else?"

They spent the rest of the journey to their new cave home in deep thought.

For environmental reasons, Kleth power transmission technology had spread throughout the Local Worlds long before the founding of Trimus. Superconducting waveguide tubing for far infrared produces no external fields, can be strung long distances under ground or water, and carries information as well as power. A sudden line break may produce a transient high intensity beam, but standard connectors shut down the minimagnetron arrays instantly when a break is detected.

The cave was too small, Drin complained to himself, as he scraped his back returning from a futile trip to the ruined station some days later. He couldn't turn around in the partly submerged lava tube except just inside the weathered out, half-submerged mouth, where the black sand floor rose almost to the widest part of the tube. The gentle solar tides of Aurum III rose only a foot or so, but on the nearly level sand of the tube, it made almost a quarter unit of difference in where the estuary shoreline fell, cutting the floor area in half at high tide, making the place feel even more claustrophobic.

Someday he would excavate a more comfortable channel and create a larger dry area, but today his mind was on a different technical problem. They had equipment, they had a source of power, but somehow during the explosion at the station, the rotary generator's output lead had been damaged, leaving bare wave guide and no way to get the power out. Without power, they had no way to call for help or warn anyone about the nets until someone came in range of their personal communicators. And once their batteries gave out, they would be, effectively, stuck in the shell age.

"Mary?" Drin called, softly lest the echoes in the confined space deafen him.

An awful buzzing racket ensued, then a cloud of dust and debris fell from the roof and rolled toward him. He backed up, getting his tail in the water again. He felt, then heard, a solid thump and saw a largish rock roll out of the settling cloud of dust. Then there was a smaller thump.

"Hi, Drin." It was Mary, grinning, clothed in volcanic rock dust, wielding a vibrosaw they had salvaged from the biostation ruins. "In one fell swoop, ahem, I've made a back door for me, a front door for the Kleth, and a chimney. A few more days of work, and this place will be habitable."

"I am glad we have *some* good news. I couldn't find any usable connectors in the ruins."

Mary's teeth disappeared. "Nuts."

"I think," he offered, "the next step is to check the wreckage of the *Egg*."

"I guess. Drin, I keep thinking I should be able to do something with what we have."

Drin looked away in negation. "I can't see how. Wave guide power transceivers need infrared wave scale dimitech, or maybe minilithography, and the best we have in our tool kit is a miniwaldo set. I hate to think of how long—"

"OK, OK, let's go on an *Egg* hunt." She ran to the water, splashed in up to her knees, made a shallow dive, and surfaced halfway to the cave mouth, then started pulling herself back to the shore, laughing. "Actually, I should get a couple things together first. Can you wait a bit?"

"Mary, I think there's going to be more residual radiation than you should see. Especially if we get stuck here for years. You should stay."

She slumped. "You're right as usual, Lieutenant. Look, Drin?" She shook water off of her head, hair flying.

"Yes?"

She pressed herself warmly against the side of his head and murmured. "Come back, huh?"

Drin touched the tip of his beak to the sand beside her. Two could play the game of inappropriate courtship signals, he thought. She laughed and kissed the top of his head.

Then he backed out into the wider part of the cave, turned and swam out into the river.

Once in the stream he sounded briefly, then sent a blast of steam into the air. Do Tor and Go Ton soon appeared overhead, and he told them what he intended and asked for some air cover.

Aurum III is a world of exaggerated vertical scale, above and below water. Its volcanoes reach over four macro-units above sea level and not much less than that below to the main ocean floor.

The main mode of crust cycling, as with many smaller hot-core worlds, is sublithic thermal deconstruction: new eruptions covering older shield deposits, weighing them down, hydrostatic readjustment taking ancient layers down below the mantle, where they decompose, re-leasing their gasses. Thus many volcanic plateaus are surrounded by deep trenches and hot springs.

—Aurum III Settlement Guide (Draft), Geology Supplement

The marginal trench was a dive beyond even Drin, but the *Egg* had touched down just landward of the edge of the island shield, and he hoped to find at least some debris there.

Again, what was that smell? An Earth species, certainly, but not one he could place.

He broached and scanned the air. Do Tor and Go Ton were circling overhead like a pair of Do'utian diving gulls looking for floating carrion—the black humor of that analogy made him chortle. He would have said something, but they were conserving communicator power—no one knew when they would get to charge them again.

A few beats later, Drin's sense of location told him that he was over the wreck, and he sent a single spout skyward, a prearranged signal to let them know everything was fine. Then he dove down, and down. The water was cold and stagnant, and illumination was only a matter of some shadows being less dark than others. He started chirping, and a fuzzy sonar scene formed below. Lava pillows, large spiral-shelled shellfish from Kleth, occasional small fuzzies, and—there, he found it, about eight-squared charter units down and left: the half shell wreck of the *Trimus Egg*.

It astounded him that so much had survived, but gammas and pions traveled too far in mere air to make for a concentrated explosion, and near-field heating may have slowed the mixing rate. Still, as he drew near, he could smell the carbon and metal ash of materials heated to their kindling temperature.

He was silent, and as the sonic images faded from his perception, a faint blue glow remained.

So, the remaining structure must still be radioactive, almost five days after its exposure. He sent a tongue branch into his pouch for a radiometer.

And backed water immediately when it started glowing red-orange.

A fear began to develop in him, a suspicion. Nervously, he ascended a bit and swam directly over the hulk. The radiometer was non-directional, but he could use his body to occult the source; in effect locating it by seeing which way his body's radiation shadow pointed. In his shadow, the detector dimmed to a dull red, then as he got out of the way, went back up to orange.

Several trials, turning in different directions, showed him that, as near as he could tell, it was a point source. There was only one possible explanation; at least one of the antihydrogen dewars had survived and must be leaking, still trying to feed antihydrogen to a converter. How?

He descended to bottom and sunk to his belly in the detritus ooze. The radiometer went almost down to black, and he released a bubble of relief. He had time to think.

Of course, the converters! Their walls were tungsten an eighth of a docu thick, and they surrounded each dewar in a cluster. It was a safety feature designed so that in case one of the clusters was breached, the resulting radiation would not damage the others.

He'd known the things were diamond-tough, but this was unexpected. Not only had the engineering actually worked, it had worked too well! It would have been much better if everything had let go when the ship was hit.

With the cold deep water as a heat sink, the solid state electron heat pumps would have much less work to do, and the dewar's emergency power supply might last this long. But when it gave out, the antihydrogen ice in the core would start to evaporate, react within the inner chamber walls, and evaporate more antihydrogen in a runaway reaction that would cause the dewar walls to fail from radiation damage. Then the dewar would collapse instantly under the water pressure, causing all the

re-maining antihydrogen to be mixed with matter. Not in a fizzle of several minibeats, but, essentially, at once.

That could happen, he realized, at any time, or be set off by any shock wave, or perhaps a disturbance. But they still needed the power converter. And, since the remaining dewars would eventually fail anyway, it would probably be better to set them all off deliberately, at a known time.

Their supplies had included some command-fused explosives, he re-called, stored in one of the cargo lockers at the unfueled waterline. Before he could talk himself out of it, he took a hand lamp from his pouch, crept up to the hulk and began to circle it, looking for the locker. Crazily, despite the fact that the upper two-thirds of the spacecraft had been vaporized, enough of the bottom of the tank had survived in places to allow one to imagine that nothing had happened!

He found the locker about a third of the way around the hulk. Very gingerly, he worked the manual release, and was rewarded by an intact storage hold—a virtual treasure trove, considering their circumstances. There were the explosives lockers, vibro drills, floodlights, diamond coated fiber line, an inflatable cargo raft, and a Do'utian beak shovel.

He permitted himself a slight purr of satisfaction. The shovel was a simple tool that would let him dig and move many times the amount of mass he could move with his tongue. The invention of such tools had played a role in Do'utian civilization comparable to that of the horse harness for humans. The DCF line was thin, light, high-tensile strength, and just about indestructible. Best of all, the floodlights, of course, had two each standard power connector splices!

Carefully, he unloaded the raft and set the rest of his treasure in it. He vented an explosive locker and withdrew four charges and put them in his pouch. Using the DCF line, he tied the beak shovel in three places so it would hang below the raft and tend to keep it upright. Then he inflated the raft and sent it toward the surface loaded with his treasure.

Drin went around the exposed underside of the hull with his radiation meter, hoping that he could find the leaking dewar and place the charges on the hull just opposite it. But after several minutes he realized he would have no such luck, and would have to go into the wreck.

He put the radiation meter in his pouch—he would have to do this as fast as Do'utianly possible, and looking at the meter would only waste time. With the charges in one hand and the light in another he went up over the torn rim of the hull. Where?

He flicked off the light and in a couple of beats, saw a faint cone of blue. Don't hesitate, he told himself, and swam directly to it. The floor grid was still perversely intact. Did he dare risk raising a panel? He wasted time in a frustrated near panic about that before it occurred to him to see if the charges would fit through the holes in the gridwork

They did, just barely. He activated them in sonic command mode, getting a confirmatory blink on the end of each. Then he forced them through the gridwork, letting them fall below to the bulkhead just over the converters and dewars, each hitting with a nerve-rattling clank.

As soon as the last one fell through, he pushed himself up, swam *gently* back over the rim and away from the wreck until he was several charter units clear, then abandoning himself to justifiable terror, he sped for the surface.

A charter unit from broaching, Drin bent his course parallel to the surface and located the beak shovel hanging from the raft, then raced for it, surfaced, and looked toward the sky for the Kleth.

"Drin? Drin!"

He rolled his eyes to the cargo raft itself. Do Tor and Go Ton were calmly seated on the left pontoon, wings folded, their horny feet brushing the wavetops.

"Good hunting!" Do Tor congratulated him.

"Oh, yes." Go Ton added.

"Monitors, we need to leave quickly. Some of the antihydrogen dewars survived the nets—"

The Kleth wings popped out in unison.

"—And may implode at any time." Drin dove under the raft, grabbed the beak shovel, surfaced and put it in the raft. As he opened his beak, he got a strong taste of the strange sea life he'd smelled earlier. No time to investi-gate now, he thought. He considered dragging the raft for a moment, then changed his mind, dove under and surfaced beneath it, so that it draped over his broad back.

The Kleth had taken to the air, and were circling Drin as he made the best surface speed toward the island.

"Is your friend coming too?" Do Tor asked.

Drin swiveled an eye back along the surface and saw a large, white, erect fin knifing along beside him, about three charter units to his left. Underwater it looked to be an Earth fish with a conical head that was un-usually wide across. It had several gill slits, instead of the usual one. Also, the mouth wasn't in the usual place. There, Drin thought, that slit below the head must be it.

An alien?

If so, it was a large one, almost half as long as he was. And why the Earth smell?

It decided to move in to investigate him. It closed rapidly. It opened its mouth.

Drin's afterbrain took over. His foreleg, muscled for carrying half his weight around on land was already in motion when the great grayish-white fish opened its mouth. The thing, which seemed originally intent on striking at Drin's nonexistent gills, started to change its target.

Drin's claw, without any conscious control from him, missed the head, but still caught the thing just behind the gills, and the next thing he knew, he had the front third of it painfully clamped onto his leg while the rest floated away, spewing fluids into the sea. After seeing a demonstration, Mary, Drin remembered, had likened a blow from Drin's foreleg to striking something with a huge serrated axe.

"Mary calls them sharks," Do Tor called.

Them?

A quick look found three more and a ping illuminated four. One of them headed for the rear half of their com-panion, and two headed for him. Drin sounded, heading straight down as fast as he could, shaking off the head of the first shark from his foreleg about halfway down. That got the other shark's attention long enough for him to get well away.

The wound in his leg was deep and painful. How, he wondered, had a mouth in that clumsy position been able to do *that*? His leg bled.

Out of nowhere, another shark ap-peared and started diving after him. Drin sent his tongue into his pouch and pulled out his gun. Then he jack-knifed and faced the thing, waited un-til it was almost on him, and put an explosive bullet into it.

He had to weigh ten times what the sharks did, and individually, they were no match for him. But he knew that, collectively, they would easily wear him down before he could reach the safety of land. Was there any way Do Tor and Go Ton could help him?

His afterbrain, responding to mi-nute water pressure variations, slammed his tail into another of the creatures before he realized what was happening. It floated stunned in the water.

Bait.

He quickly jackknifed back, nipped the shark in two, stuffed the back half down his throat for a long overdue meal, and held the polluting front part distastefully sealed inside his mouth. Then he headed for the sur-face as fast as he could, counting on the sheer speed of his ascent to pro-tect him.

It did. He shot out of the water to an altitude of about a charter unit, and almost hit circling Do Tor.

"Cover me with your guns!" Drin boomed. Then he twisted on his back and struck the water with a

stinging maximum impact. Two or three sharks floated senseless on the surface. Drin snapped them up and headed directly over the wreckage of the spacecraft, nipping heads off as he went.

"I count three eights of sharks," Do Tor called. A shot rang out. Two eights and seven, now, Drin hoped.

"Three eights six," Do Tor corrected his optimism, as if reading his mind. Several more shots rang out and even more sharks appeared.

"Fine!" Drin roared in frustration. "I'll take every one of the polluting things in the whole polluting ocean with me."

He arrived over the wreck, filled his lungs as best he could on the fly, and headed *down*, expelling the gory mess in his mouth to distract any followers. It seemed to work; they congregated over the wreck for the leavings and he couldn't detect any of the beasts on his tail, but he didn't slow down to check more carefully. About ten charter units down, he bent his course back to the raft, broached in a long low arc, barely clearing the waves, and turned his comset on. It was time to use the batteries.

"Monitors, Lieutenant Drin. I'm going to detonate the rest of the ship, soon. Get set for a big wave. Tell Mary."

He reached the raft and saw no sign of sharks. He grabbed the emergency light with one branch of his tongue, the coil of DCF line with the other, and pulled them back into his mouth. Afraid to try to save anything more, he headed away from the site as fast as he still could. Exhaustion, and what was probably the onset of radiation sickness, were slowing him considerably. He was having to spout much more frequently than usual. Fluid in his lungs. And he was pissing torrents.

Do Tor and Go Ton were pacing him overhead.

"Do Tor, Go Ton," he sent, "best help Mary prepare. The wave will likely put the cave under."

"Monitors, Mary, I think I'm set for anything. Suggest you stay with Drinnil'ib."

"No, Mary. The air won't be safe here. They'd best go. I'm not fragile, and I intend to get through this." He didn't mention the sickness. "Do Tor, get out of here. Orders. I'm going to detonate it now."

Without waiting for an argument, he sounded. He thought furiously; he had to be in the water to send the sonic command but he wanted to be out of the water when the shock arrived. He might have one good broach left in him, he thought, and he would have to time it just right. He tried to calculate, but it was too complicated, distances too uncertain, and he was too tired. So he guessed and sent the command when he was full speed *up*, halfway back to the surface.

With one last, desperate, slam of his tail he vaulted above the wave tops. He seemed to hang in the air forever while nothing happened, then, just before his back touched the water again, three ripples went by under him, extremely fast, deceptively small. He'd saved his hearing, he thought as he plunged in, by less than a fraction of a beat.

Drin surfaced again, looked back, and almost wished he hadn't. A huge dome of sea had grown behind him with incredible speed, and the nearer part was transforming itself into a wall of onrushing water almost eight-squared charter units high.

Drin spouted once more and filled his lungs as best he could and rose with the wave.

It was like being in the spaceship at launch again. He was lifted up and up as he tried to swim down. He couldn't stay under, and his head came out of the water on the slope of a huge hill of liquid. The wind howled like the worst part of a Coriolis storm. He could see Do Tor and Go Ton in the distance racing away, and his sense of level told him he was looking *down* on them.

A glance at the island confirmed that. The wave, he estimated, would inundate all but the highest peaks.

Then he was sliding down the hill of water at incredible speed toward the island. He pushed his legs forward to slow himself, spreading the webs between his claws. And found himself standing on an almost

glass-smooth wave, toes out of water. He didn't dare fall. He couldn't make himself breathe.

With his eyes on the side of his head, he had nearly seven-eighths of a sphere of vision, and processing this, the physiologists said, was what most of his massive forebrain did. It was usually a blessing, but just now it enabled him to see the top of the wave, far above him, start to curl forward and break into white foam. Behind and above that a column of dirty steam rose up to the cloud deck like a cosmic-scale ring-shelf plant, and likely far beyond.

Drin's wave was headed toward a steep volcanic cone on the end of a peninsula stretching out from the island. Instinctively, he tried to lean away from it, and his path actually bent slightly. The feeling of having even that little bit of control over what was happening to him unfroze his mind. He was headed too far inland to skate around the outside of the cone, but the saddle land connecting it with the rest of the island was low. He bent that way.

It was actually a short cut, he thought with some grim humor. The mouth of the river of their cave was on the other side of the gap, just toward the main part of the island.

The water ahead of him rose up between the main island and the cone—the wave was being funneled between the two. Its speed slackened and Drin settled from his feet back onto his belly, still sliding down an advancing slope of water, still in control.

He shot through the gap in an instant, then cubes and cubes of water crashed down on him, twisting him this way and that as his weakened and abused muscles strained and strained, trying to hold himself together. Finally it abated, and he let himself roll with it.

Eight cubed charter units from the island, what remained of the wave had passed by under him, and he found himself floating in what seemed to be a more or less normal sea.

He tried a gentle tail stroke to send him landward, but it hurt too much.

His legs seemed to have fared better than his back, however, and he was able to begin paddling, Mary-fashion, back toward the cave, letting his tortured back muscles rest.

Even this far out, he could see the devastation; only one tree in ten still standing, those leaning, the beaches covered with debris, the river choked with fallen trees and reduced to a trickle.

From this side of the peninsula, he could see that a huge bite had been washed from the base of the volcanic cone leaving a hard lava core to jut out at an impossible angle toward a side vent that was no longer there.

His eyes went to the beach again; there seemed to be more of it than a minute before. In fact...

He looked behind him. The water was rising there.

Ignoring his pain, he swung himself around and began swimming with as much speed as he could manage, away from the beach.

He rose higher, and higher, and felt the wind build up again. He did not look back a moment, but kept struggling up the wave. Finally he sounded directly into it, then emerged again, unable to stay down. But he felt himself falling; he had passed through the wave before it had formed a crest.

He let himself drift around, totally exhausted, spouting pink with every breath, and watched the incoming wave hammer the island. He floated for subjective ages, fading in and out of coherence. Finally, with a great effort, he reached into his pouch for his gun, and brought it into his mouth.

If the sharks came now, he was done. He estimated the things could chew at him for hours before they got to anything definitely vital. But he wouldn't suffer that. As a last resort, he could still put an explosive bullet in his forebrain and not experience his own undoing.

With such cold security achieved, he recovered some psychological energy, and began to paddle himself toward the river mouth. The sky above was a strange blood red; Aurum was peaking below the cloud deck, lighting it from below creating a strange scene of crimson lit billows and gray shadows. Their sun had almost completed its slow journey to the horizon and would hang there for a day before it

started up again in this world's arctic summer. From the shore, an Earth dog howled the way Drin had never heard one howl before, carrying clearly over the waves. The sea, reflecting the sky, seemed to be made of blood.

Drin fought the remaining current with his legs, pulling himself slowly upstream. He keyed his comset. "Mary?"

No answer.

"Do Tor?"

Nothing.

"Test?"

Nothing. The unit was dead; probably from having been left on too long, since no pounding that left his pouch intact could possibly have harmed it.

Of course, there had been the electromagnetic pulse of the explosion.

He put it back in his pouch; he'd assume a power problem for now.

He rested. He moved forward a few more charter units. He rested. He moved. He rested.

Had he come upstream far enough? His sense of position told him he had, but the landscape looked completely unfamiliar; the channel seemed to run too far south.

Where was the cave?

He scanned the north shore, across a field of freshly deposited sand.

There; a rough arch of lava sticking out of the sand. The lava field behind it looked familiar, too. He opened his beak.

"Mary?" he groaned, thinking it probably sounded more like an acoustic fog warning than a name.

"Drin, Drin!" her high pitched voice came echoing back, seeming to be from a million miles away. Then her frosty blond head popped out through the hole she'd cut in the top of the cave.

"Drin!" she screamed, sounding much closer now.

Her hair was matted and dirty. She had angry red marks on her face, and she limped as she ran toward him on the sand. A hand was heavily bandaged.

With a last, gigantic effort, he struggled a few steps onto the sand to meet her, and fell on his belly, completely spent.

She threw herself against his head and tried to hold herself there, repeating his name over and over.

He opened his beak slightly and slipped the branches of his tongue around her, holding her to him. They stayed that way until she seemed to regain her composure.

"Drin, we got through it. I broke a finger and wrecked a knee. Do Tor has a hole in his wing, and Go Ton is trying to patch it with one hand and guard our prisoner with the other, so I have to get back and help. Then I'll be back with the med kit for you. And Drin, for whatever crazy kind of sense it makes, I love you. I have to say that, and say it now before anything like that ever happens again without my having said it. I love you."

Drin couldn't think of anything rational to say on that subject, but he was suddenly aware that his mouth was sore from the things that had rattled around inside it.

He let go of Mary and took them out and spread them before her.

"I found some connectors," he said.

She waved an arm at the devastated island around them, started laughing and seemed unable to stop. What was so funny? Drin thought. They *needed* the connectors. Did she say *prisoner*?

In seeking the explanations of things that happen, create many models before discarding any. Understand the difference between a fact and an assumption. Do not project your ra-tionality on what may be the result of an irrational act or non-rational hap-penstance. Learn the differing moti-vations of the other sentient.

—Planet Monitor's Handbook, Forensic Methodology

The prisoner, Drin decided, was one of the most abject and miserable human beings he had ever encoun-tered. Theric Soames was so tight, surly, and touchy that conversation was impossible. Mary didn't want to use drugs, but they had to find out about the nets, and find out soon. So she had asked them all to leave. She wanted to continue the interrogation human to human, without drugs.

"Trust me, please," she told Drin. So he assented to their return to the privacy of the cave.

There was plentiful dead wood all over the island now, and Go Ton had started a large fire. For one of the few times in his life, Drin welcomed the warmth. Do Tor sat on a log near him. He was restive from not flying while his wing healed, and Go Ton was be-ing exceptionally attentive while she was around, which was not always. Go Ton was the only one of them physically fit enough to collect food for them. Incredibly, she managed.

Drin regurgitated a salmon skele-ton and cast it away.

"How do you do it?" he asked.

"Made net from the line you brought. Put across river bed near new rapids. Collect fish."

"Your energy is a marvel. I should be able to help myself in a few more days." "Day," especially here in eter-nal light of high arctic summer, still meant a Trimus day to them and not the leisurely rotation of Aurum III. But for some beings in the mists of the future, Drin reflected, that would change.

"You realize," Drin remarked to his Kleth partners, "that there is nothing that validates our Trimusian culture more than to plant a secondary col-ony. At this point, we stop worrying about whether our ancestors came from Do'utia, Kleth or Earth. We are now all from Trimus!"

"Oh, yes," Go Ton agreed. "But we can never be the same, so always ten-sion between three and one. So Mary insists we stay away while she inter-rogates Soames. Does human-sepa-rate things maybe we should not see, but she does them *for* Trimus."

"Oh." Drin rumbled. Emotionally, his attachment to Mary, despite his best intentions, was approaching that of a bull for a harem cow. This was utterly, totally unreasonable, yet what Mary might be doing to induce Soames to talk tasted like a polluted stream to him. But perhaps his Kleth friends could help him. Go Ton's per-spective was interesting and com-forting.

"Go Ton, what do you think the English word 'perverse' means?"

"Deviating from what is considered socially acceptable. Definition rela-tive, not absolute."

"How much affection can there be between different species before Tri-mus culture considers it not socially acceptable?"

Do Tor flapped a bit of wing, indi-cating to his mate that he wished to take over the conversation. Go Ton emitted a low coo of consent.

"You and Mary?"

Drin hesitated a long time. "Yes," he finally said.

"No shame in that to me. Touch friendship natural for both your spe-cies. Not for Kleth."

"Oh, yes," Go Ton added "But we're progressive Kleth. See how much Do Tor lets me talk?"

Do Tor flapped a bit again, then made the sort of hiccoughing humor sound of his people's laughter. "Tri-musian Kleth," he said, "are consid-ered perverse, by traditionalists on Kleth, because of the very name Tri-mus. On ancient Kleth, one doesn't speak of three. Know you why?"

"No. Of course I am curious, but you do not have to tell me."

"You have told us dangerous secret so we tell you one. Our nests hold three eggs, one from each of three pairs. Two eggs one sex, one the other. Everything fine for seven or eight days. Then nest is too small. While parents away, a choice is made, and two eat the one."

"Huh," Drin rumbled, "You have seen my people's beach manners. We are all part of nature. The fight to live selects the strong."

"No fight," Do Tor corrected him. "Sacrifice. The one who is to die chooses self by not defending. But sometime not."

"Oh, yes." Go Ton added. "On old Kleth, for every six eight-cubed cou-ples, one triple. Great perversion. Parents flee or be killed. Sometimes two triples get together and pretend to be three couples. Considered witches, demons if discovered in old days. You and Mary not perverse. Are interesting. Three Kleth is perverse."

"But essential, at the start, by what you say." Drin remarked.

"Big question, hard for Kleth to dis-cuss, hard to study. Nothing re-corded, but two-egg nests usually fight, then one wins and both die. No one talks about it. Our third nestmate was intelligent being, like anyone. No biological difference. Do Tor and I start life by killing and eating our nest mate. Instinct, not decision, but we remember. Our genetic engineers can change this, but the result isn't Kleth. You can tell Mary," Do Tor said, "no else, please."

"I don't judge you," Drin said. "You are my friends. I will not speak of it to others."

"Good. So we not tell others what you and Mary do."

Drin's recharged communicator asked for his attention before he could think of a reply.

"Yes, Mary?"

"I'm bringing Soames back. He freely admits that he planted the bomb in the bioforming station, arguing that it was philosophically justifiable to prevent the inundation of Aurum III with transplanted primitivists. He remained resolutely silent with respect to who else on Trimus was party to this effort to sabotage a Council decision.

"But he emphatically denied having anything to do with the nets, and claimed to know nothing about them. He seemed genuinely surprised when he saw their captive sample, and pointed out that it had come as close to killing him as anyone. I suppose you'll want to talk to him."

"I certainly do. And, Mary?"

"Yes?"

"Did your mother have access to your codes?"

"Drin! Karen Olsen is the architect of the resettlement policy! Yes, she's the alternate custodian of my personal files, but there is no way—"

"No offense, little one, I don't think she is a suspect. But we might have to worry about anyone close enough to her to have access to her files, as your roommate did to yours."

"I see. She's not like me, that way. She hasn't been active, that way, that I know of, for some time."

"Very well. Warn her if you trust her. Mary, do you have your gun handy?"

"Yes. Why?"

"Do you remember the burnt labels on the cages in the bioforming station?"

"Uh, Canis something, a type of dog: those little hairy carnivores with the high-pitched yap that we keep as pets. The other one was Kleth I think. If it were Earth life, the genus might have been Ursus, which would have been a bear, and I don't think they would...oh. The howls."

"Someone," Drin rumbled, "has cleverly revised the ecology of this project to make it hostile to

settle-ment. I was trying to think of what might be the equivalent of sharks on land."

While what our Trimusian pioneers did was almost radical, it was done for a very conservative reason. The pioneers of all three species were dedicated to the idea that a stable interspecies culture could be created without significantly reengineering the brains and endocrinological systems of its participants. They did this in full knowledge that most of the galaxy and even their own homeworlds would eventually look on them and their descendants as living fossils, but they were comfortable with that destiny, and so far, we have been able to sustain it, with varying degrees of dedication.

—Go Zom's notes on the Compact of Trimus

"Now," Do Tor shouted from aloft.

Drin released the water wheel by taking his left foreleg off the radial beam, and it started turning. The general purpose line wrapped twice around the rim of the lava stone fly-wheel on the same *pine* log, went down one side, twice around a groove carved in another smaller stone disk, and back up again. That disk was attached to their generator's input shaft.

He watched the lash-up turn nervously; the flywheel axle rested on four magnetic bearing casters, salvaged from a cart in the ruin of the station, that looked too small for the job. It bumped and clattered around, but didn't look ready to break.

The waves had moved sand around capriciously, and exposed a rapid drop of almost a charter unit that necked down into a sort of natural chute producing a flow of three to four macrodoms per beat at a speed of a couple of charter units a beat. They had cut the curved paddles from a huge hollow *xo tar bin* log, the spokes from wave-felled *aspen*, and everything was held together with construction glue salvaged from the ruined station, and DCF. The generator told them it was putting out four eight-squared cues per beat.

The power line ran back to the cave to their dearly purchased power splice, to a communications transmitter, sitting under a mesh antenna retrieved from the ruined bioforming station. Drin knew the transmitter worked because his comset lock light said it found the carrier, but he couldn't listen in.

That couldn't be helped; since Mary's call had to be encrypted, but it was frustrating.

The log looked like it was trying to work its way to the right as it rolled. Drin grabbed a discarded branch in his beak and gave it a shove back to center. The green wood began to smoke from the friction, and the stench was awful, but things seemed to turn more smoothly. They'd have to shim the stone pile under the caster bearings as soon as Mary was done. Then they could recharge the vibrosaws and the comsets.

After a minor eternity, the lock light went out.

"Mary, I need to make some adjustments," he called.

"You've got about ten minutes for lightspeed delay. Then we wait. Drin," her voice was soft now, "If I don't get a call back in a couple of hours, I guess we can assume we'll get hit by the nets in the near future."

And they could also assume a dishonor polluting the highest levels of the Trimus Council, which would make a mockery of everything Drin believed in.

"Roger," he replied in low, disheartened tones. The whole damn Universe smelled wrong, he thought as he finished shimming the mount. That should about do it; he let the wheel run again.

A movement, almost behind his tail, registered at the limits of his peripheral vision. What? He turned to get a better look. What the polluting hell was that? A carnivore of some kind?

It reared up at the sight of Drin turning, and it looked big, even to him. The legs, covered with brown

fur, looked almost as massive as his own. With his length he probably out-weighed it by four-eighths, but on its hind legs it reared taller than him. Its head was maybe only twice as big as Mary's, but most of that was a pair of heavily muscled toothy jaws that could probably crunch even his bones. Polar bear? But weren't they white?

Well, two could play the game. He bent his sore back slightly, lifted his tail as a counterbalance, and reared up himself, his beak rising to almost half a charter unit above the ground. He opened his beak wide enough to swallow the beast whole and waved his huge claw-tipped leg at it.

It stood still for a moment, claws floundering dumbly in the air, then yielded the display contest with a high-pitched grunt, dropped to a four-legged stance, and bolted in ap-parent terror.

Drin rumbled with laughter for a moment, then froze as it scurried right into the cave.

"Mary!" he bellowed. "You've got company. Get your piece ready."

She screamed. There were low growls, but no explosions. Drin was on all fours immediately and gallop-ing to the cave as fast as he could through the still wet alluvial sand. He roared a desperate challenge.

Mary screamed again, and her loud pure high note augmented by awful dissonant screeches from Do Tor and Go Ton. The carnivore wailed itself, as if in pain.

Then Drin was under the arch. He smelled blood.

The cave and equipment were a mess. Soames was moaning; some-thing was wrong with his arm. Then the thing turned to face Drin, and de-spite the difference in size, it charged him. Of course, he'd cornered it.

Drin whipped his tongue at it, branches curled into a heavy ball of cartilage and ligament, and hit it square in the head, sending it sprawl-ing into the communications unit.

It had already been wrecked, Drin told himself, as he got his gun out of his pouch.

The thing was back on its feet and charging before Drin could bring the gun to bear. He couldn't snap his beak with his tongue out, and he was, just then, too off balance to hit it with a claw.

He tried to swing his open beak at it, missed, and it was under him, at his throat, biting incredibly deep for its small mouth. Drin groaned in agony, but finally rocked back enough to raise a front leg.

Then it was over. The upper half of the carnivore slammed into the ru-ined comset again, as fur, bone, en-trails, and general gore splattered ev-erything else in the cave, including Mary, Theric Soames, Do Tor, and Go Ton.

Drin gasped. He was pumping riv-ers of blood onto the cave floor from a throat artery.

He looked at Mary dumbly, think-ing it might be the last time he would see her. She was busy, using only one arm, giving something to Soames. Do Tor had the vibrosaw. Mary grabbed the man's arm just below the joint. He looked at Drin as she held the torn stump out for what was apparently to be a crude surgery.

Drin tried to croak something, but Go Ton was talking to him trying to get his attention.

"Your ventral heart, Drin. Quiet it. They teach you how. Concentrate. Quiet it."

Yes. Think of deep, ice-cold water. Long endurance conditions.

"Good. Now, somehow you have to stay on your feet while this mess I work on."

Somehow, in the cave's wreckage, Go Ton had found the medical kit. The Kleth waded through the visceral garbage to get under him. A spray numbed his throat.

Drin realized he was woozy with heat. The charge to the cave, the fight, short as it was, with the carnivore. But if he fell now he'd crush Go Ton.

Cold deep water...negative buoyancy, standing. Drin locked his leg joints under him and let every other part of him go distant and quiescent. He stood, he endured.

How long? The dead alien flesh scattered around was beginning to smell. Finally, tugs on his outer hide told him Go Ton was closing the wound. At the last, a spray and a feel-ing of tightness. Smart fiber artificial hide.

"Done now," Go Ton declared. "Be more careful. Not enough for a wound that big again. Can lie down now, Go Ton will work on Theric Soames."

Drin backed away from the gore and settled into the cool sand. Uncon-sciousness came quickly.

Do'utian medical treatment offers several unique challenges to human and Kleth care givers. Foremost of these is the sheer size of the dose needed to do anything to a Do'utian. The principal means of providing Do'utian internal medicine is to use secondary vectors, biologically engi-neered bacteria that, when intro-duced into the Do'utian bloodstream in a dormant form, revive, multiply and give off the appropriate drug as a byproduct. Dosage is controlled by the preprogrammed number of repli-cations allowed to each bacterium.

—Planet Monitor's Handbook, Medical Appendix D

Drin watched Mary clumsily wipe the grease from her face with her right sleeve while holding a hunk of blackened meat. Go Ton had told him the two bones of her lower arm had snapped rather cleanly, and the sur-face wounds were deep punctures more than tears. With their limited medical facilities, recovery would be long and painful. For now, single branched Theric Soames was less dis-abled.

"Give it up, Soames," Mary argued. "I'll grant your ideals, but other peo-ple's ideals count, too. It was a hard decision, and sorry it didn't go your way. But your conscience can't dic-tate to everyone else."

Soames now stared at the dirt. "I'm not ready to admit...betray anyone else. I set the bomb. I hoped it would at least scare people into delaying things long enough that the political people could force another vote. I didn't want to hurt anyone. I tried to save Ko Kor's life."

"Huh?" Mary said. "Ko Kor wouldn't have lived."

"No, maybe she *would* have lived, if this egg sinks." Drin replied, realiz-ing after he spoke, that the Do'utian idiom he'd translated might not mean much to his fellow monitors. A fertile egg sinks. "Never mind. Do Tor, what do you know about the Kleth that died, Ko Kor, and Sha Ton?"

"Besides being victims, not much. Deaths obviously incidental to attack on project."

"If Kleth are mates from the begin-ning, wouldn't they be born at the same time? In the same weather?"

"Oh, yes." Go Ton answered.

"Sha Ton's crest was notched, but Ko Kor's was smooth." Drin ob-served. "The implication being that they were not born at the same time or place, and thus not nestmates. But they were listed as nestmates. Why? And one had followed the other in death, like a nest mate. Why?"

The heads of both Kleth snapped up in unison and stared at him. Go Ton's eyes found her mate.

"You have seen what we could not." Do Tor finally said in an apolo-getic and formal tone, and in a re-spectful proper English that Drin was unaware the Kleth could speak, "We would never consider it because of our fear and denial of those few who do not share our first guilt. We shall check, but the records are very pri-vate. We shall need Council ap-proval."

"Oh, yes." Go Ton chimed, very softly to her.

"Monitors," Drin rumbled. "I think Sha Ton's husband and sister are safe on Trimus, as are the brother and wife of Ko Kor. As parts of a triple, they would be expendable because they could die without killing anyone else, or continue to live if one or the other of them died."

"Oh, yes," Go Ton added. "And the conspiracy would keep their dirty little secret unless they betrayed the conspiracy. Lock in. Was too perverse for me, a Kleth to think of. Observant, suspicious, Drin had to spot difference in crests. Rest is reason."

"OK. I knew what they were, we were all part of it," Soames admitted, adding, "I thought I could save her before whatever was happening set off the explosives."

Do Tor lifted his wings slightly, a Kleth indication of irritation.

"But she did not want to be saved," Do Tor stated. "She had something more important to do."

"The cages," Mary said, at last. "*Canis lupus*, big gray, and hungry. *Ursus middendorfi*. Of course, the biologists had to be in on it: Wolves, bears, sharks, all enhanced, and none of them part of the official bioforming plan. What about the nets?" Mary asked. "Something to cover up the evidence?"

"I think Soames gets credit for too much." Do Tor said in the low resonant tone that indicated Kleth contempt. "He didn't know about nets, he was in open when they fell. Could have been *his* head. If he knew Ko Kor not going to die for mate, he knew for what she *was* risking her life. So that's what he tried to stop."

"Damn you, I was trying to save her life, bird brain!"

"Monitors, remember. These are criminals! Cheat Charter; cheat Council; cheat each other too. Sharks keep Do'utian primitivists out, wolves and bears keep humans out. Leave world for Kleth. Sha Ton was a rebel all his life, and I think wanted a world safe for Kleth triples. Soames, you wanted world for humans and not Do'utians—so you planned to bomb the baby wolves and bear. But the nets came and Ko Kor saved them for her partners back on Trimus before the electrical fires set off the explosives—if she didn't do it herself to save the conspiracy and hide tripleness. In a way, her death fulfilled a destiny she evaded at hatching, and perhaps that is how she saw it.

"Also, Earth birds, per unit mass, have best brains in whole strange Universe. Compliment accepted."

And deserved, Do Tor, Drin thought. But if Soames really didn't have anything to do with the nets, were they an accident? A wild card of fate? Or did someone back on Trimus know about them, someone placed highly enough to hide that knowledge and use it?

We who founded Trimus had a reverence for the past and our own natures. Perhaps this was nostalgia, or ancestor love, or the sensing of a dead end in the ultimate quest of the genetic engineers to fix everything. If we were clever enough, we thought, we could show, by three sentient species living together under a single law, that much of this change was unneeded; that we could preserve much more than others thought and still live at peace with one another. We knew we would have to work at it, but celebrated our common ability to act with reason over feeling. No one thought it would be easy, and we gloried in the challenge of these lofty heights.

—Go Zom's notes on the Compact of Trimus

With Aurum so near the horizon, the sky was again blood red. It could not simply be the low sun, Drin thought; there must be a lot of dust in the air.

"A volcano somewhere?" he asked Mary as they walked toward the river.

She laughed. "Of sorts. Drin, you guys, you just don't think about consequences because most of the time, you're too big to suffer ordinary consequences."

"Consequences?" What did she mean...oh. "I see. Sea bottom turned to dust from the spacecraft explosion? Look, what would the consequences have been if I hadn't made a controlled detonation?"

Mary seemed to giggle and sob at the same time. "Controlled?"

"Well..."

"Drin, sometimes you just don't have very good judgment about things on my scale."

They had reached the generator wheel. Drin was moving very slowly now, and looked at the river below the wheel. There were fish in Do Tor's net, he hoped. He had to re-cover his strength, or the infinity in front of them might not last another day. The mission. Drin examined the transmitter; its input line, which had been attached to the ruined modem back in the cave, was a standard connector. He had trouble thinking; were power supplies standard? If not, they should be.

"I think if we could connect the generator directly to the transmitter, we might be able to send a digital signal. On and off, by interrupting the connection."

Mary patted him. "I'll go back and salvage a connector so we can patch them. Meanwhile, maybe you can eat something?"

"If it swims into my mouth. Which is not that unlikely, if I put myself in the right place." He yawned in imitation of a cave, with his tongue, branches and hands as bait. Mary laughed, and then she was off.

Drin turned to the water and slid in. He had a moment of exhilaration as the weight left his legs. Freed from that demand on his energy, Drin's body fed more blood to his head. His back still ached, but days on land had left those particular muscles alone, and while they protested, a few easy movements started to warm them up a bit, and what had felt so devastating seven Trimus days ago now seemed a nuisance. He let himself drift down-stream. He hunted. He ate.

The wolf smell hit Drin as soon as he hauled himself from the water near the transmitter. No more good feeling; his protein-starved muscles burned with the pain of their reimposed burden. He should stay in the water for another day or two, but duty called.

He looked around. A large rock, maybe an eighth of a unit tall, stuck up from the sand about two thirds of the way from the cave to the river. The wolves were around it growling. From time to time the end of a large tree branch swung over it.

Mary? Drin pulled his gun out of his pouch, and felt a warning buzz along with the usual activation signal; only ten rounds left.

He keyed his comset, and got a warm-up signal. Pollution! He hadn't turned it back on since the re-charge...too far gone, mentally, to check. It was on with checks complete in less than a beat, but that didn't do any good about the past. "Mary, I'm back. Is that you in the wolves?"

"Drin," her voice was shaky, "Drin, I'm out of rounds; but they don't know that, so they're being cautious."

"I'll try to get to you, but I can barely move."

"I don't dare run to you. First thing I show any fear and they'll be on me."

"Where are the Kleth?"

"Go Ton's looking for you. Do Tor's watching Soames. We got worried."

"Sorry. My comset was still on re-charge. Do Tor, forget Soames, we need some firepower."

But it was Soames's voice that answered. "Too late for Do Tor to forget me. And if Go Ton tries to help, I'll blow his head off."

Pollution! What had happened in there? At least Go Ton was, apparently, still alive. Best leave that problem to Go Ton when she returned.

"I'm coming, Mary. Not very fast, but I think I'll make it."

"OK." She replied. Drin saw the stick jerk down and heard a yelp.

He heard wings overhead, and stuck his tongue out and made the monitor sign for silence. Go Ton alighted just ahead of him.

"Heard, Lieutenant," she said.

"Load trunk; you'll have to take him. Good hunting."

"Loaded. Front door, full speed. Good hunting, Drin."

The Kleth leapt into the air and gained altitude. Eight charter units up she stooped, buzzed the wolves sur-rounding Mary, sending one yelping away, then headed for the cave mouth at a speed that only Kleth re-actions could envision.

Meanwhile Drin got close enough to shoot at the wolves.

"Mary, I'm in range. Can you run?"

"Like a deer. Of course, that's breakfast for these things."

"If you can spiral in toward me instead of running right at me, that should keep you out of the finder range and give me a clear shot."

"Got it. Regards to Mom."

She, Drin realized, didn't expect to make it either.

"Mary Pierce. For whatever it means, I love you too. Now run while I can still stand."

The stick descended once more, and this time Drin heard a howl. Then Mary sprinted from behind the left side of the rock. Three wolves were right after her.

In a fraction of a beat, Drin shot once, and one went down. But the others didn't seem to notice. He shot again and a second went down, but the third lunged at Mary's leg.

It got a shoe in its face, and a bullet before it could recover.

Four more wolves leapt over the bodies of the fallen.

Drin pressed the stud down and five rounds went before he released it. Three wolves down, one stumbled over the other two, and was joined by four more. Drin had two bullets left.

A roar of frustration left his throat, as he shot one, getting one wolf in the midst of a leap at Mary. Too close; the bullet could just as easily have locked onto her.

The wolves stopped and looked at him.

He roared again, this time putting a little anger in it, and stepped forward. One of them yelped, and they re-treated, milling around, sniffing their dead.

Mary sprinted to about three charter units of him before the wolves realized Drin wasn't going to charge them. Then they came after her again. She tried to run faster and tripped, struggling though the soft, wet sand. Drin moved slowly, painfully forward, but he was too far away.

Suddenly, for no apparent reason, one of the wolves screeched and started biting at its own rear leg, apparently biting it off entirely. The whine got the other's attention and they milled around yelping and sniffing bodies.

Something hissed in the sand beside Drin.

"Mary, NETS!"

The front part of a wolf's head fell off, leaving a blood-spurting howling horror. Compassion used Drin's last bullet as Mary reached him.

"Get under me," he said and turned toward the river. His fight and flight glands were in full gear, but they had almost nothing to work with; his muscles were burning their own tissue, slowly. He felt a vicious sting on his back.

Mary scrambled under his head. The water was eight squared charter units away; the antenna, its mesh re-flector an ironic reminder of what was falling on them, was within six eights.

The mission. They should try to save it, the transmitter, and the generator.

The tip of his tail burned. Amputated.

"Mary, where do these polluting things come from?" he groaned as he staggered on.

The question was rhetorical, but to his surprise, she answered. "Not Trimus, we think. Do Tor took our sam-ple apart while you were gone, with the med kit. They look grown, not designed. But it could be that's what we're supposed to think."

Another sting on his back.

"Are they dispensed? How do they move?"

"They're very light absolutely, but still much denser than air. They wouldn't reflect light like light sails, unless there was stuff between the membrane that burned off in aero-braking."

Four charter units to the equip-ment. A net brushed a leg, slicing deeply. He stumbled a bit.

"Watch it, guy," Mary said, forced calm in her voice. "Uh, they could reflect radio waves, just like our mesh antenna. As long as the radio photons are bigger than the mesh openings."

Radio waves, like any other elec-tromagnetic waves, exert pressure, Drin thought and the nets were very light. And the mesh was actually about the same size as their antenna's.

"Do you still have the connectors, Mary?"

"Yes."

They were at the equipment and the nets hadn't hit it yet. "I'm thinking we can levitate or deflect them with enough power."

"That sounds a lot better than me trying to carry this stuff with one arm. I'll try to get the flywheel going."

Drin's first reaction was that he should do that and she should make the connections. But on the end of his tongue he had two hands avail-able, and she didn't.

The lines to the cave—he would have to cut them sharply and cleanly to put them into his connector but he didn't have a tool. He cast his eyes quickly around the machinery for anything he might use. There was nothing.

A net might do the trick, but ironi-cally, there wasn't one handy just now. Or was there?

In his back.

He opened his beak and looked at the gun. It had a diamond barrel, with a raised fixture for attachments on the end. He bent around and looked at one of his fresh new scars, put the gun barrel in, pushed his flesh aside, then pushed the barrel down in, twisted it and pulled it up again. It hurt, but not enough.

He did it again, and this time was rewarded with the feeling of having surgery, without anesthetic. He couldn't help groaning in pain, but when it was done he could see, glint-ing in the horizon-reddened light of the now-rising Aurum, the thread of a net.

He grabbed the output line, pulled what he hoped would be enough of it back from the direction of the cave, draped the collapsed net over the ca-ble, and gently sawed back and forth.

It cut through the glass cord sheath like a diamond-edged vibroblade, and he stuck the cleanly severed end into the connector. A net burned the top of his head, slicing the sensitive area around his blowhole. Shaking with weakness and pain, he repeated the procedure with the other cable.

"Mary," he called, "turn it loose!"

The wheel creaked, the generator telltales went on, the wheel went faster. Drin tried to think; power, lightspeed, the constant of To'ictillig, photon pressure—it all blurred.

A net hissed into the wet sand be-hind him. He moved nearer to the dish and looked up into the gray, deadly sky. Aurum peeked through the cloud cover again and its low golden glow caught a net glinting far above him. He backed away, but then noticed that it seemed to slide away.

He lost sight of it, but then saw a brief plume of steam where it must have hit the sand a charter unit away. He caught another brief plume far-ther away. One hit the wheel and hissed.

"Drin, I think it's working," Mary shouted over the noise of the wheel. "The nets are avoiding us like we were in some kind of force field."

Drin lay down in the cool, wet, sand and started taking long deep breaths, too exhausted to even reply. Soames, Do Tor, Go Ton, the nets em-bedded in his hide, and all the other problems; even Mary faded in relief. Safe for the moment, his body re-claimed him.

A day later, Drin felt much better; his meal had worked its way to the rest of his body, Go Ton's trunk rounds had easily subdued the slow moving and surprised Soames, Mary seemed her old self again, and Do Tor thought he knew what the nets were.

"The webbing is a thin diamond alloy tube only a few thousand atoms across," he said. "Not quite monofilament, but when it is very hot, it cuts almost as well."

"Oh yes," Go Ton added as Drin grunted his own ironic concurrence.

"High temperature but not much heat," Do Tor continued. "Water, flesh, wet wood, and sand stop it in a doci or less. But it goes easily through bone, plastic, glass, composite. Nets receive, transmit, or reflect radio waves at fairly high efficiency, de-pending on what the nodes that con-nect the webbing do. Possibly Ember is radio-bright enough to push them away, so they don't fall on Trimus."

Net falls, Drin remembered, had occurred a few hours after use of the high powered communications.

"Then," he speculated, "the deaths were not a crime at all, but an acci-dent? They seem too convenient."

"Can't tell if they are artificial or naturally evolved, but they seek mini-unit radio sources—what we use. They could be deliberately at-tracted."

"By who?" Drin asked. But it was becoming all too clear. All the threads had a common connection, one he wanted to reject, that he didn't dare voice.

Before anyone could answer his question Mary's comset beeped for attention. Who?

"Hello. Mary Pierce here, go ahead"

"This is Spacecraft *Trimus Com-pact*, on approach. Captain Loren speaking. You should see us shortly to the west. We have an ecological team, Councilor Olsen, and Gori'allolub aboard."

Drin's beak went to the sand at the omission of Gori'allolub's title. Whether the others noticed it or not, that immediately told Drin the worst of his fears had been confirmed. He would almost rather not be rescued. They saw the spacecraft first, a tiny teardrop against the gray clouds. Then a single heavy sonic boom rat-tled back and forth from the cones of the nearby volcanoes. A slipstream roar followed the boom, and finally a cracking torrent as the spacecraft engines scaled up to full thrust, allowing it to settle gently into a bil-lowing cloud on the sea beyond their river mouth.

Macrovirus is a name applied to various self-replicants which, absent anything sapients would recognize as intelligence or ability to communi-cate abstract ideas, nevertheless have evolved the ability to travel between stars and feed. Five are known to be spreading in this part of the Milky Way Galaxy, and only one poses a sig-nificant threat to a prepared popula-tion. But, in surprise, all are dan-gerous.

—Planet Monitor's handbook, Off-Trimus Section

The great Do'utian, Gori'allolub, did not lower his beak, and presented himself with the presence of a

beachmaster. That, Drin thought, pre-sented a memorable contrast to the circumstances of his speech. In sad-ness Drin, lowered his own head as Gori'allolub spoke.

"So I must take full responsibility and ask for gentle treatment of Theric Soames. I believe, and continue to be-lieve, that transport to Aurum III sim-ply delays confronting our problem and needlessly sacrifices an entire world. To do this in a way that flowed in the direction of strengthening the Compact required risking the lives of dedicated people, lest our network became known before it was too late. Now, I must make amends and at-tempt to do something that will allow the future to face the problem in ac-cordance with the wishes of the ma-jority of the Council, including my most intimate friend whom I have wrongly betrayed."

"Two Kleth dead, even if tripled." Go Ton spat, as angry as Drin had ever seen him.

"Gori'allolub has resigned from the Council," Councilor Karen Olsen added, unsteadily, it seemed to Drin, "to take charge of the biological reengineering effort. Even though I sup-ported resettlement, I should have recognized the depth of his opposi-tion and done more to achieve real compromise. So I take some of the blame and am staying here with him until the job is done."

She gave a tight smile, and when she did so, her resemblance to Mary startled Drin. Most intimate friend, Gori'allolub had said, yet on opposite sides of a hard political ques-tion...was this possible? Drin's beak opened as he tasted the wind—as if he would find an answer there. And there was an Earth strangeness to Gori'allolub's smell.

"Now to more pleasant things," Karen Olson nodded to Drin. "There is a Do'utian slot on the Council open. The Kleth and Human mem-bers have voted to nominate Monitor Lieutenant Drinnil'ib. I think there is little prospect that the Do'utian members will veto this."

"What!" Drin blurted, then quick-ly put his manners together, and touched his beak to Karen Olsen, "I mean I am honored. But politics? I do not swim in those currents."

The Councilor laughed. "None of us do, at first. But you have the needed dedication to the Trimus Compact and Charter, a far better ed-ucation than most, and a considerable popular following from your, shall, we say, exploits."

"Oh, YES," both Do Tor and Go Ton sang.

Drin dug his nose almost a docu into the sand trying to think of some-thing to say.

Do Tor came to his rescue.

"Excuse. I assume we are now safe from nets, but would like more than assumptions."

Oh, yes, Drin thought.

Karen Olson nodded. "Very safe. We saw what you did from our satel-lites, and have the orbital Aurum III comm maser deflecting the stream to Aurum II for now."

"Why are they here?" Drin asked, "A macrovirus, I know. But using the term explains nothing."

"We think the nets were initially attracted by the electronic noise at the start of bioforming activity, al-most a macroyear ago. Unfortunately, a scientist involved with resettlement opposition found the nets and saw a way to cover the tracks of the con-spiracy. They kept the nets a secret and used Aurum III's satellites to lure them here."

"Knowing that Ko Kor, Sha Ton, and I would get killed?" Soames whined.

"Sacrifices are necessary burdens of office," Gori'allolub said. "You chose the risk."

"And our investigation?" Mary asked quietly. Drin could sense in-comprehension in her voice.

"You," Gori'allolub stated, "were expected to be delayed, to discover the external threat too late, but not the conspiracy, nor to counter either threat quite so effectively. I badly un-derestimated your abilities, Drinnil'ib." Gori'allolub added. This time he did tip his nose slightly. "That all four of you would survive sabotage, three net falls, and two antimatter containment loss events defies rea-sonable

prediction."

The tone of Gori'allolub's remark suggested that Drin had done Trimus a disservice by staying alive. With a start, he realized that this must be just what Gori'allolub felt, and that below the reasoned discipline the ex-Councilor smelled not unlike a bull chased from its harem.

"I meant you no personal harm," Drin hissed politely. "You assigned me to seek the truth."

"I asked you to quiet troubled waters, not roil them," Gori'allolub growled. "Now, I must apologize for putting myself above the Council. As I am sure you know, exile is an insufficient apology for causing useless deaths."

"Gori'allolub?" Karen Olsen asked.

Did Gori'allolub want to lure Drin to beach combat? In his present weakness, Drin would surely lose and the huge Do'utian could eliminate the others by "accident!" Was that the problem with the other's smell? Had he taken chemicals to disguise such a challenge scent until too late?

"There is only one sufficient apology."

"No," Karen Olsen protested. "Time heals all such wounds."

"Silence." Gori'allolub snapped. There was a whiff of challenge, but Drin forced his beak down.

"I will not fight you, master." Drin stated, fighting down his own challenge instinct.

"Do not become too human, new Councilor," Gori'allolub hissed, "or you will lose the people's support. Think of Trimus as a tripod, not a sphere mapped with three regular identical colored areas, and you will do much better. No, you do not smell disguised challenge. I have ingested chemicals that will sterilize any sharks that eat my flesh. Karen, if I have failed you, I did so for a higher loyalty; just as you failed to support me in Council for a higher loyalty. So our fun was meaningless. Now, I am going for a swim with the sharks that I helped to bring to this world."

With that Gori'allolub turned and began walking in a measured, dignified way, toward the river.

"Gori'allolub," Karen Olsen shouted. "No. You don't need the Council. I will love you here, give you joy. We can still swim together. Gori'allolub, you are my life!"

Mary stared at her mother, mouth gaping. Drin's head fell. So Gori'allolub himself had drifted in the same strange currents that tempted Drin. How little he really knew the great one. But he knew this much; now only the balm of the most hideous sacrifice would lay Gori'allolub's pride to rest.

"He has no other choice," Drin told Karen Olsen quickly, "to still be a Do'utian and honor his commitment to Trimus. Providence ends all life eventually; let him go now, in balance."

"Where is your medical kit," Karen quickly asked Go Ton, "show me the anesthetics."

Go Ton held the case open and indicated the row. There were hypos and dart gun ampules. Karen took one labeled: "Do'utian: Male."

"Mary, give me your gun." Mary complied. Drin understood and made no move to stop her—it would make no difference to Gori'allolub's honor if others forced the pain blocker on him. Karen loaded the gun, and gave it back to Mary.

"You know what you're doing, Monitor. Shoot."

Mary leveled it at the Do'utian's neck. The acquisition light blinked and she shot. The dart knew to find its way to that same area of thin hide that had caused Drin so much pain with the bear wound. Gori'allolub ignored it, but now he would be able to contemplate his dismemberment free from the distraction of pain.

Mary faced her mother.

"Mom, I understand. I wanted to tell you that I have been thinking of having the same kind of relationship with Drin. I don't understand, really, the fascination I have for it. But it's something really basic. I don't feel bad about it, and I think I can handle it. And let go if I have to."

Councilor Karen Olson nodded and laughed in a way with which Drin was not familiar. Higher pitched, a different feeling. "After five centuries, Mary? You think you can handle it? Then consider this." She took a hypo tube from the open kit. Drin could read the label: general pain blocker, human. "It was a really fine perver-sion and I am *not* quite done with it." She stabbed her arm with the injec-tor. "Wait, Gori. It is only my life at stake now, and I will not leave you."

The big Do'utian hesitated but a moment, then resumed his march to the sea, the sharks, and his comple-tion. Drin understood. The old one was leaving all the affairs of Trimus, including Karen Olsen, behind him as a defeated bull leaves his harem to another without looking back. Should he say something?

"Mother," Mary cried, "you're not a harem cow or a Kleth mate! Human beings don't do that. How can we re-spect their identity if we don't re-spect our own?"

"You don't know, child," Karen Olsen snapped, and without a further word, fled after Gori'allolub.

It was a life versus a reputation, and Drin could not remain silent. "Coun-cilor Olsen, he used you. He used you to get Mary's codes to try to endanger our lives. He used her communica-tions with you to send the nets at us, twice. He's not worthy of this loyalty!"

At this, Gori'allolub did turn and roar in rage. Councilor Olsen stopped and backed away from the two Do'utian bulls. Drin's hearts began pumping at combat strength, and he took a step forward. So they would both die.

Then, with the slow majesty of one winning a hard fight with himself, Gori'allolub turned back toward the sea.

Karen Olsen looked at Mary, shook her head, and set out again after Gori'allolub.

"No!" Mary shouted and ran after the Councilor. Drin saw that Karen Olsen was too far ahead to be caught by her daughter.

But not by Drin. He shot his tongue out to its maximum length and just managed to wrap both branches around the fleeing human woman, who strug-gled briefly, then collapsed and sobbed in his grasp as Mary ran to her.

And with that one gesture, which he would remember for the eternity ahead of him, Councilor-to-be Drinnil'ib crossed the line from enforcing the choices made by others, to mak-ing such choices for them. He re-solved that he would try to do so re-sponsibly and reasonably, for Mary, for Do Tor and Go Ton, and for all the Trimusians in his wake.

Afterword

Editor's Note: This story is set in the same system as "Poles Apart," in our Mid-December 1992 issue.