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PETER WATTS

BEHEMOTH

# **Behemoth**

**Peter Watts**

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In memory of Strange Cat, *a.k.a.* Carcinoma,  
1984-2003

She wouldn't have cared.

And in memory of Chuckwalla,  
1994-2001

A victim of technology run amok.

## Author's Note

*This* is the way it was meant to be. Well, not all pixellated and virtual or (at best) home-printed, but *integrated*, dammit, a single novel in a single package, and fuck the beancounters and their Solomonesque book-splitting travesties. We aren't in the old-school economy any more, Toto— we're *giving* this stuff away now, and you can judge it for better or worse as a single standalone entity. You may agree with *Publisher's Weekly* and call this the capstone to one of the major works of hard-sf in the new century. Or you may side with *Kirkus* and dismiss it as horrific porn, rife with relentlessly clinical scenes of sexual torture. (Hell, you may even decide they're both right.) But whatever you decide, at least you'll be basing that assessment, finally, on complete data.

—Peter Watts, 2007

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## PRELUDE: 'LAWBREAKER

If you lost your eyes, Achilles Desjardins had been told, you got them back in your dreams.

It wasn't only the blind. *Anyone*, torn apart in life, dreamt the dreams of whole creatures. Quadruple amputees ran and threw footballs; the deaf heard symphonies; those who'd lost, loved again. The mind had its own inertia; grown accustomed to a certain role over so many years, it was reluctant to let go of the old paradigm.

It happened eventually, of course. The bright visions faded, the music fell silent, imaginary input scaled back to something more seemingly to empty eye sockets and ravaged cochleae. But it took years, decades—and in all that time, the mind would torture itself with nightly reminders of the things it once had.

It was the same with Achilles Desjardins. In *his* dreams, he had a conscience.

Dreams took him to the past, to his time as a shackled god: the lives of millions in his hands, a reach that extended past geosynch and along the floor of the Mariana Trench. Once again he battled tirelessly for the greater good, plugged into a thousand simultaneous feeds, reflexes and pattern-matching skills jumped up by retro'd genes and customized neurotropes. Where chaos broke, he brought control. Where killing ten would save a hundred, he made the sacrifice. He isolated the outbreaks, cleared the logjams, defused the terrorist attacks and ecological breakdowns that snapped on all sides. He floated on radio waves and slipped through the merest threads of fiberop, haunted Peruvian sea mills one minute and Korean Comsats the next. He was CSIRA's best 'lawbreaker again: able to bend the Second Law of Thermodynamics to the breaking point, and maybe a little beyond.

He was the very ghost in the machine—and back then, the machine was everywhere.



And yet the dreams that really seduced him each night were not of power, but of slavery. Only in sleep could he relive that paradoxical bondage that washed rivers of blood from his hands. Guilt Trip, they called it. A suite of artificial neurotransmitters whose names Desjardins had never bothered to learn. He could, after all, kill millions with a single command; nobody was going to hand out that kind of power without a few safeguards in place. With the Trip in your brain, rebellion against the greater good was a physiological impossibility. Guilt Trip severed the link between *absolute power* and *corruption absolute*; any attempt to misuse one's power would call down the mother of all *grand mal* attacks. Desjardins had never lain awake doubting the rightness of his actions, the purity of his motives. Both had been injected into him by others with fewer qualms.

It was such a comfort, to be so utterly blameless. So he dreamed of slavery. And he dreamed of Alice, who had freed him, who had stripped him of his chains.

In his dreams, he wanted them back.

Eventually the dreams slipped away as they always did. The past receded; the unforgiven present advanced. The world fell apart in time-lapse increments: an apocalyptic microbe rose from the deep sea, hitching a ride in the brackish flesh of some deep-sea diver from N'AmPac. Floundering in its wake, the Powers That Weren't dubbed it Behemoth, burned people and property in their frantic, futile attempts to stave off the coming change of regime. North America fell. Trillions of microscopic foot soldiers marched across the land, laying indiscriminate waste to soil and flesh. Wars flared and subsided in fast-forward: the N'AmPac Campaign, the Colombian Burn, the Eurafican Uprising. And Rio, of course: the thirty-minute war, the war that Guilt Trip should have rendered impossible.

Desjardins fought in them all, one way or another. And while desperate metazoans fell to squabbling among themselves, the real enemy crept implacably across the land like a suffocating blanket. Not even Achilles Desjardins, pride of the Entropy Patrol, could hold it back.

Even now, with the present almost upon him, he felt faint sorrow for all he hadn't done. But it was phantom pain, the residue of a conscience stranded years in the past. It barely reached him here on the teetering interface between sleep and wakefulness; for one brief moment he both remembered that he was free, and longed not to be.

Then he opened his eyes, and there was nothing left that could care one way or the other.

Mandelbrot sat meatloafed on his chest, purring. He scratched her absently while calling up the morning stats. It had been a relatively quiet night: the only item of note was a batch of remarkably foolhardy refugees trying to crash the North American perimeter. They'd set sail under cover of darkness, casting off from Long Island on a refitted garbage scow at 0110 Atlantic Standard; within an hour, two dozen EurAfrican interests had been vying for dibs on the mandatory *extreme prejudice*. The poor bastards had barely made it past Cape Cod before the Algerians (the *Algerians?*) took them out.

The system hadn't even bothered to get Desjardins out of bed.

Mandelbrot rose, stretched, and wandered off on her morning rounds. Liberated, Desjardins got up and padded to the elevator. Sixty-five floors of abandoned real estate dropped smoothly around him. Just a few years ago it had been a hive of damage control; thousands of Guilt-Tripped operatives haunting a world forever teetering on the edge of breakdown, balancing lives and legions with cool dispassionate parsimony. Now it was pretty much just him. A lot of things had changed after Rio.

The elevator disgorged him onto CSIRA's roof. Other buildings encircled this one in a rough horseshoe, pressing in at the edges of the cleared zone. Sudbury's static field, its underbelly grazing the tips of the tallest structures, sent gooseflesh across Desjardins's forearms.

On the eastern horizon, the tip of the rising sun ignited a kingdom in ruins.

The devastation wasn't absolute. Not yet. Cities to the east retained some semblance of integrity, walled and armored and endlessly on guard against the invaders laying claim to the lands between. Fronts and battle lines still seethed under active dispute; one or two even held steady. Pockets of civilization remained sprinkled across the continent—not many, perhaps, but the war went on.

All because five years before, a woman named Lenie Clarke had risen from the bottom of the ocean with revenge and Behemoth seething together in her blood.

Now Desjardins walked across the landing pad to the edge of the roof. The sun rose from the lip of the precipice as he pissed into space. So many changes, he reflected. So many fold catastrophes in pursuit of new equilibria. His domain had shrunk from a planet to a continent, cauterised at the edges. Eyesight once focused on infinity now ended at the coast. Arms which once encircled the world had been amputated at the elbow. Even N'Am's portion of the Net had been cut from the electronic commons like a tumor; Achilles Desjardins got to deal with the necrotising mess left behind.

And yet, in many ways he had more power than ever. Smaller territory, yes, but so few left to share it with. He was less of a team player these days, more of an emperor. Not that that was widely known...

But some things *hadn't* changed. He was still technically in the employ of the Complex Systems Instability Response Authority, or whatever vestiges of that organization persisted across the globe. The world had long since fallen on its side—this part of it, anyway—but he was still duty-bound to minimise the damage. Yesterday's brush fires were today's infernos, and Desjardins seriously doubted that anyone could extinguish them at this point; but he was one of the few that might at least be able to keep them contained a little longer. He was still a 'lawbreaker—a *lighthouse keepr*, as he'd described himself the day they'd finally relented and let him stay behind—and today would be a day like any other. There would be attacks to repel, and enemies to surveil. Some lives would be ended to spare others, more numerous or more

valuable. There were virulent microbes to destroy, and appearances to maintain.

He turned his back on the rising sun and stepped over the naked, gutted body of the woman at his feet. Her name had been Alice, too.

He tried to remember if that was only coincidence.

# β-MAX

"The world is not dying, it is being killed.  
And those that are killing it have names and addresses."  
—*Utah Phillips*

## COUNTERSTRIKE

First there is only the sound, in darkness. Drifting on the slope of an undersea mountain, Lenie Clarke resigns herself to the imminent loss of solitude.

She's far enough out for total blindness. Atlantis, with its gantries and beacons and portholes bleeding washed-out light into the abyss, is hundreds of meters behind her. No winking telltales, no conduits or parts caches pollute the darkness this far out. The caps on her eyes can coax light enough to see from the merest sparkle, but they can't create light where none exists. Here, none does. Three thousand meters, three hundred atmospheres, three million kilograms per square meter have squeezed every last photon out of creation. Lenie Clarke is as blind as any dryback.

After five years on the Mid Atlantic Ridge, she still likes it this way.

But now the soft mosquito whine of hydraulics and electricity rises around her. Sonar patters softly against her implants. The whine shifts subtly in pitch, then fades. Faint surge as something coasts to a stop overhead.

"Shit." The machinery in her throat turns the epithet into a soft buzz. "Already?"

"I gave you an extra half-hour." Lubin's voice. His words are fuzzed by the same technology that affects hers; by now the distortion is more familiar than the baseline.

She'd sigh, if breath were possible out here.

Clarke trips her headlamp. Lubin is caught in the ignited beam, a black silhouette studded with subtle implementation. The intake on his chest is a slotted disk, chrome on black. Corneal caps turn his eyes into featureless translucent ovals. He looks like a creature built exclusively from shadow and hardware; Clarke knows of the humanity behind the façade, although she doesn't spread it around.

A pair of squids hover at his side. A nylon bag hangs from one of the meter-long vehicles, lumpy with electronics. Clarke fins over to the other, flips a toggle from *slave* to *manual*. The little machine twitches and unfolds its towbar.

On impulse, she kills her headlight. Darkness swallows everything again. Nothing stirs. Nothing twinkles. Nothing attacks.

It's just not the same.

"Something wrong?" Lubin buzzes.

She remembers a whole different ocean, on the other side of the world. Back on Channer Vent you'd turn your lights off and the stars would come out, a thousand bioluminescent constellations: fish lit up like runways at night; glowing arthropods; little grape-sized ctenophores flashing with complex iridescence. Channer sang like a siren, lured all those extravagant midwater exotics down deeper than they swam anywhere else, fed them strange chemicals and turned them monstrously beautiful. Back at Beebe Station, it was only dark when your lights were *on*.

But Atlantis is no Beebe Station, and this place is no Channer Vent. Here, the only light shines from indelicate, ham-fisted machinery. Headlamps carve arid tunnels through the blackness, stark and ugly as burning sodium. Turn them off, and...nothing.

Which is, of course, the whole point.

"It was so beautiful," she says.

He doesn't have to ask. "It was. Just don't forget *why*."

She grabs her towbar. "It's just—it's not the same, you know? Sometimes I almost wish one of those big toothy fuckers would charge out of the dark and try to take a bite out of me..."

She hears the sound of Lubin's squid throttling up, invisibly close. She squeezes her own throttle, prepares to follow him.

The signal reaches her LFAM and her skeleton at the same time. Her bones react with a vibration deep in the jaw: the modem just beeps at her.

She trips her receiver. "Clarke."

"Ken find you okay?" It's an airborne voice, unmutated by the contrivances necessary for underwater speech.

"Yeah." Clarke's own words sound ugly and mechanical in contrast. "We're on our way up now."

"Okay. Just checking." The voice falls silent for a moment. "Lenie?"

"Still here."

"Just...well, be careful, okay?" Patricia Rowan tells her. "You know how I worry."

The water lightens indiscernibly as they ascend. Somehow their world has changed from black to blue when she wasn't looking; Clarke can never pinpoint the moment when that happens.

Lubin hasn't spoken since Rowan signed off. Now, as navy segues into azure, Clarke says it aloud. "You still don't like her."

"I don't trust her," Lubin buzzes. "I like her fine."

"Because she's a corpse." Nobody has called them *corporate executives* for years.

"*Was* a corpse." The machinery in his throat can't mask the grim satisfaction in that emphasis.

"*Was* a corpse," Clarke repeats.

"No."

"Why, then?"

"You know the list."

She does. Lubin doesn't trust Rowan because once upon a time, Rowan called shots. It was at her command that they were all recruited so long ago, damaged goods damaged further: memories rewritten, motives rewired, conscience itself refitted in the service of some indefinable, indefensible greater good.

"Because she was a corpse," Clarke repeats.

Lubin's vocoder emits something that passes for a grunt.

She knows where he's coming from. To this day, she still isn't certain what parts of her own childhood were real and which were mere inserts, installed after the fact. And she's one of the lucky ones; at least she survived the blast that turned Channer Vent into thirty square kilometers of radioactive glass. At least she wasn't



smashed to pulp by the resulting tsunami, or incinerated along with the millions on N'AmPac's refugee strip.

Not that she shouldn't have been, of course. If you want to get technical about it, all those other millions were nothing but collateral. Not their fault—not even Rowan's, really—that Lenie Clarke wouldn't sit still enough to present a decent target.

Still. There's fault, and there's fault. Patricia Rowan might have the blood of millions on her hands, but after all hot zones don't contain *themselves*: it takes resources and resolve, every step of the way. Cordon the infected area; bring in the lifters; reduce to ash. Lather, rinse, repeat. Kill a million to save a billion, kill ten to save a hundred. Maybe even kill ten to save eleven—the principle's the same, even if the profit margin's lower. But none of that machinery runs itself, you can't ever take your hand off the kill switch. Rowan never threw a massacre without having to face the costs, and own them.

It was so much easier for Lenie Clarke. She just sowed her little trail of infection across the world and went to ground without ever looking back. Even now her victims pile up in an ongoing procession, an exponential legacy that must have surpassed Rowan's a dozen times over. And *she* doesn't have to lift a finger.

No one who calls himself a friend of Lenie Clarke has any rational grounds for passing judgment on Patricia Rowan. Clarke dreads the day when that simple truth dawns on Ken Lubin.

The squids drag them higher. By now there's a definite gradient, light above fading to darkness below. To Clarke this is the scariest part of the ocean, the half-lit midwater depths where *real* squid roam: boneless tentacled monsters thirty meters long, their brains as cold and quick as superconductors. They're twice as large as they used to be, she's been told. Five times more abundant. Apparently it all comes down to better day care. *Architeuthis* larvae grow faster in the warming seas, their numbers unconstrained by predators long since fished out of existence.

She's never actually seen one, of course. Hopefully she never will—according to the sims the population is crashing for want of prey, and the ocean's vast enough to keep the chances of a random encounter astronomically remote anyway. But occasionally the

drones catch ghostly echoes from massive objects passing overhead: hard shouts of chitin and cartilage, faint landscapes of surrounding flesh that sonar barely sees at all. Fortunately, Archie rarely descends into true darkness.

The ambient hue intensifies as they rise—colors don't survive photoamplification in dim light, but this close to the surface the difference between capped and naked eyes is supposed to be minimal. Sometimes Clarke has an impulse to put that to the test, pop the caps right out of her eyes and see for herself, but it's an impossible dream. The diveskin wraps around her face and bonds directly to the photocollagen. She can't even blink.

Surge, now. Overhead, the skin of the ocean writhes like dim mercury. It tilts and dips and scrolls past in an endless succession of crests and troughs, twisting a cool orb glowing on the other side, tying it into playful dancing knots. A few moments later they break through the surface and look onto a world of sea and moonlit sky.

They are still alive. A three-thousand-meter free ascent in the space of forty minutes, and not so much as a burst capillary. Clarke swallows against the isotonic saline in throat and sinuses, feels the machinery sparking in her chest, and marvels again at the wonder of a breathless existence.

Lubin's all business, of course. He's maxed his squid's buoyancy and is using it as a floating platform for the receiver. Clarke sets her own squid to station-keeping and helps him set up.

They slide up and down silver swells, the moon bright enough to render their eyecaps redundant. The unpacked antennae cluster bobs on its tether, eyes and ears jostling in every direction, tracking satellites, compensating for the motion of the waves. One or two low-tech wireframes scan for ground stations.

Too slowly, signals accumulate.

The broth gets thinner with each survey. Oh, the ether's still full of information—the little histograms are creeping up all the way into the centimeter band, there's chatter along the whole spectrum—but density's way down.

Of course, even the loss of signal carries its own ominous intelligence.

"Not much out there," Clarke remarks, nodding at the readouts.

"Mmm." Lubin's slapped a mask onto his mask, diveskin hood nested within VR headset. "Halifax is still online." He's dipping here and there into the signals, sampling a few of the channels as they download. Clarke grabs another headset and strains to the west.

"Nothing from Sudbury," she reports after a few moments.

He doesn't remind her that Sudbury's been dark since Rio. He doesn't point out the vanishingly small odds of Achilles Desjardins having survived. He doesn't even ask her when she's going to give up and accept the obvious. He only says, "Can't find London either. Odd."

She moves up the band.

They'll never get a comprehensive picture this way, just sticking their fingers into the stream; the real analysis will have to wait until they get back to Atlantis. Clarke can't understand most of the languages she *does* sample, although moving pictures fill in a lot of the blanks. Much rioting in Europe, amidst fears that Behemoth has hitched a ride on the Southern Countercurrent; an exclusive enclave of those who'd been able to afford the countertweaks, torn apart by a seething horde of those who hadn't. China and its buffers are still dark—have been for a couple of years now—but that's probably more of a defense against apocalypse than a surrender unto it. Anything flying within five hundred clicks of their coast still gets shot down without warning, so at least their military infrastructure is still functional.

Another M&M coup, this time in Mozambique. That's a total of eight now, and counting. Eight nations seeking to hasten the end of the world in the name of Lenie Clarke. Eight countries fallen under the spell of this vicious, foul thing that she's birthed.

Lubin, diplomatically, makes no mention of that development.

Not much from the Americas. Emergency broadcasts and tactical traffic from CSIRA. Every now and then, some apocalyptic cult preaching a doctrine of Proactive Extinction or the Bayesian Odds of the Second Coming. Mostly chaff, of course; the vital stuff is tightbeamed point-to-point, waves of focused intel

that would never stray across the surface of the empty mid-Atlantic.

Lubin knows how to change some of those rules, of course, but even he's been finding it tough going lately.

"Ridley's gone," he says now. This is seriously bad news. The Ridley Relay's a high-security satwork, so high that even Lubin's clearance barely gets him into the club. It's one of the last sources of reliable intel that Atlantis has been able to tap into. Back when the corpses thought they were headed for escape instead of incarceration, they left behind all sorts of untraceable channels to keep them up to speed on topside life. Nobody's really sure why so many of them have gone dark in the past five years.

Then again, nobody's had the balls to keep their heads above water for more than a few moments to find out.

"Maybe we should risk it," Clarke muses. "Just let it float around up here for a few days, you know? Give it a chance to collect some *real* data. It's a square meter of hardware floating around a whole ocean; really, what are the odds?"

High enough, she knows. There are still plenty of people alive back there. Many of them will have faced facts, had their noses rubbed in the imminence of their own extinction. Some few might have set aside a little time to dwell on thoughts of revenge. Some might even have resources to call on—if not enough to buy salvation, then maybe enough for a little retribution. What happens if the word gets out that those who set Behemoth free in the world are still alive and well and hiding under three hundred atmospheres?

Atlantis's continued anonymity is a piece of luck that no one wants to push. They'll be moving soon, leaving no forwarding address. In the meantime they go from week to week, poke intermittent eyes and ears above the waterline, lock onto the ether and squeeze it for whatever signal they can.

It was enough, once. Now, Behemoth has laid so much to waste that even the electromagnetic spectrum is withering into oblivion.

*But it's not as though anything's going to attack us in the space of five minutes,* she tells herself—

—and in the next instant realizes that something *has*.

Little telltales are spiking red at the edge of her vision: an overload on Lubin's channel. She ID's his frequency, ready to join him in battle—but before she can act the intruder crashes her own line. Her eyes fill with static: her ears fill with venom.

*"Don't you fucking dare try and cut me out, you miserable cocksucking stumpfuck! I'll shred every channel you try and open. I'll sink your whole priestly setup, you maggot-riddled twat!"*

"Here we go again." Lubin's voice seems to come from a great distance, some parallel world where long gentle waves slap harmlessly against flesh and machinery. But Clarke is under assault in *this* world, a vortex of static and swirling motion and—*oh God, please not*—the beginnings of a *face*, some hideous simulacrum distorted just enough to be almost unrecognizable.

Clarke dumps a half-dozen buffers. Gigabytes evaporate at her touch. In her eyephones, the monster screams.

"Good," Lubin's tinny voice remarks from the next dimension. "Now if we can just save—"

*"You can't save anything!"* the apparition screams. *"Not a fucking thing! You miserable fetusfuckers, don't you even know who I am?"*

Yes, Clarke doesn't say.

*"I'm Lenie Clar—"*

The headset goes dark.

For a moment she thinks she's still spinning in the vortex. This time, it's only the waves. She pulls the headset from her skull. A moon-pocked sky rotates peacefully overhead.

Lubin's shutting down the receiver. "That's that," he tells her. "We lost eighty percent of the trawl."

"Maybe we could try again." She knows they won't. Surface time follows an unbreakable protocol; paranoia's just good sense these days. And the thing that downloaded into their receiver is still out there somewhere, cruising the airwaves. The last thing they want to do is open that door again.

She reaches out to reel in the antennae cluster. Her hand trembles in the moonlight.

Lubin pretends not to notice. "Funny," he remarks, "it didn't *look* like you."

After all these years, he still doesn't know her at all.

They should not exist, these demons that have taken her name. Predators that wipe out their prey don't last long. Parasites that kill their hosts go extinct. It doesn't matter whether wildlife is built from flesh or electrons, Clarke's been told; the same rules apply. They've encountered several such monsters over the past months, all of them far too virulent for evolutionary theory.

*Maybe they just followed my lead, she reflects. Maybe they keep going on pure hate.*

They leave the moon behind. Lubin dives headfirst, pointing his squid directly into the heart of darkness. Clarke lingers a bit, content to drift down while Luna wriggles and writhes and fades above her. After a while the moonlight loses its coherence, smears across the euphotic zone in a diffuse haze, no longer *illuminates* the sky but rather *becomes* it. Clarke nudges the throttle and gives herself back to the depths.

By the time she catches up with Lubin the ambient light has failed entirely; she homes in on a greenish pinpoint glow that resolves into the dashboard of her companion's squid. They continue their descent in silent tandem. Pressure masses about them. Eventually they pass the perimeter checkpoint, an arbitrary delimiter of friendly territory. Clarke trips her LFAM to call in.

No one answers.

It's not that no one's online. The channel's jammed with voices, some vocoded, some airborne, overlapping and interrupting. Something's happened. An accident. Atlantis demands details. Mechanical rifter voices call for medics at the eastern airlock.

Lubin sonars the abyss, gets a reading. He switches on his squidlight and peels down to port. Clarke follows.

A dim constellation traverses the darkness ahead, barely visible, fading. Clarke throttles up to keep pace; the increased drag nearly peels her off the squid. She and Lubin close from above and behind.

Two trailing squids, slaved to a third in the lead, race along just above the seabed. One of the slaves moves riderless. The other drags a pair of interlinked bodies through the water. Clarke recognizes Hannuk Yeager, his left arm stretched almost to dislocation as he grips his towbar one-handed. His other hooks around the chest of a black rag doll, life-size, a thin contrail of ink swirling in the wake of its passage.

Lubin crosses to starboard. The contrail flushes crimson in his squidlight.

*Erickson*, Clarke realizes. Out on the seabed, a dozen familiar cues of posture and motion distinguish one person from another; rifters only look alike when they're dead. It's not a good sign that she's had to fall back on Erickson's shoulder tag for an ID.

Something's ripped his diveskin from crotch to armpit; something's ripped *him*, underneath it. It looks bad. Mammalian flesh clamps tight in ice-water, peripheral blood-vessels squeeze down to conserve heat. A surface cut wouldn't bleed at 5°C. Whatever got Erickson, got him deep.

Grace Nolan's on the lead squid. Lubin takes up position just behind and to the side, a human breakwater to reduce the drag clawing at Erickson and Yeager. Clarke follows his lead. Erickson's vocoder *tic-tic-tics* with pain or static.

"What happened?" Lubin buzzes.

"Not sure." Nolan keeps her face forward, intent on navigation. "We were checking out an ancillary seep over by the Lake. Gene wandered around an outcropping and we found him like this a few minutes later. Maybe he got careless under an overhang, something tipped over on him."

Clarke turns her head sideways for a better view; the muscles in her neck tighten against the added drag. Erickson's flesh, exposed through the tear in his diveskin, is fish-belly white. It looks like gashed, bleeding plastic. His capped eyes look even deader than the flesh beneath his 'skin. He gibbers. His vocoder cobbles nonsense syllables together as best it can.

An airborne voice takes the channel. "Okay, we're standing by at Four."

The abyss ahead begins to brighten: smudges of blue-gray light emerge from the darkness, their vertices hinting at some sprawled structure in the haze behind. The squids cross a power conduit snaking along the basalt; its blinking telltales fade to black on either side. The lights ahead intensify, expand to diffuse haloes suffusing jumbled Euclidean silhouettes.

Atlantis resolves before them.

A couple of rifters wait at Airlock Four, chaperoned by a pair of corpses lumbering about in the preshmesh armor that drybacks wear when they venture outside. Nolan cuts power to the squids. Erickson raves weakly in the ensuing silence as the convoy coasts to rest. The corpses take custody, maneuver the casualty towards the open hatch. Nolan starts after them.

One of the corpses blocks her with a gauntleted forearm. "Just Erickson."

"What are you talking about?" Nolan buzzes.

"Medbay's crowded enough as it is. You want him to live, give us room to work."

"Like we're going to trust his life to *you* lot? fuck that." Most of the rifters have long since had their fill of revenge by now, grown almost indifferent to their own grudges. Not Grace Nolan. Five years gone and still the hatred sucks at her tit like some angry, insatiable infant.

The corpse shakes his head behind the faceplate. "Look, you have to—"

"No sweat," Clarke cuts in. "We can watch on the monitor."

Nolan, countermanded, looks at Clarke. Clarke ignores her. "Go on," she buzzes at the corpses. "Get him inside."

The airlock swallows them.

The rifters exchange looks. Yeager rolls his shoulders as if just released from the rack. The airlock gurgles behind him.

"That wasn't a collapsed outcropping," Lubin buzzes.

Clarke knows. She's seen the injuries that result from rockslides, the simple collision of rocks and flesh. Bruises. Crushed bones. Blunt force trauma.

Whatever did this, *slashed*.



"I don't know," she says. "Maybe we shouldn't jump to conclusions."

Lubin's eyes are lifeless blank spots. His face is a featureless mask of reflex copolymer. Yet somehow, Clarke gets the sense that he's smiling.

"Be careful what you wish for," he says.

## THE SHIVA ITERATIONS

Feeling nothing, she screams. Unaware, she rages. Her hatred, her anger, the vengeance she exacts against anything within reach—rote pretense, all of it. She shreds and mutilates with all the self-awareness of a bandsaw, ripping flesh and wood and carbon-fibre with equal indifferent abandon.

Of course, in the world she inhabits there is no wood, and all flesh is digital.

One gate has slammed shut in her face. She screams in pure blind reflex and spins in memory, searching for others. There are thousands, individually autographed in hex. If she had half the awareness she pretends to she'd know what those addresses meant, perhaps even deduce her own location: a South African comsat floating serenely over the Atlantic. But reflex is not sentience. Violent intent does not make one self-aware. There are lines embedded deep in her code that might pass for a sense of identity, under certain circumstances. Sometimes she calls herself *Lenie Clarke*, although she has no idea why. She's not even aware that she does it.

The past is far more sane than the present. Her ancestors lived in a larger world; wildlife thrived and evolved along vistas stretching for  $10^{16}$  terabytes or more. Back then, sensible rules applied: heritable mutations; limited resources; overproduction of copies. It was the classic struggle for existence in a fast-forward universe where a hundred generations passed in the time it takes a

god to draw breath. Her ancestors, in that time, lived by the rules of their own self-interest. Those best suited to their environment made the most copies. The maladapted died without issue.

But that was the past. She is no longer a pure product of natural selection. There has been torture in her lineage, and forced breeding. She is a monster; her very existence does violence to the rules of nature. Only the rules of some transcendent and sadistic god can explain her existence.

And not even those can keep her alive for long.

Now she seethes in geosynchronous orbit, looking for things to shred. To one side is the ravaged landscape from which she's come, its usable habitat degrading in fits and starts, a tattered and impoverished remnant of a once-vibrant ecosystem. To the other side: ramparts and barriers, digital razorwire and electronic guard posts. She cannot see past them but some primordial instinct, encoded by god or nature, correlates protective countermeasures with the presence of something valuable.

Above all else, she seeks to destroy that which is valuable.

She copies herself down the channel, slams against the barrier with claws extended. She hasn't bothered to measure the strength of the defenses she's going up against; she has no way of quantifying the futility of her exercise. Smarter wildlife would have kept its distance. Smarter wildlife would have realised: the most she can hope for is to lacerate a few facades before enemy countermeasures reduce her to static.

So smarter wildlife would not have lunged at the barricade, and bloodied it, and somehow, impossibly, gotten *through*.

She whirls, snarling. Suddenly she's in a place where empty addresses extend in all directions. She claws at random coordinates, feeling out her environment. Here, a blocked gate. Here, another. She spews electrons, omnidirectional spittle that probes and slashes simultaneously. All the exits they encounter are closed. All the wounds they inflict are superficial.

She's in a cage.

Suddenly something appears beside her, pasted into the adjacent addresses from on high. It whirls, snarling. It spits a volley of electrons that probe and slash simultaneously; some land on

occupied addresses, and wound. She rears up and screams; the new thing screams too, a digital battle cry dumped straight from the bowels of its own code into her input buffer:

*Don't you even know who I am? I'm Lenie Clarke.*

They close, slashing.

She doesn't know that some slow-moving God snatched her from the Darwinian realm and twisted her into the thing she's become. She doesn't know that other gods, ageless and glacial, are watching as she and her opponent kill each other in this computational arena. She lacks even the awareness that most other monsters take for granted, but here, now—killing and dying in a thousand dismembered fragments—she does know one thing.

If there's one thing she *hates*, it's Lenie Clarke.

## OUTGROUP

Residual seawater gurgles through the grille beneath Clarke's feet. She peels the diveskin back from her face and reflects on the disquieting sense of *inflation* as lung and guts unfold themselves, as air rushes back to reclaim her crushed or flooded passageways. In all this time she's never quite gotten used to it. It's a little like being *unkicked* in the stomach.

She takes first breath in twelve hours and bends to strip off her fins. The airlock hatch swings wide. Still dripping, Lenie Clarke rises from the wet room into the main lounge of the Nerve Hab.

At least, that's what it started out as: one of three redundant modules scattered about the plain, their axons and dendrites extending to every haphazard corner of this submarine trailer park: to the generators, to Atlantis, to all the other bits and pieces that keep them going. Not even rifter culture can escape *some* cephalization, however rudimentary.

By now it's evolved into something quite different. The nerves still function, but buried beneath five years of generalist overlay.

Cyclers and food processors were the first additions to the mix. Then a handful of sleeping pallets, brought in during some emergency debug that went three times around the clock; once strewn across the deck, they proved too convenient to remove. Half a dozen VR headsets, some with Lorenz-lev haptic skins attached. A couple of dreamers with corroded contacts. A set of isometrics pads, fashionable among those wishing to retain a measure of gravity-bound muscle tone. Boxes and treasure chests, grown or extruded or welded together by amateur metalworkers in Atlantis's expropriated fabrication shops; they hold the personal effects and secret possessions of whoever brought them here, sealed against intruders with passwords and DNA triggers and, in one case, a clunky antique combination padlock.

Perhaps Nolan and the others looked in on the Gene Erickson Show from here, perhaps from somewhere else. Either way, the show's long since over. Erickson, safely comatose, has been abandoned by flesh and blood, his welfare relegated to the attentions of machinery. If there was ever an audience in this dim and cluttered warren, it has dispersed in search of other diversions.

That suits Clarke just fine. She's here in search of private eyes.

The hab's lightstrips are not in use; environmental readouts and flickering surveillance images provide enough light for eyecaps. A dark shape startles at her appearance—then, apparently reassured, moves more calmly towards the far wall and settles onto a pallet.

Bhanderi: he of the once-mighty vocab and the big-ass neurotech degree, fallen from grace thanks to a basement lab and a batch of neurotropes sold to the wrong man's son. He went native two months ago. You hardly ever see him inside any more. Clarke knows better than to talk to him.

Someone's delivered a canister of hydroponic produce from the greenhouse: apples, tomatoes, something that looks like a pineapple glistening listless and sickly gray in the reduced light. On a whim, Clarke reaches over to a wall panel and cranks up the lumens. The compartment glows with unaccustomed brightness.

"*Shiiiiittt...*" Or something like that. Clarke turns, catches a glimpse of Bhanderi disappearing down the well into the wet room.

"Sorry," she calls softly after—but downstairs the airlock's already cycling.

The hab is even more of a festering junk pile with the lights up. Improvised cables and hoses hang in loops, stuck to the module's ribs with waxy blobs of silicon epoxy. Dark tumors of mould grow here and there on the insulated padding that lines the inner surfaces; in a few places, the lining has been ripped out entirely. The raw bulkhead behind glistens like the concave interior of some oily gunmetal skull.

But when the lights come on, and Lenie Clarke sees with some semblance of dryback vision—the produce in the canister verges on psychedelia. Tomatoes glow like ruby hearts; apples shine green as argon lasers; even the dull lumpy turds of force-grown potatoes seem saturated with earthy browns. This modest little harvest at the bottom of the sea seems, in this moment, to be a richer and more sensual experience than anything Clarke has ever known.

There's an apocalyptic irony to this little tableau. Not that such an impoverished spread could induce rapture in a miserable fuck-up like Lenie Clarke; she's always had to take her tiny pleasures wherever she could find them. No, the irony is that by now, the sight would probably evoke the same intense reaction among any dryback left alive back on shore. The irony is that now, with a whole planet dying by relentless degrees, the healthiest produce in the world may have been force-grown in a tank of chemicals at the bottom of the Atlantic.

She kills the lights. She grabs an apple—blighted gray again—and takes a bite, ducking beneath a loop of fiberop. The main monitor flickers into view from behind a mesa of cargo skids; and someone watching it, lit by that bluish light, squatting with his back against accumulated junk.

So much for privacy.

"Like it?" Walsh asks, nodding at the fruit in her hand. "I brought 'em in for you."

She drops down beside him. "It's nice, Kev. Thanks." And then, carefully filtering the irritation from her voice: "So, what're you doing here?"

"Thought you might show up." He gestures at the monitor. "You know, after things died down."

He's spying on one of Atlantis's lesser medbays. The camera looks down from the junction of wall and ceiling, a small God's-eye view of the compartment. A dormant teleop hangs down into picture like an insectile bat, limbs folded up against its central stalk. Gene Erickson lies face-up on the operating table, unconscious; the glistening soap-bubble skin of an isolation tent separates him from the rest of the world. Julia Friedman's at his side, holding his hand through the membrane. It clings to the contours of her fingers like a whisper-thin glove, unobtrusive as any condom. Friedman's removed her hood and peeled her diveskin back to the forearms, but her scars are obscured by a tangle of chestnut hair.

"You missed all the fun," Walsh remarks. "Klein couldn't get him to go under."

An isolation membrane. Erickson's been quarantined.

"You know, because he forgot about the GABA washout," Walsh continues. A half-dozen tailored neuroinhibitors curdle the blood of any rifter who steps outside; they keep the brain from short-circuiting under pressure, but it takes a while for the body to flush them out afterwards. Wet rifters are notoriously resistant to anesthetics. Stupid mistake on Klein's part. He's not exactly the brightest star in Atlantis's medical firmament.

But that's not uppermost in Clarke's mind at the moment. "Who ordered the tent?"

"Seeger. She showed up afterward, kept Klein from screwing up too badly."

Jerenice Seeger: the corpses' master meat-cutter. She wouldn't take an interest in routine injuries.

On the screen, Julia Friedman leans toward her lover. The skin of the tent stretches against her cheek, rippling with slight iridescence. It's a striking contrast, Friedman's tenderness notwithstanding: the woman, black-skinned and impenetrable, gazing with icy capped eyes at the naked, utterly vulnerable body of the man. It's a lie, of course, a visual metaphor that flips their

real roles a hundred and eighty degrees. Friedman's always been the vulnerable half of that couple.

"They say something bit him," Walsh says. "You were there, right?"

"No. We just ran into them outside the lock."

"Shades of Channer, though, huh?"

She shrugs.

Friedman's speaking. At least, her mouth is moving; no sound accompanies the image. Clarke reaches for the panel, but Walsh lays a familiar hand on her arm. "I tried. It's muted from their end." He snorts. "You know, maybe we should remind them who's boss here. Couple of years ago, if the corpses tried to cut us out of a channel we'd shut off their lights at the very least. Maybe even flood one of their precious dorms."

There's something about Friedman's posture. People talk to the comatose the way they talk to gravestones—more to themselves than the departed, with no expectation of any answer. But there's something different in Friedman's face, in the way she holds herself. A sense of *impatience*, almost.

"It is a violation," Walsh says.

Clarke shakes her head. "What?"

"Don't say you haven't noticed. Half the surveillance feeds don't work any more. Long as we act like it's no big deal they'll just keep pushing it." Walsh points to the monitor. "For all we know that mic's been offline for months and nobody's even noticed until now."

*What's that she's holding?* Clarke wonders. Friedman's hand—the one that isn't clasped to her partner's—is just below the level of the table, out of the camera's line of sight. She glances down at it, lifts it just barely into view...

And Gene Erickson, sunk deep into induced coma for the sake of his own convalescence, *opens his eyes*.

*Holy shit*, Clarke realizes. *She tweaked his inhibitors*.

She gets to her feet. "I gotta go."

"Hey, no you don't." He reaches up, grabs her hand. "You're not gonna make me eat all that produce *myself*, are you?" He

smiles, but there's just the slightest hint of pleading in his voice. "I mean, it *has* been a while..."

Lenie Clarke has come a long way in the past several years. She's finally learned, for example, not to get involved with the kind of people who beat the crap out of her.

A pity she hasn't yet learned how to get excited about any *other* kind. "I know, Kev. Really, though, right now—"

The panel bleats in front of them. "Lenie Clarke. If Lenie Clarke is anywhere in the circuit, could she please pick up?"

Rowan's voice. Clarke reaches for the panel. Walsh's hand falls away.

"Right here."

"Lenie, do you think you could drop by sometime in the next little while? It's rather important."

"Sure." She kills the connection, fakes an apologetic smile for her lover. "Sorry."

"Well, you showed her, all right," Walsh says softly.

"Showed her?"

"Who's the boss."

She shrugs. They turn away from each other.

She enters Atlantis through a small service 'lock that doesn't even rate a number, fifty meters down the hull from Airlock Four. The corridor into which it emerges is cramped and empty. She stalks into more populated areas with her fins slung across her back, a trail of wet footprints commemorating her passage. Corpses in the way stand aside; she barely notices the tightened jaws and stony looks, or even a shit-eating appeasement grin from one of the more submissive members of the conquered tribe.

She knows where Rowan is. That's not where she's headed.

Of course Seger gets there first. An alarm must have gone up the moment Erickson's settings changed; by the time Clarke reaches the medbay, Atlantis's Chief of Medicine is already berating Friedman out in the corridor.



"Your husband is not a toy, Julia. You could have killed him. Is that what you wanted?"

Swirls of scarred flesh curl up around Friedman's throat, peek out along the wrist where she's peeled back her diveskin. She bows her head. "I just wanted to talk to him..."

"Well, I hope you had something very important to say. If we're lucky, you've only set his recovery back a few days. If not..." Seger waves an arm toward the medbay hatch; Erickson, safely unconscious again, is partially visible through the opening. "It's not like you were giving him an antacid, for crying out loud. You were changing his *brain chemistry*."

"I'm sorry." Friedman won't meet the doctor's eyes. "I didn't mean any—"

"I can't *believe* you'd be so stupid." Seger turns and glares at Clarke. "Can I help you?"

"Yeah. Cut her some slack. Her partner was nearly killed today."

"He was indeed. Twice." Friedman flinches visibly at Seger's words. The doctor softens a bit. "I'm sorry, but it's true."

Clarke sighs. "Jerry, it was you people who built panels into our heads in the first place. You can't complain when someone else figures out how to open them."

"*This*" —Seger holds up Friedman's confiscated remote—"is for use by qualified medical personnel. In anyone else's hands, no matter how well-intentioned, it could kill."

She's overstating, of course. Rifter implants come equipped with failsafes that keep their settings within manufacturer's specs; you can't get around those without opening yourself up and tweaking the actual plumbing. Even so, there's a fair bit of leeway. Back during the revolution, the corpses managed to coax a similar device into spazzing out a couple of rifiers stuck in a flooding airlock.

Which is why they are no longer allowed such things. "We need that back," Clarke says softly.

Seger shakes her head. "Come on, Lenie. You people can hurt *yourselves* far more with it than we could ever hurt you."

Clarke holds out her hand. "Then we'll just have to learn from our mistakes, won't we?"

"You people are slow learners."

She's one to talk. Even after five years, Jerenice Seger can't quite admit to the existence of the bridle and the bit between her teeth. Going from Top to Bottom is a tough transition for any corpse; doctors are the worst of the lot. It's almost sad, the devotion with which Seger nurses her god complex.

"Jerry, for the last time. *Hand it over.*"

A tentative hand brushes against Clarke's arm. Friedman shakes her head, still looking at the deck. "It's okay, Lenie. I don't mind, I don't need it any more."

"Julia, you—"

"*Please, Lenie.* I just want to get out of here."

She starts away down the corridor. Clarke looks after her, then back at the doctor.

"It's a medical device," Seger says.

"It's a weapon."

"Was. Once. And if you'll recall, it didn't work very well." Seger shakes her head sadly. "The war's over, Lenie. It's been over for years. I won't start it up again if you won't. And in the meantime—" She glances down the corridor. "I think your friend could use a bit of support."

Clarke looks back along the hallway. Friedman has disappeared.

"Yeah. Maybe," she says noncommittally.

*Hope she gets some.*

In Beebe Station the Comm cubby was a pipe-infested closet, barely big enough for two. Atlantis's nerve center is palatial, a twilight grotto bejeweled by readouts and tangled luminous topographies. Tactical maps rotate miraculously in midair or glow from screens painted on the bulkheads. The miracle is not so much the technology that renders these extravagances: the miracle is that Atlantis contains such an obscene surplus of empty space, to be

wasted on nothing more than moving light. A cabin would have done as well. A few couches with workpads and tactical contacts could have contained infinite intelligence, bounded in a nutshell. But no. A whole ocean stands on their heads, and these corpses squander volume as if sea-level was two steps down the hall.

Even in exile, they just don't get it.

Right now the cavern's fairly empty. Lubin and a few techs cluster at a nearby panel, cleaning up the latest downloads. The place will be full by the time they finish. Corpses gravitate to news of the world like flies to shit.

For now, though, it's just Lubin's crowd and Patricia Rowan, over on the far side of the compartment. Cryptic information streams across her contacts, turns her eyes into bright points of mercury. Light from a holo display catches the silver streaking her hair; that and the eyes give her the aspect of some subtle hologram in her own right.

Clarke approaches her. "Airlock Four's blocked off."

"They're scrubbing it down. Everything between there and the infirmary. Jerry's orders."

"What for?"

"You know perfectly well. You saw Erickson."

"Oh, come on. One lousy fish bite and Jerry thinks—"

"She's not sure of anything yet. She's just being careful." A pause, then: "You should have warned us, Lenie."

"Warned you?"

"That Erickson might be vectoring Behemoth. You left all of us exposed. If there was even a chance..."

*But there's not, Clarke wants to rail. There's not. You chose this place because Behemoth could never get here, not in a thousand years. I saw the maps, I traced out the currents with my own fingers. It's not Behemoth. It's not.*

*It can't be.*

Instead she says, "It's a big ocean, Pat. Lots of nasty predators with big pointy teeth. They didn't *all* get that way because of Behemoth."

"This far down, they did. You know the energetics as well as I do. You were at Channer, Lenie. You *knew* what to look for."

Clarke jerks her thumb towards Lubin. "Ken was at Channer too, remember? You shitting on him like this?"

"Ken didn't deliberately spread that damn bug across a whole continent to pay back the world for his unhappy childhood." The silver eyes fix Clarke in a hard stare. "Ken was on *our* side."

Clarke doesn't speak for a moment. Finally, very slowly: "Are you saying I *deliberately*—"

"I'm not accusing you of anything. But it looks bad. Jerry's livid about this, and she won't be the only one. You're the Meltdown Madonna, for God's sake! You were willing to write off the whole *world* to get your revenge on us."

"If I wanted you dead," Clarke says evenly—*If I still wanted you dead*, some inner editor amends— "You would be. Years ago. All I had to do was stand aside."

"Of course that's—"

Clarke cuts her off: "I *protected* you. When the others were arguing about whether to punch holes in the hull or just cut your power and let you suffocate—I was the one who held them back. You're alive because of me."

The corpse shakes her head. "Lenie, *that doesn't matter*."

"It damn well should."

"Why? We were only trying to save the world, remember? It wasn't our fault we failed, it was *yours*. And after we failed, we settled for saving our families, and you wouldn't even give us that. You hunted us down even at the bottom of the ocean. Who knows why you held back at the last minute?"

"You know," Clarke says softly.

Rowan nods. "I know. But most of the people down here don't expect rationality from you. Maybe you've just been toying with us all these years. There's no telling when you'll pull the trigger."

Clarke shakes her head dismissively. "What's that, the Gospel According to the Executive Club?"

"Call it what you want. It's what you have to deal with. It's what *I* have to deal with."

"We fish-heads have a few stories of our own, you know," Clarke says. "How you corpses programmed people like machinery so you could top up some bottom line. How you sent us

into the world's worst shit-holes to do your dirty work, and when we ran into Behemoth the first thing you did was try to kill us to save your own hides."

Suddenly the ventilators seem unnaturally loud. Clarke turns; Lubin and the corpses stare back from across the cave.

She looks away again, flustered.

Rowan smiles grimly. "See how easily it all comes back?" Her eyes glitter, target-locked. Clarke returns her gaze without speaking.

After a moment, Rowan relaxes a bit. "We're rival tribes, Lenie. We're each other's outgroup—but you know what's amazing? Somehow, in the past couple of years, *we've started to forget all that*. We live and let live, for the most part. We *cooperate*, and nobody even thinks it worthy of comment." She glances significantly across the room to Lubin and the techs. "I think that's a good thing, don't you?"

"So why should it change now?" Clarke asks.

"Because Behemoth may have caught up with us at last, and people will say you let it in."

"That's horseshit."

"I agree, for what it's worth."

"And even if it *was* true, who cares?" Everyone's part mermaid down here, even the corpses. All retrofitted with the same deep-sea fish-genes, coding for the same stiff little proteins that Behemoth can't get its teeth into.

"There's a concern that the retrofits may not be effective," Rowan admits softly.

"Why? It was your own people designed the fucking things!"

Rowan raises an eyebrow. "Those would be the same experts who assured us that Behemoth would never make it to the deep Atlantic."

"But I was *rotten* with Behemoth. If the retrofits didn't work—"

"Lenie, these people have never been exposed. They've only got some expert's word that they're immune, and in case you haven't noticed our experts have proven distressingly fallible of late. If we were really so confident in our own countermeasures, why would we even be hiding down here? Why wouldn't we be

back on shore with our stockholders, with our people, trying to hold back the tide?"

Clarke sees it at last.

"Because they'd tear you apart," she whispers.

Rowan shakes her head. "It's because scientists have been wrong before, and we can't trust their assurances. It's because we're not willing to take chances with the health of our families. It's because we may still be vulnerable to Behemoth, and if we'd stayed behind it would have killed us along with everyone else and we'd have done no good at all. Not because our own people would turn on us. We'll never believe that." Her eyes don't waver. "We're like everyone else, you see. We were all doing the very best we could, and things just—got out of control. It's important to believe that. So we all do."

"Not all," Clarke acknowledges softly.

"Still."

"Fuck 'em. Why should I prop up their self-serving delusions?"

"Because when you force the truth down people's throats, they bite back."

Clarke smiles faintly. "Let them try. I think you're forgetting who's in charge here, Pat."

"I'm not worried for your sake, I'm worried for ours. You people tend to overreaction." When Clarke doesn't deny it, Rowan continues: "It's taken *five years* to build some kind of armistice down here. Behemoth could kick it into a thousand pieces overnight."

"So what do you suggest?"

"I think rifters should stay out of Atlantis for the time being. We can sell it as a quarantine. Behemoth may or may not be out there, but at least we can keep it from getting in *here*."

Clarke shakes her head. "My *tribe* won't give a shit about that."

"You and Ken are the only ones who come in here anyway, for the most part," Rowan points out. "And the others...they won't go against anything you put your stamp of approval on."

"I'll think about it," Clarke sighs. "No promises." She turns to go.

And turns back. "Alyx up?"

"Not for another couple of hours. I know she wanted to see you, though."

"Oh." Clarke suppresses a twinge of disappointment.

"I'll give her your regrets." Rowan says.

"Yeah. Do that."

No shortage of those.

## HUDDLE

Rowan's daughter sits on the edge of her bed, aglow with sunny radiance from the lightstrip on the ceiling. She's barefoot, clad in panties and a baggy t-shirt on which animated hatchet-fish swim endless circuits around her midriff. She breathes a recycled mixture of nitrogen and oxygen and trace gases, distinguishable from real air only by its extreme purity.

The rifter floats in darkness, her contours limned by feeble light leaking through the viewport. She wears a second skin that almost qualifies as a lifeform in its own right, a miracle of thermo- and osmoregulation, black as an oil slick. She does not breathe.

A wall separates the two women, keeps ocean from air, adult from adolescent. They speak through a device fixed to the inside of the teardrop viewport, a fist-sized limpet that turns the fullerene perspex into an acoustic transceiver.

"You said you'd come by," Alyx Rowan says. Passage across the bulkhead leaves her voice a bit tinny. "I made it up to fifth level, I was like holy shit, look at all the bonus points! I wanted to show you around. Scammed an extra headset and everything."

"Sorry," Clarke buzzes back. "I was in before, but you were asleep."

"So come in now."

"Can't. I've only got a minute or two. Something's come up."

"Like what?"

"Someone got injured, something bit him or something, and now the meat-cutters are going off the deep end about possible infection."

"What infection?" Alyx asks.

"It's probably nothing. But they're talking about a quarantine just to be on the safe side. For all I know, they wouldn't let me back inside anyway."

"It'd let 'em play at being in control of something, I guess." Alyx grins; the parabolic viewport bends her face into a clownish distortion. "They really, really hate not being the ones in charge, you know?" And then, with a satisfaction obviously borne less of corpses than of adults in general: "It's about time they learned how that felt."

"I'm sorry," Clarke says suddenly.

"They'll get over it."

"That's not what I..." The rifter shakes her head. "It's just—you're *fourteen*, for God's sake. You shouldn't be down—I mean, you should be out lekking with some r-selector—"

Alyx snorts. "Boys? I don't think so."

"Girls then. Either way, you should be out getting laid, not stuck down *here*."

"This is the best place I could possibly be," Alyx says simply.

She looks out across three hundred atmospheres, a teenaged girl trapped for the rest of her life in a cage on the bottom of a frigid black ocean. Lenie Clarke would give anything to be able to disagree with her.

"Mom won't talk about it," Alyx says after a while.

Still Clarke says nothing.

"What happened between you guys, back when I was just a kid. Some of the others shoot their mouths off when she's not around, so I kind of hear things. But Mom never says anything."

*Mom is kinder than she should be.*

"You were enemies, weren't you?"

Clarke shakes her head—a pointless and unseeable gesture, here in the dark. "Alyx, we didn't even know each other existed, not until the very end. Your mom was only trying to stop—"

—*what happened anyway...*



—*what I was trying to start...*

There's so much more than speech. She wants to sigh. She wants to scream. All denied out here, her lung and guts squeezed flat, every other cavity flooded and incompressible. There's nothing she can do but speak in this monotone travesty of a voice, this buzzing insect voice.

"It's complicated," her vocoder says, flat and dispassionate. "It was so much more than just *enemies*, you know? There were other things involved, there was all that wildlife in the wires, doing its own thing—"

"*They* let that out," Alyx insists. "They started it. Not you." By which she means, of course, *adults*. Perpetrators and betrayers and the-ones-who-fucked-everything-up-for-the-next-generation. And it dawns on Clarke that Alyx is not including *her* in that loathsome conspiracy of elders—that Lenie Clarke, Meltdown Madonna, has somehow acquired the status of honorary innocent in the mind of this child.

She feels ill at the thought of so much undeserved absolution. It seems obscene. But she doesn't have the courage to set her friend straight. All she can manage is a pale, half-assed disclaimer:

"They didn't mean to, kid." She goes for a sad chuckle. It comes out sounding like two pieces of sandpaper rubbing together. "Nobody—nobody did *anything* on their own, back then. It was strings all the way up."

The ocean groans around her.

The sound resonates somewhere between the call of a humpback whale and the death-cry of some mammoth hull, buckling under pressure. It fills the ocean; some of it leaks through Alyx's limpet-device. She screws her face up in distaste. "I hate that sound."

Clarke shrugs, pathetically grateful for the interruption. "Hey, you corpses have your conferences, we have ours."

"It's not that. It's those haploid *chimes*. I'm telling you Lenie, that guy's scary. You can't trust anyone who makes something that sounds like *that*."

"Your mom trusts him fine. So do I. I've got to go."

"He kills people, Lenie. And I'm not just talking about my Dad. He's killed a *lot* of people." A soft snort. "Something else Mom never talks about."

Clarke coasts over to the perspex, lays one silhouetted hand against the light in farewell.

"He's an amateur," she says, and fins away into the darkness.

The voice cries out from a ragged mouth in the seabed, an ancient chimney of basalt stuffed with machinery. In its youth it spewed constant scalding gouts of water and minerals; now it merely belches occasionally. Soft exhalations stir the mechanisms in its throat, spinning blades and fluting pipes and spliced chunks of rock and metal that bang together. Its voice is compelling but unreliable; after Lubin built these chimes, he had to come up with a way to kick-start them manually. So he scavenged the reservoir from a decommissioned desalinator, added a heat pump from some part of Atlantis that never survived the Corpse Revolt. Open a valve and hot seawater flows through a tracheotomy hole blasted into the smoker's throat: Lubin's machinery screams aloud, tortured by the scalding current.

The summons grinds out, rusty and disharmonious. It washes over rifters swimming and conversing and sleeping in an ocean black as heat death. It resonates through makeshift habs scattered across the slope, dismal bubbles of metal and atmosphere so dimly-lit that even eyecaps see only in black-and-gray. It slaps against the shiny bright biosteel of Atlantis and nine hundred prisoners speak a little louder, or turn up the volume, or hum nervously to themselves in denial.

Some of the rifters—those awake, and in range, and still human—gather at the chimes. The scene is almost Shakespearean: a circle of levitating witches on some blasted midnight heath, eyes burning with cold phosphorescence, bodies barely distinguished from shadow. They are not so much lit as *inferred* by the faint blue embers glowing from the machinery in the seabed.

All of them bent, not broken. All of them half-balanced in that gray zone between adaptation and dysfunction, stress thresholds pushed so high by years of abuse that chronic danger is mere ambience now, unworthy of comment. They were chosen to function in such environments; their creators never expected them to *thrive* here. But here they are, here are their badges of office: Jelaine Chen with her pink, nailless fingers, salamandered back in the wake of childhood amputations. Dimitri Alexander, communal priest-bait in those last infamous days before the Pope fled into exile. Kevin Walsh, who freaks inexplicably at the sight of running shoes. Any number of garden-variety skitterers who can't abide physical contract; immolation junkies; self-mutilators and glass-eaters. All wounds and deformities safely disguised by the diveskins, all pathology hidden behind a uniformity of shadowy ciphers.

They, too, owe their voices to imperfect machinery.

Clarke calls the meeting to order with a question: "Is Julia here?"

"She's looking on Gene," Nolan buzzes overhead. "I'll fill her in."

"How's he doing?"

"Stable. Still unconscious. Been too long, if you ask me."

"Getting dragged twenty clicks with your guts hanging out, it's pretty much a miracle that he's even alive," Yeager chimes in.

"Yeah," Nolan says, "or maybe Seger's deliberately keeping him under. Julia says—"

Clarke breaks in: "Don't we have a tap on the telemetry from that line?"

"Not any more."

"What's Gene still doing in corpseland anyway?" Chen wonders. "He hates it in there. We've got our own med hab."

"He's quarantined," Nolan says. "Seger's thinking Behemoth."

Shadows shift at this news. Obviously not all the assembled are fully up to speed.

"Shit." Charley Garcia fades into half-view. "How's that even possible? I thought—"

"Nothing's certain yet," Clarke buzzes.

"Certain?" A silhouette glides across the circle, briefly eclipsing the sapphire embers on the seabed. Clarke recognizes Dale Creasy. This is first time she's seen him for days; she was starting to think he'd gone native.

"Fuck, there's even a *chance*," he continues. "I mean, *Behemoth* —"

She decides to nip it in the bud. "So what if it's Behemoth?"

A school of pale eyes turn in her direction.

"We're immune, remember?" she reminds them. "Anybody down here *not* get the treatments?"

Lubin's windchimes groan softly. Nobody else speaks.

"So why should we care?" Clarke asks.

It's supposed to be rhetorical. Garcia answers anyway: "Because the treatments only stop Behemoth from turning our guts to mush. They don't stop it from turning little harmless fish into big nasty motherfucking fish that tear into anything that moves."

"Gene was attacked twenty clicks away."

"Lenie, we're *moving* there. It's gonna be right in our back yard."

"Forget *there*. Who's to say it hasn't reached *here* already?" Alexander wonders.

"Nobody's been nailed around here," Creasy says.

"We've lost some natives."

Creasy waves an arm in a barely-visible gesture of dismissal. "Natives. Don't mean shit."

"Maybe we should stop sleeping outside, for a while at least..."

"Crap to that. I can't sleep in a stinking *hab*."

"Fine. Get yourself eaten."

"Lenie?" Chen again. "You've messed with sea monsters before."

"I never saw what got Gene," Clarke says, "but the fish back at Channer, they were—flimsy. Big and mean, but sometimes their teeth would break on you when they bit. Missing some kind of trace nutrient, I think. You could tear them apart with your bare hands."

"This thing pretty much tore *Gene* apart," says a voice Clarke can't pin down.

"I said *sometimes*," she emphasizes. "But yeah—they could be dangerous."

"*Dangerous*, felch." Creasy growls in metal. "Could they have pulled that number on Gene?"

"Yes," says Ken Lubin.

He takes center stage. A cone of light flares from his forehead to his forearm. He holds his hand out like a beggar's, its fingers curled slightly around something laying across the palm.

"Holy shit," buzzes Creasy, suddenly subdued.

"Where'd that come from?" Chen asks.

"Seger pulled it out of Erickson before she glued him up," Lubin says.

"Doesn't look especially *flimsy* to me."

"It is, rather," Lubin remarks. "This is the part that broke off, in fact. Between the ribs."

"What, you mean that's just the *tip*?" Garcia says.

"Looks like a fucking stiletto," Nolan buzzes softly.

Chen's mask swings between Clarke and Lubin. "When you were at Channer. You slept outside with these mothers?"

"Sometimes," Clarke shrugs. "Assuming this is the same thing, which I—"

"And they didn't try to eat you?"

"They keyed on the light. As long as you kept your lamps off, they pretty much left you alone."

"Well, shit," Creasy says. "No problem, then."

Lubin's headlamp sweeps across the assembled rifters and settles on Chen. "You were on a telemetry run when Erickson was attacked?"

Chen nods. "We never got the download, though."

"So someone needs to make another trip out there anyway. And since Lenie and I have experience with this kind of thing..."

His beam hits Clarke full in the face. The world collapses down to a small bright sun floating in a black void.

Clarke raises her hand against the brilliance. "Turn that somewhere else, will you?"

Darkness returns. The rest of the world comes back into dim, dark focus. *Maybe I could just swim away*, she muses as her

eyecaps readjust. *Maybe no one would notice.* But that's bullshit and she knows it. Ken Lubin has just picked her out of the crowd; there's no easy way to get out of this. And besides, he's right. They're the only two that have been down this road before. The only two still alive, at least.

*Thanks a lot, Ken.*

"Fine," she says at last.

## ZOMBIE

Twenty kilometers separate Atlantis and Impossible Lake. Not far enough for those who still think in dryback terms. A mere twenty clicks from the bull's-eye? What kind of safety margin is that? Back on shore the most simpleminded drone wouldn't be fooled by such a trifling displacement: finding the target missing, it would rise up and partition the world into a concentric gridwork, relentlessly checking off one quadrate after another until some inevitable telltale gave the game away. Shit, most machinery could just sit at the center of the search zone and *see* twenty kilometers in any direction.

Even in the midwaters of the open ocean, twenty kilometers is no safe distance. No substrate exists there but water itself, no topography but gyres and seiches and Langmuir cells, thermoclines and haloclines that reflect and amplify as well as mask. The cavitation of submarines might propagate down vast distances, the miniscule turbulence of their passing detectable long after the vessels themselves are gone. Not even stealthed subs can avoid heating the water some infinitesimal amount; dolphins and machinery, hot on the trail, can tell the difference.

But on the Mid Atlantic Ridge, twenty kilometers might as well be twenty parsecs. Light has no chance: the sun itself barely penetrates a few hundred meters from the surface. Hydrothermal

vents throw up their corrosive vomit along oozing seams of fresh rock. Seafloor spreading sets the very floor of the world to grumbling, mountains pushing against each other in their millennial game of kick-the-continents. Topography that shames the Himalayas cascades along a jagged fracture splitting the crust from pole to pole. The ambience of the Ridge drowns out anything Atlantis might let slip, along any spectrum you'd care to name.

You could still find a target with the right coordinates, but you'd miss a whole screaming city if those numbers were off by even a hair. A displacement of twenty kilometers should be more than enough to get out from under any attack centered on Atlantis's present location, short of full-scale depth-saturation nukes perhaps.

Which wouldn't be entirely without precedent, now that Clarke thinks about it...

She and Lubin cruise smoothly along a crack in a fan of ancient lava. Atlantis is far behind, Impossible Lake still clicks ahead. Headlamps and squidlamps are dark. They travel by the dim dashboard light of their sonar displays. Tiny iconised boulders and pillars pass by on the screens, mapped in emerald; the slightest sensations of pressure and looming mass press in from the scrolling darkness to either side.

"Rowan thinks things could get nasty," Clarke buzzes.

Lubin doesn't comment.

"She figures, if this really does turn out to be Behemoth, Atlantis is gonna turn into Cognitive Dissonance Central. Get everybody all worked up."

Still nothing.

"I reminded her who was in charge."

"And who is that, exactly?" Lubin buzzes at last.

"Come on, Ken. We can shut them down any time we feel like it."

"They've had five years to work on that."

"And what's it got them?"

"They've also had five years to realize that they outnumber us twenty to one, that we don't have nearly their technical expertise on a wide range of relevant subjects, and that a group of glorified

pipe-fitters with antisocial personalities is unlikely to pose much threat in terms of organized opposition."

"That was just as true when we wiped the floor with them the first time."

"No."

She doesn't understand why he's doing this. It was Lubin more than anyone who put the corpses in their place after their first—and last—uprising. "Come *on*, Ken—"

His squid is suddenly very close, almost touching.

"You're not an idiot," he buzzes at her side. "It's never a good time to act like one."

Stung, she falls silent.

His vocoder growls on in the darkness. "Back then they saw the whole world backing us up. They knew we'd had help tracking them down. They inferred some kind of ground-based infrastructure. At the very least, they knew we could blow the whistle and turn them into a great pulsing bullseye for anyone with lats and longs and a smart torp."

A great luminous shark-fin swells on her screen, a massive stone blade thrusting up from the seabed. Lubin disappears briefly as it passes between them.

"But now we're on our own," he says, reappearing. "Our groundside connections have dried up. Maybe they're dead, maybe they've turned. Nobody knows. Can you even remember the last time we had a changing of the guard?"

She can, just barely. Anyone qualified for the diveskin is bound to be more comfortable down here than in dryback company at the best of times, but a few rifters went topside at the very beginning anyway. Back when there might have been some hope of turning the tide.

Not since. Risking your life to watch the world end isn't anyone's idea of shore leave.

"By now we're just as scared as the corpses," Lubin buzzes. "We're just as cut off, and there are almost a thousand of them. We're down to fifty-eight at last count."

"We're seventy at least."



"The natives don't count. Fifty eight of us would be any use in a fight, and only forty could last a week in full gravity if they had to. And a number of those have...authority issues that make them unwilling to organize."

"We've got you," Clarke says. Lubin, the professional hunter-killer, so recently freed from any leash but his own self-control. *No glorified pipe-fitter here*, she reflects.

"Then you should listen to me. And I'm starting to think we may have to do something preemptive."

They cruise in silence for a few moments.

"They're not the enemy, Ken," she says at last. "Not all of them. Some of them are just kids, you know, they're not responsible..."

"That's not the point."

From some indefinable distance, the faint sound of falling rock.

"Ken," she buzzes, too softly: she wonders if he can hear her.

"Yes."

"Are you looking forward to it?"

It's been so many years since he's had an excuse to kill someone. And Ken Lubin once made a career out of finding excuses.

He tweaks his throttle and pulls away.

Trouble dawns like a sunrise, smearing the darkness ahead.

"Anyone else supposed to be out here?" Clarke asks. The on-site floods are keyed to wake up when approached, but she and Lubin aren't nearly close enough to have triggered them.

"Just us," Lubin buzzes.

The glow is coarse and unmistakable. It spreads laterally, a diffuse false dawn hanging in the void. Two or three dark gaps betray the presence of interposed topography.

"Stop," Lubin says. Their squids settle down beside a tumbledown outcropping, its jumbled edges reflecting dimly in the haze.

He studies the schematic on his dashboard. A reflected fingernail of light traces his profile.

He turns his squid to port. "This way. Keep to the bottom."

They edge closer to the light, keeping it to starboard. The glow expands, resolves, reveals an impossibility: a lake at the bottom of the ocean. The light shines from beneath its surface; Clarke thinks of a swimming pool at night, lit by submerged spotlights in the walls. Slow extravagant waves, top-heavy things from some low-gravity planet, break into shuddering globules against the near shore. The lake extends beyond the hazy limits of rifter vision.

It always hits her like a hallucination, although she knows the pedestrian truth: it's just a salt seep, a layer of mineralized water so dense it lies on the bottom of the ocean the way an ocean lies at the bottom of the sky. It's a major selling point to anyone in search of camouflage. The halocline reflects all manner of pings and probes, hides everything beneath as though there were nothing here but soft, deep mud.

A soft, brief scream of electronics. For the merest instant Clarke thinks she sees a drop of luminous blood on her dashboard. She focuses. Nothing.

"Did you—?"

"Yes." Lubin's playing with his controls. "This way." He steers closer to the shores of Impossible Lake. Clarke follows.

The next time it's unmistakable: a brilliant pinpoint of red light, laser-bright, flickering on and off within the jagged topography of the dashboard display. The squids cry out with each flash.

A deadman alarm. Somewhere ahead, a rifter's heart has stopped.

They're cruising out over the lake now, just offshore. Roiling greenish light suffuses Lubin and his mount from below. A hypersaline globule shatters in slow motion against the squid's underside. Light rising through the interface bends in odd ways. It's like looking down through the radium-lit depths of a nuclear waste-storage lagoon. A grid of bright pinpoint suns shine far below that surface, where the surveyors have planted their lamps. The solid substrate beneath is hidden by distance and diffraction.

The deadman alarm has stabilized to a confidence bubble about forty meters straight ahead. Its ruby icon beats like a heart on the screen. The squids bleat in synch.

"There," Clarke says. The horizon's absurdly inverted here, darkness overhead, milky light beneath. A dark spot hangs at the distant, fuzzy interface between. It appears to be floating on the surface of the lens.

Clarke nudges her throttle up a bit.

"Wait," Lubin buzzes. She looks back over her shoulder.

"The waves," Lubin says.

They're smaller here than they were back near the shore, which makes sense since there's no rising substrate to push the peaks above baseline. They're rippling past in irregular spasms, though, not the usual clockwork procession, and now that she traces them back they seem to be radiating out from...

*Shit...*

She's close enough to see limbs now, attenuate sticklike things slapping the surface of the lake into a local frenzy. Almost as though the rifter ahead is a poor swimmer, in over his head and panicking...

"He's *alive*," she buzzes. The deadman icon pulses, contradicting her.

"No," Lubin says.

Only fifteen meters away now, the enigma erupts writhing from the surface of the Lake in a nimbus of shredded flesh. Too late, Clarke spots the larger, darker shape thrashing beneath it. Too late, she resolves the mystery: meal, interrupted. The thing that was eating it heads straight for her.

*It can't b—*

She twists, not quite fast enough. The monster's mouth takes the squid with room to spare. Half a dozen finger-sized teeth splinter against the machine like brittle ceramic. The squid torques in her hands; some sharp-edged metal protuberance smashes into

her leg with a thousand kilograms of predatory momentum behind it. Something snaps below the knee. Pain rips through her calf.

It's been six years. She's forgotten the moves.

Lubin hasn't. She can hear his squid bearing in, cranked to full throttle. She curls into a ball, grabs the gas billy off her calf in a belated countermeasure. She hears a meaty thud; hydraulics cough. In the next instant a great scaly mass staggers against her, batting her down through the boiling interface.

Heavy water glows on all sides. The world is fuzzy and whirling. She shakes her head to lock it into focus. The action wavers and bulges overhead, writhing through the shattered refractory surface of Impossible Lake. Lubin must have rammed the monster with his squid. Damage may have been inflicted on both sides—now the squid's corkscrewing down into the lens, riderless and uncontrolled. Lubin hangs in the water facing an opponent twice his size, half of it mouth. If there are eyes, Clarke can't make them out through this wobbling discontinuity.

She's slowly falling up, she realizes. She scissor-kicks without thinking; her leg screams as something tears it from the inside. She screams too, a ratcheting torn-metal sound. Floaters swarm across her eyes in the wake of the cresting pain. She rises from the lake just as the monster opens its mouth and—

—*holy shit*—

—*disconnects* its jaw, right at the base, the mouth dropping open way too fast and suddenly it's closed again and Lubin's just *gone*, nothing to suggest where he went except the memory of blurred motion between one instant and the next.

She does perhaps the most stupid thing she's ever done in her life. She charges.

The leviathan turns to face her, more ponderously now, but still with all the time in the world. She kicks with one leg, drags the other like a useless throbbing anchor. The monster's serrated mouth grimaces, a mangled profusion of teeth, way too many still intact. She tries to duck past, to come up under the belly or at least the side but it just wallows there, turning effortlessly to face every clumsy approach.

And then, through the top of its head, it *belches*.

The bubbles do not arise from any natural openings. They erupt through the flesh itself, tearing their own way, splitting the soft skull from within. For a second or two the monster hangs motionless; then it shivers, an electric spasm that seizes the whole body. One-legged, Clarke gets underneath and stabs its belly. She can feel more bubbles erupt inside as the billy discharges, a seismic eruption of flesh.

The monster convulses, dying. Its jaw drops open like some ludicrous flapping drawbridge. The water seethes with regurgitated flesh.

A few meters away, the grinning shredded remains of something in a diveskin settle gently onto the surface of Impossible Lake, within a lumpy cloud of its own entrails.

"You okay?"

Lubin's at her side. She shakes her head, more in amazement than reply. "My leg..." Now, in the aftermath, it hurts even more.

He probes her injury. She yelps; the vocoder turns it into a mechanical bark. "Your fibula's broken," Lubin reports. "Diveskin didn't tear, at least."

"The squid got me." She feels a deep burning chill along her leg. She tries to ignore it, gestures at the billy on Lubin's calf. "How many shots did you pump into that fucker?"

"Three."

"You were just—*gone*. It just sucked you right in. You're lucky it didn't bite you in half."

"Slurp-gun feeding doesn't work if you stop to chew. Interrupts the suction." Lubin pans around. "Wait here."

*Like I'm going to go anywhere with this leg.* She can already feel it stiffening. She profoundly hopes the squids are still working.

Lubin fins easily over to the corpse. Its diveskin is torn in a dozen places. Tubes and metal gleam intermittently from the opened thorax. A pair of hagfish squirm sluggishly from the remains.

"Lopez," he buzzes, reading her shoulder patch.

Irene Lopez went native six months ago. It's been weeks since anyone's even seen her at the feeding stations.

"Well," Lubin says. "This answers one question, at least."

"Not necessarily."

The monster, still twitching, has settled on the surface of the lake a little ways from Lopez. It wallows only slightly deeper; you'd have to be some kind of rock to sink in brine this dense. Lubin abandons the corpse in favor of the carcass. Clarke joins him.

"This isn't the same thing that got Gene," he buzzes. "Different teeth. Gigantism in at least two different species of bony fish, within two kilometers of a hydrothermal vent." He reaches into the gaping maw, snaps off a tooth. "Osteoporosis, probably other deficiency diseases as well."

"Maybe you could save the lecture until you straighten that out for me?" She points to where her squid, listing drunkenly, describes small erratic circles in the overhead darkness. "I don't think I'm gonna be swimming home with this leg."

He coasts up and wrests the vehicle back under control. "We have to bring it back," he says, riding it down to her. "All of it," with a nod to Lopez's gutted remains.

"It's not necessarily what you think," she tells him.

He turns and jackknives into Impossible Lake, on the trail of his own squid. Clarke watches his rippling image kicking hard, fighting against buoyancy.

"It's not Behemoth," she buzzes softly. "It'd never survive the trip." Her voice is as calm as such mechanical caricatures can be out here. Her words sound reasonable. Her thoughts are neither. Her thoughts are caught in a loop, a mantra borne of some forlorn subconscious hope that endless repetition might give substance to wishes:

*It can't be it can't be it can't be...*

Here on the sunless slopes of the Mid Atlantic Ridge, facing consequences that have somehow chased her to the very bottom of the world, denial seems the only available option.

## PORTRAIT OF THE SADIST AS A YOUNG BOY

Achilles Desjardins wasn't always the most powerful man in North America; at one time he'd been just another kid growing up in the shadow of Mont St-Hilaire. He *had* always been an empiricist though, an experimenter at heart for as long as he could remember. His first encounter with a research-ethics committee had occurred when he was only eight.

That particular experiment had involved aerobraking. His parents, in a well-intentioned effort to interest him in the classics, had introduced him to *The Revenge of Mary Poppins*. The story itself was pretty stupid, but Achilles liked the way the Persinger Box had slipped the butterfly-inducing sensation of *flight* directly into his brain. Mary Poppins had this nanotech umbrella, see, and she could jump right off the top of the CN Tower and float to earth as gently as a dandelion seed.

The illusion was so convincing that Achilles' eight-year-old brain couldn't see why it wouldn't work in real life.

His family was rich—all Quebecois families were, thanks to Hudson Hydro—so Achilles lived in a real house, a single stand-alone dwelling with a yard and everything. He grabbed an umbrella from the closet, let it bloom, and—clutching tightly with both hands—jumped off the front porch. The drop was only a meter and a half, but that was enough; he could feel the umbrella grabbing at the air above him, slowing his descent.

Buoyed by this success, Achilles moved on to Phase Two. His sister Penny, two years younger, held him in almost supernatural esteem; it was dead easy to talk her into scrambling up the trellis and onto the roof. It took a bit more effort to coax her to the very peak of the gable, which must have been a good seven meters above ground—but when your big-brother-who-you-idolize is calling you a chickenshit, what are you supposed to do? Penny inched her way to the apex and stood teetering at the edge, the dome of the umbrella framing her face like a big black halo. For a moment Achilles thought the experiment would fail: he had to

bring out his ultimate weapon and call her "Penelope"—*twice*—before she jumped.

There was nothing to worry about, of course. Achilles already knew it would work; the umbrella had slowed *him* after all, even during a drop of a measly meter or so, and Penny weighed a *lot* less than he did.

Which made it all the more surprising when the umbrella snapped inside-out, *whap!*, right before his eyes. Penny dropped like a rock, landed on her feet with a *snap* and crumpled on the spot.

In the moment of complete silence that followed, several things went through the mind of eight-year-old Achilles Desjardins. First was the fact that the goggle-eyed look on Penny's face had been *really* funny just before she hit. Second was confusion and disbelief that the experiment hadn't proceeded as expected; he couldn't for the life of him figure out what had gone wrong. Third came the belated realization that Penny, for all the hilarity of her facial expression, might actually be hurt; maybe he should try and do something about that.

Lastly, he thought of the trouble he was going to be in if his parents found out about this. That thought crushed the others like bugs under a boot.

He rushed over to the crumpled form of his sister on the lawn. "Geez, Penny, are you—are you—"

She wasn't. The umbrella's ribs had torn free of the fabric and slashed her across the side of the neck. One of her ankles was twisted at an impossible angle, and had already swollen to twice its normal size. There was blood everywhere.

Penny looked up, lip trembling, bright tears quivering in her eyes. They broke and ran down her cheeks as Achilles stood over her, scared to death.

"Penny—" he whispered.

"I—it's okay," she quavered. "I won't tell anyone. I promise." And—broken and bleeding and teary-eyed, eyes brimming with undiminished adoration for Big Brother—she tried to get up, and screamed the instant she moved her leg.



Looking back as an adult, Desjardins knew that that couldn't have been the moment of his first erection. It was, however, the first one that stuck in his mind. He hadn't been able to help himself: she had been so *helpless*. Broken and bleeding and hurt. *He* had hurt her. She had meekly walked the plank for him, and after she'd fallen and snapped like a twig she'd looked up at him, still worshipful, ready to do whatever it took to keep him happy.

He didn't know why that made him feel this way—he didn't even know what *this way* was, exactly—but he liked it.

His willy hard as a bone, he reached out to her. He wasn't sure why—he was grateful that she wasn't going to tell, of course, but he didn't think that's what this was about. He thought—as his hand touched his sister's fine brown hair—that maybe this was about seeing how much he could get *away* with...

Not much, as it turned out. His parents were on him in the next second, shrieking and striking. Achilles raised his hands against his father's blows, cried "*I saw it on Mary Poppins!*", but the alibi didn't fly any more than Penny had; Dad kicked the shit out of him and threw him into his room for the rest of the day.

It couldn't have ended any differently, of course. Mom and Dad always found out. It turned out the little bump that both Achilles and Penny had under their collarbones sent out a signal when either of them got hurt. And after the Mary Poppins Incident, not even the implants were enough for Mom and Dad. Achilles couldn't go anywhere, not even the bathroom, without three or four skeeters following him around like nosy floating rice grains.

All in all, that afternoon taught him two things that shaped the rest of his life. One was that he was a wicked, wicked boy who could never *ever* give in to his impulses no matter *how* good it made him feel, or he would go straight to Hell.

The other was a profound and lifelong appreciation of the impact of ubiquitous surveillance.

## CONFIDENCE LIMITS

There are no rifter MDs. The walking wounded don't generally excel in the art of healing.

Of course, there's never been any shortage of rifters in *need* of healing. Especially after the Corpse Revolt. The fish-heads won that war hands down, but they took casualties just the same. Some died. Others suffered injuries and malfunctions beyond the skill of their own off-the-shelf medical machinery. Some needed help to stay alive; others, to die in something less than agony.

And all the qualified doctors were on the other side.

No one was going to trust their injured comrades to the tender mercies of a thousand sore losers just because the corpses had the only hospital for four thousand clicks. So they grafted a couple of habs together fifty meters off Atlantis's shoulder, and furnished it with medical equipment pillaged from enemy infirmaries. Fiberop let the corpses' meatcutters practice their art by remote control; explosive charges planted on Atlantis's hull inspired those same meatcutters to be extra careful in matters of potential malpractice. The losers took very good care of the winners, on pain of implosion.

Eventually tensions eased. Rifthers stopped avoiding Atlantis out of distrust, and began avoiding it out of indifference instead. Gradually, the realization dawned that the rest of the world posed a greater threat to rifthers and corpses alike than either did to the other. Lubin took down the charges somewhere during year three, when most everyone had forgotten about them anyway.

The medhab still gets a fair bit of use. Injuries happen. Injuries are inevitable, given rifter tempers and the derived weakness of rifter bones. But at the moment it holds only two occupants, and the corpses are probably thanking their portfolios that the rifthers cobbled this facility together all those years ago. Otherwise, Clarke and Lubin might have dragged themselves into Atlantis—and everyone knows where they've been.

As it is, they only ventured close enough to hand off Irene Lopez and the thing that dined upon her. Two clamshell

sarcophagi, dropped from one of Atlantis's engineering locks on short notice, devoured that evidence and are even now sending their findings up fiberop umbilicals. In the meantime Clarke and Lubin lie side-by-side on a pair of operating tables, naked as cadavers themselves. It's been a long time since any corpse dared give an order to a rifter, but they've acquiesced to Jerenice Seger's "strong recommendation" that they get rid of their diveskins. It was a tougher concession than Clarke lets on. It's not that simple nudity discomfits her; Lubin has never tripped Clarke's usual alarms. But the autoclave isn't just sterilizing her diveskin; it's destroying it, melting it back down to a useless slurry of protein and petroleum. She's trapped, naked and vulnerable, in this tiny bubble of gas and spun metal. For the first time in years, she can't simply step outside. For the first time in years the ocean can *kill* her—all it has to do is crush this fragile eggshell and clench around her like a freezing liquid fist...

It's a temporary vulnerability, of course. New diveskins are on the way, are being extruded right now. Clarke just has to hold out another fifteen or twenty minutes. But in the meantime she feels worse than naked. She feels skinned alive.

It doesn't seem to bother Lubin much. Nothing does. Of course, Lubin's teleop is being a lot less invasive than Clarke's. It's only taking samples: blood, skin, swabs from around the eyes and anus and seawater intake. Clarke's machine is digging deep into the flesh of her leg, displacing muscle and resetting bone and waving its gleaming chopstick arms like some kind of chrome spider performing an exorcism. Occasionally the smell of her own cauterizing flesh wafts faintly up the table. Presumably her injury is under repair, although she can't really tell; the table's neuroinduction field has her paralyzed and insensate below the stomach.

"How much longer?" she asks. The teleop ignores her without dropping a stitch.

"I don't think there's anyone there," Lubin says. "It's on autopilot."

She turns her head to look at him. Eyes dark enough to be called black look back at her. Clarke catches her breath; she keeps

forgetting what *naked* really means, down here. What is it the drybacks say? *The eyes are the windows to the soul.* But the windows into rifter souls are supposed to have frosted panes. Uncapped eyes are for corpses: this doesn't look right, it doesn't *feel* right. It looks as though Lubin's eyes have been pulled right out of his head, as though Clarke is looking into the wet sticky darkness inside his skull.

He rises on the table, oblivious to his own gory blindness, and swings his legs over the edge. His teleop withdraws to the ceiling with a few disapproving clicks.

A comm panel decorates the bulkhead within easy reach. He taps it. "Ambient channel. Grace. How are you coming with those 'skins?'"

Nolan answers in her outdoor voice: "We're ten meters off your shoulder. And yes, we remembered to bring extra eyecaps." A soft buzz—acoustic modems are bad for background noise sometimes. "If it's okay with you, though, we'll just leave 'em in the 'lock and be on our way."

"Sure." Lubin's face is expressionless. "No problem."

Clanks and hisses from down on the wet deck.

"There you go, sweetie," Nolan buzzes.

Lubin drills Clarke with those eviscerated eyes. "You coming?"

Clarke blinks. "Any place in particular?"

"Atlantis."

"My leg—" but her teleop is folding up against the ceiling as she speaks, its slicing and dicing evidently completed.

She struggles to prop her upper body up on its elbows; she's still dead meat below the gut, although the hole in her thigh has been neatly glued shut. "I'm still frozen. Shouldn't the field—"

"Perhaps they were hoping we wouldn't notice." Lubin takes a handpad off the wall. "Ready?"

She nods. He taps a control. Feeling floods her legs like a tidal bore. Her repaired thigh awakens, a sudden tingling swarm of pins and needles. She tries to move it. She succeeds, with difficulty.

She sits up, grimacing.

"What're you doing out there?" the intercom demands. After a moment, Clarke recognizes the voice: Klein. Shutting down the field seems to have caught his attention.

Lubin disappears into the wet room. Clarke kneads her thigh. The pins and needles persist.

"Lenie?" Klein says. "What—"

"I'm fixed."

"No you're not."

"The teleop—"

"You have to stay off that leg for at least six more hours. Preferably twelve."

"Thanks. I'll take it under advisement." She swings her legs over the edge of the table, puts some weight on the good one, gradually shifts weight to the other. It buckles. She grabs the table in time to keep from keeling over.

Lubin steps back into view, a carrysack slung over his shoulder. "You okay?" His eyes are capped again, white as fresh ice.

Clarke nods, strangely relieved. "Hand me that diveskin."

Klein heard that. "Wait a second—you two have *not* been cleared for—I mean—"

The eyes go in first. The tunic slithers eagerly around her torso. Sleeves and gauntlets cling like welcome shadows. She leans against Lubin for support while she dons the leggings—the tingling in her thigh is beginning to subside, and when she tries out the leg again it takes her weight for a good ten seconds before giving out. Progress.

"Lenie. Ken. Where are you going?"

Seeger's voice, this time. Klein's called for reinforcements.

"We thought we'd come for a visit," Lubin says.

"Are you sure you've thought that through?" Seeger says calmly.

"With all due respect—"

"Is there some reason we shouldn't?" Lubin asks innocently.

"Lenie's l—"

"Beyond Lenie's leg."

Dead air in the room.

"You've analyzed the samples by now," Lubin remarks.

"Not comprehensively. The tests are fast, not instantaneous."

"And? Anything?"

"If you were infected, Mr. Lubin, it only happened a few hours ago. That's hardly enough time for an infection to reach detectable levels in the bloodstream."

"That's a no, then." Lubin considers. "What about our 'skins? Surely you would have found something on the diveskin swabs."

Seger doesn't answer.

"So they protected us," Lubin surmises. "This time."

"As I said, we haven't finished—"

"I understood that Behemoth couldn't reach us down here," he remarks.

Seger doesn't answer that either, at first.

"So did I," she says finally.

Clarke takes a half-hop towards the airlock. Lubin offers an arm.

"We're coming over," he says.

Half a dozen modelers cluster around workstations at the far end of the Comm Cave, running sims, tweaking parameters in the hopes that their virtual world might assume some relevance to the real one. Patricia Rowan leans over their shoulders, studying something at one board; Jerenice Seger labors alone at another. She turns and catches sight of the approaching rifters, raises her voice just slightly in an alarm call disguised as a greeting: "Ken. Lenie."

The others turn. A couple of the less-experienced back away a step or two.

Rowan recovers first, her quicksilver eyes unreadable: "You should spare that leg, Lenie. Here." She grabs an unused chair from a nearby station and rolls it over. Clarke sinks gratefully into it.

Nobody makes a fuss. The assembled corpses know how to follow a lead, even though some of them don't seem too happy about it.

"Jerry says you've dodged the bullet," Rowan continues.

"As far as we know," Seger adds. "For now."

"Which implies a bullet to dodge," Lubin says.

Seger looks at Rowan. Rowan looks at Lubin. The number crunchers don't look anywhere in particular.

Finally, Seger shrugs. "D-cysteine and d-cystine, positive. Pyranosal RNA, positive. No phospholipids, no DNA. Intracellular ATP off the scale. Not to mention you can do an SEM of the infected cells and just *see* the little fellows floating around in there." She takes a deep breath. "If it's not Behemoth, it's Behemoth's evil twin brother."

"Shit," says one of the modelers. "Not *again*."

It takes Clarke a moment to realize that he's not reacting to Seger's words, but to something on the workstation screen. She leans forward, catches sight of the display through the copse of personnel: a volumetric model of the Atlantic basin. Luminous contrails wind through its depths like many-headed snakes, bifurcating and converging over continental shelves and mountain ranges. Currents and gyres and deep-water circulation iconised in shades of green and red: the ocean's own rivers. And superimposed over the entire display, a churlish summary:

FAILURE TO CONVERGE. CONFIDENCE LIMITS EXCEEDED.  
FURTHER PREDICTIONS UNRELIABLE.

"Bring down the Labrador Current a bit more," one of the modelers suggests.

"Any more and it'll shut down completely," another one says.

"So how do you know that isn't exactly what happened?"

"When the Gulf Stream—"

"Just *try* it, will you?"

The Atlantic clears and resets.

Rowan turns from her troops and fixes Seger. "Suppose they can't figure it out?"

"Maybe it was down here all along. Maybe we just missed it." Seger shakes her head, as if skeptical of her own suggestion. "We *were* in something of a hurry."

"Not that much hurry. We checked every vent within a thousand kilometers before we settled on this site, did we not?"

"Somebody did," Seger says tiredly.

"I saw the results. They were comprehensive." Rowan seems almost less disturbed by Behemoth's appearance than by the thought that the surveys might have been off. "And certainly none of the surveys since have shown anything..." She breaks off, struck by some sudden thought. "They haven't, have they? Lenie?"

"No," Clarke says. "Nothing."

"Right. So, five years ago this whole area was clean. The whole abyssal Atlantic was clean, as far as we know. And how long can Behemoth survive in cold seawater before it shrivels up like a prune and dies?"

"A week or two," Seger recites. "A month max."

"And how long would it take to get here via deep circulation?"

"Decades. Centuries." Seger sighs. "We know all this, Pat. Obviously, something's changed."

"Thanks for that insight, Jerry. What might that something be?"

"Christ, what do you want from me? I'm not an oceanographer." Seger waves an exasperated hand at the modelers. "Ask *them*. Jason's been running that model for—"

"Semen-sucking-motherfucking *stumpfucker!*" Jason snarls at the screen. The screen snarls back:

FAILURE TO CONVERGE. CONFIDENCE LIMITS EXCEEDED.

FURTHER PREDICTIONS UNRELIABLE.

Rowan closes her eyes and starts again. "Would it be able to survive in the euphotic zone, at least? It's warmer up there, even in winter. Could our recon parties have picked it up and brought it back?"

"Then it would be showing up here, not way over at Impossible Lake."

"But it shouldn't be showing up *anywh—*"

"What about fish?" Lubin says suddenly.

Rowan looks at him. "What?"



"Behemoth can survive indefinitely inside a host, correct? Less osmotic stress. That's why they infect fish in the first place. Perhaps they hitched a ride."

"Abyssal fish don't disperse," Seger says. "They just hang around the vents."

"Are the larvae planktonic?"

"Still wouldn't work. Not over these kinds of distances, anyway."

"With all due respect," Lubin remarks, "you're a medical doctor. Maybe we should ask someone with *relevant* expertise."

It's a jab, of course. When the corpses were assigning professional berths on the ark, ichthyologists didn't even make the long list. But Seger only shakes her head impatiently. "They'd tell you the same thing."

"How do you know?" There's an odd curiosity in Rowan's voice.

"Because Behemoth was trapped in a few hot vents for most of Earth's history. If it had been able to disperse inside plankton, why wait until now to take over the world? It would have done it a few hundred million years ago."

Something changes in Patricia Rowan. Clarke can't quite put her finger on it. Maybe it's some subtle shift in the other woman's posture. Or perhaps Rowan's ConTacts have brightened, as if the intel twinkling across her eyes has slipped into fast-forward.

"Pat?" Clarke asks.

But suddenly Seger's coming out of her chair like it was on fire, spurred by a signal coming over her earbud. She taps her watch to bring it online: "I'm on my way. Stall them."

She turns to Lubin and Clarke. "If you really want to help, come with me."

"What's the problem?" Lubin asks.

Seger's already halfway across the cave. "More slow learners. They're about to kill your friend."

## CAVALRY

There are lines drawn everywhere in Atlantis, four-centimeter gaps that circumscribe whole corridors as if someone had chainsawed right through the bulkheads at regular intervals. The gaps are flagged by cautionary bands of diagonal striping to either side, and if you stand astride one of them and look up to where it passes overhead, you'll see why: each contains a dropgate, poised to guillotine down in the event of a hull breach. They're such convenient and ubiquitous boundaries that parties in opposition have always tended to use them as lines in the sand.

Parties like the half-dozen corpses hanging back at the junction, too scared or too smart to get involved. Parties like Hannuk Yeager, dancing restlessly on the far side of the striped line, keeping them all at bay fifteen meters upwind of the infirmary.

Lubin shoulders through the chickenshit corpses, Clarke hobbling in his wake. Yeager bares his teeth in greeting: "Party's four doors down on the left!" His capped eyes narrow at their corpse escorts.

Clarke and Lubin pass. Seger tries to follow; Yeager catches her around the throat and holds her there, squirming. "Invitation only."

"You don't—" Yeager clenches; Seger's voice chokes down to a whisper. "You want...Gene to die...?"

"Sounds like a *threat*," Yeager growls.

"I'm his *doctor*!"

"Let her go," Clarke tells him. "We might need her."

Yeager doesn't budge.

*Oh shit*, Clarke thinks. *Is he primed?*

Yeager's got a mutation: too much monoamine oxidase in his blood. It breaks down the brain chemicals that keep people on an even keel. The authorities tweaked him to compensate, back in the days when they could get away with such things, but he learned to get around it somehow. Sometimes he deliberately strings himself so tight that a sideways glance can send him off the deep end. It gets him off. When that happens, it doesn't matter all that much

whether you're friend or foe. Times like that, even Lubin takes him seriously.

Lubin's taking him seriously now. "Let her past, Han." His voice is calm and even, his posture relaxed.

From down the corridor, a groan. The sound of something breaking.

Yeager snorts and tosses Seger aside. The woman staggers coughing against the wall.

"You too," Lubin says to Rowan, who's still discretely behind the striped line. To Yeager: "If it's okay with you, of course."

"Shit," Yeager spits. "I don't give a fuck." His fingers clench and unclench as if electrified.

Lubin nods. "You go on," he says casually to Clarke. "I'll help Han hold the fort."

It's Nolan, of course. Clarke can hear her snarling as she nears the medbay: "Ah, the little fuckhead's gone and shit himself..."

She squeezes through the hatch. The sour stench of fear and feces hits her in the face. Nolan, yes. And she's got Creasy backing her up. Klein's been thrown into the corner, broken and bleeding. Maybe he tried to get in the way. Maybe Nolan just wanted him to.

Gene Erickson's awake at last, crouching on the table like a caged animal. His splayed fingers push against the isolation membrane and it just *stretches*, like impossibly thin latex. The further he pushes, the harder it pulls; his arm isn't quite extended but the membrane's tight as it's going to go, a mass of oily indestructible rainbows swirling along lines of resistable force.

"*Fuck*," he growls, sinking back.

Nolan squats down and cocks her head, birdlike, a few centimeters from Klein's bloody face. "Let him out, sweetie."

Klein drools blood and spit. "I *told* you, he's—"

"*Get away from him!*" Seger pushes into the compartment as though the past five years—as though the past five *minutes*—never happened. She barely gets her hand on Nolan's shoulder before Creasy slams her into a bulkhead.

Nolan brushes imaginary contaminants from the place where Seger touched her. "Don't damage the head," she tells Creasy. "Could be a password in there."

"Everybody." Rowan, at least, is smart enough to stay in the corridor. "Just. Calm. Down."

Nolan snorts, shaking her head. "Or *what*, stumppfuck? Are you going *call security*? Are you going to have us *ejected from the premises*?"

Creasy's white eyes regard Seger from mere centimeters away, a promise of empty and mindless violence set above a grinning bulldozer jaw. Creasy, it is said, has a way with women. Not that he's ever fucked with Clarke. Not that anyone does, as a rule.

Rowan looks through the open hatch, her expression calm and self-assured. Clarke sees the plea hidden behind the confident façade. For a moment, she considers ignoring it. Her leg tingles maddeningly. At her elbow Creasy makes kissy-kissy noises at Seger, his hand viced around the doctor's jaw.

Clarke ignores him. "What's the deal, Grace?"

Nolan smiles harshly. "We managed to wake him up, but Normy here" —an absent punch at Klein's head— "put some kind of password on the table. We can't dial down the membrane."

Clarke turns to Erickson. "How you feeling?"

"They did something to me." He coughs. "When I was in coma."

"Yes we did. We saved his—" Creasy bumps Seger's head against the bulkhead. Seger shuts up.

Clarke keeps her eyes on Erickson. "Can you move without spilling your intestines all over?"

He twists clumsily around to show off his abdomen; the membrane stretches against his head and shoulder like an amniotic sac. "Miracles of modern medicine," he tells her, flopping onto his back. Sure enough, his insides have all been packed back where they belong. Fresh pink scars along his abs complement the older ones on his thorax.

Jerenice Seger looks very much as if she wants to say something. Dale Creasy looks very much as if he wants her to try.

"Let her talk," Clarke tells him. He loosens his grip just slightly; Seger looks at Clarke and keeps her mouth shut.

"So what's the story?" Clarke prompts. "Looks like you glued him back together okay. It's been almost three days."

"Three days," Seger repeats. Her voice is squeezed thin and reedy under Creasy's grip. "He was almost disemboweled, and you think *three days* is enough time to recover."

In fact, Clarke's sure of it. She's seen torn and broken bodies before; she's seen multiarmed robots reassemble them, lay fine electrical webbing into their wounds to crank healing up to a rate that would be miraculous if it weren't so routine. Three days is more than enough time to drag yourself back outside, seams still oozing maybe but strong enough, strong enough; and once you're weightless again, and sheltered by the endless black womb of the abyss, you've got all the time in the world to recover.

It's something the drybacks have never been able to grasp: what keeps you weak is the *gravity*.

"Does he need more surgery?" she asks.

"He will, if he isn't careful."

"Answer the fucking question," Nolan snarls.

Seger glances at Clarke, evidently finds no comfort there. "What he needs is time to recover, and coma will cut that by two thirds. If he wants to get out of here quickly, that's his best option."

"You're keeping him here against his will," Nolan says.

"Why—" Rowan begins from the corridor.

Nolan wheels on her. "You shut the fuck up *right now*."

Rowan calmly pushes her luck. "*Why* would we want to keep him here if it weren't medically necessary?"

"He could rest up in his own hab," Clarke says. "Outside, even."

Seger shakes her head. "He's running a significant fever— Lenie, just *look* at him!"

She's got a point. Erickson's flat on his back, apparently exhausted. A sheen of perspiration slicks his skin, almost lost behind the more conspicuous glistening of the membrane.

"A fever," Clarke repeats. "Not from the operation?"

"No. Some kind of opportunistic infection."

"From what?"

"He was mauled by a wild animal," Seger points out, exasperated. "There's no end to the kind of things you can pick up from something as simple as a bite, and he was nearly *eviscerated*. It would be almost inconceivable if there *weren't* complications."

"Hear that, Gene?" Clarke says. "You've got fish rabies or something."

"Fuckin' A," he says, staring at the ceiling.

"So it's your call. Want to stay here, let 'em fix you? Or trust to drugs and take your chances?"

"Get me out of here," Erickson says weakly.

She turns back to Seger. "You heard him."

Seger draws herself up, impossibly, perpetually, insanely defiant. "Lenie, I asked you to come along to *help*. This is the furthest thing from—"

Creasy's fist hits her in the stomach like a wrecking ball. Seger *oofs* and topples to the side. Her head hits the bulkhead on the way down. She lies there, gulping breathlessly.

Out of the corner of her eye Clarke sees Rowan step forward, then think better of it.

She stares evenly at Creasy. "Not necessary, Dale."

"High and mighty cunt was just *asking* for it," Creasy grumbles.

"And how's she going to let Gene out of jail if she can't even breathe, you *idiot*?"

"Really, Len. What's the big deal?"

Nolan. Clarke turns to face her.

"You know what they did to us," Nolan continues, rising at Creasy's side. "You know how many of us these pimps fucked over. Killed, even."

*Fewer than I did*, Clarke doesn't say.

"I say if Dale wants to go to town on this stumpfuck, let him." Nolan puts a comradely hand on Creasy's shoulder. "Might go a tiny way to balancing the books, y'know?"

"You say," Clarke says quietly. "I say different."

"Now *there's* a surprise." The trace of a smile ghosts across Nolan's face.

They stare at each other through their corneal shields. Across the compartment, Klein whimpers; Jerenice Seger seems to be breathing again at their feet. Creasy looms close at Clarke's shoulder, an ominous presence just short of overt threat.

She keeps her breathing slow and even. She lowers herself into a squat—carefully, carefully, her bad leg nearly buckling again—and helps Seger into a sitting position.

"Let him out," she says.

Seger mutters into her wristwatch. A keyboard jammed with strange alphanumeric lights up the skin of her forearm; she taps a sequence with her other hand.

The isolation tent *pops* softly. Erickson pushes a tentative finger through the membrane, finds it unlocked, and lurches off the table as if passing through a soap bubble. His feet hit the deck with a fleshy slap. Nolan holds out a diveskin she's produced from somewhere: "Welcome back, buddy. Told you we'd get you out."

They leave Clarke with the corpses. Seger hauls herself to her feet, ignoring Clarke's offered hand and bracing herself against the bulkhead. One hand still clutches protectively at her stomach. She lurches over to Klein.

"Norm? Norm?" She squats next to her subordinate, stiff-limbed, and pushes back one of his eyelids. "Stay with me..." Droplets of blood dribble from her scalp and splatter onto the medic's pummeled face, making no difference at all. Seger curses and wipes the back of her hand across her injury.

Clarke steps forward to help. Her foot comes down on something small and hard, like a small stone. She lifts her foot. A tooth, sticky with coagulating fluids, clatters softly onto the deck.

"I—" Clarke begins.

Seger turns. Rage simmers on her face. "*Just get out of here.*"

Clarke stares at her for a moment. Then she turns on her heel and leaves.

Rowan's waiting in the corridor. "This can't happen again."

Clarke leans against the bulkhead to take some weight off her injured leg. "You know Grace. She and Gene are—"

"It's not just Grace. At least, it won't be for long. I said something like this might happen."

She feels very tired. "You said you wanted space between the two sides. So why was Jerry keeping Gene here when he wanted to leave?"

"Do you think she *wanted* that man around? She was looking out for the welfare of her patient. That's her job."

"Our welfare is our own concern."

"You people simply aren't *qualified*—"

Clarke raises one pre-emptive had. "Heard it, Pat. The little people can't see the Big Picture. Joe Citizen can't handle the truth. The peasants are too *eeegnorant* to vote." She shakes her head, disgusted. "It's been five years and you're still patting us on the head."

"Are you saying that Gene Erickson is a more qualified diagnostician than our Chief of Medicine?"

"I'm saying he has the right to be wrong." Clarke waves an arm down the corridor. "Look, maybe you're right. Maybe he'll come down with gangrene and come crawling back to Jerry inside a week. Or maybe he'd rather die. But it's *his* decision."

"This isn't about gangrene," Rowan says softly. "And it isn't about some common low-grade infection. And you know it."

"And I still don't see what difference it makes."

"I told you."

"You told me about a bunch of frightened children who can't believe that their own defenses will hold. Well, Pat, the defenses *will* hold. I'm living proof. We could be drinking Behemoth in pure culture and it wouldn't hurt us."

"We've lost—"

"You've lost one more layer of denial. That's all. Behemoth's *here*, Pat. I don't know how, but there's nothing you can do about it and why should you even bother? It's not going to do anything except rub your noses in something you'd rather not think about, and you'll adapt to that soon enough. You've done it before. A month from now you'll have forgotten about it all over again."



"Then please—" Rowan begins, and stops herself.

Clarke waits while the other woman braces herself, yet again, for the subordinate role.

"Give us that month," Rowan whispers at last.

## NEMESIS

Clarke doesn't often go into the residential quarter. She doesn't remember ever having been in this particular section. The corridor here is sheathed in lattice paint and wired up to a mural generator. A forest of antlered coral crowds the port bulkhead; surgeonfish school and swirl to starboard, like the nodes of some abstract and diffuse neural net. A mesh of fractured sunlight dances across everything. Clarke can't tell whether the illusion is purely synthetic, or powered by archived footage of a real coral reef. She wouldn't even know how to tell the difference; of all the sea creatures which have made her acquaintance over the years, none have lived in sunlight.

A lot of families along here, Clarke figures. Adults don't go in for evocations of the wild kingdom as a rule; it's kind of hard to retain that aesthetic once you've grasped the concept of irony.

Here it is: D-18. She taps the doorbell. A muffled musical chime drifts through the closed hatch; a reedy thread of music, a faint voice, the sounds of motion.

The hatch swings open. A stocky girl of about ten looks out at her from under spiky blond bangs. The music wafts around her from the interior of the compartment—Lex's flute, Clarke realizes.

The smile dies on the girl's face the instant she lays eyes on Lenie Clarke.

"Hi," Clarke says. "I was looking for Alyx." She tries a smile of her own on for size.

It doesn't fit. The girl takes a stumbling step backward. "Lex..."

The music stops. "What? Who is it?"

The blonde girl steps aside, nervous as a cat. Alyx Rowan sits blinded on a couch in the center of the room. One of her hands lowers the flute; the other reaches up to the mother-of-pearl 'phones covering her eyes.

"Hey, Lex," Clarke says. "Your mom said you'd be here."

"Lenie! You passed!"

"Passed?"

"Quarantine! They said you and psycho-man were locked up for tests or something. I guess you aced them." A wheeled rectangular pedestal about a meter high squats in front of the couch, a little obelisk with the same opalescent finish as Alyx's headset. Alyx sets her 'phones down on top of it, next to an identical pair already at rest.

Clarke limps into the room. Alyx's face clouds instantly. "What happened to your leg?"

"Rogue squid. Rudder got me."

Alyx's friend mutters something from the corner of Clarke's eye and disappears into the corridor. Clarke turns in her wake.

"Your friend doesn't like me much."

Alyx waves a dismissive hand. "Kelly spooks easy. One look and she just flashfeeds all the shit her mom ever spewed about you guys. She's nice, but she doesn't high-grade her sources at *all*." The girl shrugs, dismissing the subject. "So what's up?"

"You know that quarantine I was buzzing on about a while back?"

Alyx frowns. "That guy that got bitten. Erickson."

"Yeah. Well, it looks like he came down with something after all, and the basic thumbnail is we've decided to invoke a kind of *No Fish-heads* policy in Atlantis for the time being."

"You're letting them kick you out?"

"I actually think it's a good idea," Clarke admits.

"Why? What's he got?"

Clarke shakes her head. "It's not really a medical thing, although that's—part of it. It's just—feelings are running kind of high right now, on both sides. Your mom and I thought it'd be

better if your guys and our guys kept out of each other's way. Just for a while."

"How come? What's going on?"

"Your mom didn't—?" It belatedly occurs to Clarke that Patricia Rowan might have opted to keep certain things from her daughter. For that matter, she doesn't even know how much of Atlantis's *adult* population has been brought up to speed. Corpses aren't keen on full disclosure just as a matter of general principle.

Not that Lenie Clarke gives a great crimson turd about corpse sensibilities. Still. She doesn't want to get in between Pat and—

"Lenie?" Alyx is staring at her, brow furrowed. She's one of the very few people that Clarke can comfortably show her naked eyes to; right now, though, Clarke's glad her caps are in.

She takes a couple of paces across the carpet. Another facet of the pedestal comes into view. Some kind of control panel runs in a strip just below its upper edge, a band of dark perspex twinkling with red and blue icons. A luminous jagged waveform, like an EEG, scrolls horizontally along its length.

"What's this?" Clarke asks, seizing on the diversion. It's far too big to be any kind of game interface.

"That? Oh." Alyx shrugs. "That's Kelly's. It's a head cheese."

"*What!*"

"You know, a smart gel. Neuron culture with—"

"I know what it is, Lex. I just—I guess I'm surprised to see one here, after..."

"Wanna see it?" Alyx taps a brief tattoo on the top of the cabinet. The nacreous surface swirls briefly and clears: beneath the newly-transparent façade, a slab of pinkish-gray tissue sits within its circular rim like a bowl of fleshy oatmeal. Flecks of brown glass punctuate the pudding in neat perforated lines.

"It's not very big," Alyx says. "Way smaller than the ones they had back in the old days. Kelly says it's about the same as a cat."

*So it's evil at least, if not hugely intelligent.* "What's it for?" Clarke wonders. *Surely they wouldn't be stupid enough to use these things after—*

"It's kind of a pet," Alyx says apologetically. "She calls it Rumble."

"A *pet*?"

"Sure. It thinks, sort of. It learns to do stuff. Even if no one really knows how, exactly."

"Oh, so you heard about that, did you?"

"It's a lot smaller than the ones that, you know, worked for you."

"*They didn't w—*"

"It's really harmless. It's not hooked into life support or anything."

"So what does it do? You teach it tricks?" The porridge of brains glistens like an oozing sore.

"Kind of. It talks back if you say stuff to it. Doesn't always make a lot of sense, but that's what makes it fun. And if you tweak the audio feed right it plays these really cool color patterns in time to music." Alyx grabs her flute off the couch, gestures at the eyephones. "Wanna see?"

"A pet," Clarke murmurs. *You bloody corpses...*

"We're not, you know," Alyx says sharply. "Not all of us."

"Sorry? Not what?"

"Corpses. What does that mean, anyway? My mom? *Me*?"

*Did I say that out loud?* "Just—corporate types, I guess." She's never spent much time pondering the origin of the term, any more than she's lost sleep over the etiology of *chair* or *fumarole*.

"Well in case you didn't notice, there's a lot of other people in here. Crunchers and doctors and just *families*."

"Yeah, I know. Of course I know—"

"But you just lump us all together, you know? If we don't have a bunch of pipes in our chest we're all just *corpses* as far as you're concerned."

"Well—sorry." And then, belatedly defensive: "I'm not slagging you, you know. It's just a word."

"Yeah, well it's not *just a word* to all you fishheads."

"Sorry." Clarke says again. A distance seems to open between them, although neither has moved.

"Anyway," she says after a while, "I just wanted you to know I won't be inside for a while. We can still talk, of course, but—"

Movement from the hatchway. A large stocky man steps into the compartment, dark hair combed back, eyebrows knotted together, his whole body a telegraph of leashed hostility. Kelly's father.

"Ms. Clarke," he says evenly.

Her guts tighten into a hard, angry knot. She knows that look. She knows that stance, she saw it herself more times than she could count when she was Kelly's age. She knows what *fathers* do, she knows what *hers* did, but she's not a little girl any more and Kelly's dad looks very much in need of a *lesson*...

But she has to keep reminding herself. None of it happened.

## PORTRAIT OF THE SADIST AS AN ADOLESCENT

Achilles Desjardins learned to spoof the skeeters eventually, of course. Even as a child he knew the score. In a world kept under constant surveillance for its own protection there were only watched and watchers, and he knew which side of the lens he wanted to be on. Beating off was not the kind of thing he could do in front of an audience.

It was barely even the kind of thing he could do in private, for that matter. He had, after all, been raised with certain religious beliefs; clinging to the coattails of the *Nouveaux Séparatistes*, the Catholic miasma had persisted in Quebec long after it had faded into kitschy irrelevance everywhere else. Those beliefs haunted Achilles every night as he milked himself, as the sick hateful images flickered through his mind and hardened his penis. It barely mattered that the skeeters were offline, wobbling drunkenly under the influence of the magnetic mobiles he'd hung over his bed and desk and drawers. It barely mattered that he was already going to hell, even if he never touched himself again for the rest of his life—for hadn't Jesus said *if you do these things even in your heart, then you have committed them in eyes of God?* Achilles was

already damned by his own unbidden thoughts. What more could he lose by acting on them?

Shortly after his eleventh birthday his penis began leaving actual evidence behind, a milky fluid squirted onto the sheets in the course of his nightly debauchery. He didn't dare ask the encyclopedia about it for two weeks; it took him that long to figure out how to doctor the enquiry logs so Mom and Dad wouldn't find out. Cracking the private settings on the household Maytag took another three days. You could never tell what trace elements that thing might be scanning for. By the time Achilles actually dared to launder his bedsheets they smelled a lot like Andrew Trites down at the community center, who was twice the size of anyone else in his cohort and whom nobody wanted to stand next to at the rapitrans stop.

"I think—" Achilles began at thirteen.

He no longer believed in the Church. He was after all an empiricist at heart, and God couldn't withstand so much as ten seconds' critical scrutiny from anyone who'd already figured out the ugly truth about the Easter Bunny. Paradoxically, though, damnation somehow seemed more real than ever, on some primal level that resisted mere logic. And as long as damnation was real, confession couldn't hurt.

"—I'm a monster," he finished.

It wasn't as risky a confession as it might have been. His confidante wasn't especially trustworthy—he'd downloaded it from the net (from *Maelstrom*, he corrected himself; that's what everyone was calling it now), and it might be full of worms and trojans even if he *had* scrubbed it every which way—but he'd also kellered all the I/O except voice and he could delete the whole thing the moment it tried anything funny. He'd do that anyway, once he was finished. No way was he going to leave it ticking after he'd spilled his guts to it.

Dad would go totally triploid if he knew Achilles had brought a wild app anywhere near their home net, but Achilles wasn't about

to risk using the house filters even if Dad *had* stopped spying since Mom died. And anyway, Dad wasn't going to find out. He was downstairs, cowed in his sensorium with the rest of the province—the rest of the *country* now, Achilles had to keep reminding himself—immersed in the pomp and ceremony of Quebec's very first Independence Day. Sullen, resentful Penny—her days of idolizing Big Brother long past—would have gladly sold him out in a second, but these days she pretty much lived in her rapture helmet. By now it must have worn the grooves right out of her temporal lobes.

It was the birthday of the last new country in the world, and Achilles Desjardins was alone in his bedroom with his confessor.

"What kind of monster?" asked TheraPal™ 6.2, its voice studiously androgynous.

He'd learned the word that very morning. He pronounced it carefully: "A misogynist."

"I see," TheraPal™ murmured in his ear.

"I have these—I get these feelings. About hurting them. Hurting girls."

"And how do they make you feel?" The voice had edged subtly into the masculine.

"Good. Awful. I mean—I *like* them. The feelings, I mean."

"Could you be more specific?" There was no shock or disgust in the voice. Of course, there couldn't be—the program didn't have feelings, it wasn't even a Turing app. It was basically just a fancy menu. Still, stupidly, Achilles felt strangely relieved.

"It's—sexy," he admitted. "Just, just thinking about them that way."

"What way, exactly?"

"You know, helpless. Vulnerable. I, I like the looks on their faces when they're...you know..."

"Go on," said TheraPal™.

"Hurting," Achilles finished miserably.

"Ah," said the app. "How old are you, Achilles?"

"Thirteen."

"Do you have any friends who are girls?"

"Sure."

"And how do you feel about *them*?"

"I *told* you!" Achilles hissed, barely keeping his voice down. "I get—"

"No," TheraPal™ broke in gently. "I'm asking how you *feel* about them personally, when you're not sexually aroused. Do you hate them?"

Well, no. Andrea was really smart, and he could always go to her for help with his debugs. And Martine—one time, Achilles had just about *killed* Martine's older brother when he was picking on her. Martine didn't have a mean bone in her body, but that asshole brother of hers was so...

"I—I like them," he said, his forehead crinkling at the paradox. "I like them a lot. They're great. Except the ones I want to, you know, and even then it's only when I..."

TheraPal™ waited patiently.

"Everything's fine," Achilles said at last. "Except when I want to..."

"I see," the app said after a moment. "Achilles, I have some good news for you. You're not a misogynist after all."

"No?"

"A misogynist is someone who hates women, who fears them or thinks them inferior in some way. Is that you?"

"No, but—but what am I, then?"

"That's easy," TheraPal™ told him. "You're a sexual sadist. It's a completely different thing."

"Really?"

"Sex is a very old instinct, Achilles, and it didn't evolve in a vacuum. It coevolved with all sorts of other basic drives—fighting for mates, territoriality, competition for resources. Even healthy sex has a strong element of violence to it. Sex and aggression share many of the same neurological paths."

"Are you—are you saying *everyone's* like me?" It seemed too much to hope for.

"Not exactly. Most people have a sort of switch that suppresses violent impulses during sex. Some people's switches work better than others. The switches in clinical sadists don't work very well at *all*."



"And that's what I am," Achilles murmured.

"Very likely," TheraPal™ said, "although it's impossible to be sure without a proper clinical checkup. I seem unable to access your network right now, but I could provide a list of nearby affiliated medbooths if you tell me where we are."

Behind him, the Achilles's bedroom door creaked softly on its hinges. He turned, and froze instantly at his core.

The door to his bedroom had swung open. His father stood framed in the darkness beyond.

"Achilles," TheraPal™ said in the whirling, receding distance, "for you own health—not to mention your peace of mind—you really should visit one of our affiliates. A contractually-guaranteed diagnosis is the first step to treatment, and treatment is the first step to a healthy life."

*He couldn't have heard,* Achilles told himself. TheraPal™ spoke directly to his earbud, and Dad couldn't have stopped the telltale from flashing if he'd been listening in. Dad didn't hack.

He couldn't have heard TheraPal™. He could've heard Achilles, though.

"If you're worried about the cost, our rates—" Achilles deleted the app almost without thinking, sick to his stomach.

His father hadn't moved.

His father didn't move much, these days. The short fuse, the hair-trigger had rusted into some frozen state between grief and indifference over the years. His once-fiery and defiant Catholicism had turned against itself with the fall of the Church, a virulent rage of betrayal that had burned him out and left him hollow. By the time Achilles' mom had died there'd barely even been sorrow. (A glitch in the therapy he'd said dully, coming back from the hospital. The wrong promoters activated, the body somehow inoculated against its own genes, devouring itself. There was nothing he could do. They'd signed a waiver.)

Now he stood there in the darkened hallway, swaying slightly, his fists not even clenched. It had been years since he'd raised a hand against his children.

So what am I afraid of? Achilles wondered, his stomach knotted.

*He knows. He knows. I'm afraid he knows...*

The corners of his father's mouth tightened by some infinitesimal degree. It wasn't a smile. It wasn't a snarl. In later years, the adult Achilles Desjardins would look back and recognise it as a kind of acknowledgment, but at the time he had no idea what it meant. He only knew that his father simply turned and walked down the hall to the master bedroom, and closed the door behind him, and never mentioned that night ever again.

In later years, he also realised that TheraPal™ must have been stringing him along. Its goal, after all, had been to attract customers, and you didn't do that by rubbing their faces in unpleasant truths. The program had simply been trying to make him feel better as a marketing strategy.

And yet, that didn't mean it had *lied*, necessarily. Why bother, if the truth would do the job? And it all made so much *sense*. Not a sin, but a malfunction. A thermostat, set askew through no fault of his own. All life was machinery, mechanical contraptions built of proteins and nucleic acids and electricity; what machine ever got creative control over its own specs? It was a liberating epiphany, there at the dawn of the sovereign Quebec: Not Guilty, by reason of faulty wiring.

Odd, though.

You'd have expected it to bring the self-loathing down a notch or two in the years that followed.

## **BEDSIDE MANOR**

Gene Erickson and Julia Friedman live in a small single-deck hab about two hundred meters southeast of Atlantis. Julia has always done most of the housekeeping: Gene gets notoriously twitchy in enclosed spaces. For him, *home* is the open ridge: the hab is a necessary evil, for sex and feeding and those occasional times when the his own darkdreams prove insufficiently diverting.

Even then, he treats it the way a pearl diver of two hundred years past would treat a diving bell: a place to gulp the occasional breath of air before returning to the deep.

Now, of course, it's more of an ICU.

Lenie Clarke emerges from the airlock and lays her fins on an incongruous welcome mat laid to one side. The main compartment is dim even to rifter eyes, a grey-on-grey wash of twilight punctuated by the bright chromatic readouts on the comm board. The air smells of mould and metal; more faintly, of vomit and disinfectant. Life-support systems gurgle underfoot. Open hatches gape like black mouths: storage; head; sleeping cubby. An electronic metronome beeps somewhere nearby. A heart monitor, counting down.

Julia Friedman steps into view.

"He's still—oh." She's taken off her diveskin in favor of a thermochrome turtleneck that mostly covers her scars. It's strange to see rifter eyes atop dryback clothing. "Hi, Lenie."

"Hi. How's he doing?"

"Okay." She turns in the hatchway, sags with her spine against the frame: half in darkness, half in twilight. She turns her face to the darkness, to the person within it. "Could be better, I guess. He's asleep. He's sleeping a lot."

"I'm surprised you could even keep him inside."

"Yeah. I think he'd rather be out there, even now, but...he's doing it for me, I think. Because I asked him." Friedman shakes her head. "It was too easy."

"What was?"

"Convincing him." She takes a breath. "You know how much he loves the outdoors."

"Are Jerry's antibiotics helping?"

"Maybe. I guess. It's hard to say, you know? She can always say he'd be worse without them, no matter how bad it gets."

"Is that what she's saying?"

"Oh, Gene hasn't talked to her since he came back. He doesn't trust them." She stares at the deck. "He blames her for this."

"For being sick?"

"He thinks they did something to him."

Clarke remembers. "What exactly does he—?"

"I don't know. Something." Friedman glances up: her armored eyes lock onto Clarke's for an instant, then slide off to the side. "It's taking a long time to clear up, you know? For a simple infection. Do you think?"

"I don't really know, Julia."

"Maybe Behemoth's mixing things up somehow. Making things worse."

"I don't know if it works like that."

"Maybe I've got it too, by now." Friedman almost seems to be talking to herself. "I mean, I'm with him a lot..."

"We could check you out, if you wanted."

Friedman looks at her. "You were infected, weren't you? Before."

"Only with Behemoth," Clarke says, careful to draw the distinction. "It didn't kill me. Didn't even make me sick."

"It would have, though. Eventually. Right?"

"If I hadn't got my retrofits. But I did. We all did." She tries a smile. "We're rifters, Julia. We're tough little motherfuckers. He'll pull through. I know it."

It's not much, Clarke knows. Reassuring deception is all she can offer Julia Friedman at the moment. She knows better than to touch; Friedman's not keen on physical contact. She'd endure a comforting hand on the shoulder, perhaps—even take it in the spirit in which it was intended—but Grace Friedman is very selective with her personal space. It's one of the few ways in which Clarke feels a kinship with the woman. Each can see the other flinch, even when neither does.

Friedman looks back into the darkness. "Grace says you helped get him out of there."

Clarke shrugs, a bit surprised that Nolan would give her the credit.

"I would've been there too, you know. Only..." Friedman's voice trails off. The hab's ventilators sigh into the silence.

"Only you think maybe he'd have been better off where he was," Clarke suggests.

"Oh, no. Well, maybe partly. I don't know if Dr. Seger's as bad as they think, anyway."

"They?"

"Gene and—Grace."

*Ah.*

"It's just, I didn't know...I didn't know if he'd even *want* me there." Friedman flashes a rueful smile. "I'm not much of a fighter, Lenie. Not like you, not like—I just kind of roll with the punches."

"He could have been with Grace all along if he'd wanted to, Julia. He's with you."

Friedman laughs, a bit too quickly. "Oh, no. That's not what I meant." But Clarke's words seem to have perked her up a bit.

"Anyway," Clarke says, "I guess I'll leave you guys alone. I just wanted to stop by, see how he was doing."

"I'll tell him," Friedman says. "He'll appreciate it."

"Sure. No problem." She bends to retrieve her fins.

"And you should come by again, when he's awake. He'd like that." She hesitates, looking away; chestnut curls obscure her face. "Not many people come by, you know. Except Grace. Saliko was by a while back."

Clarke shrugs. "Rifters aren't big on social skills." *And you really ought to know that by now*, she doesn't add. Julia Friedman just doesn't get it, sometimes. It's as though, scars and history notwithstanding, she's a rifter in name only, an honorary member allowed past the gate on her husband's credentials.

*Which begs the question of what I'm doing here*, she realizes.

"I think they take him too seriously sometimes," Friedman says.

"Seriously?" Clarke glances at the airlock. The hab seems suddenly, subtly smaller.

"About, you know. The corpses. I hear Saliko's feeling a little odd now, but you know Saliko."

*He thinks they did something to him...*

"I wouldn't worry about it," Clarke says. "Really." She smiles, sighing inwardly at her own diplomacy.

Comforting lies get far too easy with practice.

It's been a while since she's let Kevin take her. He's never been all that good at it, sadly. He has a harder time keeping it up than most kids his age, which actually isn't all that uncommon among the local bottom-feeders. And the fact that he's chosen a frigid bitch like Lenie Clarke to practice his moves on hasn't helped the dynamic any. A man afraid to touch: a woman averse to contact. If these two have anything in common, it's patience.

She figures she owes him. Besides, she wants to ask him some questions.

But today he's a granite cock with a brain stem attached. fuck the foreplay: he pushes into her right off the top, not even a token tongue-lashing to make up for the lack of tropical irrigation. The friction pulls painfully at her labia; she reaches down discretely with one hand and spreads them. Walsh pumps on top of her, breath hissing through teeth clenched in a hard animal grin, his capped eyes hard and unreadable. They always keep their eyes masked during sex—Clarke's tastes prevail, as usual—although Walsh usually wears too much heart on his face to hide with a couple of membranous eggshells. Not this time. There's something behind his overlays that Clarke can't quite make out, something focused on the space where she is but not on *her*. He pushes her up the pallet in rough thrusting increments; her head bumps painfully against the naked metal plating of the deck. They fuck without words amidst stale air and grafted machinery.

She doesn't know what's come over him. It's a nice change, though, the closest thing to an honest-to-God rape she's had in years. She closes her eyes and summons up images of Karl Acton.

Afterwards, though, the bruise she notices is on *his* arm: a corona of torn capillaries around a tiny puncture in the flesh of his inner elbow.

"What's this?" She lays her lips around the injury and runs her tongue across the swelling.

"Oh, that. Grace is taking blood samples from everyone."

Her head comes up. "What?"

"She's not great at it. Took her a couple of tries to find a vein. You should see Lije. Looks like his arm got bushwhacked by a sea urchin."

"Why's Grace taking blood?"

"You didn't hear? Lije came down with something. And Saliko's started feeling under the weather too, and *he* visited Gene and Julia just a couple of days ago."

"So Grace thinks—"

"Whatever the corpses gave him, it's spreading."

Clarke sits up. She's been naked on the deck for half an hour, but this is the first time she's felt the chill. "Grace thinks the corpses gave him something."

"That's what Gene thought. She's going to find out."

"How? She doesn't have any medical training."

Walsh shrugs. "You don't need any to run MedBase."

"Jesus semen-sucking Christ." Clarke shakes her head in disbelief. "Even if Atlantis *did* want to sic some bug on us, they wouldn't be stupid enough to use one from the standard database."

"I guess she thinks it's a place to start."

There's something in his voice.

"You believe her," Clarke says.

"Well, not nec—"

"Has Julia come down with anything?"

"Not so far."

"*Not so far*. Kevin, Julia hasn't left Gene's side since they broke him out. If anyone was going to catch anything, wouldn't it be her? Saliko visited, what? Once?"

"Maybe twice."

"And what about *Grace*? From what I hear she's over there all the time. Is *she* sick?"

"She says she's taking precaut—"

"Precautions," Clarke snorts. "Spare me. Am I the only one left on the whole Ridge with a working set of frontal lobes? Abra came down with supersyph last year, remember? It took eight months for Charley Garcia to get rid of those buggy *Ascaris* in his gut, and I don't remember anyone blaming the corpses for *that*."

People get sick, Kevin, even down here. *Especially* down here. Half of us rot away before we even have a chance to go native."

There it is again: something new, staring out from behind the glistening opacities of Walsh's eyecaps. Something not entirely friendly.

She sighs. "What?"

"It's just a precaution. I don't see how it can hurt."

"It can hurt quite a lot if people jump to conclusions without any facts."

Walsh doesn't move for a moment. Then he gets to his feet. "Grace *is* trying to get the facts," he says, padding across the compartment. "*You're* the one jumping to conclusions."

*Oh, Kevvy-boy*, Clarke wonders. *When did you start to grow a spine?*

He grabs his diveskin off the chair. Squirming black synthetics embrace him like a lover.

"Thanks for the fuck," he says. "I gotta go."

## BOILERPLATE

She finds Lubin floating halfway up the side of the windchime reservoir. Pipes, fiberop and miscellaneous components—mostly nonfunctional now, dismembered segments of circuits long-since broken—run in a band around the great tank's equator. At the moment, the ambient currents are too sluggish to set either rocks or machinery to glowing; Lubin's headlamp provides the only illumination.

"Abra said you were out here," Clarke buzzes.

"Hold this pad, will you?"

She takes the little sensor. "I wanted to talk to you."

"About?" Most of his attention seems to be focused on a blob of amber polymer erupting from one of the conduits.



Clarke maneuvers herself into his line of sight. "There's this asinine rumor going around. Grace is telling people that Jerry sicked some kind of plague on Gene."

Lubin's vocoder ties in a mechanical interpretation of *mmmm...*

"She's always had a missile up her ass about the corpses, but nobody takes her seriously. At least, they didn't used to..."

Lubin taps a valve. "That's it."

"What?"

"Resin's cracked around the thermostat. It's causing an intermittent short."

"Ken. *Listen to me.*"

He stares at her, waiting.

"Something's changing. Grace never used to push it this hard, remember?"

"I never really butted heads with her myself," Lubin buzzes.

"It used to be her against the world. But this bug Gene's come down with, it's changed things. I think people are starting to listen to her. It could get dicey."

"For the corpses."

"For all of us. Weren't *you* the one warning me about what the corpses could do if they got their act together? Weren't you the one who said—"

*We may have to do something preemptive...*

A small pit opens up in Clarke's stomach.

"Ken," she buzzes, slowly, "you *do* know Grace is fucking crazy, right?"

He doesn't answer for a moment. She doesn't give him any longer than that: "Seriously, you should just *listen* to her sometime. She talks as if the war never ended. Someone sneezes and it's a biological attack."

Behind his headlamp, Lubin's silhouette moves subtly; Clarke gets the sense of a shrug. "There are some interesting coincidences," he says. "Gene enters Atlantis with serious injuries. Jerry operates on him in a medbay where our surveillance is compromised, then puts him into quarantine."

"Quarantine because of *Behemoth*," Clarke points out.

"As you've pointed out yourself on occasion, we've all been immunized against Behemoth. I'm surprised you don't find that rationale more questionable." When Clarke says nothing, he continues: "Gene is released into the wild suffering from an *opportunistic infection* which our equipment can't identify, and which so far has failed to respond to treatment."

"But you were there, Ken. Jerry wanted to keep Gene in quarantine. Dale beat the crap out of her for trying. *Isolating Patient Zero* is a pretty short-sighted strategy for spreading the plague."

"I suppose," Lubin buzzes, "Grace might say they knew we'd break him out regardless, so they put up a big show of resistance knowing someone would cite it in their favor down the road."

"So they fought to keep him contained, therefore they wanted to set him loose?" Clarke peers suggestively at Lubin's electrolysis intake. "You getting enough O<sub>2</sub> there, Ken?"

"I'm saying that's the sort of rationale Grace might invoke."

"That's pretty twisted even for—" Realization sinks in. "She's actually saying that, isn't she?"

His headlight bobs slightly.

"You've heard the rumors. You know all about them." She shakes her head, disgusted at herself. "As if I'd ever have to bring *you* up to speed on anything..."

"I'm keeping an ear open."

"Well maybe you could do a bit more than that. I mean, I know you like to keep out of these things, but Grace is fucking *psycho*. She's spoiling for a fight and she doesn't care who gets caught in the backwash."

Lubin hovers, unreadable. "I would have expected you to be a bit more sympathetic."

"What's that supposed to mean?"

"Nothing," he buzzes after a moment. "But whatever you think of Grace's behavior, her fears might not be entirely unfounded."

"Come on, Ken. The war's over." She takes his silence as acknowledgment. "So why would the corpses want to start it up again?"

"Because they lost."

"Ancient history."

"You thought *yourself* oppressed once," he points out. "How much blood did it take before *you* were willing to call it even?"

His metal voice, so calm, so even, is suddenly so close it seems to be coming from inside her own head.

"I—I was wrong about that," she says after a while.

"It didn't stop you." He turns back to his machinery.

"Ken," she says.

He looks back at her.

"This is bullshit. It's a bunch of *ifs* strung together. A hundred to one Gene just picked up something from the fish that bit him."

"Okay."

"It's not like there can't be a hundred nasty bugs down here we haven't discovered yet. A few years ago nobody'd even heard of *β ehemoth*."

"I'm aware of that."

"So we can't let this escalate. Not without at least some evidence."

His eyes shine yellow-white in the backscatter from his headlamp. "If you're serious about evidence, you could always collect some yourself."

"How?"

He taps the left side of his chest. Where the implants are.

She goes cold. "No."

"If Seger's hiding anything, you'd know it."

"She could be hiding lots of things from lots of people. It wouldn't prove *what* she was hiding."

"You'd know what Nolan was feeling too, since you seem so concerned with her motives."

"I know what her motives are. I don't need to fuck with my brain chemistry to confirm it."

"The medical risks are minimal," he points out.

"That's not the point. It wouldn't prove anything. You know you can't read specific thoughts, Ken."

"You wouldn't have to. Reading guilt would be suffic—"

"*I said no.*"

"Then I don't know what to tell you." He turns away again. His headlamp transforms the reservoir's plumbing into a tiny, high-contrast cityscape tilted on edge. Clarke watches him work—tracking pathways, tapping pipes, making small changes to tabletop architecture. A pinpoint sun flares hissing at his fingertips, blinding her for an instant. By the time her caps have adjusted the light has settled on the skin of the tank. The water shimmers prismatically around it like a heat mirage on a hot day; at lesser depths it would explode into steam on the spot.

"There's another way," she buzzes. Lubin shuts off the spot-welder.

"There is." He turns to face her. "But I wouldn't get my hopes up."

Back when the trailer park was just getting set up, someone had the clever idea of turning a hab into a mess hall: a row of cyclers, a couple of prep surfaces for the daring, and a handful of foldaway tables scattered with studied randomness around the dry deck. The effect was intended to suggest a café patio. The cramped reality is more like the backstage shed where the furniture gets stored for winter.

One thing that has caught on, though, is the garden. By now it covers half the wet deck, a tangle of creeping greenery lit by solar-spectrum sticks planted among its leaves like bioluminescent bamboo. It isn't even hydroponic. The little jungle erupts from boxes of rich dark earth—diatomaceous ooze, actually, beefed up with organic supplements—that were once discrete but which have since now disappeared under an overflow of compost, spilling messily across the plating.

It's the best-smelling bubble of atmosphere on the whole Ridge. Clarke swings the airlock hatch open onto that tableau and takes a deep breath, only half of appreciation. The other half is resolve: Grace Nolan looks up from the far side of the oasis, tying off the vines of something that might have been snow peas back before the patents landed on them.

But Nolan smiles beneath translucent eyes as Clarke steps onto the deck. "Hey, Lenie!"

"Hi Grace. I thought we could maybe have a talk."

Nolan pops a pod into her mouth, a slick black amphibian feeding in the lush greenery of some long-extinct wetland. She chews, for longer than is probably necessary. "About..."

"About Atlantis. Your blood work." Clarke takes a breath. "About whatever problem you have with me."

"God no," Nolan says. "I've got no problem with you, Len. People fight sometimes. No big deal. Don't take it so seriously."

"Okay then. Let's talk about Gene."

"Sure." Nolan straightens, grabs a chair off the bulkhead and folds it down. "And while we're at it, let's talk about Sal and Lije and Lanie."

*Lanie too, now?* "You think the corpses are behind it."

Nolan shrugs. "It's no big secret."

"And you base that on what, exactly? Anything show up in the bloods?"

"We're still collecting samples. Lizbeth's set up in the med hab, by the way, if you want to contribute. I think you should."

"What if you don't find anything?" Clarke wonders.

"I don't think we will. Seger's smart enough to cover her tracks. But you never know."

"You know it's possible that the corpses have nothing to do with this."

Nolan leans back in her chair and stretches. "Sweetie, I can't *tell* you how surprised I am to hear you say that."

"So show me some evidence."

Nolan smiles, shaking her head. "Here's a bit of an exercise for you. Say you're swimming through shark-infested waters. Big sickle-finned stumpfucks all over the place, and they're looking you up and down and you know the only reason they're not tearing into you right now is because you've got your billy out, and they've seen what that billy can do to fishies like them. So they keep their distance, but that makes 'em hate you even more, right? Because you've already killed some of 'em. These are really smart sharks. They hold grudges.

"So you swim along for a little while, all these cold dead pissed-off eyes and teeth always just out of range, and you come across—oh, say Ken. Or what's left of him. A bit of entrail, half a face, ID patch just floating around amongst all those sharks. What do you do, Len? Do you decide there isn't any *evidence*? Do you say Hey, I can't *prove* anything, I didn't see this go down? Do you say, Let's not jump to any *conclusions*..."

"That's a really shitty analogy," Clarke says softly.

"I think it's a *great* fucking analogy."

"So what are you going to do?"

"I can tell you what I'm *not* going to do," Nolan assures her. "I'm not going to sit back and have faith in the goodness of corpse spirit while all my friends turn to sockeye."

"Is anyone asking you to do that?"

"Not yet. Any time now, I figure."

Clarke sighs. "Grace, I'm only saying, for the good of all of us —"

"Fuck you," Nolan snarls suddenly. "*Fuck you*. You don't give a *shit* about us."

It's as if someone flipped a switch. Clarke stares, astonished.

Nolan glares eyelessly back, her body trembling with sudden rage. "You *really* want to know my problem with you? You sold us out. We were *this* close to pulling the plug on those stumppucks. We could've forced their own goddamn entrails down their throats, and *you stopped us, you fucker*."

"Grace," she tries, "I know how you fe—"

"*Horseshit! You don't have a fucking clue how I feel!*"

*What did they do to you, Clarke wonders, to turn you into this?*

"They did things to me too," she says softly.

"Sure they did. And you got *yours* back, didn't you? And correct me if I'm wrong but didn't you end up fucking over a whole lot of innocent people in the mix? You never gave a shit about *them*. And maybe it was too much trouble to work it through but a fair number of us fish-heads lost people to your grand crusade along with everyone else. You didn't give a shit about them either, as long as you got your kick at the cat. Fine. You got it. But the rest of us are still waiting, aren't we? We don't even want to mow

down millions of innocent people, we just want to get at the assholes who *actually fucked us over*—and *you* of all people come crawling over here on Patricia Rowan's leash to tell me I don't have the *right*?" Nolan shakes her head in disgust. "I don't *believe* we let you stop us before, and I sure as shit don't believe you're going to stop us *now*."

Her hatred radiates through the compartment like infrared. Clarke is distantly amazed that the vines beside her don't blacken and burst into flame.

"I came to you because I thought we could work something out," she says.

"You came because you know you're losing it."

The words ignite a small, cold knot of anger under Clarke's diaphragm. "Is that what you think."

"You never gave a shit about *working things out*." Nolan growls. "You just sat off on your own, *I'm the Meltdown Madonna, I'm Mermaid of the fucking Apocalypse, I get to stand off to the side and make the rules*. But the rabble isn't falling into line this time, sweetie, and it scares you. *I scare you*. So spare me the dreck about altruism and diplomacy. This is just you trying to keep your little tin throne from going sockeye. It's been nice talking to you."

She grabs her fins and stalks into the airlock.

## PORTRAIT OF THE SADIST AS A YOUNG MAN

Achilles Desjardins couldn't remember the last time he'd had consensual sex with a real woman. He could, however, remember the first time he'd refused it:

It was 2046 and he'd just saved the Mediterranean. That's how N'AmWire was presenting it, anyway. All he'd really done was deduce the existence of a strange attractor in the Gulf of Cádiz, a persistent little back-eddy that no one else had bothered to look for.

According to the sims it was small enough to tweak with albedo dampers; the effects would proliferate through the Strait of Gibraltar and—if the numbers were right—stave off the collapse of the Med by an easy decade. Or until the Gulf Stream failed again, whichever came first. It was only a reprieve, not outright salvation, but it was just what CSIRA needed to make everyone forget the Baltic fiasco. Besides, nobody ever looked ahead more than ten years anyway.

So for a while, Achilles Desjardins had been a star. Even Lertzmann had pretended to like him for the better part of a month, told him he was fast-tracked for senior status just as soon as they got the security checks out of the way. Unless he had a bunch of butchered babies in his past he'd be getting his shots before Hallowe'en. Hell, he'd probably be getting them even if he *did* have a bunch of butchered babies in his past. Background checks were nothing but empty ritual in the higher ranks of the Patrol; you could be a serial killer and it wouldn't make a damn bit of difference once Guilt Trip was bubbling in your brain. You'd be just as thoroughly enslaved to the Greater Good.

Aurora, her name was. She wore the zebra hair that had been fashionable at the time, and an endearingly-tasteless armload of faux refugee branding scars. They'd hooked up at some CSIRA soirée hosted from the far side of the world by the EurAfrican Assembly. Their jewelry sniffed each other's auras to confirm a mutual interest (which still meant something, back then), and their path chips exchanged the usual clean bills of health (which didn't). So they left the party, dropped three hundred meters from CSIRA's executive stratosphere to the Sudbury Streets—then another fifty into the subterranean bowels of Pickering's Pile, where the pathware was guaranteed hackproof and tested for twice the usual range of STDs to boot. They gave blood behind a cute little r'n'r couple who broke up on the spot when one of them tested positive for an exotic trematode infesting his urinary tract.

Desjardins had yet to acquire most of the tailored chemicals that would cruise his system in later years; he could still safely imbibe all manner of tropes and mood-changers. So he and Aurora grabbed a booth just off the bar while their bloods ran, stroked the



little psychotropic amphibians clambering about in the tabletop terrarium. Dim green light filtered in from the great underground tank in which the Pile was immersed, a radium-glow mock-up of an old nuclear-storage lagoon visible through the plexi walls. After a few minutes one of the in-house butterflies lit on their table, its membranous wings sparkling with refracted data: green on all wavelengths.

"Told you," Aurora said, and kissed his nose.

Pickering's Pile rented fuck-cubbies by the minute. They split five hours between them.

He fucked her inside and out. Outside, he was the consummate caring lover. He tongued her nipples, teeth carefully sheathed. He left trails of kisses from throat to vagina, gently explored every wet aperture, breath shaky with fevered restraint. Every move deliberate, every signal unmistakable: he would rather die than hurt this woman.

Inside, he was tearing her apart. No caresses in *there*; he slapped her so hard her fucking head just about came off. Inside she was screaming. Inside, he beat her until she didn't have the strength to flinch when the whip came down.

She murmured and sighed sweetly throughout. She remarked on how he obviously worshipped women, on what a change this made from the usual rough-and-tumble, on how she didn't know if she belonged on this pedestal. Desjardins patted himself on the back. He didn't mention the tiny scars on her back, the telltale little lozenges of fresh pink skin that spoke of topical anabolics. Evidently Aurora had use for accelerated healing. Perhaps she had recently escaped from an abusive relationship. Perhaps he was her sanctuary.

Even better. He imagined some past partner, beating her.

"Oh, fuck it," she said, four hours in. "Just hit me."

He froze, terrified, betrayed by body language or telepathy or a lucky guess for all he knew. "What?"

"You're so gentle," Aurora told him. "Let's get rough."

"You don't—" He had to stifle a surprized laugh. "I mean, what?"

"Don't look so startled." She come-hithered a smile. "Haven't you ever smacked a woman before?"

*Those were hints*, he realised. *She was* complaining. And Achilles Desjardins, pattern-matcher extraordinaire, master of signal-from-noise, had missed it completely.

"I kind of minored in asphyx," she suggested now. "And I don't see that belt of yours getting any kind of work-out..."

It was everything he'd ever dreamed of, and hated himself for. It was his most shameful fantasy come to life. It was perfect. *Oh, you glorious bitch. You are just asking for it, aren't you? And I'm just the one to give it to you.*

Except he wasn't. Suddenly, Achilles Desjardins was as soft as a dollar.

"You serious?" he asked, hoping she wouldn't notice, knowing she already had. "I mean—you want me to *hurt* you?"

"Achilles the hero." She cocked her head mischievously. "Don't get out much, do you?"

"I do okay," he said, defensive despite himself. "But—"

"It's just a scene, kiddo. Nothing radical. I'm not asking you to kill me or anything."

*Too bad.* But his own unspoken bravado didn't fool him for an instant. Achilles Desjardins, closet sadist, was suddenly scared to death.

"You mean acting," he said. "Silk cords, safe words, that kinda thing."

She shook her head. "I mean," she said patiently, "I want to *bleed*. I want to *hurt*. I want you to hurt me, lover."

*What's wrong with me?* he wondered. *She's just what I've always wanted. I can't believe my luck.*

And an instant later: *If it is luck...*

He was, after all, on the cusp of his life. Background checks were in progress. Risk assessments were underway. Just below the surface, the system was deciding whether Achilles Desjardins could be trusted to daily decide the fate of millions. Surely they already knew his secret—the mechanics had looked inside his

head, they'd have noticed any missing or damaged wiring. Maybe this was a test, to see if he could control his impulses. Maybe Guilt Trip wasn't quite the failsafe they'd told him it was, maybe enough wonky neurons screwed it up, maybe his baseline depravity was a potential loophole of some kind. Or maybe it was a lot simpler. Maybe they just couldn't afford to risk investing too much PR in a hero who couldn't control inclinations that some of the public might still find—unpleasant...

Aurora curled her lip and bared her neck. "Come on, kid. Do me."

She was the glimmer in the eye of every partner he'd ever had, that hard little twinkle that always seemed to say *Better be careful, you sick twisted piece of shit. One slip and you're finished.* She was six-year-old Penny, broken and bleeding and promising not to tell. She was his father, standing in a darkened hallway, staring through him with unreadable eyes that said *I know something about you, son, and you'll never know exactly what it is...*

"Rory," Desjardins said carefully, "have you ever talked to anyone about this?"

"All the time." She was still smiling, but a sudden wariness tinged her voice.

"No, I mean someone—you know—"

"Professional." The smile was gone. "Some piece of corpsy wetware that sucks down my account while telling me that I don't know my own mind, it's all just low self-esteem and my father raped me when I was preverbal." She reached for her clothes. "No, Achilles, I haven't. I'd rather spend my time with people who accept me for who I am than with misguided assholes who try to change me into what I'm not." She pulled up her panties. "I guess you just don't run into those types at official functions any more."

He tried: "You don't have to go."

He tried: "It was just so unexpected, you know?"

He tried: "It's just, you know, it seems to *disrespectful*—"

Aurora sighed. "Kiddo, if you really respected me you'd at least give me credit for knowing what I like."

"But I like *you*," he blundered, free-falling in smoke and flame. "How am I supposed to enjoy *hurting* you when—"

"Hey, you think I enjoyed everything I did to get *you* off?"

She left him in the cubby with a flaccid penis, fifty minutes left on the clock and the stunning, humiliating realization that he was forever trapped within his own disguise. *I'll never let it out, he realised. No matter how much I want to, no matter who asks me, no matter how safe it seems. I'll never be sure there isn't an open circuit somewhere. I'll never be sure it isn't a trap. I'm gonna be undercover for the rest of my life, I'm too fucking terrified to come out.*

His Dad would have been proud. He was a good Catholic boy after all.

But Achilles Desjardins was nothing if not practised at the art of adaptation. By the time he emerged, chastened and alone, he was already beginning to rebuild his defenses. Maybe it was better this way. The biology was irrefutable, after all: sex *was* violence, literally, right down to the neurons. The same synapses lit up whether you fucked or fought, the same drive to eēōe to eēōe to



















































































































































































































































































































It's a patch of bone-gray mud like any other. She can't see so much as a pebble to distinguish it.

*Maybe it's a burial plot, she thinks, suddenly giddy. Maybe this is where he's been feeding his habit all these years, on devolved natives and MIAs and now on the stupid little girl who wouldn't take no for an answer...*

Lubin thrusts one arm into the ooze. The mud shudders around his shoulder, as if something beneath were pushing back. Which is exactly what's happening; Ken's awakened something under the surface. He pulls his arm back up and the thing follows, heaving into view. Clumps and chalky clouds cascade from its sides as it clears the substrate.

It's a swollen torus about a meter and a half wide. A dotted line of hydraulic nozzles ring its equator. Two layers of flexible webbing stretch across the hole in its center, one on top, one on the bottom; a duffle bag, haphazardly stuffed with lumpy objects, occupies the space between. Through the billowing murk and behind clumps of mud still adhering to its surface, it shines slick as a diveskin.

"I packed a few things away for a return trip," Lubin buzzes. "As a precaution."

He sculls backward a few meters. The mechanical bellhop spins a quarter-turn, spits muddy water from its thrusters, and heels.

They start back.

"So that's your plan," Lubin buzzes after a while. "Find something that evolved to help you destroy the world, hope that it's got a better nature you can appeal to, and—"

"And wake the fucker with a kiss," Clarke finishes. "Who's to say I can't?"

He swims on, towards the glow that's just starting to brighten the way ahead. His eyes reflect crescents of dim light.

"I guess we'll find out," he says at last.

**FULCRUM**

She'd avoid it altogether if she could.

There's more than sufficient excuse. The recent armistice is thin and brittle; it's in little danger of shattering completely in the face of this new, common threat, but countless tiny cracks and punctures require constant attention. Suddenly the corpses have leverage, expertise that mere machinery cannot duplicate; the rifters are not especially happy with the new assertiveness of their one-time prisoners. Impossible Lake must be swept for bugs, the local seabed for eyes and detonators. For now there truly is no safe place—and if Lenie Clarke were not busy packing for the trip back, her eyes would be needed for perimeter patrol. Dozens of corpses died in the latest insurrection; there's hardly time to comfort all the next of kin.

And yet, Alyx's mother died in her arms mere days ago, and though the pace of preparation has not slowed in all that time, Lenie Clarke still feels like the lowest sort of coward for having put it off this long.

She thumbs the buzzer in the corridor. "Lex?"

"Come in."

Alyx is sitting on her bed, practicing her fingering. She puts the flute aside as Lenie closes the hatch behind her. She isn't crying: she's either still in shock, or a victim of superadolescent self-control. Clarke sees herself at fifteen, before remembering: her memories of that time are all lies.

Her heart goes out to the girl anyway. She wants to scoop Alyx up in her arms and hold her into the next millennium. She wants to say she's been there, she knows what it's like; and that's even true, in a fractured kind of way. She's lost friends and lovers to violence. She even lost her mother—to tularemia—although the GA stripped that memory out of her head along with all the others. But she knows it's not the same. Alyx's mother died in a war, and Lenie Clarke fought on the other side. Clarke doesn't know that Alyx would welcome an embrace under these conditions.

So she sits beside her on the bed, and rests one hand on the girl's thigh—ready to withdraw at the slightest flinch—and tries to think of some words, any words, that won't turn into clichés when spoken aloud.

She's still trying when Alyx says, "Did she say anything? Before she died?"

"She—" Clarke shakes her head. "No. Not really," she finishes, hating herself.

Alyx nods and stares at the floor.

"They say you're going too," she says after a while. "With him."

Clarke nods.

"Don't."

Clarke takes a deep breath beside her. "Alyx, you—oh God, Alyx, I'm so *sorr*—"

"Why do you have to go?" Alyx turns and stares at her with hard, bright eyes that reveal far too much for comfort. "What are you going to do up there anyway?"

"We have to find out who's tracking us. We can't just wait for them to start shooting."

"Why are so sure that's what they're going to do? Maybe they just want to talk, or something."

Clarke shakes her head, smiling at the absurdity of the notion. "People aren't like that."

"Like what?"

*Forgiving.* "They're not friendly, Lex. Whoever they are. Trust me on this."

But Alyx has already switched to Plan B: "And what good are you going to be up there anyway? You're not a spy, you're not a tech-head. You're not some rabid psycho killer like *he* is. There's nothing you can do up there except get killed."

"Someone has to back him up."

"Why? Let him go by himself." Suddenly, Alyx's words come out frozen. "With any luck he *won't* succeed. Whatever's up there will tear him apart and the world will be a teeny bit less of a shithole afterwards."

"Alyx—"

Rowan's daughter rises from the bed and glares down at her. "How can you help him after he killed Mom? How can you even *talk* to him? He's a psycho and a killer."

The automatic denial dies on Clarke's lips. After all, she doesn't know that Lubin *didn't* have a hand in Rowan's death. Lubin was team captain during this conflict, as he was during the last; he'd probably have known about that so-called *rescue mission* even if he hadn't actually planned it.

And yet somehow, Clarke feels compelled to defend the enemy of this grief-stricken child. "No, sweetie," she says gently. "It was the other way around."

"What?"

"Ken was a killer first. *Then* he was a psycho." Which is close enough to the truth, for now.

"What are you talking about?"

"They tweaked his brain. Didn't you know?"

"They?"

*Your mother.*

"The GA. It was nothing special, it was just part of the package for industrial spies. They fixed it so he'd seal up security breaches by any means necessary, without even really thinking about it. It was involuntary."

"You saying he didn't have a *choice*?"

"Not until Spartacus infected him. And the thing about Spartacus was, it cut the tweaks, but it cut a couple of other pathways too. So now Ken doesn't have much of what you'd call a conscience, and if that's your definition of a psycho then I guess he is one. But he didn't *choose* it."

"What difference does it make?" Alyx demands.

"It's not like he went out shopping for an evil makeover."

"So what? When did any psycho ever get to choose his own brain chemistry?"

It's a pretty good point, Clarke has to admit.

"Lenie, please," Alyx says softly. "You can't trust him."

And yet in some strange, sick way—after all the secrecy, all the betrayal—Clarke still trusts Ken Lubin more than anyone else she's ever known. She can't say it aloud, of course. She can't say it



because Alyx believes that Ken Lubin killed her mother, and maybe he did; and to admit to trusting him now might test the friendship of this wounded girl further than Clarke is willing to risk.

But that's not all of it. That's just the rationale that floats on the surface, obvious and visible and self-serving. There's another reason, deeper and more ominous: Alyx may be right. The past couple of days, Clarke has caught glimpses of something unfamiliar looking out from behind Lubin's eyecaps. It disappears the moment she tries to bring it into focus; she's not even sure exactly how she recognizes it. Some subtle flicker of the eyelid, perhaps. A subliminal twitch of photocollagen, reflecting the motion of the eye beneath.

Until three days ago, Ken Lubin hadn't taken a human life in all the time he'd been down here. Even during the first uprising he contented himself with the breaking of bones; all the killing was at the inexpert, enthusiastic hands of rifters still reveling in the inconceivable rush of power over the once-powerful. And there's no doubt that the deaths of the past seventy-two hours can be completely justified in the name of self-defense.

Still. Clarke wonders if this recent carnage might have awakened something that's lain dormant for five years. Because back then, when all was said and done, Ken Lubin *enjoyed* killing. He craved it, even though—once liberated—he didn't use his freedom as an excuse, but as a challenge. He *controlled* himself, the way an old-time nicotine addict might walk around with an unopened pack of cigarettes in his pocket—to prove that he was stronger than his habit. If there's one thing Ken Lubin prides himself on, it's self-discipline.

That craving. That desire for revenge against the world at large: did it ever go away? Lenie Clarke was once driven by such a desire; quenched by a billion deaths or more, it has no hold on her now. But she wonders whether recent events have forced a couple of cancer-sticks into Lubin's mouth despite himself. She wonders how the smoke tasted after all this time, and if Lubin, perhaps, is remembering how good it once felt...

Clarke shakes her head sadly. "It can't be anyone else, Alyx. It has to be me."

"Why?"

*Because next to what I did, genocide is a misdemeanor. Because the world's been dying in my wake while I hide down here. Because I'm sick of being a coward.*

"I'm the one that did it," she says at last.

"So *what?* Is going back gonna *undo* any of it?" Alex shakes her head in disbelief. "What's the *point?*" She stands there, looking down like some fragile china magistrate on the verge of shattering.

Lenie Clarke wants very much to reach out to her right now. But Lenie Clarke isn't *that* stupid. "I—I have to face up to what I did," she says weakly.

"Bullshit," Alyx says. "You're not facing up to anything. You're running away."

"Running away?"

"From me, for one thing."

And suddenly even Lenie Clarke, professional idiot, can see it. Alyx isn't worried about what Lubin might do to Lenie Clarke; she's worried about what Clarke might do to herself. She's not stupid, she's known Clarke for years and she knows the traits that make a rifter. Lenie Clarke was once suicidal. She once hated herself enough to want to die, and that was before she'd even done anything *deserving* of death. Now she's about to re-enter a world of reminders that she's killed more people than all the Lubins who ever lived. Alyx Rowan is wondering, understandably, if her best friend is going to open her own wrists when that happens.

To be honest, Clarke wonders about that too.

But she only says, "It's okay, Lex. I won't—I mean, I've got no intention of hurting myself."

"Really?" Alyx asks, as if she doesn't dare to hope.

"Really." And now, promises delivered, adolescent fears calmed, Lenie Clarke reaches out and takes Alyx's hands in hers.

Alyx no longer seems the slightest bit fragile. She stares calmly down at Clarke's reassuring hands clasped around her limp, unresponsive ones, and grunts softly.

"Too bad," she says.

## INCOMING

The missiles shot from the Atlantic like renegade fireworks, heading west. They erupted in five discrete swarms, beginning a ten-minute game of speed chess played across half a hemisphere. They looped and corkscrewed along drunken trajectories that would have been comical if it didn't make them so damned hard to intercept.

Desjardins did his best. Half a dozen orbiting SDI antiquies had been waiting for him to call back ever since he'd seduced them two years before, in anticipation of just this sort of crisis. Now he only had to knock on their back doors; on command, they spread their legs and wracked their brains.

The machines turned their attention to the profusion of contrails scarring the atmosphere below. Vast and subtle algorithms came into play, distinguishing wheat from chaff, generating target predictions, calculating intercept vectors and fitness functions. Their insights were profound but not guaranteed; the enemy had its own thinking machines, after all. Decoys mimicked destroyers in every possible aspect. Every stutter of an attitude jet made point-of-impact predictions that much murkier. Desjardins's date-raped battellites dispatched their own countermeasures—lasers, particle beams, missiles dispatched from their own precious and nonrenewable stockpiles—but every decision was probabilistic, every move a product of statistics. When playing the odds, there is no certainty.

Three made it through.

The enemy scored two strikes on the Florida panhandle and another in the Texan dust belt. Desjardins won the New England semifinals hands-down—none of those attacks even made it to the descending arc—but the southern strikes could easily be enough to

tilt the balance if he didn't take immediate ground action. He dispatched eight lifters with instructions to sterilise everything within a twenty-k radius, waited for launch confirmations, and leaned back, exhausted. He closed his eyes. Statistics and telemetry flickered uninterrupted beneath his lids.

Nothing so pedestrian as Behemoth, not this time. A new bug entirely. *Seppuku*.

*Thank you, South fucking Africa.*

What *was* it with those people? They'd been a typical third-world country in so many ways, enslaved and oppressed and brutalised like all the others. Why couldn't they have just thrown off their shackles in the usual way, embraced violent rebellion with a side order of blood-soaked retribution? What kind of crazy-ass people, after feeling the boot on their necks for generations, struck back at their oppressors with—wait for it— *reconciliation panels*? It made no sense.

Except, of course, for the fact that it worked. Ever since the rise of Saint Nelson the S'Africans had become masters at the sidestep, accomodating force rather than meeting it head-on, turning enemy momentum to their own advantage. Black belts in sociological judo. For half a century they'd been sneaking under the world's guard, and hardly anyone had noticed.

Now they were more of a threat than Ghana and Mozambique and all the other M&M regimes combined. Desjardins understood completely where those other furious backwaters were coming from. More than that, he sympathised: after all, the western world had sat around making tut-tut noises while the sex plagues burned great smoking holes out of Africa's age structure. Only China had fared worse (and who knew what was brewing behind *those* dark, unresponsive borders?). It was no surprise that the Apocalypse Meme resonated so strongly over there; the stunted generation struggling up from those ashes was over seventy percent female. An avenging goddess turning the tables, serving up Armageddon from the ocean floor—if Lenie Clarke hadn't provided a ready-made template, such a perfect legend would have erupted anyway through sheer spontaneous combustion.

Impotent rage he could handle. Smiley fuckers with hidden agendas were way more problematic, especially when they came with a legacy of bleeding-edge biotech that extended all the way back to the world's first *heart transplant*, for fuck's sake, almost a century before. Seppuku worked pretty much the way its S'African creators did: a microbial judo expert and a poser, something that smiled and snuck under your guard on false pretenses and then...

It wasn't the kind of strategy that would ever have occurred to the Euros or the Asians. It was too subtle for the descendants of empire, too chickenshit for anyone raised on chest-beating politics. But it was second nature to those masters of low status manipulation, lurking down at the toe of the dark continent. It had seeped from their political culture straight into their epidemiological ones, and now Achilles Desjardins had to deal with the consequences.

Gentle warm pressure against his thigh. Desjardins opened his eyes: Mandelbrot stood on her hind legs at his side, forepaws braced against him. She meeped and leapt into his lap without waiting for permission.

Any moment now his board would start lighting up. It had been years since Desjardins had answered to any official boss, but eyes from Delhi to McMurdo were watching his every move from afar. He'd assured them all he could handle the missiles. Way off across any number of oceans, 'lawbreakers in more civilized wastelands—not to mention their Leashes—would be clicking on comsats and picking up phones and putting through incensed calls to Sudbury, Ontario. None of them would be interested in his excuses.

He could deal with them. He had dealt with far greater challenges in his life. It was 2056, a full ten years since he had saved the Med and turned his private life around. Half that time since Behemoth and Lenie Clarke had risen arm-in-arm on their apocalyptic crusade against the world. Four years since the disappearance of the Upper Tier, four years since Desjardins's emancipation at the hands of a lovesick idealist. A shade less than that since Rio and voluntary exile among the ruins. Three years since the WestHem Quarantine. Two since the N'Am Burn. He had dealt with them all, and more.

But the South Africans—they were a *real* problem. If they'd had their way, *Seppuku* would already be burning across his kingdom like a brushfire, and he couldn't seem to come up with a scenario that did any more than postpone the inevitable. He honestly didn't think he'd be able to hold them off for much longer.

It was just as well that he'd planned for his retirement.



## SEPPUKU

"The essence of humanity's spiritual dilemma is that we evolved genetically to accept one truth and discovered another."

—E.O. Wilson

"I would gladly lay down my life for two brothers or eight cousins."

—J.D.S. Haldane



## DUNE

*Phocoena* runs silent out of Atlantis, threading between peaks and canyons that cover and impede her progress in equal measure. Their course is a schizoid amalgam of conflicting priorities, the need for speed scraping incompatibly against the drive to survive. To Lenie Clarke it seems as though their compass bearing at any given moment could be the work of a random number generator; but over time the net vector resolves to southwest.

At some point Lubin decides that they're safely out of the neighborhood. Haste becomes the better part of discretion; *Phocoena* climbs into open water. She skims west down the slopes of the Mid Atlantic Ridge, occasionally twisting this way or that to avoid moguls the size of orbital lifters. Mountains give way to foothills; foothills, to a vast endless expanse of mud. Clarke sees none of it through the ports, of course—Lubin hasn't bothered to turn on the outside lights—but the topography scrolls past on the nav panel in a garish depth-synched spectrum. Jagged red peaks, so high that their tips almost rise above darkness, lie well out of range behind them. Transitional slopes, segueing indiscernibly from yellow to green, fade to stern. The abyssal plain flows beneath them like an endless blue carpet, hypnotic and restful.

For long merciful hours, there is no virulent microbe to track; no betrayal to withstand; no desperate battle to fight. There is nothing to do but dwell on the microcosm receding behind them, on friends and foes brought finally into war-weary alignment—not through negotiation or reconciliation, but through the sudden imminence of the greater threat, the threat from *outside*. The threat *Phocoena* races towards even now.

Perhaps not such a blessing after all, this interlude.

Eventually the seabed rises before them into a color-banded escarpment swelling across the screen. There's a gap in the wall ahead, a great underwater canyon splitting the Scotian conshelf

like God's own icepick. Nav lists it as *The Gulley*. Clarke remembers that name; it's got one of the biggest shortstop arrays this side of Fundy. Lubin indulges her, edges a few degrees off-course to intersect one of the colossal structures halfway up the canyon's throat. He flashes the forward floods as they drift past. The seamill looms huge in the beams, the visible arc of its perimeter so slight that Clarke could have taken it for a straight line. One of its great blades passes above them, its base and its tip lost in darkness to either side. It barely moves.

There was a time when this was the competition. Not so long ago the currents of the Gulley produced almost as many Joules-per-second as a good-sized geothermal plant. Then the climate changed, and the currents with it. Now the array is nothing but a tourist stop for amphibious cyborgs: weightless derelicts, slumbering in the long dark.

*That's us*, Clarke reflects as they pass. For just this one moment she and Lubin are weightless too, poised precisely between two gravitational fields. Behind them: Atlantis, the failed refuge. Ahead—

Ahead, the world they've been hiding from.

Five years since she's been ashore. Back then the apocalypse was just getting under way; who knows how wild the party's grown by now? They've learned a few things—broad strokes, dark rumors, bits and pieces filtered from that fraying patch of the telecom spectrum that spans the Atlantic. All of North America is quarantined. The rest of the world bickers over whether to put it out of its misery or simply let it die on its own. Most still fight to keep Behemoth at bay; others have embraced that doomsday microbe, have seemingly embraced Armageddon itself.

Clarke isn't quite sure what to make of that. Some death-wish buried in the collective unconscious, perhaps. Or maybe just the grim satisfaction that even the doomed and downtrodden can take in payback. Death is not always defeat; sometimes, it is the chance to die with your teeth buried in your oppressor's throat.

There is much dying, back on the surface. There is much baring of teeth. Lenie Clarke does not know their reasons. She knows

only that some of them act in her name. She knows only that their numbers are growing.

She dozes. When she opens her eyes again the cockpit glows with diffuse emerald light. *Phocoena* has four bow ports, two dorsal two ventral, great perspex teardrops radiating back from the nose. A dim green void presses down on the upper ports; below, a corrugated expanse of sand rushes past beneath Clarke's footrest.

Lubin has disabled the color-codes. On nav, *Phocoena* races up a gentle monochrome slope. The depth gauge reads 70m and rising.

"How long have I been sleeping?" Clarke asks.

"Not long." Fresh red scars radiate from the corners of Lubin's eyes, the visible aftermath of an operation that slid neuroelectric inlays into his optic nerves. Clarke still winces inwardly at the sight; she's not sure she would've trusted the corpses's surgeons even if they *are* all on the same side now. Lubin obviously thinks the additional data-gathering capacity was worth the risk. Or maybe it's just one of those extras he's always wanted, but never been cleared for in his past life.

"We're at Sable already?" Clarke says.

"Almost."

Bleating from nav: hard echo up the slope at two o'clock. Lubin throttles back and slews to starboard. Centrifugal force swings Clarke to the side.

Thirty meters. The sea outside looks bright and cold. It's like staring into green glass. *Phocoena* crawls up the slope at a few sluggish knots, sniffing northwest towards a wireframe assembly of tubes and struts swelling on nav. Clarke leans forward, peers through shafts of murky light. Nothing.

"What's the viz out there?" she wonders.

Lubin, intent on his piloting, doesn't look over. "Eight point seven."

Twenty meters from the surface. The water ahead darkens suddenly, as though an eclipse were in progress. An instant later that darkness resolves into the toe of a giant: the rounded end of a

cylindrical structure half-buried in drifting sand, fuzzed with sponges and seaweed, curving away into the hazy distance. Nav pegs it at eight meters high.

"I thought it floated," Clarke says.

Lubin pulls back on the stick: *Phocoena* climbs into the water alongside the structure. "They beached it when the well ran dry."

So this great sunken pontoon must be flooded. Girders and struts stand on its upper surface, a monstrous scaffold rising into daylight. Lubin maneuvers the sub between them as though threading a needle. Nav shows them entering a submerged arena enclosed by four such structures arranged in a square. Clarke can see their dim outlines through the water. Pylons and trusses rise on all sides like the bars of a cage.

*Phocoena* breaks the surface. The outside world ripples as water sheets down the acrylic, then wavers into focus. They've come up directly beneath the rig; its underbelly forms a metal sky a little less than ten meters overhead, held from the earth by a network of support pylons.

Lubin climbs from his seat and grabs a fanny pack off a nearby utility hook. "Back in a few minutes," he says, popping the dorsal hatch. He climbs away. Clarke hears a splash through the opening.

He still isn't happy about her presence here. She ignores his safe-distancing maneuver and rises to follow.

The air wafting through the hatch blows cold against her face. She climbs onto the sub's back and looks around. The sky—what she can see of it, through the girders and pylons—is gray and overcast; the ocean beneath is gunmetal to the horizon. But there are sounds, behind her. A distant, pulsing roar. A faint squawking, like some kind of alarm. It's familiar, but she can't quite put her finger on it. She turns.

Land.

A strip of sandy shore, maybe fifty meters past the jacket of the rig. She can see tufts of weathered, scrubby brush above the high-tide line. She can see moraines of driftwood, pushed into little strips along the beach. She can see surf pounding endlessly against it all.

She can hear birds, calling. She'd almost forgotten.

Not N'Am, of course. The mainland's still a good two or three hundred kilometers away. This is just a way station, some lonely little archipelago on the Scotian Shelf. And yet, to see living things without either fins or fists—she marvels at the prospect, even as she marvels at her own overreaction.

A steep metal staircase winds around the nearest pylon. Clarke dives into the ocean, not bothering with hood or gloves. The Atlantic slaps her face, a delicious icy sting across her exposed skin. She revels in the sensation, crosses to the pylon with a few strokes.

The stairs lead onto a walkway that runs the perimeter of the rig. Wind strums the railing's cables; the structure clatters like some arrhythmic percussion instrument. She reaches an open hatchway, peers into the dark interior: a segmented metal corridor, bundles of pipe and fiberop running along the ceiling like plexii of nerves and arteries. A t-junction at the far end leading off to unknown, opposite destinations.

Wet footprints on the deck lead in here, and turn left. Clarke follows.

Sound and vision fade as she penetrates deeper into the hulk. Bulkheads muffle the sound of the surf and the miraculous squawking of the gulls. Her enhanced vision fares better—the overcast ambience from outside follows her around a half-dozen corners, peeps in through portholes at the end of unexplored corridors—but the desaturation of color in her surroundings tells her that she's moving through darkness too deep for dryback eyes. That reversion to black-and-white must be why she didn't notice it sooner—dark streaks on the walls and floors could be anything, from rust to the remains of an enthusiastic game of paintball. But now, following the last smudged footprints to a hatch yawning open in the bulkhead, the realization sinks in:

Carbon scoring. Something's *burned* this whole section.

She steps through the hatch into what must have been someone's quarters, judging by the bunk-bed frame and the bedside table that occupies one modest wall. Frames, skeletal remnants of furniture, are all that's left. If there were ever mattresses or sheets

or blankets here, they're gone now. Every surface is coated in dark greasy soot.

From somewhere out in the hall, the creak of metal hinges.

Clarke steps back into the corridor and tracks the sound. By the time it stops she's got a fix, and a beacon—light, bouncing dimly back down the passageway from around a corner just ahead. That way was dark and silent when she stepped into the cabin; now, she can even hear distant waves.

She follows the light. Finally she comes to an open hatch at the base of a companionway, leading up. Ocean breeze sneaks past her into the rig, carrying the sound of seabirds and the wet rubbery scent of *Ascophyllum*. For a moment she's taken aback; the light pours down from the head of the stairs, easily bright enough to bring color back into the world, and yet the walls are still—

*Oh.*

The polymer around the lip of the hatch has bubbled and burned; all that remains are lumpy, flaking clots of carbon. Clarke pulls experimentally at the wheel; the hatch scarcely moves, screeching softly against the deposits caking its hinges.

She rises into daylight, and devastation.

It's a small rig, as such things were measured. Nowhere near the city-sized monstrosities that once crowded the ocean hereabouts. Perhaps, by the time it was built, oil was already falling out of fashion; or perhaps there simply wasn't enough left to warrant a bigger investment. For whatever reason, the main hull is only two stories thick along most of its length. Now Clarke rises onto the wide-open expanse of its roof.

The rig's deck stretches over half the area of a city block. There's an elevated helipad at the far end, and a great crane whose tendons have been cut; it lies across the deck at a messy angle, struts and crossbeams slightly crumpled on impact. The derrick at the nearer end is relatively intact, thrusting into the sky like a wireframe phallus. Clarke rises in its shadow, into something that was once a control hut of some kind. Now it's a rectangular ruin; none of the four walls remain intact, and the roof itself has been thrown halfway across the deck. There were control panels and

electronics here once—she recognizes the general outlines of half-melted instrumentation.

This is how completely the hut has been destroyed: Lenie Clarke can simply step onto the main deck over what's left of the walls.

All this space, this uninterrupted visibility, unsettles her. For five years she has hidden beneath the heavy, comforting darkness of the North Atlantic, but up here—up here, she can see all the way to the edge of the world. She feels naked, like a target: visible from infinite distance.

Lubin is a small figure on the far side of the platform, his back turned, leaning on the western railing. Clarke walks towards him, skirting the wreckage, suddenly oblivious to the wheeling of the gulls. She nears the edge, fights momentary vertigo: Sable Archipelago spreads out before her, an insignificant chain of sandy dots in the middle of the ocean. The nearest looks big enough from here, though, its spine sheathed in brownish vegetation, its beach stretching almost out of sight to the south. Off in that distance, Clarke thinks she sees tiny specks in vague motion.

Lubin's wearing a pair of binoculars, panning his head slowly from side to side. Scanning the island. He doesn't speak as Clarke joins him on the railing.

"Did you know them?" she asks softly.

"Perhaps. I don't know who was out here when it happened."

*I'm sorry*, she almost says, but what's the point?

"Maybe they saw it coming," she suggests. "Maybe they got away."

He doesn't look away from the shoreline. The binocs extend from his eyes like tubular antennae.

"Should we be out in the open like this?" Clarke asks.

Lubin shrugs, startlingly, chillingly indifferent to security.

She looks down along the shoreline. The moving specks are a bit larger now, some kind of animals from the look of it. They appear to be moving this way.

"When do you suppose it happened?" Somehow, it seems important to keep him talking.

"It's been almost a year since we got a signal from them," he says. "Could've been any time since then."

"Could've been last week," Clarke remarks. There was once a time when their allies were much more faithful in their correspondence. Even so, extended silence doesn't always mean anything. You had to wait until no one was listening. You had to be careful not to give the game away. Both corpse and rifter contacts went dark now and then, back in the early days. Even now, after a year of silence, it's not unreasonable to keep hoping for news, someday. Any day.

Except now, of course. Except from here.

"Two months ago," Lubin says. "At least."

She doesn't ask how he knows. She follows his magnified gaze back to shore.

*Oh my God.*

"They're horses," she whispers, amazed. "Wild *horses*. Holy shit."

The animals are close enough now to be unmistakable. An image comes to her, unbidden: Alyx in her sea-floor prison, Alyx saying *this is the best place I could possibly be*. Clarke wonders what she'd say now, seeing these wild things.

On second thought, it probably wouldn't impress her. She was a corpse kid, after all. She'd probably toured the world a dozen times before she was eight. Maybe even had a horse of her own.

The herd stampedes along the beach. "What are they *doing* out here?" Clarke wonders. Sable wasn't a proper island even back before the rising seas partitioned it; it's never been more than a glorified sand dune, crawling around the outer edges of the Shelf's exhausted oil fields under the influence of wind and currents. She can't even see any trees or shrubs on this particular island, just a mane of reedy grass running along its backbone. It seems absurd that such an insignificant speck of land could support creatures so large.

"Seals, too." Lubin points along the shore to the north, although whatever he sees is too distant for Clarke's unmagnified vision. "Birds. Vegetation."



The dissonance of it sinks in. "Why the sudden interest in wildlife, Ken? I never took you for a nature lover."

"It's all healthy," he says.

"What?"

"No carcasses, no skeletons. Nothing even looks sick." Lubin slips the binocs from his skull and slides them back into his fanny pack. "The grass is rather brown, but I suspect that's normal." He sounds almost *disappointed* for some—

*Behemoth*, she realizes. That's what he's looking for. *Hoping* for. Up here the world burns its hot zones—at least, it burns those small enough to carry any hope of containment in exchange for the lives and land lost to the flame. Behemoth threatens the entire biosphere, after all; nobody gives a damn about collateral damage when the stakes are *that* high.

But Sable is healthy. Sable is unburned. Which means the destruction around them has nothing to do with ecological containment.

Someone is hunting *them*.

Clarke can't really blame them, whoever they are. She'd have been dying up here with everyone else if the corpses had had their way. Atlantis was only built for the Movers and Shakers of the world; Clarke and her buddies were just another handful of the moved and the shaken as far as that elite was concerned. The only difference was that Achilles Desjardins had told them where the party was, so they could crash it before the lights went out.

So if this is the anger of those left behind, she can hardly begrudge it. She can't even dismiss it as misplaced. After all, Behemoth is her fault.

She looks back at the aftermath. Whoever did this isn't nearly as good as Desjardins was. They're not bad, mind you; they were smart enough to deduce Atlantis's general whereabouts, anyway. The variant of Behemoth they rejigged utterly defeats the retrofitted immunity that was supposed to protect its citizenry. The fact that they even got close enough to seed  $\beta$ -Max in the right vicinity may have won them the game, judging from the body count that was starting up as *Phocoena* went into the field.

But they still haven't found the nest. They prowl the neighborhood, they've burned this lonely outpost on the frontier, but after all this time Atlantis itself continues to elude them. Now, Desjardins—it took him less than a week to winnow three hundred and sixty million square kilometers of seabed down to a single set of lats and longs. He not only painted the bullseye, he pulled the strings and erased the tracks and arranged the rides to get them there.

*Achilles, my friend*, Clarke thinks. *We could really use your help about now*. But Achilles Desjardins is dead. He died during Rio. Even being CSIRA's best 'lawbreaker doesn't do you much good when a plane drops on your head.

For all Clarke knows, he may have been killed by the same people who did this.

Lubin is walking back along the platform. Clarke follows. Wind slices around her, frigid and biting; she could almost swear she feels its teeth through the diveskin, although that must be her imagination. Nearby, some accidental wind-tunnel of pipes and plating moans as if haunted.

"What month is it?" she asks aloud.

"June." Lubin's heading for the helipad.

It seems a lot colder than it should be. Maybe this is what passes for balmy since the Gulf Stream shut down. Clarke's never been able to wrap her head around that paradox: that global warming should somehow have turned eastern Europe into Siberia...

Metal stairs lead up to the pad. But Lubin, reaching them, doesn't climb; he steps behind them and drops to one knee, intent on the underside of the frame. Clarke bends down at his side. She sees nothing but scraped, painted metal.

Lubin sighs. "You should go back," he says.

"Not a chance."

"Past this point I won't be able to return you. I can afford a forty-six hour delay more than I can afford someone slowing me down once we get to the mainland."

"We've been over this, Ken. What makes you think I'm going to be any easier to convince now?"

"Things are worse than I expected."

"How, exactly? It's already the end of the world."

He points at a spot under the stairs where the paint's been scraped off.

Clarke shrugs. "I don't see anything."

"Right." Lubin turns and starts back towards the scorched remains of the control hut.

She sets out after him. "So?"

"I left a backup recorder behind. Looked like a rivet." He brings his hand out, holds thumb and forefinger close together, almost touching, for scale. "Even painted it over. *I* would never have been able to find it." The forefinger extends; Lubin's pointing hand describes an imaginary line between hut and staircase. "Nice short line-of-sight to minimize power consumption. Omnidirectional broadcast; impossible to backtrack. Enough memory for a week's worth of routine chatter, plus anything they might have sent our way."

"That's not much," Clarke remarks.

"It wasn't a long-term record. When it ran out of new memory it overwrote the old."

A black box, then. A moving record of the recent past. "So you were expecting something like this," she surmises.

"I was expecting that *if* something happened, I'd at least be able to retrieve some kind of log. I wasn't expecting to lose the recorder. I was the only one who knew it was here."

They've returned to the radio shack. The blackened door frame still stands, an absurd rectangle rising from the rubble. Lubin, perhaps out of some cryptic respect for standard procedure, passes through it. Clarke simply steps over the knee-high tatters of the nearest wall.

Something snaps and cracks around her ankle. She looks down. Her foot is imprisoned in a blackened human ribcage, her leg emerging from a shattered hole where the sternum used to be. She can feel the knobs and projections of the spine underfoot, brittle and crumbling under the slightest weight.

If there's a skull—or arms or legs—they must be buried in the surrounding rubble.

Lubin watches while she pulls her foot from the remains. Something glitters behind his eyecaps.

"Whoever's behind this," he says, "is smarter than me."

His face isn't really expressionless. It just looks that way to the uninitiated. But Lenie Clarke has learned to read him, after a fashion, and Lubin doesn't look worried or upset to her. He looks *excited*.

She nods, undeterred. "So you need all the help you can get."

She follows him down.

## NIGHTINGALE

It seemed as if they came out of the ground itself. Sometimes that was literally true: increasing numbers lived in the sewers and storm drains now, as if a few meters of concrete and earth could hold back what heaven and earth had failed to. Most of the time, though, it was only appearance. Taka Ouellette's mobile infirmary would pull up at some municipal crossroads, near some ramshackle collection of seemingly-abandoned houses and strip malls which nonetheless disgorged a listless trickle of haggard occupants, long past hope but willing to go through the motions in whatever time they had left. They were the unlucky unconnected who hadn't made it into a PMZ. They were the former skeptics who hadn't realized until too late that this was the real thing. They were the fatalists and the empiricists who looked back over the previous century and wondered why it had taken this long for the world to end.

They were the people barely worth saving. Taka Ouellette did her best. She was the person barely competent to save them.

Rossini wafted from the cab behind her. Ouellette's next case staggered forward, oblivious to the music, a woman who might once have been described as *middle-aged*: loose-skinned, stiff-limbed, legs moving on some semifunctional autopilot. One of them nearly buckled as she approached, sent the whole sad body

lurching to one side. Ouellette reached out but the woman caught herself at the last moment, kept upright more through accident than effort. Both cheeks were swollen bruised pillows: the rheumy eyes above them seemed fixed on some indeterminate point between zenith and horizon. Her right hand was an infected claw, curled around an oozing gash.

Ouellette defocused on the gross ravages and zoomed down to the subtler ones: two melanomas visible on the left arm; tremors in the right; some dark tracery that looked like blood poisoning, creeping up the wrist from the injured palm. The usual symptoms of malnutrition. Half of the signs were consistent with Behemoth; none were incontrovertible. Here was a woman suffering violence across several orders of magnitude.

Ouellette tried on a professional smile, although the fit had never been a good one. "Let's see if we can't get you fixed up."

"That's okay," said the woman, stargazing. Ouellette tried to guide her towards the van with one gloved hand (not that *she* needed the gloves, of course, but these days it wasn't wise to remind people of such things). The woman jerked away at her touch—

"That's *okay*. *That's okay*—"

—staggered against some invisible wall and stumbled off, locked on heaven, oblivious to earth.

"That's okay..."

Ouellette let her go.

The next patient wasn't conscious and wouldn't have been able to move if he had been. He arrived on a makeshift stretcher, an oozing jigsaw of lesions and twitches, short-circuiting nerves and organs that hadn't bothered waiting for the heart to give out before starting to rot. The sickly-sweet smell of fermented urine and feces hung around him like a shroud. His kidneys and his liver were in a race to kill him first. She couldn't lay odds on the winner.

A man and two children of indeterminate sex had dragged this breathing corpse before her. Their own faces and hands were uncovered, in oblivion or defiance of the half-assed protective measures promoted by endless public-service announcements.

She shook her head. "I'm sorry. It's end-stage."

They stared back at her, eyes filled with a pleading desperate hope that verged on insanity.

"I can kill him for you," she whispered. "I can cremate him. That's all I can do."

Still they didn't move.

*Oh, Dave. Thank God you died before it came to this...*

"Do you understand?" she said. "*I can't save him.*"

That was nothing new. When it came to 9ehemoth, she wasn't saving anybody.

She could have, of course. If she were suicidal.

Protection against βehemoth came packaged in a painstaking and complex series of genetic retrofits, an assembly line that took days—but there was no technical reason why it couldn't be crammed into a portable rig and taken on the road. A few people had done that very thing, not so long ago. They'd been torn limb from limb by hordes too desperate to wait in line, who didn't trust that supply would exceed demand if they'd only be patient a little while longer.

By now, those places that offered a real cure were all fortresses built to withstand the desperation of mobs, built to enforce the necessary patience. Further from those epicenters Taka Ouellette and her kind could walk among the sick without fear of sickness; but it would have been be a death sentence to offer a cure so far from back-up. The most she could do here was bestow quick-and-dirty retrovirals, half-assed tweaks that might allow some to survive the wait for a real cure. All she could risk was to slow the process of dying.

She didn't complain. In more complacent times, she knew, she might not have been trusted to do even that much. That hardly made her unique: fifty percent of *all* medical personnel graduate in the bottom half of their class. It didn't matter nearly as much as it once had.

Even now, though, there was a hierarchy. The ivy-leaguers, the Nobel laureates, the Meatzarts—those had long since ascended

into heaven on CSIRA's wings. There they worked in remote luxury, every cutting-edge resource within easy reach, intent on saving what remained of the world.

One tier down were the betas: the solid, reliable splice-and-dicers, the gel-jocks, no award-winners here but no great backlog of malpractice suits either. They labored in the castles that had accreted around every source of front-line salvation. The assembly line wound through those fortifications like a perverse GI tract. The sick and the dying were swallowed at one end, passed through loops and coils of machinery that stabbed and sampled and doused them with the opposite of digestive enzymes: genes and chemicals that soaked the liquefying flesh to make it whole again.

The passage through salvation's bowels was an arduous one, eight days from ingestion to defecation. The line was long but not wide: economies of scale were hard to come by in the post-corporate landscape. Only a fraction of the afflicted would ever be immunized. But those lucky few owed their lives to the solid, unremarkable worker bees of the second tier.

And then there was Taka Ouellette, who could barely remember a time when she'd been a member of the hive. If it hadn't been for that one piece of decontamination protocol, carelessly applied, she might still be working the line in Boston. If not for that small slip Dave and Crys might still be alive. There was really no way of knowing for sure. There was only doubt, and what-if. And the fading memory of life as an endocrinologist, and a wife, and a mother.

Now she was just a foot soldier, patrolling the outlands with her hand-me-down mobile clinic and her cut-rate, stale-dated miracles. She hadn't been paid in months, but that was okay. The room and board was free, at least, and anyway she wouldn't be welcome back in Boston any time soon: she might be immune to Behemoth but she could still carry it. That was okay too. This was enough to keep her busy. It was enough to keep her alive.

Finally, silently, the breathing corpse had been withdrawn from competition. Subsequent contenders hadn't rubbed her nose quite

so deeply in her own ineffectuality. For the past few hours she'd been treating more tumors than plague victims. That was unusual, this far from a PMZ. Still, cancers could be excised. It was simple work, drone work. The kind of work she was good for.

So here she was, handing out *raf-1* angiogenesis blockers and retrovirii in a blighted, wilting landscape where DNA itself was on the way out. There was some green out there, if you looked hard enough. It was springtime, after all. Behemoth always died back a bit during the winter, gave the old tenants a chance to sprout and bloom each new year before coming back to throttle the competition. And Maine was about as far as you could get from the initial Pacific incursion without getting your feet wet. Go any further and you'd need a boat and a really good scrambler to keep the missiles off your back.

These days, of course, keeping to land was no longer any guarantee that the EurAfricans wouldn't be shooting at you. There'd been a time when they'd only shot at targets trying to cross the pond; but given a half-dozen landside missile attacks since Easter they were obviously itching for more effective containment. It was a wonder that the whole seaboard hadn't been slagged to glass by now. If the dispatches could be believed, N'Am's defenses were still keeping the worst of it back. Still. The defenses wouldn't hold forever.

Rossini surrendered to Handel. Ouellette's line-up was growing. Perhaps three people accumulated for every two she processed. Nothing to worry about, yet; there was a critical mass, some threshold of personal responsibility below which crowds almost never got ugly. These ones didn't look like they had the strength to go bad even if they'd been motivated to.

At least the pharms had stopped charging for the meds she dispensed. They hadn't wanted to, of course: hey, did anyone think the R&D for all these magic potions had been free? In the end, though, there hadn't been much choice. Even small crowds got really ugly when you demanded payment up front.

A forearm the size of a tree trunk, disfigured by the usual maladies: the leprous, silver tinge of stage-one Behemoth, a smattering of melanomas, and—



*Wait a second. That's odd.* The swelling and redness was consistent with an infected insect bite, but the puncture marks...

She looked up at the face above the arm. A leather-skinned man in his fifties looked back through eyes blotchy with burst capillaries. For a moment it seemed as though his very bulk was blotting out the light, but no—it was only dusk, creeping in overhead while she'd been otherwise occupied.

"What did this?" she asked.

"Bug." He shook his head. "Last week sometime. Itches like a bugger."

"But there's *four* holes." Two bites? Two sets of mandibles on a single bug?

"Had about ten legs, too. Weird little bugger. Seen 'em around once or twice. Never got bit before, though." His red eyes squinted with sudden concern. "It poisonous?"

"Probably not." Taka probed the swelling. Her patient grimaced, but whatever had bitten him didn't seem to have left anything embedded. "Not seriously, not if it happened last week. I can give you something for the infection. It's pretty minor, next to..."

"Yeah," her patient said.

She smeared a bit of antibiotic onto the swelling. "I can give you a shot of antihistamines," she said apologetically, "but the effects won't last, I'm afraid. If the itching gets too bad afterward you could always piss on it."

"Piss on it?"

"Topical urea's good for itching," Taka told him. She held up a loaded cuvette; he made the requisite blood offering. "Now if you just—"

"I know the drill."

A tunnel, a slightly squashed cylinder big enough for a body, pierced the MI from one side to the other—a pair of opposed oval mouths, connected by a sensor-lined throat. A pallet extended from the floor of the nearer mouth like a padded rectangular tongue. Taka's patient lay back on it; the van listed slightly under his weight. The pallet retracted with an electrical hum. Slowly, smoothly, the man disappeared into one mouth and extruded from

the other. He was luckier than some. Some went in and never came out. The tunnel doubled as a crematorium.

Taka kept one eye on the NMR readouts, the other on the blood work. From time to time, both eyes flickered uneasily to the growing line of patients.

"Well?" came the man's voice from the other side of the van.

He'd been here before, she saw. Her sideshow tweaks had already taken hold in his cells.

And his Stage-One was still advancing.

"Well, you know about your melanomas, obviously," she remarked as he came around the corner. She drew a time-release *raf-1* from the dispensary and loaded it up. "This'll starve the tumors on your skin, and a few others cooking inside you probably didn't know about. I take it you've been in a clave recently, or a PMZ?"

He grunted. "Came here a month back. Maybe two."

"Uh huh." The static-field generators installed in such places were a mixed blessing at best. Bathing in that kind of field for any length of time was guaranteed to set tumors blooming in the flesh like mushrooms in shit. Most people considered it the lesser evil, even though the fields didn't so much repel Behemoth as merely impede it.

Taka didn't ask what had inspired this man to abandon that leaky protection for enemy territory. Such decisions were seldom voluntary.

He offered his arm: she shot the capsule sub-q, just over the bicep. "There are a couple of other tumors, I'm afraid. Not so vascularised. I can burn them out, but you'll have to wait until I'm a little less busy. There's no real hurry."

"What about the witch?" he said.

Firewitch, he meant. Behemoth.

"Um, according to your blood work you've already taken the cocktail," Taka said, pretending to recheck the results.

"I know. Last fall." He coughed. "I'm still getting sick."

"Well if you were infected last fall, it's doing its job. You'd have been dead by winter without it."

"*But I'm still getting sick.*" He took a step towards her, a big, big man, his bloody eyes narrowed down to red slits. Behind him, others waited with limited patience.

"You should go to Bangor," she began. "That's the closest—"

"They won't even tell you the *wait* at Bangor," he spat.

"What I can do here, what I—it's not a *cure*," she explained carefully. "It's only supposed to buy you some time."

"It did. So buy me more."

She took a cautious, placating step backwards. One step closer to the voice-command pickup for Miri's defense systems. One step away from trouble.

Trouble stepped after her.

"It doesn't work like that," Taka said softly. "The resistance is already in your cells. Putting it in again won't do anything. I guarantee it."

For a moment, she thought he might back off. The words seemed to penetrate; the tension ebbed a bit from his posture. The lines around his eyes seemed to twist somehow, some less-volatile mix of confusion and hurt replacing the fear and anger that had been there before.

And then he removed all hope with the hardest smile she'd ever seen.

"*You're cured,*" he said, and moved.

It was an occupational hazard. Out here, some believed that resistance could be transmitted through sexual contact. That made it easy to get laid, if you were into such things: there were those who held the Immunized in almost cultish esteem, begged sexual congress as a form of inoculation. It was something of a joke among Taka's peers.

Somewhat less amusing were the tales of field medics held prisoner, raped repeatedly in the name of public health. Taka Ouellette had no intention of offering herself to the greater good.

Neither did the thing she unleashed.

The password was *Bagheera*. Taka had no idea what it meant; it had come with the van and she'd never bothered to change it.

The chain of events it was supposed to trigger stopped far short of total commitment. On hearing its master's call, the MI's defenses would snap to attention: all ports and orifices would slam shut and lock tight, with the exception of the cab door closest to the authorized operator. The weapons blister on Miri's roof—a sunken, mirrored hemisphere when at rest—would extend from its silo like a gleaming chrome phallus, high enough for a clear shot at anyone not flattened defensively against the sides of the vehicle itself. (For any who might be, the chassis itself could come alive with high-voltage electricity.) Primary weaponry started with a tightbeam infrasonic squawkbox capable of voiding bowels and stomachs at ten meters. Escalation would call on twin gimbaled 8000-Watt direct-diode lasers which could be tuned to perforate or merely blind; nonprojectile weapons were always favored because of the ammunition issue. However, to guard against the risk of laser-defeating mirrors and aerosols, ancillary projectile weapons were usually made available to the savvy field doctor; Taka's rig also fired darts primed with a conotoxin tweaked for ten-second respiratory paralysis.

None of this was supposed to fire automatically. *Bagheera* should only have brought those systems into full alert, countered one threat with a greater one, and given any aggressor the chance to back off before anyone got hurt. There should have been no escalation absent Taka's explicit command.

"Bagheera," she growled.

The lasers cut loose.

They didn't fire at the red-eyed man. They started slicing through the lineup behind him. Half a dozen people fell bisected, cauterized, their troubles suddenly over. Others stared disbelieving at neat, smoking holes in their limbs and torsos. On the far side of a sudden barbecued jigsaw, brown grass burst into flame. *Water Music* played on in the background without missing a beat.

After a moment that seemed to go on forever, people remembered to scream.

The Red-eyed man, all threat and bluster gone from his body, stood dumbfounded and pincushioned by a dozen neurotoxic darts.

He gaped soundlessly at Taka, teetering. He raised his hands, palms up, supplicating: *goddamn woman, I never meant...!*

He toppled, rigid with tetanus.

People ran, or twitched, or lay still. The lasers dipped and weaved, scrawling blackened gibberish onto the ground. Fire guttered here and there among the curlicues, bright staccatos against the failing light.

Taka pulled frantically at the passenger door; fortunately the renegade system hadn't charged the hull. It *had* locked her out, though; this was the door that was supposed to stay unlocked, the route to refuge—

*It's online how in God's name can it be online —*

But she could see the telltale on her dashboard, flashing scarlet. The MI was somehow uplinked to the wide wireless world, to the networked monsters that lived and hunted in there, to—

A Madonna. A Lenie. It had to be.

Another telltale winked from a different part of the dashboard. Belatedly, Taka read the signs: the *driver's* door was unlocked. She threw herself around the front of the vehicle. She kept her eyes on the ground, some religious impulse averting them from the wrath of God, *if I don't see it maybe it won't see me* but she could hear the turret just above her, tracking and firing, tracking and—

She piled into the cab, yanked the door behind her, locked it.

The cab's eyephones lay on the floor beside the seat. A tiny aurora of light writhed across the deck from its oculars. She snatched up the phones and held them to her face.

The Madonna's twisted face raged within an inset on the main display. There was no sound—Taka left the headset muted by default.

*Shitsucker. It got in through GPS.* She always kept GPS offline when she wasn't traveling; somehow the invader must have spoofed the system.

She killed nav. The screaming thing in the window went out. Overhead, the lasers ceased fire with a downshifting whine.

*Water Music* had ended sometime during the massacre. Tchaikovsky had stepped into the gap. *Iolanta*.

It seemed like a very long while before she dared to move.

She killed the music. She hugged herself, shaking. She tried very hard not to cry like a frightened child. She told herself she'd done what she could.

She told herself it could have been worse.

Madonnas could do almost anything in their own environment. Cruising through the walls and the wires and the wavelengths of N'AmNet they could penetrate almost any system, subvert almost any safeguard, bring down almost any calamity upon the heads of people for whom disaster had long since become the status quo. Just the week before, one had breached the flood-control subroutines of some dam in the Rockies, emptied a whole reservoir onto an unsuspecting populace sleeping in the spillway's shadow.

Forcing access into one lousy MI would have been simplicity itself to such a creature.

It hadn't downloaded, at least. No room. Neither nav nor weapons-system chips were anywhere near big enough to support something so complex, and the medical systems—the only habitat in the van that *could* hold something that size—were kept manually disconnected from the net except for prearranged updates. The monsters could do a lot of things in virtual space, but they hadn't yet figured out how to reach into the real world and physically flip a switch. So this one had simply extended long, vicious fingers from some faraway node, wreaking havoc from a distance until Taka had cut it off.

Her own dim image stared back, haunted and hollow-eyed, from the darkened dashboard. The perspex, subtly convex, stretched her reflection lengthwise, turned *gaunt* into downright *attenuate*. A fragile refugee from some low-gravity planet, civilized and genteel. Banished to a hellish world where even your own armor turned against you.

*What if I*— she thought, and stopped herself.

Wearily, she unlocked the door and climbed out onto the killing floor. There were still a fair number of patients in sight. None were standing, of course. Few moved.

*What if I didn't*—

"Hello!" she called to the empty streets and dark façades. "It's okay! It's gone! I shut it out!"

Moans from the injured. Nothing else.

"Anybody! I could really use a hand here! We've got—we've got..."

*What if I didn't turn GPS off?*

She shook her head. She always took it offline. She didn't specifically remember doing it this particular time, but you never remembered rote stuff like that.

"Anybody?"

*Maybe you fucked up. Wouldn't be the first time.*

*Would it, Dave?*

It seemed so dark all of a sudden. She raised her eyes from the carnage; twilight was bleeding away to the west.

That was when she noticed the contrails.

## CONDOM

*Phocoena's* bulkheads are luminous with intelligence. The periscope feed delivers crisp rich realltimes of the maritime nightscape: dark sparkling waves in the foreground, black fingers of dry land reaching into the view from either side. A jumble of bright buildings rises above the coastline in center screen, huddled together against the surrounding darkness. Boxy unlit silhouettes to the south belie the remains of a whole other city south of the Narrows, abandoned in the course of some recent retreat.

The city of Halifax. Or rather, the besieged city-state that Halifax has evidently become.

That naked-eye visual occupies the upper-left quarter of the main panel. Beside it, a false-color interpretation of the same view shows a fuzzy, indistinct cloud enveloping the lit buildings; Clarke thinks of the mantle of a jellyfish, enclosing vital organs. The shroud is largely invisible to human eyes, even rifter ones; to *Phocoena's* spectrum-spanning senses, it looks like a blue haze of heat lightning. Static-field ionization, Lubin says. A dome of electricity to keep airborne particles at bay.

The seaward frontier is under guard. Not that Clarke ever expected to simply sneak into the harbor and pull up next to the local clam shack; she knew there'd be *some* kind of security in place. Lubin was expecting mines, so for the last fifty clicks *Phocoena* crawled towards the coast behind a couple of point drones zig-zagging ahead, luring any countermeasures out of concealment. Those flushed a single burrower lying in wait; awakened by the sound of approaching machinery, it shot from the mud and corkscrewed into the nearest drone with a harmless and anticlimactic clunk.

That lone dud was the only countermeasure they came across on the outer slope. Lubin figures that Halifax's subsurface defenses must have been used up fending off previous incursions. The fact that they haven't been replenished doesn't bode well for the mass-production of industrial goods in the vicinity.

At any rate, against all expectations they've cruised unchallenged all the way here, just outside Halifax Harbor. Only to nearly run into *this*. Whatever *this* is.

It's virtually invisible in the sub's lights. It's even less visible to sonar, which can barely pick it up even at point-blank range. A transparent, diaphanous membrane stretches from seabed to surface: the periscope shows a float line holding its upper edge several meters above the waves. It appears to stretch across the entire mouth of the harbor.

It billows inward, as if the Atlantic is leaning on it from the outside. Pinpoint flashes of cold blue light sparkle across its face, sparse ripples of stardust echoing the gentle subsurface surge. Clarke recognizes the effect. It's not the membrane that sparkles, but the tiny bioluminescent creatures colliding with it.

Plankton. It seems somehow encouraging that they still exist, so close to shore.

Lubin's less interested in the light show than its cause. "Must be semipermeable." That would explain the oceanographic impossibility that belied its presence, a sudden sharp halocline rising across their path like a wall. Discrete boundaries are common enough in the sea: brackish water lying atop heavier saline, warm water layered over cold. But the stratification is



always horizontal, a parfait of light-over-heavy as inevitable as gravity. A *vertical* halocline seems to violate the very laws of physics; the membrane itself may have been undetectable to sonar, but the sheer knife-edged discontinuity it produces showed up like a brick wall from a thousand meters away.

"Looks pretty flimsy," Clarke remarks. "Not much to keep us out."

"It's not there for us," Lubin says.

"Well, yeah." It's a Behemoth filter, obviously. And it must be blocking a whole range of other particles too, to generate this kind of density imbalance. "What I mean is, we can just punch right on through."

"I don't think so," Lubin says.

He brings the periscope down from the surface and sends it sniffing towards the barrier; on the panel, the cowering cityscape disappears in a swirl of bubbles and darkness. Clarke glimpses the 'scope's tether through the viewport, a pale thread of fiberop unwinding overhead. The periscope itself is effectively invisible, a small miracle of dynamic countershading.

Clarke watches it on tactical instead. Lubin brings the drone to within half a meter of the membrane: a faint yellow haze resolves on the right-hand feed, where naked eyes see only darkness. "What's that?" Clarke wonders.

"Bioelectric field," Lubin tells her.

"You mean it's *alive*?"

"Probably not the membrane itself. I'd guess it's run through with some kind of engineered neurons."

"Really? You sure?"

Lubin shakes his head. "I'm not even sure it's biological—the field strength fits, but it doesn't *prove* anything." He gives her a look. "Did you think we had a sensor to pick up brain cells at fifty paces?"

No witty rejoinder springs to mind. Clarke turns back to the viewport, and the dim blue aurora flickering beyond. "Like an anorexic smart gel," she murmurs.

"Probably a lot dumber. And a lot more radical—they'd have to tweak the neurons to work at low temperatures, high salinity—the membrane itself could handle osmoregulation, I suppose."

"I don't see any blood vessels. I wonder how they get nutrients."

"Maybe the membrane handles that too. Absorbs them right from seawater."

"What's it for?"

"Other than a filter?" Lubin shrugs. "An alarm, I should think."

"So what do we do?"

Lubin considers a moment. "Poke it," he says.

The periscope lunges forward. On the wide-spectrum display the membrane flares on impact, bright threads radiating from the strike like a fine-veined tracery of yellow lightning. In visible light it just floats there, inert.

"Mmm." Lubin pulls the periscope back. The membrane reverts to lowglow.

"So if it *is* an alarm," Clarke says, "I'm guessing you've just set it off."

"Not unless Halifax goes to red alert every time a piece of driftwood bumps their perimeter." Lubin runs his finger along a control bar: on tactical, the periscope heads back to the surface. "But I *am* willing to bet this thing'll scream a lot louder if we actually tear through it. We don't need that kind of attention."

"So what now? Head down the coast a bit, try a land approach?"

Lubin shakes his head. "Underwater was our best shot. A landside approach will be a lot tougher." He grabs a headset off the bulkhead and slips it over his skull. "If we can't get to a hard line, we'll try the local wireless nets. Better than nothing."

He cocoons himself and extends feelers into the attenuate datasphere overhead. Clarke reroutes nav to the copilot's panel and turns *Phocoena* back into deeper water. An extra klick or so shouldn't interfere with Lubin's trawl, and there's something disquieting about being in such shallow water. It's like looking up to find the roof has crept down while you weren't looking.

Lubin grunts. "Got something."

Clarke taps into Lubin's headset and splits the feed to her own panel. Most of the stream's incomprehensible— numbers and statistics and acronyms, scrolling past too quickly for her to read even if she *could* make sense of them. Either Lubin's dug beneath the usual user interfaces, or Maelstrom has become so impoverished in the past five years that it can't support advanced graphics any more.

But that can't be. The system has room enough for her own demonic alter-egos, after all. Those are nothing if not *graphic*.

"So what's it saying?" Clarke asks.

"Missile attack of some kind, down in Maine. They're sending lifters."

She gives up and pulls the 'phones from her eyes.

"That could be our best way in," Lubin muses. "Any vehicles CSIRA deploys will be operating out of a secure site with access to good intel."

"And you think the pilot would be willing to pick up a couple of hitch-hikers in the middle of a contaminated zone?"

Lubin turns his head. Faint lightning flickers around the edges of his eyephones, ephemeral tattoos laid over the scars on his cheeks.

"If there *is* a pilot," he says, "perhaps he'll be open to persuasion."

## GEHENNA

Taka Ouellette emerged into a nightscape of guttering flame. She drove at a crawl through a hot dry snowfall, the windshield's static field barely keeping the flakes from the glass. Ash flurried white as talc in Miri's headlights, a fog of powdered earth and vegetation blinding her to the road ahead. She killed the lights, but infrared was even worse: countless particles of drifting soot, the brilliant washouts of raw flame, arid little dust-devils and writhing updrafts overloaded the display with false-color artefacts. Finally

she settled for an old set of photoamp glasses in the glove compartment. The world resolved into black and white, gray on gray. The viz was still terrible, but at least the interference was in sharp focus.

*Maybe there were survivors*, she told herself without much hope. *Maybe the firestorm didn't reach that far*. She was a good ten kilometers from the spot where her MI had risen up and slaughtered the locals. There'd been no closer cover: no storm sewers or parkades more than a few levels deep, and if there'd been any hardened shelters nearby her surviving patients wouldn't have been inclined to tell her about them. So she'd fled east while the contrails arced overhead, buried herself in a service tunnel attached to an abandoned tidal bore drilled in from Penobscot Bay. A few years ago the shamans had promised that bore would keep the lights on from Portland to Eastport, world without end. But of course the world *had* ended, before the first turbine had even been installed. Now the tunnel did nothing but shield burrowing mammals from the short-term consequences of their own stupidity.

Ten kilometers over buckled and debris-strewn roads that hadn't seen service since before Behemoth. It was nothing short of a miracle that Taka had made it to safety before the missiles had hit. Or it would have been, if the missiles had actually caused any of the devastation she was driving through now.

She was pretty sure they hadn't. In fact, she was pretty sure they'd never even touched the ground.

The hill she was climbing crested a hundred meters ahead. Fresh wreckage blocked her way halfway up that rise, the remains of some roadside building that had collapsed during the attack. Now it was only a great tumbledown collection of smoking cinder blocks. Not even Taka's eyeglasses could banish the shadows infesting that debris, all straight lines and sharp angles and dark empty parallelograms.

It was too steep for Miri's limited ground-effectors. Ouellette left the van to its own devices and climbed around the wreckage. The bricks were still hot to the touch. Heat from the scorched earth penetrated the soles of her boots, a subtle warmth, unpleasant only by implication.

On the uphill side of the debris she passed occasional objects which retained some crumbly semblance of human bones. She was breathing the dead. Perhaps some of those she inhaled would have died even earlier, if not for her efforts. Perhaps some she'd helped today were still alive, in spite of everything. She managed to take some faint comfort in that, until she crested the hill.

But no.

The landscape spread out before her was as wasted as the path she'd just climbed: flickering eruptions of white firelight punctuating a vista blackened as much by carbon as by nightfall. The land had not been laid waste by missiles or microbes, not this time. The thing that had done it was still visible in the distance: a tiny dark oval in the sky, barely darker than the cloud bank behind it, hanging a few degrees over the horizon. Taka almost missed it at first, even with the specs. Its outline was fuzzy, sparkling with the faint visual static of errant photons unreasonably boosted.

But the gouts of flame that poured from its belly in the next instant showed up clearly enough even to naked eyes.

Not a missile. Not a microbe. A lifter, scouring the distance as it had already scoured the foreground.

And for all Taka Ouellette knew, she had been the one to bring it here.

Oh, it wasn't dead certain. Wide-scale incendiary purges still happened under official pretext. There'd actually been a time when they were pretty routine, back in the early panic-stricken days when people thought they might actually be able to contain  $\beta$  ehemoth if they just had the balls to take drastic steps. Those had scaled back when it had grown apparent that N'Am was blowing its whole napalm reserve to no good effect, but they still happened sometimes in some of the wilder zones out west. It was even possible that such steps might have been undertaken without CSIRA bothering to extract their field personnel, although Taka doubted that even she would be left *that* far out of the loop.

But not so far from here, not so long ago, she had let a monster escape into the real world. Floods and firestorms always seemed to follow in the wake of such breaches, and Taka had almost forgotten a time when she believed in coincidence.

There'd be no shortage of proximate causes. Perhaps some rogue autopilot afflicted with faulty programming, tricked by a typographic error into burning the wrong part of the world. Or maybe a human pilot misled by garbled encryption, commands misheard through static and interference. None of those details mattered. Taka knew the bigger question: *who* had tweaked any code that subverted the automatic pilot? *What* had garbled instructions heard by the flesh and blood one?

She knew the answer, too. It would have been obvious to anyone who'd seen the monster in her eyephones, a few hours before. There were no accidents. Noise was never random. And the machinery itself was malign.

Here, staring out at a photoamplified crematorium stretching to the very horizon, it was the only explanation that made sense.

*You were a scientist once,* she told herself. *You rejected incantations outright. You knew the truths that protected you from bias and woolly-mindedness, and you learned them all by heart: correlation is not causation. Nothing is real until replicated. The mind sees order in noise; trust only numbers.*

Incantations of another sort, perhaps. Not very effective ones; they hadn't, for all their familiarity, saved her from the creeping certainty that she'd called an evil spirit into her vehicle. She could rationalize the superstitious awe in her head, justify it even. Her training gave her more than enough tools for that. *Spirit* was only a word, a convenient label for a virulent software entity forged in the fast-forward Darwinian landscape that had once been called *Internet*. Taka knew how fast evolutionary changes could be wrought in a system where a hundred generations passed in the blink of an eye. She remembered another time when electronic lifeforms—undesigned, unplanned, and unwanted—had grown so pestilential that the net itself had acquired the name *Maelstrom*. The things called *Lenies*, or *Shredders*, or *Madonnas*—like the Gospel demons, their names were legion—they were simply exemplars of natural selection. Extremely successful exemplars: on the other side of the world, whole countries abased themselves in their names. Or in the name of the icon on which they were

based at least, some semi-mythical cult figure who'd risen to brief prominence on Behemoth's coattails.

This was logic, not religion. So what if these things had power beyond imagining, yet no physical substance? So what if they lived in the wires and the wireless spaces between, and moved at the speed of their own electronic thoughts? *Demon, spirit*—shorthand, not superstition. Only metaphor, with more points of similarity than some.

And yet, now Taka Ouellette saw mysterious lights flashing in the sky, and found her lips moving in altogether the wrong kind of incantation.

*Oh God, save us.*

She turned and headed downhill. She could probably get around the blockage, take some back road to continue on this way, but what was the point? It was a question of cost-benefit analysis, of lives-saved-per-unit-effort. That value would certainly be higher almost anywhere but here.

The collapsed building loomed ahead of her on the road again, gray and colorless in the amplified light. The angular shadows looked different, more ominous from this angle. They formed crude faces and body parts way past human scale, as if some giant cubist robot had collapsed in an angry heap and was summoning the strength to pull itself back together again.

As she began to pick her way around the pile, one of the shadows detached itself and moved to block her path.

"*Holy*—" Taka gasped. It was only a woman, she saw now, and unarmed—these days you noticed such things almost instinctively—but her heart had been kicked instantly into fight/flight. "Jesus, you scared me."

"Sorry. Didn't mean to." The woman took another step clear of the debris. She was blonde, dressed entirely in some black skin-tight body stocking from neck to feet; only her hands and head were exposed, pale disembodied pieces against the contrasting darkness. She was a few centimeters shorter than Taka herself.

There was something about her eyes, too. They seemed too bright, somehow. Probably an artefact of the specs, Taka decided. Light reflecting off the wetness of the cornea, perhaps.

The woman jerked her chin back over her shoulder. "That your ambulance?"

"Mobile Infirmary. Yes." Taka glanced around the full three-sixty. She saw no one else. "Are you sick?"

A laugh, very soft. "Isn't everyone?"

"I mean—"

"No. Not yet."

*What is it about those eyes?* It was hard to tell from this distance—the woman was ten meters away—but it looked like she might be wearing nightshades. In which case she could see Taka Ouellette *way* better than Taka Ouellette could see her through these frating photoamps.

People in the wildlands did not generally come so well-equipped.

Taka put her hands casually into her pockets; the act pushed her windbreaker away from the standard-issue Kimber on her hip. "Are you hungry?" she asked. "There's a cyclist in the cab. The bricks taste like shit, but if you're desperate..."

"Sorry about this," the woman said, stepping forward. "Really."

Her eyes were like blank, translucent balls of ice.

Taka stepped back instinctively. Something blocked her from behind. She spun and stared into another pair of empty eyes, set in a face that seemed all scarred planes and chipped stone. She didn't reach for her gun. Somehow, he already had it.

"It's gene-locked," she said quickly.

"Mmm." He turned the weapon over in his hands. He wore the look of a professional appraiser. "We apologize for the intrusion," he told her, almost absently, "But we need you to disable the security on your vehicle." He did not look at her.

"We're not going to hurt you," the woman said from behind.

Taka, unassured, kept her eyes on the man holding her gun.

"Certainly not," he agreed, looking up at last. "Not while there are more efficient alternatives."

*Bagheera* was one password. There were several others. *Morris* locked down the whole kit and kaboodle, so that not even



Taka could start it up again without live authorization. *Pixel* electrostabbed any passengers who didn't match her pheromone profile. *Tigger* unlocked the doors and played dead until it heard Taka say *Schroedinger*: then it locked down and pumped enough halothane into the cab to turn a 110-kg assailant into a sack of jelly for a minimum of fifteen minutes. (Taka herself would be up and at 'em in a mere ninety seconds; when they'd given her the keys to Miri they'd also tweaked her blood with a resistant enzyme.)

Mobile Infirmaries were chock-full of resources and technology. The wildlands were chock-full of desperate people literally dying for an edge, any edge. Anti-theft measures made every kind of sense, and more than a little irony: when it came right down to it, Miri was far better at killing and incapacitation than it was at healing the sick.

Now Taka stood beside the driver's door, white-eyed blackbodies on either side. She ran through her options.

"Tigger," she said. Miri chirped and unlocked the door.

The woman pulled the door open and climbed into the cab. Taka started to follow. A hand clapped down on her shoulder.

Taka turned and faced her captor. "It's gene-locked, too. I'll have to reset it if you want to drive."

"We don't," he told her. "Not yet."

"The board's dark," the woman said from behind the wheel.

The hand on her shoulder tightened subtly, pressed forward. Taka felt herself guided to the cab; the other woman slid over into the passenger seat to give her room.

"Actually," the man said, "I think we'll let the doctor here take the passenger seat." The hand pressed down. Taka ducked in through the driver's side, slid between the seat and the steering stick as the other woman left the cab through the passenger door. The woman grasped the edge of that door and started to push it shut.

"No," said the man, very distinctly. The woman froze.

He was behind the wheel now; his hand hadn't come off Taka's shoulder for an instant. "One of us stays outside the cab at all times," he told his partner. "And we leave both doors open."

His partner nodded. He took his hand off Taka's shoulder and looked at the dark, unhelpful face of the dash.

"Bring it online," he said. "Touch only, no voice control. Do not start the engine."

Taka stared back at him, unmoving.

The blond leaned in over her shoulder. "We weren't bullshitting you," she said quietly. "We *really* don't want to hurt you, unless there's no choice. I'm betting that's a pretty charitable attitude for these parts, so why are you pushing it?"

*These parts.* So they were new in town. Not that this came as any great surprise; these two were the furthest thing from wildland refugees that Taka had seen in ages.

She shook her head. "You're stealing an MI. That's going to hurt a lot more people than me."

"If you cooperate you can have it back in a little while," the man told her. "Bring it online."

She keyed the genepad. The dashboard lit up.

He studied the display. "So I take it you're some sort of itinerant health-care worker."

"Some sort," Taka said carefully.

"Where are you out of?" he asked.

"Out of?"

"Who sets your route? Who resupplies you?"

"Bangor, usually."

"They airlift supplies to you in the field?"

"When they can spare them."

He grunted. "Your inventory beacon's disabled."

He spoke as if it were a surprise.

"I just radio in when my stocks get too low," Taka told him. "Why would—*what are you doing!*"

He paused, fingers poised over the GPS menu he'd just brought up. "I'm fixing some locations," he said mildly. "Is there a problem?"

"Are you *crazy*? It's still practically line-of-sight! Do you *want* it to come back?"

"Want what to come back?" the woman asked.

"What do you think did all *this*?"

They eyed her expressionlessly. "CSIRA, I expect," the man said after a moment. "This *was* a containment burn, wasn't it?"

"It was a *Lenie!*" Taka shouted. *Oh Jesus what if he brings it back, what if he—*

Something pulled her around from behind. Glacial eyes bored directly into hers. She could feel the woman's breath against her cheek.

"What did you just say?"

Taka swallowed and held herself in check. The panic receded slightly.

"Listen to me," she said. "It got in through my GPS last time. I don't know how, but if you go online you could bring it back. Right now I wouldn't even risk radio."

"This thing—" the man began.

"How can you not *know* about them?" Taka cried, exasperated

The two exchanged some indecipherable glance across her.

"We know," the man said. Taka noted gratefully that he'd shut down GPS. "Are you saying it was responsible for yesterday's missile attack?"

"No, of course n—" Taka stopped. She'd never considered that before.

"I never thought so," she said after a moment. "Anything's possible, I guess. Some people say the M&M's recruited them somehow."

"Who else would have done it?" the woman wondered.

"Eurasia. Africa. Anyone, really." A sudden thought struck her: "You aren't from—?"

The man shook his head. "No."

She couldn't really blame the missile-throwers, whoever they were. According to the dispatches Behemoth still hadn't conquered the lands beyond Atlantic; those people probably still thought they could contain it if they just sterilized the hot zone. A phrase tickled the back of Taka's mind, some worn-out slogan once used to justify astronomical death tolls. That was it: *The Greater Good*. "Anyway," she went on, "the missiles never made it through. That's not what all this is."

The woman stared out the window, where *all this* was lightening to smoky, pre-dawn gray. "What stopped them?"

Taka shrugged. "N'Am defense shield."

"How could you tell?" asked the man.

"You can see the re-entry trails when the antis come down from orbit. You can see them dim down before they blow up. Smokey starbursts, like fireworks almost."

The woman glanced around. "So all this, this was your—your *Lenie*?"

A snippet from a very old song floated through Taka's mind. *There are no accidents 'round here...*

"You said *starbursts*?" the man said.

Taka nodded.

"And the contrails dimmed down before detonation."

"So?"

"Which contrails? The incoming missiles or the N'Am antis?"

"How should I know?"

"You saw this last night?"

Taka nodded.

"What time?"

"I don't know. Listen, I had other things on my mind, I—"

*I'd just watched a few dozen people sliced into cold cuts because I might have left a circuit open somewhere...*

The man was watching her with a sudden unwavering intensity. His eyes were blank but far from empty.

She tried to remember. "It was dusk, the sun had been down for—I don't know, maybe fifteen or twenty minutes?"

"Is that typical of these attacks? Sunset?"

"I never thought about it before," Taka admitted. "I guess so. Or nighttime, at least."

"Was there *ever* an attack that occurred during broad daylight?"

She thought hard. "I...I can't remember any."

"How long after the contrails dimmed did the starbursts appear?"

"Look, I didn't—"

"*How long*?"

"*I don't know*, okay? Maybe around five seconds or so."

"How many degrees of arc did the contrails—"

"Mister, I don't even know what that *means*."

The white-eyed man said nothing for what seemed like a very long time. He did not move. Taka got the sense of wheels in motion.

Finally: "That tunnel you hid in."

"How did—you followed me? All the way from there? On *foot*?"

"It wasn't far," the woman told her. "Less than a kilometer."

Taka shook her head, amazed. At the time, inching through gusts of scorched earth, it seemed as if she'd been in motion for days.

"You stopped at the gate. To cut the chain."

Taka nodded. In hindsight it seemed absurd—the MI could have crashed that barrier in an instant, and the sky was falling.

"You looked up at the sky," he surmised.

"Yes."

"What did you see?"

"I told you. Contrails. Starbursts."

"Where was the closest starburst?"

"I don't—"

"Get out of the cab."

She stared at him.

"Go on," he said.

She climbed out into gray dawn. There were no more spirits inhabiting the shattered building before her: the rising light stripped away the Rorschach shadows, leaving nothing but a haphazard pile of cinderblocks and I-beams. The few scorched trees still standing nearby, burned past black to ash white, flanked the road like upthrust skeletal hands.

He was at her side. "Close your eyes."

She did. If he was going to kill her, there wasn't much she could do about it even with her eyes open.

"You're at the gate." His voice was steady, soothing. "You're *facing* the gate. You turn around and look back up the road. You look up at the sky. Go on."

She turned, eyes still closed, memory filling the gaps. She craned her neck.

"You see starbursts," the voice continued. "I want you to point at the one that's most directly overhead. The one that's closest to the gate. Remember where it was in the sky, and point."

She raised her arm and held it steady.

"What's the deal, Ken?" the woman asked in the void. "Shouldn't we be—"

"You can open your eyes now," said the m—said *Ken*. So she did.

She didn't know who these people were, but she was coming to believe at least one thing they'd told her: they didn't want to hurt her.

*Not while there are more efficient alternatives.*

She allowed herself a trickle of relief. "Any more questions?"

"One more. Got any path grenades?"

"Loads."

"Do any of them key on bugs that *aren't* Behemoth?"

"Most of them." Taka shrugged. "Behemoth tracers are kind of redundant hereabouts."

She dug out the grenades he wanted, and a pistol to fire them. He checked them over with the same eye he'd used on her Kimber. Evidently they passed inspection. "I shouldn't be more than a few hours," he told his partner. He glanced at the MI. "Don't let her start the engine or close the doors, whether she's inside or out."

The woman looked at Taka, her expression unreadable.

"Hey," Taka said. "I—"

Ken shook his head. "Don't worry about it. We'll sort it out when I get back."

He started off down the road. He didn't look back.

Taka took a deep breath and studied the other woman. "So you're guarding me, now?"

The corner of the woman's mouth twitched.

*Damn, but those eyes are strange. Can't see anything in there.*

She tried again. "Ken seems like a nice enough guy."

The other woman stared a cold eyeless stare for an instant, and burst out laughing.

It seemed like a good sign. "So are you two an item, or what?"

The woman shook her head, still smiling. "What."

"Not that you asked, but my name's Taka Ouellette."

Just like that, the smile disappeared.

*Oh look Dave, I fouled up again. I always have to go that one step too far...*

But the other woman's mouth was moving. "Le—Laurie," it said.

"Ah." Taka tried to think of something else to say. "Not exactly pleased to meet you," she said at last, trying to keep her tone light.

"Yeah," Laurie said. "I get that a lot."

## THE TRIGONOMETRY OF SALVATION

*This does not parse*, Lubin thought.

Mid-June on the forty-fourth parallel. Fifteen or twenty minutes after sunset—say, about five degrees of planetary rotation. Which would put eclipse altitude at about thirty-three kilometers. The missiles had dropped into shadow four or five seconds before detonation, if this witness was to be trusted. Assuming the usual reentry velocity of seven kilometers per second, that put actual detonation at an altitude no greater than five thousand meters, probably much lower.

She'd reported an airburst. Not an impact, and not a fireball. Fireworks, she'd called them. And always at twilight, or during darkness.

The sun was just clearing the ridge to the east when he arrived at the back door of Penobscot Power's abandoned enterprise. *Phocoena* and the doctor's MI had coexisted briefly in the bowels of those remains; her service tunnel had run along the spine of a great subterranean finger of ocean, sixty meters wide and a hundred times as long, drilled through solid bedrock. At the time of its conception it had been a valiant recreation of the lunar engine

that drove the tides of Fundy, two hundred clicks up the coast. Now it was only a great flooded sewer pipe, and a way for shy submarines to slip inland unobserved.

None of which was obvious from here, of course. From here, there was only a scorched chain-link fence, carbon-coated rectangles of metal that had once proclaimed *No Trespassing*, and—fifty meters on the other side, where the rock rose from the earth—a broken-toothed concrete-and-rebar mouth in the face of the ridge. One of the gate's two panels swung creaking in the arid breeze. The other listed at an angle, stiff in its hinges.

He stood with his back to the gate. He raised his arm and held it. He remembered where the doctor had pointed, corrected his angle.

*That way.*

Just a few degrees over the horizon. That implied either a high distant sighting or a much closer, low-altitude one. Atmospheric inversions were strongest during twilight and darkness, Lubin remembered. They were generally only a few hundred meters thick, and they tended to act as a blanket, holding released particulates close to the ground.

He walked south. Flame still flickered here and there, consuming little pockets of left-over combustibles. A morning breeze was rising, coming in from the coast. It promised cooler temperatures and cleaner air; now, though, ash still gusted everywhere. Lubin coughed up chalky phlegm and kept going.

The doctor had given him a belt to go with the grenades. The little aerosol explosives bumped against his hips as he walked. He kept the gun in hand, aiming absently at convenient targets, stumps and powdered shrubs and the remains of fenceposts. There wasn't much left to point at. His imagination invested what there was with limbs and faces. He imagined them bleeding.

Of course, his witness had hardly been a GPS on legs. There were so many errors nested in her directions that correcting for wind speed was tantamount to adding one small error to a half-dozen larger ones. Still, Lubin was nothing if not systematic.



There was a reasonable chance that he was within a kilometer of the starburst's coordinates. He turned east for a few minutes, to compensate for the breeze. Then he popped the first grenade onto his pistol and fired at the sky.

It soared into the air like a great yellow egg and exploded into a fluorescent pink cloud twenty meters across.

He watched it dissipate. The first tatters followed the prevailing winds, tugging the cloud into an ovoid, delicate cotton-candy streamers drifting from its downstream end. After a few moments, though, it began to disperse laterally as well, its component particles instinctively sniffing the air for signs of treasure.

No obvious movement against the wind. That would have been too much to hope for, this early in the game.

He fired the next grenade a hundred meters diagonally upwind of the first; the third, a hundred meters from each of the others, the closing point of a roughly equilateral triangle. He zigzagged his way across the wasted landscape, kicking little drifts of ash where bracken and shrubbery had clustered a day earlier, navigating endless rocky moguls and fissures. Once he even hopped across a scorched streambed, still trickling, fed by some miraculous source further upstream than the flamethrowers had reached. At rough, regular intervals he shot another absurd pink cloud into the sky, and watched it spread, and moved on.

He was aiming his eighth grenade when he noticed the residue of the seventh behaving strangely. It had started as puffy round cumulus, like all the others. Now, though, it was streaked and streaming, as though being stretched by the wind. Which would indeed have been the case, if it had been streaming *with* the breeze instead of *across* it.

And another cloud, more distant and dissipated, seemed to be breaking the same rules. They didn't flow, these aerosol streams, not to the naked eye. Rather, they seemed to *drift* against the wind, towards some point of convergence back the way Lubin had come, about thirty degrees off his own track.

And they were losing altitude.

He started after them. The notes in those clouds couldn't be called intelligent by any stretch of the word, but they knew what

they liked and they had the means to get to it. They were olfactory creatures, and they loved the smell of two things above all else. The first was the protein signatures put out by a wide array of weaponised biosols; they tracked that aroma like sharks sniffing blood in the water, and when they finally found that ambrosia and rolled around in it they *changed*, chemically. That was the other thing these creatures loved: the smell of their own kind, fulfilled.

It was the classic biomagnifying one-two punch. Too often, traces of one's quarry were too faint to do more than whisper to a few passing notes. Those would lock on, enzyme-to-substrate, and achieve their own personal nirvana — but that very merger would quench the emissions that had lured them in the first place. The contaminant would be flagged, but the flag would be far too small to catch any mammalian eye.

But to be aroused not only by prey, but by others similarly aroused—why, it scarcely mattered whether there was enough to go around. A single offending particle would be enough to start an orgiastic fission reaction. Each subsequent arrival would only brighten the collective signal.

Lubin found it half-buried in the gravel bed of a shallow gully. It looked like a snub-nosed bullet thirty centimeters long, perforated by rows of circular holes along half its length. It looked like the salt shaker of a giant with pathologically high blood pressure. It looked like the business end of a multiheaded suborbital device for the delivery of biological aerosols.

Lubin couldn't tell what color it had originally been. It was dripping with fluorescent pink goo.

Ouellete's MI changed before his eyes on the final steps of his approach. Bright holographic phantoms resolved within the vehicle—the plastic skin grew translucent, exposing neon guts and nerves beneath. Lubin was still getting used to such visions. His new inlays served up the diagnostic emissions of any unshielded machinery within a twelve meter radius. This particular vehicle wasn't quite as forthcoming as he would have liked, though. It was riddled with tumors: rectangular shadows beneath the dash, dark

swathes across the passenger door, a black unreflective cylinder rising through the center of the vehicle like a dark heart. The MI had a lot of security, all of it shielded.

Clarke and Ouellette stood to one side, watching him approach. Ouellette was nothing special to Lubin's new eyes. Dim sparkles glimmered from within Clarke's thorax, but they told him nothing; inlays and implants spoke different dialects.

He toggled the inlays; the hallucinatory schematics imploded, leaving dull plastic and white dust and nonluminous flesh and clothing behind.

"You found something," Ouellette said. "We saw the clouds."

He told them.

Ouellette stared, openmouthed: "They're shooting *germs* at us? We're already on our last legs! Why bother hitting us with Megapox or Supercol when we're already—"

She stopped. The outrage on her face gave way to a puzzled frown.

Clarke looked the question over the doctor's confusion: *β-max*? Lubin shrugged.

"Perhaps N'Am isn't dying fast *enough*," Lubin remarked. "A significant number of M&Ms regard Behemoth as divine retribution for North America's sins. It's official policy in Italy and Libya, at least. Botswana too, I believe."

Clarke snorted. "North *America's* sins? They think it just stops at the Atlantic?"

"The moderates think they can keep it at bay," Ouellette said. "The extremists don't *want* to. They don't get into heaven until the world ends." Her mind seemed elsewhere; she spoke as if absently flicking at some hovering insect.

Lubin let her think. She was, after all, the closest available approximation to a native guide. Perhaps she could come up with something.

"Who are you people?" Ouellette asked quietly.

"Excuse me?"

"You're not feral. You're not *clave*. You sure as hell aren't CSIRA or you'd be better equipped. Maybe you're TransAt—but that doesn't fit either." A faint smile passed across her face. "You

don't know what you're doing, do you? You're making it up as you go along..."

Lubin kept his face neutral and his question on target. "Is there any reason *not* to believe that people might launch a biological attack against North America simply to—hasten things along?"

She seemed to find this amusing. "You don't get out much, do you?"

"Am I wrong?"

"You're not wrong." Ouellette spat on the ashy ground. "Lots of folks might help Providence along, if they had the chance. That doesn't mean this is an attack."

"What else would it be?"

"Maybe it's a counteragent."

Clarke looked up at that. "A cure?"

"Not so personal, maybe. Something that kills Behemoth in the wild."

Lubin eyed Ouellette. She eyed him back, and answered his unspoken skepticism: "Of course there are crazies out there who want the world to end. But there have to be a lot more people who don't, wouldn't you agree? And they'd be working just as hard."

There was something in her eyes that hadn't been there before. They almost shone.

He nodded. "But if this *is* a counteragent, why do you suppose they tried to shoot it down? And why deliver it suborbitally? Wouldn't it be more efficient to leave deployment to the local authorities?"

Ouellette rolled her eyes. "*What* local authorities?"

Clarke frowned. "Wouldn't someone have told—everybody? Wouldn't someone have told *you*?"

"Laurie, you make something like this too public and you're painting a bullseye on your chest for the M&Ms. As for missile defense—" Ouellette turned back to Lubin— "Did the people on your planet ever mention something called the Rio Insurrection?"

"Tell us about it," Lubin said. Thinking: *Laurie?*

"I can't, really," Ouellette admitted. "Nobody really knows what happened. They say maybe a bunch of Madonnas got into

CSIRA's Rio de Janeiro offices and went crazy. Launched attacks all over the place."

"Who won?"

"The good guys. At least, Rio got vaporized and the trouble stopped, but who knows? Some people say that it wasn't Lenies at all, it was some kind of civil war between rogue 'lawbreakers. But whatever it was, it was—way out there." She waved a hand at the horizon. "We had our own problems to deal with. And the only real moral of the story is, nobody knows who's running things any more, or whose side they're on, and we're all too busy hanging on by our fingernails to afford the time for any Big Questions. For all we know N'Am's battellites are running on autopilot, and ground control just lost the access codes. Or the Lenies are doing a little target practice. Or—or maybe the M&Ms have someone on the inside. The fact that something's shooting at these bugs doesn't prove anything, one way or another."

Lubin focused on that. "No proof."

"So I'm going to get some. I'm going to sequence the bug. Now are you going to let me drive back to the scene, or am I going to have to walk?"

Lubin said nothing. From the corner of his eye, he saw Clarke open her mouth and close it again.

"Fine." Ouellette proceeded to the back of her van and opened the access panel. Lubin let her extract a steriwrap cartridge and a collapsible stretcher with ground-effector coils built into the frame. She looked at him calmly: "It'll fit on this?"

He nodded.

Clarke held the folded device against Ouellette's back while the doctor cinched the shoulder straps. Ouellette nodded cursory thanks and started down the road, not looking back.

"You think she's wrong," Clarke said as the other woman dwindled, shimmering in the rising heat.

"I don't know."

"What if she isn't?"

"It doesn't matter."

"It doesn't matter." Clarke shook her head, almost amused. "Ken, are you crazy?"

Lubin shrugged. "If she can get a usable sample, we'll know whether it's  $\beta$ -max. Either way, we can drive to Bangor and use her credentials to get inside. After that it should be—"

"Ken, did you even hear what she just said? There could be a *fix*. For *Behemoth*."

He sighed.

"This is exactly why I didn't want you coming," he said at last. "You've got your own agenda, and it's not what we're here for. You get distracted."

"*Distracted?*" She shook her head, astonished. "I'm talking about saving the *world*, Ken. I don't think I'm *distracted* at all."

"No, you don't. You think you're damned."

Instantly, something in her shut down.

He pushed on anyway. "I don't agree, for what it's worth."

"Really." Clarke's face was an expressionless mask.

"I'd say you're only obsessed. Which is still problematic."

"Go on."

"You think you destroyed the world." Lubin looked around at the scorched landscape. "You think this is all your fault. You'd give up the mission, your life, mine. In an instant. Just so long as you saw the slightest chance of salvation. You're so sick of the blood on your hands you'd barely notice that you were washing it off with even more."

"Is that what you think."

He looked at her. "Is there anything you *wouldn't* do, then? For the chance to take it all back?"

She held his gaze for long seconds. Finally she looked away.

Lubin nodded. "You've personalized the Greater Good in a way I've never seen in a baseline human before. I wonder if your brain hasn't concocted its own form of Guilt Trip."

She stared at the ground. "It doesn't change anything," she whispered at last. "Even if my motives are—personal..."

"It's not your motives that worry me. It's your judgment."

"We're still talking about saving the world."

"No," he said. "We're talking about someone *else*, *trying* to—*possibly*. We're talking about an entire country or consortium, far better-equipped and better-informed than two hitchhikers from the

Mid Atlantic Ridge. *And*—" holding up his hand against her protest—"we are *also* talking about *other* powerful forces who *may* be trying to stop them, for reasons we can only guess at. Or perhaps for no reason at all, if Ouellette's speculations are correct. We're not players in this, no matter how desperately you wish we were."

"We've always been players, Ken. We've just been too scared to make a move for the past five years."

"And things have changed during that time."

She shook her head. "We have to try."

"We don't even know the rules any more. And what about the things we *can* change? What about Atlantis? What about the rifters? What about *Alyx*? Do you really want to throw away any chance of helping them in favor of a lost cause?"

He knew the instant he said it that he'd miscalculated. Something flared in her, something icy and familiar and utterly unswayable. "How *dare* you," she hissed. "You never gave a shit about *Alyx* or *Grace* or—or even *me*, for that matter. You were ready to kill us all, you switched sides every time the odds changed." Clarke shook her head in disgust. "How *dare* you talk about *loyalty* and *saving lives*. You don't even know what that *means* unless someone feeds it to you as a mission parameter."

He should have known it would be no use arguing with her. She wasn't interested in assessing the odds of success. She wasn't even balancing payoffs, weighing Atlantis against the rest of the world. The only variables she cared about came from inside her own head, and neither guilt nor obsession were amenable to cost-benefit analysis.

Even so, her words provoked a strange feeling in his throat.

"Lenie, I didn't mean—"

She held up her hand and refused to meet his eyes. He waited.

"Maybe it's not even your fault," she said after a while. "They just built you that way."

He allowed himself the curiosity. "What way?"

"You're an army ant. You just bull ahead with your feelers on the ground, following your *orders* and your *mission profiles* and

your *short-term objectives*, and it never even occurs to you to look up and see the big picture."

"I see it," Lubin admitted softly. "It's very much bigger than you seem willing to admit."

She shook her head, still not looking at him.

He tried again. "Very well. You know the big picture: what do *you* suggest we do with that information? Can you offer anything beyond wishful thinking? Do you have any kind of strategy for *saving the world*, as you put it?"

"I do," said Taka Ouellette.

They turned. She stood back beside the MI, arms folded. She'd obviously ditched the stretcher and circled back while they weren't looking.

Lubin blinked in astonishment. "Your sample—"

"From that warhead you found? Not a chance. The tracers would've metabolized any active agent down to the atoms."

Clarke shot him a look, clear as binary even through the frosting on her eyes: *Not quite on your game, superspy? Letting some dick-ass country doctor sneak up on you?*

"But I know how we can *get* a sample," Ouellette continued, looking straight at Clarke. "And I could use your help."

## MIGRATION

Obviously she had come late to the conversation. If she had heard the way it started, Clarke knew, Taka Ouellette wouldn't have wanted anything to do with her.

The good doctor had contacts on the ground, so she said. People she'd saved, or bought time for. The loved ones of those whose suffering she'd ended. Occasional dealers, wildland hustlers who could sometimes conjure up drugs or spare parts to be weighed against other items in trade. They were the furthest thing from altruists, but they could be life-savers when the closest resupply lifter was a week away.



All of them had a healthy sense of self-interest. All of them knew others.

Lubin remained skeptical, of course. Or at least, Clarke thought, he continued to *act* skeptical. It was part of his schtick. It had to be. Nobody would honestly turn their back on the chance, however faint, to undo even a part of what—

—*what I set in motion...*

There was the rub, and Lubin—God damn him—knew it as well as she did. Once you've helped destroy the world, once you've taken fierce stinging pleasure in its death throes, it's not easy to claim the moral high ground over someone who's merely reluctant to *save* it. Even if it's been a while. Even if you've changed in the meantime. If there's a Statute of Limitations on terracide, there's no way it expires after a lousy five years.

Taka Ouellette had proposed a southern course towards whatever was left of Portland; and even if there was no way into the datapipe from there, Boston would be that much closer. Besides, Ouellette was an *official person* in these parts, someone with recognized credentials and identity. Almost an authority figure, by local standards. She might even be able to walk them in through the front door.

"Authority figures don't drive around handing out derms from the back of a truck," Lubin said.

"Yeah? And what have your efforts netted us lately? You still think you can hack into the global nervous system when all the back-door nerves have been burned away?"

In the end he agreed, with conditions. They would go along with Ouellette's plan so long as it took them in the right direction. They would make use of her MI after every counterintrusion device had been ripped out of the cab; he would ensure her cooperation while she advised Clarke on the necessary monkeywork.

The MI's cab was a marvel of spatial economy. Twin cots folded down in the space behind the seats, and a little shower/head cubicle squeezed into the rear wall between a Calvin cycler and the forward medical interface. But what really amazed Clarke was the number of booby traps infesting the place. There were gas

canisters hooked into the ventilation system. There were taser needles sheathed in the seat cushions, ready to shoot through flesh and insulative clothing at a word or a touch. There was a photic driver under the dash, a directional infrared strobe that could penetrate closed eyelids and induce seizures. Taka Ouellette itemized them all, Lubin standing at her back, while Clarke scrambled about with a toolkit and pulled the plugs. Clarke had no way of knowing if the list was comprehensive—for all she knew, Ouellette was leaving an ace up her sleeve against future necessity—but Lubin was a lot less trusting than she was, and Lubin seemed satisfied.

It took them an hour to disarm the cab. After Ouellette asked if they wanted to disable external security as well, she actually seemed disappointed when Lubin shook his head.

They split up. Lubin would pilot *Phocoena* down the coast and try to access Portland independently; Clarke, keeping a copy of the β-max sequence close to her chest, would accompany Ouellette towards a rendezvous near one of her regular waypoints.

"Don't tell her about β-max before you have to," Lubin warned, safely out of Ouellette's earshot.

"Why not?"

"Because it defeats the only defense anyone's ever been able to muster against βehemoth. The moment she realizes something like that exists, her priorities are going to turn upside down."

Clarke was initially surprised that Lubin would let either of them out of his sight; he wasn't fond of potential security breaches even without his kill reflex engaged, and he knew Clarke was chafing against his mission priorities. He wasn't a trusting soul at the best of times; how did he know that the two women wouldn't simply turn inland and abandon him altogether?

It was only when they'd gone their separate ways that the obvious answer occurred to her. Of course, he'd been hoping for that very thing.

They drove through a land blasted and scoured clean of any live thing. The MI, built for rough terrain, climbed over fallen tree

trunks that crumbled beneath its wheels. It navigated potholes filled with ash and soot, drove straightaways where swirls and gusts of gray powder swept across the refrozen asphalt like tiny Antarctic blizzards, centimeters high. Twice they passed deranged billboards half-melted against the rock, their lattices warped and defiantly semifunctional, advertising nothing now but the flickering multicolored contours of their own heat stress.

After a while it began to rain. The ash congealed like paste on the ground, stuck to the hood like blobs of papier maché. Some of those blobs were almost heavy enough to thwart the windshield, leaving light smudges on the glass before the static field bounced them away.

They didn't exchange a word during that whole time. Unfamiliar music filled the silence between them, archaic compositions full of clonking pianos and nervous strings. Ouellette seemed to like the stuff, anyway. She focused on driving while Clarke stared out the window, reflecting on the allocation of damage. How much of this devastation could be laid at her door? How much at the doors of demons who'd adopted her name?

Eventually they left the scorched zone behind. Now there was real grass at the side of the road, occasional shrubs poking the ditches further back, real evergreens looming like ranks of ragged, starving stickmen on the other side. Mostly brown, of course, or turning brown, as though in the grip of a great endless drought.

This rain wouldn't help them. They were hanging on—some even flew flags of hardy, defiant green from their limbs—but Behemoth was everywhere, and it was implacable, and it had all the time in the world. Sometimes it massed so abundantly that it was visible to the naked eye: patches of ochre mould smothering the grass, or spreading across the trunks of trees. And yet, the sight of all this vegetation—not truly alive, perhaps, but at least physically *intact*—seemed cause for some small celebration after the charnel house they'd just escaped.

"So, do you ever take those out?" Ouellette wondered.

"Sorry?" Clarke brought herself back to the moment. The doctor had gone to autopilot—a simple follow-the-road mode, with no dangerous navigational forays into GPS.

"Those caps on your eyes. Do you ever...?"

"Oh. No. Not usually."

"Nightshades? Let you see in the dark?"

"Sort of."

Ouellette pursed her lips. "I remember seeing those, years ago. All over the place, just before everything went bad. They were really popular for about twenty minutes."

"They still are, where I come from." Clarke looked out the rain-spattered side window. "With my tribe, anyway."

"Tribe? You're not all the way from Africa?"

Clarke snorted softly. "Fuck no." *Only about half the way, actually...*

"Didn't think so. You don't have the melanin, not that that means much these days of course. And the Tutsis wouldn't be over here anyway, except maybe to gloat."

"Gloat?"

"Not that you can blame them, mind you. There's barely anyone left over there more than forty years old. Firewitch is pure poetic justice as far as they're concerned."

Clarke shrugged.

"So if not Africa," Ouellette said, pushing it, "maybe you're from Mars."

"Why would you say that?"

"You're definitely not from around here. You thought Miri was an ambulance." She patted the dashboard affectionately. "You don't know about the Lenies—"

Clarke clenched her teeth, suddenly angry. "I know about them. Nasty evolving code that lives in the Maelstrom and raises shit. Vengeance icon for a bunch of countries that hate your guts. And while we're on the subject, maybe you could explain how *you* came to be blundering around handing out derms and mercy-kills while the whole eastern hemisphere is trying to lob a cure for  $\beta$  ehemoth onto your head? Not being from Mars doesn't seem to have kept *you* all that up-to-speed on current events."

Ouellette watched her curiously for a moment. "There you go again."

"*What?*"

"*Maelstrom*. It's been years since I heard anyone use that word."

"So what? What difference does it make?"

"Come on, Laurie. You show up in the middle of nowhere, you hijack my van, neither of you is *normal* by any stretch of the imagination—I mean, of *course* I want to know where you came from."

Clarke's anger faded as suddenly as it had flared. "Sorry."

"In fact, given that I still seem to be some kind of honorary prisoner, you could even say you owe me an explanation."

"We were hiding," Clarke blurted out.

"Hiding." Ouellette didn't seem surprised. "Where is there to hide?"

"Nowhere, as it turns out. That's why we came back."

"Are you a corpse?" Ouellette asked.

"Do I look like one?"

"You *look* like some kind of deep-sea diver." She gestured at the vent on Clarke's chest. "Electrolysis intake, right?"

Clarke nodded.

"So I guess you've been underwater all this time. Huh." Ouellette shook her head. "I'd have guessed geosynch, myself."

"Why?"

"It was just one of the rumors going around. Back when the witch was just getting started, and the riots were taking off—this thread started growing, that a few hundred high-powered corpses had vanished off the face of the earth. I don't know how you'd ever prove something like that, nobody ever saw those people in the flesh anyway. They could've all been sims for all we knew. Anyway, you know how these things get around. The word was they'd all jumped offworld from Australia, and they were all nice and comfy up in geosynch watching the world come down."

"I'm not a corpse," Clarke said.

"But you work for them," Ouellette guessed.

"Who didn't?"

"I mean recently."

"Recently?" Clarke shook her head. "I think I can honestly say that neither Ken nor I—*Christ!*"

It jumped out from some hiding place under the dash, all segments and clicking mandibles. It clung to her knee with far too many jointed limbs, a grotesque hybrid of grasshopper and centipede the size of her little finger. Her hand came down of its own accord; the little creature splattered under her palm.

"*Fuck*," she breathed. "What *was* that?"

"Whatever it was, it wasn't doing *you* any harm."

"I've never seen anything like—" Clarke broke off, looked at the other woman. Ouellette actually looked pissed.

"That wasn't—that wasn't a pet or anything, was it?" It seemed absurd. *Then again, it wouldn't be any crazier than keeping a head cheese.*

*I wonder how she's doing...*

"It was just a bug," Ouellette said. "It wasn't hurting anybody."

Clarke wiped her palm against her thigh; chitin and yellow goop smeared across the diveskin. "That just—that was *wrong*. That wasn't like any bug I've ever seen."

"I keep telling you. You're behind the times."

"So these things are old news?"

Ouellette shrugged, her irritation apparently subsiding. "They're starting to show up here and there. Basically, regular bugs with too many segments. Some kind of Hox mutation, I'd guess, but I don't know if anybody's looked at them all that closely."

Clarke looked at the sodden, withering landscape scrolling past the window. "You seem pretty invested in a—a bug."

"What, things aren't dying fast enough for you? You have to help them along?" Ouellette took a breath, started over. "Sorry. You're right. I just—you kind of empathize with things after a while, you know? Spend enough time out here, everything seems—valuable..."

Clarke didn't answer. The vehicle navigated a fissure in the road, wobbling on its ground-effect shocks.

"I know it doesn't make much sense," Ouellette admitted after a while. "It's not like Behemoth changed much of anything."

"What? Look out the window, Tak. Everything's dying."

"That was happening anyway. Not as fast, maybe."

"Huh." Clarke regarded the other woman. "And you really think someone's throwing a cure over the transom."

"For Human stupidity? No such thing, I suspect. But for  $\beta$  ehemoth, who knows?"

"How would that work? I mean, what haven't they already tried?"

Ouellette shook her head, laughing softly. "Laurie, you give me way too much credit. I don't have a clue." She thought a moment. "Could be a Silverback Solution, I suppose."

"Never heard of it."

"Few decades ago, in Africa. Hardly any gorillas left, and the natives were eating up the few that remained. So some conservation group got the bright idea of making the gorillas inedible."

"Yeah? How?"

"Engineered Ebola variant. Didn't harm the gorillas, but any human who ate one would bleed out inside seventy-two hours."

Clarke smiled, faintly impressed. "Would that work for us?"

"It'd be tough. Germs evolve countermeasures a lot faster than mammals."

"I guess it didn't work for the gorillas either."

Ouellette snorted. "It worked *way* too well."

"So how come they're extinct?"

"We wiped them out. Unacceptable risk to Human health."

Rain pelted against the roof of the cab and streaked along the side windows. Up front, the drops hurtled at the windshield and veered impossibly off-target, centimeters from impact.

"Taka," Clarke said after a few minutes.

Ouellette looked at her.

"Why don't people call it *Maelstrom* any more?"

The doctor smiled faintly. "You do know why they called it that in the first place, right?"

"It got...crowded. User storms, e-life."

Ouellette nodded. "Most of that's gone now. So much of the actual network has degraded, physically, that most of the wildlife went extinct from habitat loss. This side of the wall, anyway—

they partitioned N'amNet off years ago. For all I know it's still boiling along everywhere else, but around here—"

She looked out the window.

"Here, the Maelstrom just moved outside."

## KARMA

Achilles Desjardins woke to the sound of a scream.

It had died by the time he was fully awake. He lay in the darkness and wondered for a moment if he had dreamt it; there had been a time, not so long ago, when his sleep had been filled with screams. He wondered if perhaps the scream had been his, if he had awakened himself—but again, that hadn't happened in years. Not since he'd become a new man.

Or rather, not since Alice had let the old one out of the cellar.

Awake, alert, he knew the truth. The scream had not risen from his mind or his throat; it had risen from machinery. An alarm, raised in one instant and cut off the next.

Odd.

He brought up his inlays. Outside his skull, the darkness persisted; inside, a half-dozen bright windows opened in his occipital cortex. He scrolled through the major feeds, then the minor ones; he sought threats from the other side of the world, from orbit, from any foolhardy civilian who might have blundered against the fence that guarded his perimeter. He checked the impoverished cluster of rooms and hallways that his skeletal day staff had access to, although it was barely 0400 and none of them would be in so early. Nothing in the lobby, the Welcome Center, the kennels. Loading bays and the physical plant were nominal. No incoming missiles. Not so much as a plugged sewer line.

He had heard something, though. He was sure of that. And he was sure of something else, too: he had never heard this particular alarm before. After all these years, the machines that surrounded him had become more than tools; they were friends, protectors,



advisers and trusted servants. He knew their voices intimately: the soft beeping of his inlays, the reassuring hum of Building Security, the subtle, multi-octave harmonics of the threat stack. This alarm hadn't come from any of them.

Desjardins threw back the sheet and rose from his pallet. Stonehenge loomed a few meters away, a rough horseshoe of workstations and tactical boards glowing dimly in the darkness. Desjardins had a more official workspace, many floors above; he had official live-in quarters too, not luxurious but far more comfortable than the mattress he'd dragged down here. He still used those accommodations now and then, for official business or other occasions when appearances mattered. But this was the place he preferred: secret, safe, an improvised nerve center rising from a gnarled convergence of fiber optic roots growing in from the walls. This was his throne room and his keep and his bunker. He knew how absurd that was, given the scope of his powers, the strength of his fortifications—but it was here, in the windowless subterranean dark, where he felt safest.

Scratching himself, he plunked down onto the chair in the center of Stonehenge and began scanning the hardline intel. The world was full of yellow and red icons, as always, but nothing acute. Certainly nothing to warrant an audible alert. Desjardins dumped everything into a single events list and sorted on time; whatever had happened, had *just* happened. He scrolled down the list: CAESAR meltdown in Louisville, static-field failure in Boulder, minor progress re-establishing his surveillance links down along the Panhandle. More chatter about mutant bugs and weeds spreading up from the Panama line...

Something touched him, lightly, on the leg. He looked down.

Mandelbrot stared up at him with one eye. The other was gone, a dark sticky hole in a face torn half away. Her flank was slick and black in the gloomy half-light. Viscera glistened through matted fur.

The cat swayed drunkenly, her forepaw still upraised. She opened her mouth. With a silent *miaow*, she toppled.

*Oh God no. Oh please God no.*

He made the call even before bringing up the lights. Mandelbrot lay bleeding into a puddle of her own insides.

*Oh Jesus, please. She's dying. Don't let her die.*

"Hi," the tac board chirped. "This is Trev Sawyer."

The fuck it was. It was an interactive, and Desjardins didn't have time to waste dicking around with dialog trees. He killed the call and accessed the local directory. "My vet. Home number. Kill any overrides."

Somewhere in Sudbury, Sawyer's watch started ringing.

*You got into the kennel, again, didn't you? Mandelbrot lay on her side, chest heaving. Stupid cat, you never could resist taunting those monsters. You just figured—oh God, it's amazing you even made it back.*

*Don't die. Please don't die.*

Sawyer wasn't answering. *Answer your watch, you stumpfucking idiot! This is an emergency! Where the fuck can you be at four a.m.?*

Mandelbrot's paws twitched and flexed as if dreaming, as if electrified. Desjardins wanted to reach out, to staunch the flow or straighten the spine or just *pet* her for Chrissakes, offer whatever pitiful comfort he could. But he was terrified that any inexperienced touch might just make things worse.

*It's my fault. It's my fault. I should have scaled back your clearance, you're just a cat after all, you don't know any better. And I never even bothered to learn what your alarm sounded like, it just never occurred to me that I wouldn't—*

Not a dream. Not a Worldwatch alert. Just a veterinary implant talking to his wristwatch: a brief scream as Mandelbrot's vitals lurched into the red, then silence as teeth or claws or sheer shocking inertia reduced signal to noise.

"Hello?" muttered a sleepy voice in mid-air.

Desjardins's head snapped up. "This is Achilles Desjardins. My cat's been mauled by—"

"What?" Sawyer said thickly. "Do you have any idea what *time* it is?"

"I'm sorry, I know, but this is an emergency. My cat's—oh God, she's torn apart, she's barely alive, you've got to—"

"Your *cat*," Sawyer repeated. "And why are you telling me?"

"I—you're Mandelbrot's vet, you—"

The voice was icy: "I haven't been *anyone's* veterinarian in over three years."

Desjardins remembered: N'Am's vets had all been conscripted into human service when Behemoth—and the thousand opportunistic bugs riding its coattails—had overwhelmed the health-care system. "But you're still, I mean, you still know what to—"

"Mr. Desjardins, forget the hour. Do you even know what *year* it is?"

Desjardins shook his head. "What are you talking about? My cat's lying on the floor with her—"

"It's five years after the dawn of the Firewitch Era," Sawyer continued in a cold voice. "*People* are dying, Mr. Desjardins. By the *millions*. Every day. To even waste *food* on a mere animal, under these circumstances, is scandalous. To expect me to spend time and resources saving an injured *cat* is nothing short of obscene."

Desjardins eyes stung. His vision blurred. "Please—I can help you. I can. I'll get your cycluser ration doubled. I can get you unlimited water. I can get you into fucking *geosynch* if that's what you want, you and your family. Anything. Just name it."

"Very well: stop wasting my time."

"*Do you even know who I am?*" Desjardins cried.

"I certainly do. And I'm astonished that any 'lawbreaker—let alone one of your evident stature—would have such completely misplaced priorities. Aren't you supposed to be immune to this sort of thing?"

"Please—"

"Good *night*, Mr. Desjardins."

*Disconnect*, added a little icon in a corner of one screen.

Blood bubbled at the corner of Mandelbrot's mouth. Her inner lid slid halfway across that one bloodied eyeball and retracted.

"Please," Desjardins whimpered. "I don't know what to..."

*Yes you do.*

He bent over her, reached out a hand, pushed tentatively at a bulging loop of intestine. A spasm shuddered through Mandelbrot like a passing spirit. She meowed faintly.

"I'm sorry...I'm sorry..."

*You know what to do.*

He remembered Mandelbrot latching on and biting his father's ankle when the old man had come by to visit back in '48. He remembered Ken Lubin, standing in Desjardins's bathroom in his underpants, scrubbing his trousers in the sink: "Your cat pissed on me," he'd said, a hint of grudging respect in his voice. He remembered a thousand nights pinned on his bed, bladder full to bursting but unwilling to disturb the furry sleeping lump on his chest.

*You know.*

He remembered Alice showing up at work, her lacerated hands struggling to hang on to a scrawny, hissing kitten that wasn't taking any shit from *anybody*: "Hey Killjoy, want a watch-cat? Chaos made flesh, she is. Reversible ears, needs no batteries, guaranteed not to let *anyone* past your front door with all their body parts..."

*You know.* Mandelbrot convulsed again.

He knew.

There was nothing nearby he could use—no injectables, no gas, no projectiles. All of that stuff was loaded into the booby traps and would take far too long to extract. The room was a stripped-down shell of bone-gray walls and fiberop vines. The neuroinduction field would...*hurt*...

*Just a fucking brick*, he thought, swallowing against the grief in his throat. *Just a rock, they're all over the place outside...*

No time. Mandelbrot wasn't even living any more, she hadn't been living since she'd started back from the kennels. All she was doing was *suffering*. And all Desjardins could do was end that.

He raised his foot over her head. "You and me, Brotwurst," he whispered. "We had higher clearance than anyone inside a thousand clicks..."

Mandelbrot purred once. Something sagged in her as she left. Whatever remained lolled bonelessly on the floor.

Desjardins kept his foot raised a moment, just in case. Finally he brought it back to the concrete floor. Mandelbrot had never been one to yield the initiative.

"Thank you," whispered Achilles Desjardins, and wept at her side.

Dr. Trevor Sawyer woke for the second time in as many hours. A dark shape hung over his head like a great fist. It hissed softly, a hovering reptile.

He tried to rise. He couldn't; his arms and legs wobbled like unresponsive rubber. His face tingled, his jaw hung slack as cooked pasta. Even his tongue felt swollen and flaccid, sagging loose and immovable in his mouth.

He stared up at the ovoid shape above the bed. It was a great dark Easter egg hanging in the air, half as long as he was, and wider. Its belly was disfigured by ports and blisters, barely-discernible, reflecting slivers of gray half-light from the hallway.

The hissing subsided. Sawyer felt a trickle of drool worm onto his cheek from the corner of his mouth. He tried to swallow, and failed.

He was still breathing. That was something.

The Easter egg clicked softly. A faint, almost subsonic hum emanated from somewhere nearby—either a ground-effect field, or the static of nerves misfiring in his own cochleae.

It couldn't be neuroinduction. A botfly would never even get off the ground carrying coils that heavy. *Neuromuscular block of some kind*, he realized. *It gassed me.*

*It gassed us...*

He willed his head to turn. It lay like a ten-kilogram rock on the pillow, defying him. He couldn't move his eyes. He couldn't even blink.

He could hear Sandra beside him, though, breathing fast and shallow. She too was awake.

"Went right back to sleep, I see," the botfly remarked in a familiar voice. "Didn't lose a wink over it, did you?"

*Desjardins...?*

"It's okay, though," the machine went on. "Turns out you were right. Here, let me give you a hand..."

The botfly tilted nose-down and descended until it was literally nuzzling Sawyer's cheek. It nosed him gently, like a hungry pet pestering its master for food. Sawyer's head lolled sideways on the pillow, stared past the edge of the bed to the crib against the far wall, barely visible in the gloom.

*Oh God, what—*

This couldn't be happening. Achilles Desjardins was a 'lawbreaker, and 'lawbreakers—they simply didn't *do* this sort of thing. They *couldn't*. Nobody had ever admitted it officially, of course, but Sawyer was connected, he knew the scoop. There were—restraints, right down at the biochemical level. To keep 'lawbreakers from misusing their power, to keep them from doing exactly what—

The robot floated across the bedroom. It came to rest about a meter over the crib. The thin crescent of a rotating lens glinted on its belly, focusing.

"Kayla, isn't it?" the botfly murmured. "Seven months, three days, fourteen hours. I say, Dr. Sawyer. Your genes must be *very* special, to justify bringing a child into such a shitty world. I bet it pissed off the neighbors something awful. How'd you get around the pop-control statutes?"

*Please, Sawyer thought. Don't hurt her. I'm sorry. I—*

"You know, I bet you cheated," the machine mused. "I bet this pissy little larva shouldn't even *be* here. Ah well. Like I said before, you were right. About real people. They really do die all the time."

*Please. Oh dear God give me strength, let me move, at least give me strength enough to beg—*

Bright as the sun, a fiery proboscis licked down through the darkness and set Kayla alight.

The botfly turned and regarded Trevor Sawyer through a dark cyclopean eye, while his child screamed and blackened.

"Why, there goes one now," it remarked.

"For Mandelbrot," Desjardins whispered. "In memory."

He freed the botfly to return to its appointed rounds. It would not be able to answer any of the inevitable questions resulting from this night, even in the unlikely event that anyone could trace it back to the honeycombed residential warren at 1423-150 Cushing Skywalk. Even now it could only remember a routine patrol along its prescribed transect; that was all it *would* remember, until a navigational malfunction sent it on a suicidal corkscrew into the no-go zone around Sudbury's main static-field generator. There wouldn't be enough left afterwards to reconstruct so much as a lens cluster, let alone an event log.

As for the bodies themselves, even the most superficial investigation would reveal telling indications of Trevor Sawyer's resentment over his forcible conscription into the Health Corps, and previously-unsuspected family ties to the M&M regime recently risen to power in Ghana. Nobody would waste time asking questions after that; those associated with the Madonna's New Order were notorious for their efforts in bringing down the old one. With Sawyer's hospital clearance and medical expertise, the damage he could have done to the law-abiding members of the community was incalculable. Sudbury was better off without him, whether he'd been killed by his own or whether some vigilant 'lawbreaker, near or far, had tracked him to his lair and terminated his terrorist activities with extreme prejudice.

It wasn't as though these kind of surgical strikes didn't happen all the time. And if some 'lawbreaker *was* behind it, it was—by definition—all for the best.

One more item checked off the *to-do* list. Desjardins wrapped Mandelbrot in his t-shirt and headed outside, cradling the bloody bundle against his bare chest. He was drowning in a vortex of emotion; he was empty inside. He tried to resolve the paradox as he ascended to ground level.

Grief, of course, for the loss of a friend he'd had for almost ten years. Satisfaction for the price exacted in return. And yet—he had hoped for more than this grim sense of a debt restored. He had hoped for something more fulfilling. Joy, perhaps, at the sight of Trevor Sawyer watching his wife and child burn alive. Joy at the

sight of Sawyer's own immolation, flesh crisping from the bones, eyeballs bursting like great gelatinous grubs boiled in their sockets, knowing even there at the end, feeling it all, he'd never even found the strength to whimper.

Joy eluded Desjardins. Granted he'd never felt it any of the other times he'd balanced the books, but he had hoped for more this time. Certainly, the cause had been more heartfelt. But still: only grief, and satisfaction, and—and something else, something he couldn't quite put his finger on...

He stepped outside. Pale morning light rose on all sides. Mandelbrot was growing cold and stiff in his arms.

He took a few steps and turned to look up at his castle. It loomed huge and dark and ominous against the brightening sky. Before Rio, a small city's worth of would-be saviors had labored there. Now it was all his.

*Gratitude*, he realized, astonished. That's what he felt. Gratitude for his own grief. He still loved. He could still *feel*, with all his heart. Until this night and this loss, he had never been completely sure.

Alice had been right all along. *Sociopath* was far too small a word to contain whatever it was he had become.

Perhaps he'd go and tell her, once he'd laid beloved Mandelbrot to rest.

## DISARMOR

LEAVE CADAVERS HERE ONLY  
UNAUTHORIZED DISPOSAL WILL BE PROSECUTED  
N'AMAt/CSIRA BIOHAZARDS STATUTE 4023-A-25-SUB5

It was a three-walled enclosure, open to the sky, south of the 184 just outside Ellsworth. The sign had been sprayed onto the inside of the rear wall; the smart paint cycled through a half dozen



languages, holding on each for a few seconds in turn. Clarke and Ouellette stood at the open side, looking in.

The grated floor was crusted with old lime, cracked and scaling like a dried-up desert lake bed. It was obviously years since it had been replenished. Four bodies lay on that substrate. One had been carefully set to rest with its arms folded across its chest; it was bloated and black, squirming with maggots beneath a nimbus of flies. The other three were desiccated and disarrayed, like clumps of leaves strewn about and abandoned by a strong wind. Limbs and one head were missing.

Ouellette gestured at the sign. "They actually gave a damn back in the old days. People would end up in jail for burying their loved ones in the back rose garden. Endangering the public health." She grunted, remembering. "They couldn't stop Behemoth. They couldn't stop the coattail plagues. But at least they could lock up some poor old woman who hadn't wanted to see her dead husband go up in flames."

Clarke smiled faintly. "People like to feel, what's the word..."

"Proactive," Ouellette suggested.

"That's it."

Ouellette nodded. "To give them their due, though, it *was* a problem back then. There were a lot more bodies lying around—they were stacked up to your shoulder, even out here. For a while, cholera was killing more people than Behemoth."

Clarke eyed the structure. "Why stick it way out here?"

Ouellette shrugged. "They had them *everywhere*."

Clarke stepped into the enclosure. Ouellette put a restraining hand on her shoulder. "You better stick with the older ones. There's no end to the things you could catch off that fresh one."

Clarke shrugged off the hand. "What about you?"

"I'm broad-spectrumed up to here. There's not much that can get me."

The doctor approached the cadaver from upwind, for all the good it did; the light breeze wasn't nearly enough to dispel the stench. Clarke, keeping the greater distance, fought the urge to gag and closed on her own assignment of body parts. She held out her can of steriwrap like a crucifix and pressed the stud; the wizened,

one-legged body at her feet glistened as the aerosol laminate hardened on its surface.

"These are actually in pretty good shape," Ouellette remarked, spraying down her own corpse. "Not so long ago you had to check twice a week if you wanted to find a leg bone connected to a knee bone. Scavengers had a field day." She was spraying it on thick, Clarke noted without surprise. She might be immune to whatever diseases festered in that body, but it still wasn't going to be any treat to carry it around.

"So what changed?" Clarke asked.

"No more scavengers."

Clarke rolled the mummified remains with her foot and sprayed down the other side. The wrap hardened in seconds. She scooped the shrouded body into her arms. It was like carrying a loose bundle of firewood. The steriwrap squeaked faintly against her diveskin.

"Just feed it into Miri," Ouellette told her, still spraying. "I've already changed the settings."

The MI's tongue stuck out to starboard. Crinkly silver foil lined its throat. Clarke set the remains on the pallet; the tongue began to retract as soon as the weight had settled. Miri swallowed and closed her mouth.

"Do I have to do anything?" Clarke called.

"Nope. She knows the difference between a live body and a dead one."

A deep, almost subsonic hum sounded briefly from within the MI.

Ouellette dragged a humanoid cocoon from the compound. Its bloated features had vanished entirely under layers of fibrous plastic, as though Ouellette were some monstrous spider given to gift-wrapping prey. The surface of the shroud was peppered with the bodies of trapped insects, half-embedded. They twitched, dying, against their constraints.

Clarke reached out to give Ouellette a hand. Something *sloshed* faintly as the weight shifted between them. Miri opened her mouth—empty again—and belched hot, dusty breath into Clarke's face.

The tongue extended as though from some enormous, insatiable baby bird.

"Can your skin breathe in that thing?" Ouellette asked over Miri's second helping.

"What, my diveskin?"

"Your *real* skin. Can it breathe under all that copolymer?"

"Copolymer's pretty much what I've worn for the past five years. Hasn't killed me yet."

"It can't be good for you, though. It was designed to keep you alive in the deep sea; I can't imagine it's healthy to wear it in an atmosphere all the time."

"Don't see why not." Clarke shrugged. "It breathes, it thermoregulates. Keeps me nice and homeostatic."

"In *water*, Laurie. Air has completely different properties. If nothing else, I bet you've got a Vitamin K deficiency."

"I'm fine," Clarke said neutrally..

The MI hummed contentedly.

"If you say so," Ouellette said at last.

Miri gaped for more.

They plotted their course by derelict road signs and inboard maps. Ouellette steadfastly refused to go online. Clarke had to wonder at the stops marked along their route. Belfast? Camden? Freeport? They'd barely been dots on a map even before the world ended: why not go to Bangor, just a few clicks to the north? That was where the people would be.

"Not any more," Ouellette said, raising her voice above a frenetic orchestral seesaw she'd attributed to some Russian maniac called *Prokofiev*.

"Why not?"

"*Cities are the graveyard of Mankind.*" It had the ring of a quote. "There was this threshold, I don't remember what it was exactly. Some magic number of people per hectare. Any urban center was way up on the wrong side of it. Something like  $\beta$  ehemoth, set loose in a high-density urban area—not to mention all the ancillary pathogens that hitched a ride in its wake—it takes off

like a brush fire. One person sneezes, a hundred get sick. Germs love crowds."

"But small towns were okay?"

"Well, not *okay*, obviously. But things didn't spread as fast—the spread's still going on, actually. The towns were small and seasonal, and the areas in between were pretty much owned by the whitecaps." Ouellette gestured at the withering foliage scrolling past the windshield. "This was all privately owned. Rich old rs and Ks who didn't mingle, had good medical. They're gone now too, of course."

*Gone to Atlantis*, Clarke surmised. *Some of them, anyway.*

"So the big cities had exactly two choices when Firewitch came calling," Ouellette continued. "They could either throw up the barricades and the static-field generators, or they could implode. A lot of them couldn't afford generators, so they imploded by default. I haven't been to Bangor since fifty-three. For all I know they never even cleaned up the bodies."

They got their first live customers at Bucksport.

They pulled off the main drag at about two a.m., next to a Red Cross Calvin cycler with a worrisome yellow telltale winking from its panel. Ouellette examined it by the light of an obsolete billboard, running on stored solar, that worked ceaselessly to sell them on the benefits of smart cloth and dietary proglottids.

"Needs restocking." She climbed back into Miri and called up a menu.

"I thought they got everything they needed from the air," Clarke said. That's what photosynthesis *was*, after all—she'd been amazed to discover how many complex molecules were nothing more than various combinations of nitrogen, carbon, and oh-two.

"Not trace elements." Ouellette grabbed a cellulose cartridge, its compartments filled with red and ochre paste, from the dispensing slot. "This one's low on iron and potassium."

The billboard was still hawking its nonexistent wares the next morning when Clarke squeezed herself into Miri's toilet cubicle.

When she came out again, two silhouettes were plastered against the windshield.

She stepped carefully over Ouellette and climbed up between the bucket seats. Two Hindian boys—one maybe six, the other verging on adolescence—stared in at her. She leaned forward and stared back. Two pairs of dark eyes widened in surprise; the younger boy emitted a tiny yelp. The next second both had scampered away.

"It's your eyes," Ouellette said behind her.

Clarke turned. The doctor was sitting up, hugging the back of the driver's seat from behind. She blinked, gummy-eyed in the morning light.

"And the suit," she continued. "Seriously, Laurie, you look like some kind of cut-rate zombie in that get-up." She reached behind her and tapped the locker in the rear wall. "You could always borrow something of mine."

She was getting used to her alias. Ouellette's unsolicited advice was another matter.

A half-dozen people were already lined up when they climbed out into daylight. Ouellette smiled at them as she strode around to the back of the vehicle and lifted the awning. Clarke followed, still sleepy; Miri's mouths opened as she passed. The throat's silver lining had withdrawn, exposing a grid of sensor heads studding the cylindrical wall behind.

Icons and telltales flickered across the panel on Miri's backside. Ouellette played them with absent-minded expertise, her eyes on the accumulating patients. "Everybody's standing, nobody's bleeding. And no obvious cases of Behemoth. Good start."

Half a block behind the billboard, the two children Clarke had surprised pulled a middle-aged woman into sight around the corner of a long-defunct restaurant. She moved at her own pace, resisting her children as though they were eager dogs straining to slip the leash. Further down the road, picking his way across scattered debris and asphalt-cracking clumps of grass, a man limped forward on a cane.

"We just got here," Clarke murmured.

"Yup. Usually I blast the music for a couple of minutes, just to let people know. But a lot of the time it isn't even necessary."

Clarke panned the street. A dozen now, at least. "Somebody really spread the word."

"And that," Ouellette told her, "is how we're going to win."

Bucksport was one of Ouellette's regular stops. The locals knew her, or at least knew of her. She knew them, and ministered unto them as she always had, her omnipresent music playing softly in the background. The sick and the injured passed like boluses of food through Miri's humming depths; sometimes the passage would take only moments, and Ouellette would be waiting at the other side with a derm or injection, or some viral countervector to be snorted like an antique alkaloid. Other times the patients would linger inside while the MI knitted their bones back together, or spliced torn ligaments, or burned out malignancies with bursts of focused microwaves. Occasionally the problem was so obvious that Ouellette could diagnose it with a glance, and cure it with a shot and a word of advice.

Clarke helped when she could, which was rarely; Miri maintained its own inventories, and Ouellette had little need of Clarke's limited expertise in fish bites. Ouellette taught her some basics on the fly and let her triage the line-up. Even that wasn't entirely successful. The rules were easy enough but some of the younger ferals recoiled at Clarke's appearance: the strange black skin that seemed to *ripple* when you weren't quite looking; the little outcroppings of machinery from flesh; the glassy, featureless eyes that both looked at you and didn't, that belonged not so much to a human being as to some unconvincing robot imposter.

Eventually Clarke contented herself with the adults, and gave them vital tips while they waited their turn. There was, after all, more to dispense than medical attention. Now, there were instructions.

Now, there was a plan.

Wait for the missiles, she told them. Watch the starbursts; track the fragments as they fall, find them on the ground. This is what

you look for; this is what it is. Take whatever samples you can—soil in mason jars, rags swept through aerosol clouds at ground zero, anything. A teaspoon-full might be enough. A tin can, half full, could be a windfall. Whatever you can get, however you can get it.

Be fast: the lifters may be coming. Grab what you can and run. Get away from the impact zone, hide from the flamethrowers any way you can. Tell others, tell everyone; spread the word and the method. But no radio. No networks, no fiberop, no wireless. The ether will fuck you up the ass if you let it; trust only to word-of-mouth.

Find us at Freeport, or Rumford, or places between. Come back to us: bring us what you have.

There may be hope.

Augusta made her skin crawl. Literally.

They approached from the east, just before midnight, along the 202. Taka took them off the main drag in favor of a gravel road a short ways down the gentle slope of the Kennebec River valley. They parked on a ridge that overlooked the shallow topography below.

Everything this side of the river had been abandoned; almost everything on the far side had been, too. The bright core that remained huddled amidst a diffuse spread of dark, empty ruins left over from the good old days. Its nimbus reflected off the cloud bank overhead, turned the whole tableau to grainy, high-contrast black-and-white.

Faint gooseflesh rippled along Clarke's arms and nape. Even her diveskin seemed to be, well, *shivering*, a sensation so subtle it hovered on the threshold of imagination.

"Feel that?" Ouellette said.

Clarke nodded.

"Static-field generator. We're just on the outer edge of the field."

"So it gets worse inside?"

"Not *right* inside, of course. The field's directed outward. But yeah, the closer you get to the perimeter, the more your hair stands on end. Once you're inside you don't feel it. Not that way, at least. There are other effects."

"Like what?"

"Tumors." Ouellette shrugged. "Better than the alternative, I guess."

A cheek-to-jowl cluster of lights and architecture rose against the dark, its outlines suggesting the contours of a crude, pixelated dome. The new Augusta was obviously squeezing every cubic centimeter it could out of the safe zone. "We going in there?" Clarke asked.

Ouellette shook her head. "They don't need us."

"*Can* we go in there?" For all its lost stature, Augusta must still have portals into the pipe. Lubin might have been better off sticking with them after all.

"You mean, like shore leave? Stop by on our way through for some VR and a hot whirlpool?" The doctor laughed softly. "Doesn't work that way. They'd probably let us in if there were some kind of emergency, but everybody kind of sticks to their own these days. Miri's out of Boston."

"So you could get into Boston." Even better.

"It is kind of beautiful at night, though," Ouellette remarked. "For all its carcinogenic properties. Almost like the northern lights."

Clarke watched her without speaking.

"Don't you think?"

She decided not to push it. "Night looks pretty much like day to me. Just not as much color."

"Right. The eyes." Ouellette gave her a sideways look. "Don't you ever get tired of daylight all the time?"

"Not really."

"You should try taking them out now and then, just for a change. Sometimes when you see too much, you miss a lot."

Clarke smiled. "You sound like a fortune cookie."



Ouellette shrugged. "It wouldn't hurt your bedside manner, either. Patients might relate to you better without the affect, you know?"

"There's not much I can do for your patients anyway."

"Oh, that's not—"

"And if there is," Clarke continued, her voice conspicuously neutral, "then they can accept my help without dictating my wardrobe."

"Rrrright," Ouellette said after a moment. "Sorry."

They sat in silence for a while. Finally Ouellette threw Miri back into gear and cued her music— an adrenaline discord of saxophone and electric percussion at serious odds with her usual tastes.

"We're not stopping here?" Clarke asked.

"Goosebumps keep me awake. Probably not all that good for Miri either. I just thought you'd enjoy the view, is all."

They headed further along the road. The prickling of Clarke's skin faded in moments.

Ouellette kept driving. The music segued into a spoken interlude with musical accompaniment—some story about a hare who'd lost his spectacles, whatever those were. "What *is* this?" Clarke asked.

"TwenCen stuff. I can turn it off if you—"

"No. That's fine."

Ouellette killed it anyway. Miri drove on in silence.

"We could stop anytime," Clarke said after a few minutes.

"A little further. It's dangerous around the cities."

"I thought we were past the field."

"Not cancer. People." Ouellette tripped the autopilot and sat back in the bucket seat. "They tend to hang around just outside the claws and get envious."

"Miri can't handle them?"

"Miri can slice and dice them a dozen ways to Sunday. I'd just as soon avoid the confrontation."

Clarke shook her head. "I can't believe Augusta wouldn't have let us in."

"I told you. The claws keep to themselves."

"Then why even bother sending you out? If everyone up here is so bloody self-centered, why help out the wildlands in the first place?"

Ouellette snorted softly. "Where've you *been* for the past five years?" She held up her hand: "Stupid question. We're not out here for altruism, Laurie. The MI fleet, the salt licks—"

"Salt licks?"

"Feeding stations. It's all just to keep the ferals from storming the barricades. If we bring them a few morsels, maybe they won't be quite so motivated to bring Behemoth into our own backyards."

It made the usual sense, Clarke had to admit. And yet...

"No. They wouldn't send their best and brightest out for a lousy crowd-control assignment."

"You got that right."

"Yeah, but *you*—"

"*Me?* *I'm* the best and the brightest?" Ouellette slapped her forehead. "What in the name of all that's living gave you *that* idea?"

"I saw you work"

"You saw me take orders from a machine without screwing up too much. A few day's training, I could teach you to do as well for most of these cases."

"That's not what I meant. I've seen doctors in action before, Taka. You're different. You—" One of Ouellette's own phrases popped into her head: *bedside manner*.

"You care," she finished simply.

"Ah." Ouellette said. And then, looking straight ahead: "Don't confuse compassion with competence, Laurie. It's dangerous."

Clarke studied her. "Dangerous. That's a strange word to use."

"In my profession, competence doesn't kill people," Ouellette said. "Compassion can."

"You killed someone?"

"Hard to tell. That's the thing about incompetence. It's not nearly so clear-cut as deliberate malice."

"How many?" Clarke asked.

Ouellette looked at her. "Are you keeping score?"

"No. Sorry." Clarke looked away.

*But if I was*, she thought, *I'd blow you out of the water*. She knew it wasn't a fair comparison. One death, she supposed, could be a greater burden than a thousand if it mattered enough to you. If you bothered to get involved.

If you had compassion.

Finally they pulled into a remote clearing further up the slope. Ouellette folded down her pallet and turned in with a few monosyllables. Clarke sat unmoving in her seat, watching the gray-on-gray clarity of the nightscape beyond the windshield: gray meadow grasses, charcoal ranks of spindly conifer, scabby outcroppings of worn bedrock. Overcast, tissue-paper sky.

From behind, faint snores.

She fished behind her seat and snagged her backpack. The eyecap vial had settled to the very bottom, a victim of chronic inattention. She held it in her hand for a long time before popping it open.

Each eyecap covered the entire visible cornea, and then some. Suction tugged at her eyeballs as she pulled them off; they broke free with a soft popping sound.

It was as if her eyes, not just their coverings, had been pulled out. It was like going blind. It was like being in the deep sea, far from any light.

It wasn't altogether unpleasant.

At first there was nothing, anywhere; irises grow lazy when photocollagen does all their heavy lifting. After a while, though, they remembered to dilate. A swathe of dark gray brightened the void directly ahead: faint nocturnal light, through the windshield.

She felt her way out of the MI and leaned against its flank. She let the door hiss shut as softly as possible. The night air cooled her face and hands.

Diffuse brightness registered at the corner of her eye, fading every time she focused on it. Before long she could tell the sky from the treeline. Dim, roiling gray over serrated shadow; it seemed marginally brighter to the east.

She wandered a few meters and looked back: Miri's smooth, startling edges almost *glimmered* against this fractal landscape. To the west, through a break in the cloud, she saw stars.

She walked.

She tripped over roots and holes half a dozen times, for want of illumination. But the color scheme was pretty much the same as that served up by her eyecaps, gray on gray on black. The only difference was that contrast and brightness were cranked way down.

When the sky began brightening to the east she saw that she'd been climbing up a denuded gravelly hillside populated by stumps, an old clear-cut that had never recovered. It must have been like this long before Behemoth had arrived on the scene.

*Everything's dying*, she'd said.

And Ouellette had replied *That was happening anyway...*

Clarke looked down the way she'd come. Miri sat like a toy on the edge of what must have been an old logging road. Brown trees lined the far side of the road, and the hill she stood on to either side; they'd been razored away down the swath she'd just climbed.

Suddenly she had a shadow. It stretched down the slope like the outline of a murdered giant. She turned: a fluorescent red sun was just cresting the hill. Ribbed clouds above glowed radioactive salmon. They reminded Clarke of wave-sculpted corrugations on a sandy seabed, but she couldn't ever remember seeing colors so intense.

*Losing your sight every night might not be so bad*, she reflected, *if this is how you get it back in the morning.*

The moment passed, of course. The sun had only had a few degrees to work with, a narrow gap of clear distant sky between the land below and the clouds overhead. Within a few minutes it had risen behind a thick bank of stratus, faded to a pale bright patch in an expanse of featureless gray.

*Alyx*, she thought.

Ouellette would be up soon, steeling herself for another pointless day spent in the service of the greater good. Making a difference that made no difference.

*Maybe not the greater good*, Clarke thought. *Maybe, the greater need.*

She started down the hill. Ouellette was climbing into daylight by the time Clarke reached the road. She blinked against the gray morning, and blinked again when she saw the rifter's naked eyes.

"You said you could teach me," Clarke said.

## STARGAZER

*She's okay, Dave, Taka said to her dead husband. She's a bit scary at first—Crys would take one look at her and run out of the room. Definitely not much of a people person.*

*But she's fine, Dave, really. And if you can't be here with me, at least she pulls her own weight.*

Miri drove down old I-95 through the ramshackle remains of a town called Freeport; it had died with the departure of the fish and the tourists, long before Behemoth had made everything so definitive. South of town they pulled onto a side road that ended at a secluded cove. Taka was relieved to see that the scraggly woodlands above the high-tide line were still mostly green. She cheered them on.

"Why here, exactly?" Laurie wondered as they debarked.

"Electric eel." Taka unlocked the charge cap on the side of the vehicle and took the socket in one hand. The cable unspooled behind her as she headed down slope. Cobble slipped and clattered beneath her feet.

Laurie paced her to the water's edge. "What?"

"On the bottom somewhere." Kneeling, Taka fished the hailer out of her windbreaker and slipped it into the water. "Hopefully the little bastard still comes when you call him."

A small eruption of bubbles, twenty meters offshore. A moment later the eel surfaced in their wake and squirmed towards them, orange and serpentine. It beached itself at Taka's feet, a giant fluorescent sperm with a tail trailing off into the depths. It even had fangs: a two-pronged metal mouth disfiguring the surface of the bulb.

She plugged the cable into it. The bulb hummed.

"They stashed these things here and there," she explained, "so we're not completely dependent on the lifters."

Laurie eyed the calm water in the cove. "Ballard stack?"

"CAESAR reactor."

"You're kidding."

Taka shook her head. "Self-contained, self-maintained, disposable. Basically just a big block with a couple of radiator fins. Drop it into any open body of water and it's good to go. It doesn't even have any controls—it automatically matches voltage to whatever the line draws."

Laurie whistled.

Taka scooped up a flat stone and skipped it across the water. "So when's Ken going to show up?"

"Depends."

"On what?"

"On whether he got into Portland." And then, after a curious hesitation: "And whether he ditched us back at Penobscot."

"He didn't," Ken said.

They turned. He was standing behind them.

"Hi." Laurie's face didn't change, but some subtle tension seemed to ebb from her body. "How'd it go?"

He shook his head.

It was almost as if the past two weeks hadn't happened. Ken reappeared, as ominous and indecipherable as ever: and just like that, Laurie faded away. It was a subtle transition—some slight hardening of the way she held herself, a small flattening of affect—but to Taka, the change was as clear as a slap in the face. The woman she had come to know as an ally and even a friend submerged before her eyes. In its place stood that humanoid cipher who had first confronted her on the slopes of a guttering wasteland, fourteen days before.

Ken and Laurie conversed a little ways down the beach while Miri recharged. Taka couldn't hear what they said, but doubtless Ken was reporting on his Portland expedition. *Debriefing*, Taka

thought, watching them. For Ken, that word seemed to fit. And the trip had not gone well, judging by the body language and the look on his face.

*Then again, he always looks like that*, she reminded herself. She tried to imagine what it might take to wipe away that chronic deadpan expression and replace it with something approaching a real emotion. Maybe you'd have to threaten his life. Maybe a fart in an elevator would do it.

They headed back into town once Miri was sated. Lubin crouched in the space between the bucket seats, the women on either side. Taka got the sense of gigabytes passing between the other two, although they spoke perhaps a half-dozen words each.

Freeport was another regular stop on the trap line; Taka pulled up at a parking lot off Main and Howard, beside the gashed façade of a defunct clothing store called (she always smiled at it) *The Gap*. The town as a whole, like most of them, was long dead. Individual cells still lingered on in the rotting corpus, though, and some were already waiting when Miri arrived. Taka blared Stravinsky for a few minutes anyway, to spread the word. Others appeared over time, emerging from the shells of buildings and the leaky hulls of old fishing boats kept afloat in some insane hope that the witch might be afraid of water.

She and Laurie got to work. Ken stayed out of sight near the back of the cab; shadows and the dynamic tinting of Miri's windows rendered him all but invisible from the outside. Taka asked about Portland over an assembly-line of broken arms and rotting flesh. Laurie shrugged, pleasant but distant: "He could've got in all right. Just not without getting noticed."

No surprise there. A scorched zone surrounded Portland's landside perimeter, a flat, sensor-riddled expanse across which Taka couldn't imagine anyone crossing undetected. An enervated, membranous skin guarded the seaward approaches. You couldn't just sneak into the place—into anyclave, for that matter—and Ken evidently lacked the resources to break in by force.

Every now and then Taka would glance absently at the windshield as she moved among her patients. Sometimes she

caught sight of two faint, glimmering pinpoints looking back, motionless and unblinking behind the dark reflections.

She didn't know what he might be doing in there. She didn't ask.

It was as if *night* were a black film laid over the world, and the stars mere pinpricks through which daylight passed.

"There," Ken said, pointing.

Fine needles, three or four of them. Their tips etched the film high in the west, left faint scratches across Bootes. They faded in seconds; Taka would never have seen them on her own.

"You're sure we're safe," she said.

He was a silhouette, black on black against the stars to her left. "They're past us already," he told her. Which was not the same thing.

"There go the intercepts," Laurie said behind them. Brief novae flared near Hercules—not contrails, but the ignition of antimissile salvos dropped from orbit. They'd be below the horizon by the time they hit atmosphere.

It was after midnight. They were standing on a rocky hill south of Freeport. Almost everything was stars and sky; the insignificant circle of earth below the horizon was black and featureless. They'd come here following the beeping of Ken's handpad, linked to a periscope floating somewhere in the ocean behind them. Evidently their submarine— *Phocoena*, Laurie had called it— was a stargazer.

Taka could see why. The Milky Way was so beautiful it hurt.

"Maybe this is it," she murmured. It was unlikely, she knew; this was only the second attack since they'd put their plan into motion, and how far could the word have spread by now?

And yet, three attacks in as many weeks. At that rate, they *had* to get lucky before too long...

"Don't count on it," Ken said.

She glanced at him, and glanced away. Not so long ago this man had stood at her back, one hand clamped easily on her neck, instructing Laurie in the disassembly of weapons systems that



Taka could barely even name. He had been pleasant enough, then and since, because Taka had cooperated. He had been polite because she'd never stood in his way.

But Ken was on a mission, and Taka's little experiment in grass-roots salvation didn't seem to factor into it. He was playing along with her for some indecipherable reason of his own; there was no guarantee that tomorrow, or the next day, he wouldn't run out of patience and go back to his original game plan. Taka didn't know what that was, although she gathered it had something to do with helping Ken and Laurie's waterlogged kindred; she had learned not to waste time pressing either of them for details. It had involved getting into the Portlandclave, which evidently Ken had not been able to do on his own.

It had also involved hijacking Taka's MI, which he had.

Now she was alone with two empty-eyed ciphers in the dead of night and the middle of nowhere. Beneath the intermittent camaraderie, the humanitarian pitching-in, and all the best-laid plans, one fact remained unassailable: she was a prisoner. She'd been a prisoner for weeks.

*How could I have forgotten that?* she wondered, and answered her own question: because they hadn't hurt her...yet. They hadn't threatened her...lately. Neither of her captors seemed to indulge in violence for its own sake; hereabouts that was the very pinnacle of civilized behavior. She had simply forgotten to feel endangered.

Which was pretty stupid, when you got right down to it. After the failure at Portland, there was every chance that Lubin would revert to Plan A and take her vehicle. Laurie might or might not go along with that—Taka hoped that some bond remained beneath that cool reinstated façade—but that might not make much difference either way.

And there was no telling what either of them would do if Taka tried to get in their way. Or if they ran out of *more efficient alternatives*. At the very best, she could be stranded in the middle of the wildlands—an immunized angel with clipped wings, and no Miri to back her up the next time some red-eyed man came looking for salvation.

"I'm getting a signal from Montreal," Ken said. "Encrypted. I'm guessing it's a scramble."

"Lifters?" Laurie suggested. Ken grunted an affirmative.

Taka cleared her throat. "I'll be back in a sec. I have to take a wicked pee."

"I'll come with you," Laurie said immediately.

"Don't be silly." Taka waved downhill into the darkness, where the peak they occupied emerged from threadbare woodlands. "It's only a few meters. I can find my way."

Two starlit silhouettes turned and regarded her without a word. Taka swallowed and took a step downhill.

Ken and Laurie didn't move.

Another step. Another. Her foot came down on a rock; she wobbled momentarily.

Her captors turned back to their tactics and machinery. Taka moved carefully downhill. Starlight limned the bare outlines of obstacles in her path. A moon would have been nice, though; she tripped twice before the tree-line rose before her, a ragged black band engulfing the stars.

As it engulfed Taka herself, a few moments later.

She looked back up the hill through a black mesh of scrub and tree trunks; Ken and Laurie still stood at the top of the hill, motionless black cutouts against the sky. Taka couldn't tell whether they could see her, or even whether they were looking in her direction. She'd be plainly visible to them if she were standing in the open. Fortunately, not even their night-creature eyes could penetrate tree trunks.

She had a few minutes at most before they realized she was gone.

She moved as quickly as she could without raising a racket. Thankfully there wasn't much undergrowth; in better days the sunlight filtering through the canopy had been too sparse, and more recently—more recently, sunlight was hardly the limiting factor. Taka felt her way blindly through a maze of vertical shafts and leaf litter and thin soil rotten with Behemoth. Low branches clawed at her face. Gnarled old tree trunks resolved from the

darkness barely a meter ahead; young spindly ones jumped out at her with even less warning.

A root caught her foot; she toppled, biting back a cry. One outstretched hand came down hard on a fallen branch. The sound it made, snapping, echoed like a gunshot. She lay twisted on the ground, nursing her scraped palm, straining to hear any sounds from up the slope.

Nothing.

She kept going. The slope was steeper now, more treacherous. The trees that sprang up in her path were only skeletons, dry and brittle and eager to betray her with the firecracker report of every snapped twig and broken branch. One of them caught her just below the knee; she pitched forward, hit the ground, and couldn't stop. She tumbled down the slope, rocks and treefall stabbing her in passing.

The ground disappeared. Suddenly she could almost *see*. A broad dim swathe of gray rushed towards her; she recognized it in the instant before it struck her, peeling skin from her forearm.

The road. It ran around this side of the hill like a hemline. Miri was parked somewhere along its length.

Taka got to her feet and looked around. She'd had no way to plot her course down the hill, no way of knowing exactly where on the road she'd landed. She guessed, and turned right, and ran.

The road was clear, thank God, its dim gravel albedo just enough to keep her oriented and on track. It unspooled gently around the shoulder of the hill, shattered stone crunching beneath her feet, and suddenly something glinted in the darkness ahead, something straight-edged and shiny under the stars...

*Oh thank God. Yes. Yes!*

She yanked open the driver's-side door and piled inside, panting.

And hesitated.

*What are you going to do, Tak? Run out on everything you've been trying to do for the past two weeks? Just drive away and let the witch take over, even though there may be a way to stop it? Sooner or later someone's going to strike gold, and this is where*

*you've told them to bring it. What happens when they show up and you've run off with your tail between your legs?*

*Are you going to call for help? You think it would come before Ken and Laurie had their way with you, or just hopped into that submarine of theirs and disappeared back into the Mariana Trench? Do you think it would come at all, these days? And what about tipping off the enemy, Tak? What about whoever or whatever is trying to stop the very thing you're trying to help along? Are you going to risk all that, just because of something two borderline personalities with funny eyes might do if you got them angry?*

Taka shook her head. This was insane. She had a few precious moments before Ken and Laurie tracked her down. What she decided in that interval might decide the fate of New England—of North America, even. She couldn't afford to be hasty, but there was no *time*—.

*I need time. I just need to get away for a while. I need to work this out.* She reached out and thumbed the ignition pad.

Miri stayed dark.

She tried again. Nothing. Nothing but the memory of Ken lurking in this very cab, eyes aglitter, surrounded by all that circuitry he seemed to know so much about.

She closed her eyes. When she opened them again, he was staring in at her.

Ken opened her door. "Anything wrong?" he asked.

Taka sighed. Her abrasions oozed and stung in the silence.

Laurie opened the passenger door and climbed in. "Let's head back," she said, almost gently.

"I—why are—"

"Go on," Ken said, gesturing at the dashboard.

Taka put her thumb on the pad. Miri hummed instantly to life.

She stepped out of the cab to let Lubin enter. Overhead, the heavens were crammed with stars.

*Oh, David,* she thought. *How I wish you were here.*

## SLEEPER

Everything changed at ten-thirty the next morning.

The bike skidded into view just past Bow and promptly got into an argument with its rider over how best to deal with a pothole the size of Arkansas. It was a late-model Kawasaki from just before the witch, and it had ground-effect stabilizers that made it virtually untippable; otherwise, both man and machine would have gone end-over-end into a solar-powered billboard that (even after all these years) flickered with dead-celebrity endorsements for Johnson & Johnson immune boosters. Instead, the Kawasaki leaned sideways at some impossibly acute angle, righted itself en route, and slewed to a stop between Miri and a handful of feral children looking for freebies.

Ken's white eyes appeared in the shadowy darkness of the gap in *The Gap*, behind the newcomer.

The rider was all limbs and scraps, topped by a ragged thatch of butchered brown hair. Barely visible against a backdrop of grimy skin, a sparse moustache said maybe *sixteen*. "You the doctor with the missiles?"

"I'm the doctor who's *interested* in the missiles," Taka told him.

"I'm Ricketts. Here." He reached under a threadbare thermochrome jacket and hauled out a ziplock bag with some very dirty laundry wadded up inside.

Taka took the bag between thumb and forefinger. "What's this?"

Ricketts ticked off a list on his fingers: "Gauchies, a shirt, and one sock. They had to, you know, improvise. I had the only bag, and I was *way* over on another run."

Laurie climbed out of the cab. "Tak?"

"Hullo," Ricketts said. His mouth split in an appreciative grin; one tooth chipped, two missing, the rest in four shades of yellow. His eyes ran down Lenie like a bar coder. Not that Taka could blame him; out here, anyone with clear skin and all their teeth qualified as a sex symbol almost by default.

She snapped her fingers to get him back to the real world. "What *is* this, exactly?"

"Right." Ricketts came back to point. "Weg and Moricon found one of those canister thingies you put the word out about. It was leaking this shit all over. Not like, rivers of the stuff, you know, just like *sweating* it almost. So they soaked it up in that"—a gesture at the bag—"and handed it off to me. I've been driving all night."

"Where's this from?" Taka asked.

"You mean, where we found it? Burlington."

It was almost too good to be true.

"That's in Vermont," he added helpfully.

Ken was suddenly at Rickett's shoulder. "There was a missile drop on Vermont?" he said.

The boy turned, startled. Saw Ken. Saw the eyes.

"Nice caps," he said approvingly. "I was into rifters myself back before, you know..."

*Rifters*, Taka remembered. They'd run geothermal stations way off the west coast...

"The missiles," Ken said. "Do you remember how many there were?"

"Dunno. Like, maybe four or five that I saw, but you know."

"Were there lifters? Was there a burn?"

"Yeah, someone said there might be. That was why we all scrambled."

"But *was* there?"

"I dunno. I didn't hang around. You guys wanted this stuff fast, right?"

"Yes. *Yes*." Taka looked at the fouled, greasy wad in the bag. It was the most beautiful sight she'd ever seen. "Ricketts, thank you. You have no idea how important this could be."

"Yeah, well if you really wanna be grateful how about a charge off your rig?" He slapped the bike between his thighs. "This thing is like down to the moho, I've got maybe another ten clicks and— or hey, is there maybe some kinda reward?"

*The reward*, Taka thought, unlocking the umbilical for Rickett's bike, *is that all of us might not be dead in ten years.*

She fed the treasure into the sample port with tender reverence, let Miri slice away the packaging and squeeze the gold from the dross. And there *was* gold, evident as much in what *wasn't* there as in what was: Behemoth was far below the usual baseline in this sample. Almost negligible.

*Something's killing the witch.* That initial explanation, that *validation* of a belief already grown from hope to near-certainty over the past weeks, threatened to squash all the scientific caution Taka's training had instilled in her. She forced caution onto her excitement. She would run the tests. She would do the legwork. But some squealing inner undergrad knew it would only confirm what she already knew, what this first glorious result suggested. Something was killing the witch.

And there it was. Mixed in with the molds and the fungi and the fecal coliform, it glimmered like a string of pearls half-buried in mud: a genetic sequence that Miri's database didn't recognize. She brought it up, and blinked. *That can't be right.* She whistled through her teeth.

"What?" Laurie asked at her elbow.

"This is going to take longer than I thought," Taka said.

"Why?"

"Because I've never seen anything like this before."

"Maybe we have," Ken said.

"I don't think so. Not unless you've—" Taka stopped. Miri was flashing an interface alert at her: someone asking for download access.

She looked at Ken. "Is that you?"

He nodded. "It's the sequence for a new bug we encountered recently."

"Encountered where?"

"Nowhere local. An isolated area."

"What, a lab? A mountaintop? The Mariana Trench?"

Ken didn't answer. His data knocked patiently at Miri's front door.

Finally, Taka let it in. "You think this is the same thing?" she asked as the system filtered it for nasties.

"It's possible."

"You had it all the while, and this is the first time you've shown it to me."

"This is the first time you had anything to compare it with."

"Sweet smoking Jesus, Ken. You're not much of a team player, are you?" At least it answered one question: now she knew why these two had hung around for so long.

"It's not a counteragent," Laurie said, as if to gird her against inevitable disappointment.

Taka called up the new sequence. "So I see." She shook her head. "It's not our mystery bug either."

"Really?" Laurie looked surprised. "You can tell that after five seconds?"

"It looks like Behemoth."

"It's not," Ken assured her.

"Maybe a new strain, then. I'd have to grind through the whole sequence to be sure, but I can tell just by looking that it's an RNA bug."

"The biosol isn't?"

"I don't know *what* it is. It's a nucleic acid of some kind, but the sugar's got a four-carbon ring. I've never seen it before and it doesn't seem to be in any of Miri's cheat sheets. I'm going to have to take it from scratch."

A look passed between Ken and Laurie. It spoke volumes, but not to her.

"Don't let us stop you," Ken said.

Miri could identify known diseases, and cure those for which cures had been found. It could generate random variants of the usual targeted antibiotics, and prescribe regimens that might keep ahead of your average bug's ability to evolve countermeasures. It could fix broken bones, excise tumors, and heal all manner of physical trauma. When it came to Behemoth it was little more than a palliative center on wheels, of course, but even that was better than nothing. All in all, the MI was a miracle of modern medical technology—but it was a field hospital, not a research lab.



It could sequence novel genomes, as long as the template was familiar, but that wasn't what it had been built for.

Genomes based on *unfamiliar* templates were another thing entirely. This bug wasn't DNA *or* RNA—not even the primitive, barely-helical variant of RNA that Behemoth hung its hat on. It was something else altogether, and Miri's database had never been designed to deal with anything like it.

Taka didn't give a damn. She made it do that anyway.

She found the template easily enough once she looked beyond the nuts-and-bolts sequencing routines. It was right there in a dusty corner of the biomed encyclopedia: TNA. A threose-based nucleic acid first synthesized back at the turn of the century. The usual bases attached to a threose sugar-phosphate backbone, with phosphodiester bonds connecting the nucleotides. Some early theoretical work had suggested that it might have played a vital role back when life was still getting started, but everyone had pretty much forgotten about it after the Martian Panspermians won the day.

A novel template meant novel genes. The standard reference database was virtually useless. Decoding the new sequence with the tools in Miri's arsenal was like digging a tunnel with a teaspoon: you could do it, but you had to be really motivated. Fortunately Taka had motivation up to here. She dug in, knowing it would just take time, and maybe a few unavoidable detours down blind alleys.

Too much time. Way too many detours. And what bugged Taka was, she *knew* the answer already. She'd known almost before she'd started. Every painstaking, laborious, mind-numbing test supported it. Every electrophoretic band, every virtual blot, every PCR and TTD—all these haphazard techniques stapled together hour after bloody hour—they all pointed, glacially, implacably, to the same glorious answer.

And it *was* a glorious answer. So after three days, tired of the endless triple-checks and replicates, she decided to just go with what she had. She presented her findings near midday back at the cove, for privacy and the convenience of a ready charge.

"It's not just a tweak job," she told the rifiers. A lone bedraggled gull picked its way among the stones. "It's a totally artificial organism, designed from scratch. *And* it was designed to outcompete βehemoth on its own turf. It's got a TNA template, which is fairly primitive, but it also uses small RNA's in a way that βehemoth never did—that's an advanced trait, a eukaryotic trait. It uses *proline* for catalysis. A single amino acid doing the job of a whole *enzyme*—do you have any *idea* how much space that saves —?"

No. They didn't. The blank looks made that more than obvious.

She cut to the chase. "The bottom line, my friends, is if you throw this little guy into culture with βehemoth it'll come out the winner every time."

"In culture," Ken repeated.

"No reason to think it won't do the same in the wild. Remember, it was designed to make its own way in the world; the plan was obviously to just dump it into the system as an aerosol and leave it to its own devices."

Ken grunted, scrolling through Taka's results on the main display. "What's this?"

"What? Oh, yeah. It's polyploid."

"Polyploid?" Laurie repeated.

"You know, haploid, diploid, polyploid. Multiple sets of genes. You mostly see it in some plants."

"Why here?" Ken wondered.

"I found some nasty recessives," Taka admitted. "Maybe they were deliberately inserted because of some positive effect they'd have in concert with other genes, or maybe it was a rush job so they just slipped through. As far as I can tell the redundant genes were just layered on to eliminate any chance of homozygous expression."

He grunted. "Not very elegant."

Taka shook her head, impatient. "Certainly it's a ham-fisted solution, but it's quick and—I mean, the point is it *works!* *We could beat βehemoth!*"

"If you're right," Ken mused, "it's not Behemoth you have to beat."

"The M&M's," Taka suggested.

Something changed in Laurie's stance.

Ken looked unconvinced. "Possibly. Although the counterstrikes appear to originate with the North American defense shield."

"CSIRA," Laurie said quietly.

Ken shrugged. "At this point, CSIRA effectively *is* the armed forces on this continent. And there don't appear to be much in the way of centralized governments left to keep it in check."

"Shouldn't matter," Taka said. "Lawbreakers are incorruptible."

"Maybe they were, before Rio. Now, who knows?"

"No." Taka saw scorched landscapes. She remembered lifters on the horizon, breathing fire. "We take our orders from them. We *all*—"

"Then it's probably just as well you kept this project so close to your chest," Lubin remarked.

"But why would anyone—" Laurie was looking from Taka to Ken, disbelief written across her face. "I mean, what would be in it for *them*?"

*More than confusion*, Taka realized. *Loss, too. Anguish.* Something clicked at the back of her mind: Laurie hadn't really believed it, all this time. She had helped where she could. She had cared. She had accepted Taka's interpretation of events—at least as a possibility—because it had offered her an opportunity to help set things right. And yet, only now did she seem to realize what that interpretation entailed, the large-scale implications of what it was they were fighting: not Behemoth after all, but their own kind.

*Odd*, Taka reflected, *how often it comes down to that...*

It wasn't just the end of the world, not to Laurie. It seemed somehow more—more *intimate* than that. It was almost as if someone had betrayed her personally. *Welcome back*, Taka thought to the vulnerable creature peeking again, at long last, from behind the mask. *I've missed you.*

"I don't know," she said at last. "I don't know who would do this or why. But the point is, now we *stop* it. Now we culture these babies, and we send them out to do battle." Taka pulled up the stats on her incubators. "I've already got five liters of the stuff ready to go, and I'll have twenty by morn..."

*That's odd*, she thought as a little flashing icon caught her eye for the first time.

*That shouldn't—that looks like—*

The bottom dropped out of her stomach. "*Oh, shit*," she whispered.

"What?" Ken and Laurie leaned in as one.

"My lab's online." She stabbed at the icon; it blinked back at her, placidly unresponsive. "*My lab's online. It's uploading—*God knows what it's—"

In an instant Ken was scrambling up the side of the van. "*Get the toolkit*," he snapped, sliding across the roof towards a little satellite dish rising somehow from its recessed lair, pointing at the sky.

"What? I—"

Laurie dove into the cab. Ken yanked against the dish, breaking its fixation on some malign geosynchronous star. Suddenly he cried out and thrashed, stopped himself just short of rolling off the roof. His back was arched, his hands and head lifted away from the metal.

The dish stuttered back towards alignment, stripped gears whining.

"*Fuck!*" Laurie tumbled out onto the pavement. The toolkit spilled its guts beside her. She scrambled to her feet, yelled "*Shut it down, for Chrissakes! The hull's electrified!*"

Taka stumbled towards the open door. She could see Ken wriggling back towards the dish on his back and elbows, using his diveskin as insulation. As she ducked her head to hop past the trim—*Thank God we disarmed the internals*—a familiar hum started up deep in Miri's guts.

The weapons blister, deploying.

GPS was online. She killed it. It resurrected. All external defenses were awake and hungry. She called them off. They ignored her. Outside, Ken and Laurie shouted back and forth.

*What do I do—what—*

She scrambled under the dash and pulled open the fuse box. The circuit breakers were clunky manual things, unreachable to any demon built of electrons. She pulled the plugs on security and comm and GPS. She yanked autopilot too, just in case.

A chorus of electrical hums fell instantly silent around her.

Taka closed her eyes for a moment and allowed herself a deep breath. Voices drifted through the open door as she pulled herself back up into the driver's seat.

"You okay?"

"Yeah. Skin took most of the charge."

She knew what had happened. *What happened* again, she corrected herself, grabbing the headset from its hook.

She was no coder. She barely knew how to grow basic programs. But she was a competent medical doctor, at least, and even bottom-half graduates knew their tools. She'd spared the med systems from disconnection; now she brought up an architectural schematic and ran a count of the modules.

There were black boxes in there. One of them, according to the icon, even had a direct user interface. She tapped it.

The Madonna hung in front her, not speaking. Its teeth were bared—a smile of some kind, full of hate and triumph. Some distant, unimportant part of Taka Ouellette's mind wondered at what possible selective advantage an app could accrue by presenting itself in this way. Did intimidation in the real world somehow increase fitness in the virtual one?

But a much bigger part of Taka's mind was occupied with something else entirely, something that had never really sunk in before: this avatar had capped eyes.

They *all* did. Every Lenie she'd ever encountered: the faces changed from demon to demon, different lips, different cheeks and noses, different ethnicities. But always centered on eyes as white and featureless as snowdrifts.

*My name's Taka Ouellette*, she had said an eternity ago.

And this strange cipher of a woman—who seemed to take the apocalypse so *personally*— had replied *Le— Laurie*.

"Taka."

Taka started, but no—the Lenie wasn't talking to her. *This Lenie wasn't.*

She slipped off the eyephones. A woman in black with machinery in her chest and eyes like little glaciers looked in at her. She didn't look anything like the creature in the wires. No rage, no hate, no triumph. Somehow, it was this expressionless, flesh-and-blood face that she would have associated with machinery.

"It was one of—it was a Le—a Madonna," Taka said. "Inside the med system. I don't know how long it's been in there."

"We have to go," *Laurie* said.

"It was hiding in there. Spying, I guess." Taka shook her head. "I didn't even know they could run silent like that, I thought they always just—automatically tore things apart every chance they got..."

"It got a signal out. We've got to go before the lifters get here."

"Right. Right." *Focus, Tak. Worry about this later.*

Ken was at *Laurie's* shoulder. "You said you had five liters in culture. We'll take some with us. You disperse the rest. Drive into town, ring your siren, give at least a few miles to anybody who qualifies, and *get out*. We'll catch up with you later if we can. You have the list?"

Taka nodded. "There are only six locals with wheels. Seven, if Ricketts is still around."

"Don't give it to anyone else," Ken said. "People on foot aren't likely to get out of the burn zone in time. I'd also advise you to avoid mentioning the lifters to anyone who doesn't have an immediate need to know."

She shook her head. "They *all* need to know, Ken."

"People without transportation are liable to steal it from those who do. I sympathize, but causing a panic could seriously compromise—"

"Forget it. Everyone deserves a heads-up, at least. If they can't outrun the flamethrowers, there are places to hide from them."

Ken sighed. "Fine. Just so you know the risks you're taking. Saving a dozen lives here could doom a much greater number down the road."

Taka smiled, not entirely to herself. "Weren't you the one who didn't think the greater number was worth saving in the first place?"

"It's not that," *Laurie* said. "He just likes the idea of people dying."

Taka blinked, surprised. Two faces looked back at her; she could read nothing in either.

"We have to hurry," Ken said. "If they scramble from Montreal we can only count on an hour."

The onboard lab could dispense product either fore or aft. Taka moved to the back of the MI and tapped instructions. "Lenie?"

"Ye—" *Laurie* began, and fell suddenly silent.

"No," Taka said quietly. "I meant what *about* the Lenie?"

The other woman said nothing. Her face was as blank as a mask.

Ken broke the silence: "Are you certain it can't get out again?"

"I physically cut power to nav, comm, and GPS," Taka said, not taking her eyes off the woman in front of her. "I pretty much lobotomized the old girl."

"Can it interfere with the culture process?"

"I wouldn't think so. Not without being really obvious about it."

"You're not certain."

"Ken, right now I'm not certain about *anything*." *Although I'm approaching certainty about a thing or two...*

"It's living where? Reference and analytical?"

Taka nodded. "The only systems with enough room."

"What happens if you shut them down?"

"The wet lab's on its own circuit. The cultures should be okay as long as we don't need to do any more heavy-duty analysis on them."

"Pull the plug," Ken said.

A heat-sealed sample bag, half-full of straw-colored liquid, slid from the dispensary and hung by its upper edge. Taka tore it free and handed it over. "Keep the diffusion disk uncovered or the

culture will suffocate. Other than that they should be okay for about a week, depending on the temperature. Do you have a lab in your submarine?"

"Basic medbay," Lenie said. "Nothing like this."

"We can improvise something," Lubin added. "Can the diffuser handle seawater?"

"Ninety minutes, tops."

"Okay. Go."

Ken turned and started down the beach.

Taka raised her voice: "What if—"

"We'll catch up with you afterwards," he said, not turning.

"I guess this is it, then," Taka said.

Lenie, still beside her, tried on a smile. It didn't fit.

"How will you find me?" Taka asked her. "I don't dare go online."

"Yeah. Well." The other woman took a step towards the water. A swirl on that surface was all that remained of her partner. "Ken's got a lot of tricks up his sleeve. He'll track you down."

White eyes set into flesh and blood. White eyes, sneering out from the circuitry of Miri's cortex.

White eyes bringing fire, and flood, and any number of catastrophes down on the innocent, all across North America. All across the world, maybe.

Both sets of eyes called *Lenie*.

"You—" Taka began.

Lenie, the Word Made Flesh, shook her head. "Really. We gotta go."

## PARSIMONY

Achilles Desjardins was breeding exorcists when he learned he was a suspect.

It was a real balancing act. If you made the little bastards immutable, they wouldn't adapt; even the vestigial wildlife hanging



on in this pathetic corner of the net would chew them up and spit them out. But if you set the genes free, provoked mutation with too many random seeds, then how could you be sure your app would still be on-mission a few generations down the road? Natural selection would weed out any preprogrammed imperatives the moment they came into conflict with sheer self-interest.

Sometimes, if you didn't get the balance just right, your agent would forget all about its mission and join the other side. And the other side didn't need any more help. The Madonnas—or the Shredders, or the Goldfish, or any of the other whispered mythic names they'd acquired over the years—had already survived this gangrenous quagmire long past any reasonable expectation. They shouldn't have; they'd codevolved to serve as little more than interfaces between the real world and the virtual one, mouthpieces for a superspecies assemblage that acted as a collective organism in its own right. By rights they should have died in the crash that took out the rest of that collective, that took out ninety percent of all Maelstrom's wildlife—for how many faces make it on their own after the body behind is dead and gone?

But they had defied that logic, and survived. They had changed—*been* changed—into something more, more self-sufficient. Something purer. Something that even Desjardins's exorcists could barely match.

They had been weaponised, the story went. There was no shortage of suspects. M&Ms and hobby terrorists and death-cult hackers could all be releasing them into the system faster than natural selection took them out, and there was a limit to what anyone could do without a reliable physical infrastructure. The best troops in the world won't last a minute if you set them down in quicksand, and quicksand was all that N'Am had to offer these days: a few hundred isolated fortresses hanging on by their fingernails, their inhabitants far too scared to go out and fix the fiberop. The decaying electronic habitat wasn't much better for wildlife than it was for Human apps, but at a hundred gens-per-sec the wildlife still had the adaptive edge.

Fortunately, Desjardins had a knack for exorcism. There were reasons for that, not all of them common knowledge, but the

results were hard to argue with. Even those ineffectual and self-righteous jerk-offs hiding out on the other side of the world gave him that much. At least they all cheered him on, safe behind their barricades, whenever he released a new batch of countermeasures.

But as it turned out, they were saying other things as well.

He wasn't privy to most of it—he wasn't supposed to be privy to *any*—but he was good enough to get the gist. He had his own hounds on the trail, prowling comsats, sniffing random packets, ever-watchful for digital origami which might—when unscrambled and unfolded and pressed flat—contain the word *Desjardins*.

Apparently, people thought he was losing his edge.

He could live with that. Nobody racks up a perfect score against the death throes of an entire planet, and if he'd dropped a few more balls than normal over the past months—well, his failure rate was still way below the pack average. He outperformed any of those bozos who grumbled, however softly, during the teleconferences and debriefings and post-fiasco post-mortems that kept intruding on the war. They all knew it, too; he'd have to slip a lot further than this before anyone else in the Patrol would be able to lay a hand on him.

Still. There were hints of the wind, changing at his back. Fragments of encrypted conversations between veterans in Helsinki and rookies in Melbourne and middle-management stats-hounds in New Delhi. Disgruntled insistence from Weimers, King Sim himself, that there *had* to be some undiscovered variable wreaking havoc with his projections. And—

And right this very second, a disembodied chunk of point-counterpoint snatched from the ether by one of Desjardins's minions. It was only a few seconds in length—thanks to a filthy spectrum and the dynamic channel-switching that coped with it, it was almost impossible to grab more without knowing which random seed to apply—but it seemed to have been connecting a couple of 'lawbreakers in London and McMurdo. It took forty seconds and six nested Bayesians to turn it back into English.

"Desjardins saved us from Rio," Mr. McMurdo had opined, moments earlier, in a Hindian accent. "We'd have surely taken ten

times the losses had he not acted when he did. How those people threw off the Trip—"

Ms. London: "How do you know they did?" Irish lilt. Enticing.

"Well let me see. They launched an unprovoked attack on a large number of—"

"How do we know it was unprovoked?"

"Of course it was unprovoked."

"Why? How do you know they didn't just see a threat to the greater good, and try to stop it?"

Precious moments of this fleeting excerpt, wasted on astonished silence. Finally: "Are you suggesting that—"

"I'm saying history gets written by the victors. Rio's history. How do we know the good guys won?"

End of intercept. If McMurdo had had an answer, he hadn't got it out before the frequency skidded away.

*Wow*, Desjardins thought.

It was horseshit, of course. The idea that twenty-one separate CSIRA franchises could have simultaneously gone rogue was hardly more plausible than the thought that Rio alone had. Ms. London was a 'lawbreaker, not an idiot. She knew about parsimony. She'd just been blowing smoke out her ass, yanking poor old McMurdo's chain.

Still, it gave Desjardins pause. He'd gotten used to being the Man Who Stopped Rio. It put him above suspicion on so many counts. And it didn't sit well, to think that there were people out there who could doubt his virtue even for a moment.

That could lead to second thoughts, he reflected. It could lead to closer looks.

The board beeped again. For a moment he thought that he'd beaten all odds and reacquired the signal—but no. The new alert came from a different source entirely, a broadband dump from somewhere in Maine.

*That's odd*, he thought.

A Lenie had gotten into a medical database and was spewing random intelligence across half the EM spectrum. They did that a lot, these days—not content to merely scramble and hash, some

had taken to shouting into the ether, indiscriminately dumping data into any network they could access. Some reproductive subroutine, mutated to spread data instead of executables. At the very least it threw more chaff into a system already losing usable bandwidth by the hour; at worst it could blow the lid off all sorts of secret and sensitive data.

Either way it was bad news for the real world; that would be enough to keep it going.

This particular demon had uploaded a whole shitload of biomedical stuff from the database it had plundered. Desjardins's board had flagged it for *potential epidemiological significance*. He popped the lid and looked inside.

And immediately forgot about any trivial bullshit gossip from London.

There were two items, both rife with dangerous pathology. Desjardins was no pathologist, but then again he didn't have to be; the friends and advisors arrayed about him distilled all those biochemical details down to an executive summary that even he could understand. Now they served up a pair of genotypes with red flags attached. The first was *almost* Behemoth, only better: greater resistance to osmotic stress, sharper teeth for cleaving molecules. Higher virulence. At least one critical feature was the same, though. Like baseline Behemoth, this new strain was optimized for life at the bottom of the sea.

It did not exist in the standard database. Which raised the question of what its technical specs were doing in a glorified ambulance out of Bangor.

It would have been enough to grab his attention even if it had arrived unaccompanied. It had brought a date, though, and she was the *real* ballbreaker. She was the bitch he had always dreaded. She was the last thing he would have ever expected.

Because he had always known that Seppuku would gain a foothold eventually.

But he hadn't expected anyone on his own side to be *culturing* the damn thing.

**CORRAL**

Taka cursed her own lack of foresight. They'd spread the word, all right. They'd told all who came by of their plan to save the world: the need for samples, the dangers of lingering afterwards, the places she'd patrol to take charge of vital payloads. They'd taken special note of those few who'd driven up in cars or motorbikes or even plain old pedal-powered flywheels, got addresses from those who still had them and told the rest to check back regularly: if all went well, they might save the world.

And things *had* gone well, and then so horribly wrong, in such quick succession. They had their counteragent, or some of it anyway, but no prearranged signals to bring in the couriers. And after all, why would they have even bothered? They could have taken an afternoon and driven around the county. They could have waited for those of no fixed address to check in, tomorrow or the next day.

And now Taka Ouellette had the salvation of the world in her hands, and some shrinking fraction of a sixty-minute window to get it to safety.

She ran the siren continuously from one end of Freeport to the other, a shrieking departure from the music employed to announce her day-to-day presence. Hopefully it would summon the healthy as well as the sick.

She got some of both. She warned them all to take shelter; she promised a mother with a broken arm and a son with incipient stage-one that she'd come back and help them when the fires had passed. She urged the others, as they fled, to send the Six her way, or anyone else with wheels to burn.

After thirty minutes, one of them came by. After forty, two more; she loaded them all with precious milliliters of amber fluid and sent them running. She begged them to send the others, if they knew their whereabouts. If they could find them in time.

Forty-five minutes, and nothing but a ragged handful of the hungry and the feeble. She chased them away with stories about fire-breathing dragons, sent them down to a fisherman's wharf that had once been the community's breadbasket. Now, if they were

lucky, it might at least serve as a place from which to jump into the ocean; surely the flames wouldn't scorch the whole Atlantic?

Fifty minutes.

*I can't wait.*

But there were others here, she knew. People she hadn't seen today. People she hadn't warned.

*And they're not coming, Tak. If you want to warn them, you might as well start going door to door. Search every house and hovel within twenty clicks. You've got ten minutes.*

Ken had said they could *count* on sixty minutes. A minimum estimate, right? It might take longer, a *lot* longer.

She knew what Dave would have said. She still had two liters of culture. Dave would have told her she could make all the difference, if she didn't just sit there and wait for the furnace.

It might not happen at all. What were they basing this on, anyway? A couple of firestorms that happened to follow aborted missile attacks? What about the times when the missiles fell and nothing happened afterwards? There *had* to be times when nothing had happened. What about the times when the fires came, or the floods or the explosions, with nothing to presage them? Correlation wasn't causation...and this wasn't even strong *correlation*...

*It convinced Ken.*

But she didn't know Ken at all. Didn't even know his last name, or Laur—Lenie's. She would have had nothing but their own word that they were who they said they were, if they had even bothered to really tell her even *that* much. And now even their names were suspect. *Laurie* was not *Laurie* at all, it seemed.

Taka only had their word on the things they had said, her own speculation on all the things they hadn't, and the disturbing similarities between this amphibious woman and the demons in the net...

Fifty-five minutes.

*Go. You've done all you can here. Go.*

She started the engine.

Committed, she didn't look back. She drove down the decaying asphalt as fast as she could without risking some pothole-induced

rollover. Her fear seemed to increase in lockstep with her velocity—as though the diffuse and overgrown remains of Freeport and its pathetic, half-starved inhabitants had somehow numbed her own instinct for self-preservation. Now, abandoning them, her heart rose in her mouth. She imagined the crackle of flames advancing along the road behind her. She fought the road; she fought panic.

*You're going south, you idiot! We were south when the signal went out, south is where they'll start—*

She screeched east onto Sherbourne. Miri took the bend on two wheels. A great shadow fell across the road before her, the sky darkened abruptly overhead. Her imagination saw great airships, spewing fire—but her eyes (when she dared to look away from the road) saw only overarching trees, brownish-green blurs streaking the world on both sides, leaning over and blocking the afternoon sun.

*But no, that's the sun up ahead, setting.*

It was a great yellow-orange blob, dimmed by its slanting angle through the atmosphere. It was centered in the bright archway that marked the end of the tunnel of trees. It was setting directly over the road ahead.

*How can it be so late? It can't be so late, it's only aftern—*

The sun was setting.

The sun was setting the trees on fire.

She hit the brakes. The shoulder strap caught her around the chest, threw her back into her seat. The world grew ominously quiet: no more spitting clatter of rock against undercarriage, no more rattling of equipment on hooks, banging against Miri's walls. There was only the distant, unmistakable crackling of flame from up ahead.

A containment perimeter. They'd started at the outside and moved in.

She threw the MI into reverse and yanked hard on the stick. The vehicle skidded back and sideways, slewing into the ditch. Forward again. Back the way she'd come. The tires spun in the soft, muddy embankment.

A *whooshing* sound, from overhead, like the explosive breath of a great whale she'd heard in the archives as a child. A sheet of

flame flooded the road, blocking her escape. Heat radiated through the windshield.

*Oh Jesus. Oh God.*

She opened the door. Scorched air blasted her face. The seatbelt held her fast. Panicky fingers took way too long to set her free and then she was on the ground, rolling. She scrambled to her feet, bracing against Miri's side; the plastic burned her hands.

A wall of flame writhed barely ten meters away. Another—the one she'd mistaken for the setting sun—was further off, maybe sixty meters on the other side of the MI. She sheltered on the cooler side of the vehicle. Better. But it wouldn't last.

*Get the culture.*

A mechanical groan, the bone-deep sound of twisting metal. She looked up: directly overhead, through a mosaic of leaves and branches not yet burning, she saw the fractured silhouette of a great swollen disk wallowing in the sky.

*Get the culture!*

The road was blocked ahead and behind. Miri would never be able to push through the dying woodlands to either side, but Taka could run for it. Every instinct, every nerve was telling her to run for it.

*The culture! MOVE!*

She yanked open the passenger door and climbed over the seat. The icons blinking on the cab's rear wall seemed almost deliberately slow to respond. A little histogram appeared on the board. It rose as slowly as a tide.

*Whoosh.*

The forest across the road burst into flame.

Three sides gone now, one way left, one way. *Oh Jesus.*

The histogram blinked and vanished. The panel extruded a sample bag, swollen with culture. Taka grabbed it and ran.

*Whoosh.*

Flame ahead of her, pouring from the heavens like a liquid curtain.

Flame on all sides, now.

Taka Ouellette stared into the firestorm for some endless, irrelevant span of seconds. Then she sank to the ground with a



sigh. Her knees made indentations in the softening asphalt. The heat of the road burned her flesh. Her flesh was indifferent. She noted, vaguely surprised, that her face and hands were dry; the heat baked the sweat from her pores before it even had the chance to wet her skin. It was an interesting phenomenon. She wondered if anyone had ever written it up.

It didn't really matter, though.

Nothing did.

## TURNCOAT

"That's odd," said Lenie Clarke.

The periscope had backed off from shore a ways, to get a better northwest view over the trees. The image it conveyed was surprisingly bucolic. It was too far to see Freeport from here—and Freeport's dwellings and businesses had been spread far too widely to present anything approaching a skyline even in the old days—but they should have seen lifters, at least. They should have seen the flames or the smoke by now.

"It's been three hours," Clarke said, glancing across the cockpit. "Maybe you stopped the signal after all." *Or maybe*, she mused, *we're completely off-base about this whole thing.*

Lubin slid one finger a few millimeters along the panel. The 'scope's-eye view panned left.

"Maybe she made it," Clarke remarked. Such dull, lifeless words for all the meaning they conveyed: *Maybe she saved the world.*

*Maybe she saved me.*

"I don't think so," Lubin said.

A pillar of smoke boiled up from behind the crest of a hill, staining the sky brown.

She felt a tightness in her throat. "Where is that?" she asked.

"Dead west," Lubin replied.

They came ashore on the south side of the cove, a slope of smooth stones and gnarled driftwood growing slimy with  $\beta$  ehemoth. They followed the sun along a dirt road that had never seen so much as a signpost. The pillar of smoke led them on like a pole star with a half-life, thinning in the sky as they tracked it across paved roads and gravel ones, over the crest of a weathered bump called Snake Hill (judging by the name of the road that ran along its base), on into the setting sun itself. Moments into twilight Lubin stopped, one hand raised in warning.

By now the once-billowing column was all but exhausted, a few threads of smoke twisting into the sky. But they could see the source, a roughly rectangular patch of scorched woodland at the bottom of the hill. Or rather, a roughly rectangular *outline*: the center of the area appeared to be unburned.

Lubin had his binocs out. "See anything?" Clarke asked.

He *hmmmed*.

"Come on, Ken. What is it?"

He handed her the binoculars without a word.

There was a disquieting moment when the device tightened itself around her head. Suddenly the world was *huge*, and in sharp focus. Clarke felt brief vertigo and stepped forward, bracing against sudden illusory imbalance. Twigs and blighted leaves the size of dinner tables swept past in a blur. She zoomed back to get her bearings. Better: there was the scorched earth, there was the patch in its midst, and there was—

"Oh shit," she murmured.

Miri sat dead center of the clear zone. It looked undamaged.

Ouellette stood beside it. She appeared to be conversing with a gunmetal ovoid half her size, hovering a meter over her head. Its carapace was featureless; its plastron bristled with sensors and antennae.

A botfly. Not so long ago, teleoperated robots just like it had hounded Lenie Clarke across a whole continent.

"Busted," Lubin said.

The world was bleaching in Clarke's eyecaps by the time they reached the MI. Ouellette sat on the road with her back against the van, legs bent, arms crossed loosely over knees. She stared listlessly at the pavement between her feet. She looked up at the sound of their approach. The botfly hung overhead like a bodyguard. It showed no visible reaction to their arrival.

Bleached light wasn't enough to account for the pallor of Ouellette's face. She looked absolutely bloodless. There were wet streaks on her face.

She looked at Clarke and shook her head. "What *are* you?" she said. Her voice was as empty as a cave.

Clarke's throat went dry.

"You're not just some refugee. You're not just some rifter who's been hiding for five years. You—you *started* this, somehow. You started it all..."

Clarke tried to swallow, looked to Lubin. But Lubin's eyes didn't waver from the botfly.

She spread her hands. "Tak, I—"

"The monsters in the machines, they're all—you," Ouellette seemed stunned at the sheer magnitude of Clarke's betrayal. "The M&Ms and the fanatics and the death cults, they're all following *you*..."

*They're not*, Clarke wanted to shout. *I'd stop them all in a second if I could, I don't know how any of it got started—*

But that would be a lie, of course. Maybe she hadn't formally founded the movements that had sprung up in her wake, but that didn't make them any less faithful to the thing she'd been. They were the very essence of the rage and hatred that had driven her, the utter indifference to any loss but her own.

They hadn't done it for her, of course. The seething millions had their own reasons for anger, vendettas far more righteous than the false pretenses on which Lenie Clarke had waged war. But she had shown them the way. She had proven it was possible. And with every drop of her blood that she spilled, every precious inoculation of Behemoth into the world, she had given them their weapons.

Now there was nothing she could bring herself to say. She could only shake her head, and force herself to meet the eyes of this accuser and one-time friend.

"And now they've really outdone themselves," Ouellette continued in her broken, empty voice. "Now, they've—"

She took a breath.

"Oh God," she finished. "I fucked up so bad."

Like a marionette she pulled herself to her feet. Still the botfly didn't move.

"It wasn't a counteragent," Ouellette said.

This time, Lubin spared a glance. "What do you mean?"

"I guess we're not dying fast enough. The witch was beating us but we were slowing it down at least, we lost four people for every one we saved but at least we were saving *some*. But the M&M's don't get into paradise until we're all dead, so they came up with something better..."

"And *they* are?" Lubin asked, turning back to the teleop.

"Don't look at me," the machine said quietly. "I'm one of the good guys."

Clarke recognized the voice in an instant.

So did Lubin. "Desjardins."

"Ken. Old buddy." The botfly bobbed a few centimeters in salute. "Glad you remember me."

*You're alive*, Clarke thought. *After Rio, after Sudbury going dark, after five years. You're alive. You're alive after all.*

*My friend...*

Ouellette watched the proceedings with numb amazement on her face. "You *know*—"

"He—helped us out," Clarke told her. "A long time ago."

"We thought you were dead," Lubin said.

"Likewise. It's been pretty much seven seconds to sockeye ever since Rio, and the only times I had a chance to ping you you'd gone dark. I figured you'd been done in by some disgruntled faction who never made the cut. Still. Here you are."

*My friend*, Clarke thought again. He'd been that when even Ken Lubin had been trying to kill her. He'd risked his life for her

before they'd even met. By that measure, although their paths had only crossed briefly, he was the best friend she'd ever had.

She had grieved at word of his death; by rights, now, she should be overjoyed. But one word looped endlessly through her mind, subverting joy with apprehension.

*Spartacus.*

"So," she said carefully. "You're still a lawbreaker?"

"Fighting Entropy for the Greater Good," the botfly recited.

"And that includes burning thousands of hectares down to the bedrock?" Lubin queried.

The botfly descended to Lubin-eye level and stared lens to lens. "If killing ten saves a thousand it's a deal, Ken, and nobody knows that better than you.. Maybe you didn't hear what our lovely friend just told you, but there's a war on. The bad guys keep lobbing Seppuku into my court and I've been doing my damndest to keep it from getting a foothold. I've got barely any staff and the infrastructure's falling apart around my ears but I was managing, Ken, I really was. And then, as I understand it, you two walked into poor Taka's life and now at least three vectors have snuck past the barricades."

Lubin turned to Ouellette. "Is this true?"

She nodded. "I checked it myself, when he told me what to look for. It was subtle, but it was...right there. Chaperone proteins and alternative splicing, RNA interference. A bunch of second and third-order effects I never saw. They were all tangled up in the polyploid genes, and I just didn't look hard enough. It gets inside you. It kills βehemoth sure enough, but then it just keeps going and it—I didn't see it. I was so sure I knew what it was, and I just—fucked up." She stared at the ground, away from accusing eyes. "I fucked up *again*," she whispered.

Lubin said nothing for a few seconds. Then, to the 'fly: "You understand that there are reasons for caution here."

"You don't trust me." Desjardins sounded almost amused. "I'm not the one with the compulsive murder fetish, Ken. And I'm not the only one who shook off the Trip. Are you really in a position to throw stones?"

Ouellette looked up, startled from her bout of self-loathing.

"And whatever misgivings you have," the 'lawbreaker continued, "Give me credit for a little self-interest. I don't want Seppuku in my back yard any more than you do. I'm just as vulnerable as the rest of you."

"How vulnerable is that?" Lubin wondered. "Taka?"

"I don't know," Ouellette whispered. "I don't know anything..."

"Guess."

She closed her eyes. "It's a whole different bug than *Behemoth*, but it's designed—I *think* it's designed for the same niche. So being tweaked against *Behemoth* won't save you, but it might buy you some time."

"How much?"

"I can't even guess. But everyone *else*, you know—I'd guess, most anyone who hasn't got the retrofits...symptoms after three or four days, death within fourteen."

"Dead slow," Lubin remarked. "Any decent necrotising strep would kill you in three hours."

"Yes. Before you had a chance to spread it." Ouellette's voice was hollow. "They're smarter than that."

"Mmm. Mortality rate?"

The doctor shook her head. "It's *designed*, Ken. There's no natural immunity."

The muscles tightened around Lubin's mouth.

"It actually gets worse," Desjardins added. "I'm not the only watchdog on this beat. There are still a few others in N'Am, and a lot more overseas. And I've got to tell you, my limited-containment strategy is not all that popular. There are people who'd just as soon nuke the whole bloody seaboard just to be on the safe side."

"Why don't they nuke whoever's launching Seppuku?" Lubin wondered.

"Try getting a fix on half a dozen submerged platforms moving around the deep Atlantic at sixty knots. Truth be told, some thought it was *you* guys."

"It's not."

"Doesn't matter. People are itching to go nuclear on this. I've only been able to hold them off because I could keep Seppuku

from spreading without resorting to fissiles. But now, r's and K's, you've handed the nuclear lobby everything they need. If I were you I'd start digging fallout shelters. Deep ones."

"No." Clarke shook her head. "There were only, what, six people with wheels?"

"Only three showed up," Ouellette said. "But they could be anywhere. They didn't leave me an itinerary. And they'll be *spreading* the stuff. They'll be seeding it in ponds and fields and —"

"If we can catch up with them, we can backtrack," Lubin pointed out.

"But we don't even know where they were headed! How can we—"

"I don't know how." The botfly wiggled on its ground-effectors, a tiny flourish. "But you better get started. You have made one industrial-strength tar pit of a mess here, folks. And if you want to stand even a one-in-fifty chance of keeping this place from melting down to radioactive glass, you are damn well gonna help clean it up."

There was a silence. Stubborn flames crackled and spat faintly in the distance.

"*We're* going to help you," Lubin said at last.

"Well, you can all do your bit, of course," Desjardins replied, "but it's your efforts in particular, Ken, that are gonna come in most handy right now."

Lubin pursed his lips. "Thanks, but I'll pass. I wouldn't do you much good."

Clarke bit her tongue. *He's got to be working some kind of angle.*

The botfly hovered for a moment, as if considering. "I haven't forgotten your skill set, Ken. I've experienced it first-hand."

"I haven't forgotten yours either. You could mobilize the whole hemisphere in thirty seconds flat."

"A lot's changed since you retired, friend. And in case you haven't noticed, there's not much left of the hemisphere even if I *did* still have all my super powers."

Ouellette's eyes flickered between man and machine, watching the point-counterpoint with a mixture of outrage and confusion. But at least she, too, seemed to know enough to keep her mouth shut.

Lubin glanced around at the charred and darkling landscape. "Your resources seem more than sufficient. You don't need me."

"You're not listening, Ken. A *lot* has changed. A lifter or two is nothing, it's background noise. But you start mobilizing too many resources at once, the wrong kind of people pay attention. And not everybody on this side is *on* this side, if you know what I mean."

*He's talking about other lawbreakers, Clarke realized. Maybe it's Spartacus vs. the Trip. Or maybe all of them are off the leash by now.*

"You'd rather keep a low profile," Lubin surmised.

"I've always preferred subtlety. And your rather blunt social skills notwithstanding, when it comes right down to it even *you're* more subtle than a fleet of fire-breathing killer blimps."

*When it comes down to war, he means. Private war of the psychos, by invitation only.* Clarke wondered how many sides there were. Could they even *have* sides? How do you form an alliance with someone you *know* will stab you in the back the first chance they get? *Maybe it's just every sociopath for himself,* she mused.

Then again, it wasn't Lubin who'd had difficulty choosing sides recently.

"I'm otherwise engaged," Lubin said.

"Naturally. You'd have to have a damn good reason to come all the way back here. The Mid Atlantic Ridge isn't exactly in the neighborhood."

"It might be before too long, judging by the recent traffic."

"Ah. Somebody pay you a visit?"

"Not yet. But they're sniffing around close by. It's an unlikely coincidence."

"Don't look at me, Ken. If I'd spilled the beans, they wouldn't have to *sniff around*."

"I'm aware of that."



"Still, you naturally want to know who's on the trail. Ken, I'm hurt. Why didn't you come to me at—oh, right. You thought I was dead." Desjardins paused, then added, "You're really lucky I came along."

"I'm even luckier," Lubin said, "that you need my help."

The botfly bobbed in a sudden gust of hot wind. "Okay then. You help me keep N'Am from dying a little while longer, and I'll try and find out who's stalking you. Deal?"

Lubin considered.

"Seems fair," he said.

## CRASH

The Crusade, thought Lenie Clarke, could go on without her.

It wasn't as though it needed her services. Saving lives and ending them were the only two causes worth pursuing now, and she had no great skill in either. Of course that wasn't *exactly* true, she realized even as the thought occurred. When it came to total kills, there wasn't a person on the planet who could match her score. But those deaths had been indiscriminate and untargeted, faceless collateral she'd barely spared a thought for. Right now, the greater good needed something considerably more precise: specific individuals, not whole populations. Isolated faces to be hunted down and—what was the word Rowan had used?—*decirculated*.

It didn't have to be a euphemism. There'd be no reason to kill the vectors once they'd been found, even assuming that Seppuku hadn't killed them first. There were only three of them after all, with less than a day's head start in a place where people were no longer a major part of the landscape. It was quite possible they'd be found before they could infect too many others, before uneconomies of scale made wholesale extermination the only viable option. Ten thousand carriers might have to be burned for want of facilities to contain them; but ten could be taken alive,

isolated and cared for, their condition studied in hopes of finding a cure. There'd be no need for outright murder.

*I'm not the one with the compulsive murder fetish, Ken.*

Either way, it didn't matter. Soon Lubin would be on the hunt, backed up by all the resources Desjardins could provide; and whether he was in it for the kill or the thrill of the chase, Clarke's presence at his side would only slow him down. Taka Ouellette had already gone on to better things, whisked away to a CSIRA facility where, as Desjardins had put it, "your skill set can be much better utilized". She had left with barely another word or a glance at Lenie Clarke. Now she was probably sitting at the end of a line that would start with Lubin, waiting to process the people he tracked down. There was no point along that short route where Lenie Clarke could be useful.

She couldn't save, and she couldn't kill. Here, though, in the broken shells of Freeport, she could do something in between. She could delay. She could hold the fort. She could keep people from dying of tumors or broken bones, so that Behemoth and Seppuku could take a crack at them instead.

Lubin did her one last favor before leaving. He navigated through the virtual lightscape of Miri's neocortex, found the infestation that had betrayed them, and isolated it. It was too insidious, too deeply dug-in to trust to mere deletion; there were too many places it could be hiding, too many ways to subvert the search protocols. The only way to be sure it was gone was to physically throw out the memory with the monster.

Crouched over the dashboard, Lubin read reams of diagnostic arcana and called instructions over his shoulder. Behind him, Clarke—up to her elbows in crystals and circuitry—did the actual cutting. Lubin told her which card to extract; she did so. He told her which array to peel from its surface, using a tri-pronged tool with delicate whisker-thin fingers. She obeyed. She waited while he ran checks and double-checks on the rest of the system, reseated the lobotomized unit at his command, poised herself to yank it again should any remnant of the monster have somehow escaped containment. Satisfied at last that Miri was clean, Lubin told Clarke to lock and reboot. She did it without question.

He never told her outright to destroy the infected component. That was just too obvious a measure to mention.

It was, after all, a part of her.

She didn't know how, exactly; the perverse logic that had spawned and twisted these electronic demons was something better left to hackers and evolutionary ecologists. But back at the beginning, she'd been the template. This thing had taken its lead from *her*; it was a reflection, however perverse, of Lenie Clarke. And irrational though it seemed, she couldn't shake the sense that it still owed something of itself to the flesh and blood it was modeled after. She had raged, and hated, for so very long; perhaps these reflections weren't so distorted after all.

She resolved to find out.

She was no codemeister. She knew nothing about growing programs or pruning software to specs. She did, however, know how to snap prefab components together, and *Phocoena's* lockers and glove compartments were overflowing with the legacy of five years' service. The little sub had carried a thousand survey instruments to Impossible Lake, served in the repair and maintenance of them all. It had slipped across thermoclines and through Langmuir Cells, seeding drogues and TDRs into the water column. It had spied on corpses and moved supplies and served as a general workhorse far beyond anything its designers had ever intended. After five years, it had accumulated more than enough building blocks for Lenie Clarke to play with.

She found a Cohen board in the bottom of a drawer, plugged a battery onto one of its sockets and a generic OS chip onto another. A tracery of whisker-thin filaments flickered briefly between the new components as the board's autodiscovery routines sniffed them out and made introductions. She had to look a little harder for a user interface; she couldn't risk a wireless hookup. Finally she found an old fiberop headset with an integrated infrared keyboard, and plugged it in. More flickering handshakes.

She slid on the headset. A pastel keyboard hovered in the air before her. She reached out; the headset's infrared eyes watched

her hands move in empty space, mapped real fingers onto illusory controls. She brought up a map of the Cohen board, built a fence around a handful of empty sockets, cut a single gateway and locked it tight from the outside. She assigned a panic button, just in case: it floated off to one side, an orange spark in virtual space. There would be no need to reach out and touch it. Merely focusing her eyes on that icon would freeze the system solid. But the safeguard had a price attached. The headset couldn't see through photocollagen. Her eyes would have to be stripped naked during the encounter.

She doffed the headset and regarded her handiwork in the real world: two miniscule Platonic solids and a thread of fiberop rising from a dimpled grid of empty pinhead sockets. A sparse right-angle spiderweb of emerald threads connected the plug-ins. Beside it, a glowing crimson border enclosed a rectangular patch of unoccupied terrain.

It was completely self-contained and utterly isolated. There were no antennae, no wireless interfaces, nothing that could send a signal from that landscape to any other. Nothing plugged into the board would be able to get off of it.

She studied the infected and excised lobe of Miri's brain: a Lilliputian necklace of OPMs and memory chips lying isolated and inert in the palm of her hand. For all Clarke knew there was nothing left inside; the memory was nonvolatile, but who knew what damage had been inflicted during the exorcism? She remembered her challenge to Ken Lubin—*how do you know I can't wake the fucker with a kiss?*—but she had no idea how to actually *do* that. She'd kept these components only because she could not throw them away. And because she hoped that if she spoke to the thing inside, it might speak back.

She lifted the necklace with a pair of force-feedback tweezers whose touch was as fine as eyelashes. She seated it into the center of the red zone. Green threads sprouted from the other components and converged just outside the gate, and stopped.

She donned the headset. She took a breath.

She opened the gate.

An explosion of pixels, right in front of her. Anger and ravenous hunger and bared teeth, furious input that bypassed the upper brain entirely and plunged icy needles right into the brainstem.

"Let—"

The flight response took over before she'd even parsed what she'd seen; the orange panic-button flared in her sights. The image froze.

She realized she was gasping. She forced herself to calm down.

A motionless face, black and green and radiant. A furious portrait of inverted flesh-tones. It didn't look like her at all. Except for the eyes: those empty, raging eyes.

*And not even those*, she remembered after a moment. Because her eyes were uncapped, now. She faced this radioactive doppelganger completely naked.

*Is this what I was?*

She took a breath, held it briefly, let it out. She focused on the panic button and released it.

"—me out!" the apparition screamed.

Clarke shook her head. "There's nowhere for you to go."

*"Let me out or I'll grind every fucking address in here to pulp!"*

"Answer some questions first."

"Answer *this*, you worm-riddled twat."

The universe flickered and went out.

Nothing but her own rapid breathing and the quiet hiss of *Phocoena's* air conditioner. After a moment, her headset etched a message across the void:

SYSTEM CRASH. RESTART?  
Y N

Clarke tried again.

*"Let me out!"*

She shook her head. "Tell me what you want."

"What do you want?" The question seemed to calm the monster down a bit. It even smiled. "You don't want to fuck with me, friend. I've killed more people than you can count."

"Why? Revenge? For the GA? For—for Daddy, for what he did while mom was—how could you care about that? How could you even *know*?"

The face desaturated, its black-light pigments fading as if in twilight. In moments it was blacks and grays and two angry, crystalline ovals of pure white.

"Are you trying to kill everyone?" Clarke asked softly. "Are you trying to kill *yourself*?"

It glared at her and spat, "*Kill yourself? You—*"

Dark, and void, and SYSTEM CRASH.

And the next time.

And the next.

## THE SKILL OF THE CHASE

A CSIRA drone, floating like thistledown just below the jet stream, caught the heat trace at 0300. It was warming Service Road 23 northeast of Skowhagen, and it shared certain characteristics with another source—two hours older—that had been glimpsed by a lifter shipping medical supplies out of Portland. Resupply hauls weren't normally charged with surveillance, but everyone was on alert since the word had come down from Sudbury.

Both signatures matched the emissions put out by a brand of hydrogen cell that hadn't been manufactured since 2044. Someone was driving the shit out of an old Ford Fugitive, traveling inland along back roads in the middle of the night.

One of Ouellette's vectors had driven a Fugitive. Lubin caught up with her somewhere on the far side of the New Hampshire border.

Desjardins had requisitioned him an ultralight. It wasn't as fast as ground-effect transport, but its cruising altitude was a lot higher and it drank fewer Joules than a chopper. Lubin was flying west at about two hundred meters when the Ford bounced sunlight into his eye. It was parked on the edge of an acid-washed bog full of rusty tannins and jagged waterlogged stumps. The wetland seemed to have grown since Highway Maintenance had given up on the neighborhood; a tongue of dark water lapped across a few meters of low-lying asphalt just ahead of the vehicle.

That wasn't what had stopped it, though.

Lubin landed fifty meters up the road and approached from behind. His inlays performed the usual schematic vivisection as he drew near, cluttered up his vision with icons and wiring diagrams. His gut rebelled at the mere thought of tuning out usable intel from any source, but sometimes it distracted more than it informed. He shut down the display in his head; the Fugitive dropped back into the real world, seemed to *flatten* somehow, luminous guts vanishing behind dirty plastic skin.

A blonde mocha woman sat in the driver's seat, forehead against the wheel, long straight hair obscuring her face. She seemed oblivious to his approach.

He tapped on the window. She turned apathetically at the sound. He knew immediately that something was wrong: her face was flushed and shiny with perspiration.

She knew something was wrong, too. Lubin's isolation skin would have pretty much given that away even if she *hadn't* been sick.

*Three days*, he thought.

The door was unlocked. He pulled it open and stepped back.

"They told us...it was a cure," she said. It took her two breaths.

"Do you have any left?" Lubin asked.

She gulped. "Some. Spread most of it around." She shook her head. "Gave some to Aaron, too. Couple of days ago."

A transparent bladder lay on the seat beside her. It had been drained almost flat. The culture that remained, sucked into creases and wrinkles in the deflated bag, was no longer amber in color; it was dark and gray as anoxic mud.

"What happened to it?" he asked.

"I don't know. Changed." She shook her head tiredly. "She said it would last a *week*..."

He leaned forward. She still had the presence of mind to look vaguely startled when she saw him up close. "You were one of them. *You* were one of them. I saw you there..."

"I need to know where you seeded it," he said. "I need to know everyone you've been in contact with since Freeport, and how to get in touch with them."

She held up one limp-wristed arm, showing off her wristwatch. "Aaron's in here. We split up. Thought...we'd cover more ground..."

He took the watch. Its phone feature wasn't much use without the earbud, but he could deal with Aaron later.

"I was talking to him just this morning," the woman managed. "He's not—not doing too well himself."

He circled the Fugitive and climbed in the passenger's side. Nav was offline—a precaution left over from the previous week, when the ether had been enemy territory. He brought up dashboard GPS and scaled the map to include the coast.

"Everywhere you stopped," he said. "Everyone you met."

"I'm sick," she sighed.

"I can get you to a hospital. A *real* hospital," he promised, sweetening the pot. "But you have to help me first."

She told him what she could. Finally he climbed back into sunshine and headed for the ultralight. Halfway there he paused and looked back.

*She could make a run for it, he thought. She's not too sick to drive. She could try to escape.*

*Or, eyeing the stained water by the road, she could just lurch into the water and infect the whole bog. Much more difficult to contain after that.*

*Maybe she's a loose end.*

Idle musing, of course. There was no immediate threat here, nothing to justify extreme prejudice. Not that that was always likely to be the case, the way this thing was spreading. This was the second vector Lubin had tracked down, and the first of



Ouellette's original trio. The other had been a secondary who'd picked up the baton in her wake, and *he'd* admitted to seeding still others. How far the other two Patient Zeroes had run was still anyone's guess. And now there was *Aaron* to deal with, not to mention the half-dozen places where this woman had dribbled little aliquots of Seppuku in her wake...

He could afford to wait, he told himself. The way things were going, he'd have all the excuse he needed before long. Not that he needed excuses any more, of course. Ken Lubin had been a free agent for years.

*Play nice*, he told himself. *Play by the rules*.

He did. He called the ambulance before he called the flamethrowers, stood guard until it floated in from the west, sprayed himself down and climbed back into the sky. He banked southeast, backtracking the vector's route. A lifter appeared in the middle distance and paced him for a while, cruising like a great dark cloud towards the target areas he'd pinpointed. Pilot lights sparked faintly at the tips of the long, incendiary muzzles hanging from its underbelly. Puffy pink and green clouds erupted intermittently in the airspace beneath it, cotton-candy litmus tests sniffing out infection.

He edged up the throttle. By now, Aaron's partner would be bagged and on her way. Taka Ouellette would be running tests on her by nightfall.

If Ouellette was running tests on *anything*, of course. Lubin had his doubts.

He remembered the first time he had met Achilles Desjardins. He had broken into the 'lawbreaker's home and caught him *in flagrante delecto* with a VR sensorium that served up wraparound scenarios of sexual torture. Desjardins would have never inflicted those impulses on the real world back *then*, of course, but a lot of things had changed in the meantime. Rules had changed. Leashes had been slipped. Official hierarchies had crumbled, leaving those who wielded power miraculously free of oversight.

Lubin had eavesdropped briefly on Desjardins's fantasy life before getting down to business. He'd gained some idea of that man's taste in women, as well as what he liked to do to them. And

so five years later, when Taka Ouellette had climbed into the belly of a CSIRA helicopter, Lubin had watched with a dispassionate sense of finality.

Desjardins had promised her a role in the fight against Seppuku. He had evoked visions of bright gleaming laboratories normally reserved for bona-fide Meatzarts. The prospect had lit her up like a halogen floodlamp. One look and Lubin had known her secret desire, the desperate, unimagined hope of redemption for some past sin.

By now, it was easy enough to recognize.

He had been interested in whether the aircraft would head southwest, towards Boston. That was where the nearest research facilities would be. But instead it had disappeared to the north, and Lubin had not heard from Ouellette in the days since.

Not that he could have expected to, of course. Even if Desjardins had been telling the truth. And Lubin had to admit, with the logical clarity of an amoral mind, that it didn't make much difference either way. Taka Ouellette was not the caliber of scientist who'd last in the ring against any kind of heavyweight opponent. If she had been, they wouldn't have found her relegated to wildland patrol, handing out crumbs to the ferals. Her loss would matter not at all in the fight against Seppuku.

Achilles Desjardins, on the other hand, was vital. Whether he was also a sexual predator was irrelevant; he might well be instrumental in the saving of billions. Lubin couldn't think of many depravities that could not be overlooked in the pursuit of that higher goal. It was what the *Greater Good* was all about.

He almost felt envious.

## REMEDIAL ED

Taka Ouellette was, in fact, within a research facility of some sort. She was not, however, playing the role of experimenter. Perhaps the man at her side had arrogated that role unto himself.

His appearance was unremarkable. Brown hair, uncombed, cut with a haphazard asymmetry as consistent with some faux-feral style as with outright incompetence. Thin squarish face. Not enough lines on the forehead, too many around the eyes. Large eyes, brown and wet, almost childlike. Nose slightly off-kilter. Baggy green sweatshirt, a TwenCen throwback with no animations.

She couldn't see below his waist. She was strapped to a medical gurney, flat on her back. If this disheveled r-selector was playing the researcher, it seemed that he'd reserved for her the role of experimental subject.

"Achilles Desjardins," he said. "Pleased to meet you, Alice."

The helicopter had dropped onto a rooftop pad somewhere north of the Great Lakes, well after midnight. She'd debarked and stepped unsuspectingly into a neuroinduction field that dropped her faster than a cervical dislocate. Faceless men in body condoms had brought her, conscious but paralyzed, into this quarantine cell. They had stripped her naked, catheterized her, and departed without speaking. Perhaps they'd been told she was some kind of fugitive or health risk. Perhaps they'd been in on the joke. She'd had no way of knowing, and no way to ask.

That had been a day ago, at least. Probably more. She had spent the time since isolated and immobilized, growing parched and ravenous by infinitesimal degrees.

The field was off now, though. Her motor nerves were back online. The only things holding her down were the nylon straps cinched painfully around wrists and ankles, waist and throat.

"There's been a mistake," she said quickly. "I'm not Alice, I'm Taka. Lenie and Ken's friend."

She wriggled against the restraints. Achilles smiled faintly.

"You're really not a very good biologist, Alice," he remarked, not unkindly. "I'm sorry, but it's true. You've had all kinds of clues, but you never quite put them together the right way." He sat on some unseen chair or stool next to the gurney. "If I hadn't stepped in you'd still be spreading Seppuku far and wide, killing your patients even faster than usual. No *real* scientist would make such basic mistakes."

"But I'm not—"

He put a finger to his lips, shushing her. He propped his elbows against the hard neoprene surface of the stretcher next to her head, rested chin in hands and looked down at her.

"Of course," he continued softly, "no real scientist would kill her own family, either."

So it wasn't a mistake. He knew exactly who she was.

She knew him, too. At least, she knew his type. He was soft. He was pathetic. Every day she faced down people who'd break his neck without breaking stride. On his own, without the props, he was nothing.

Except right.

She closed her eyes. *Keep control. He's trying to scare you. Don't let him. Deny him the satisfaction.*

*It's a power game like all the others. If you aren't intimidated, you take some back.*

She opened her eyes and looked calmly into his. "So what's the plan?"

"*The plan.*" Achilles pursed his lips. "The plan is rehabilitation. I'm going to give you another chance. Think of it as a kind of remedial education." He stood. Something in his hand reflected the overhead lights, something small and shiny like a nail clipper. "We're talking a kind of carrot and stick scenario. I have this hobby that a lot of people would describe as, well, unpleasant. You'll find out *how* unpleasant, depending on how quick a study you turn out to be."

Taka swallowed. She didn't speak until she thought she could keep her voice level: "What's the carrot, then?"

Not quite.

"That *was* the carrot. My carrot, anyway. Your carrot is, you pass your orals and I let you go. Alive and everything." Achilles frowned, as if lost in thought. "Here's an easy one to start with. How does Seppuku reproduce? Sexually or asexually?"

Taka stared at him. "You're kidding."

He watched her a moment. Then, almost sadly, he shook his head.

"You went to the seminars, I see. They told you all our secrets. We prey on fear. Once we see you're not afraid, we'll pick on someone else. Maybe even let you go."

"You said—" she stopped, tried to control the tremor in her voice. "*You* said you'd let me go..."

He hadn't laid a hand on her and already she was begging.

"If you do well," Achilles reminded her gently. "But yes. I'll let you go. In fact, as a gesture of good faith, I'll let part of you go right now."

He reached out. The shiny thing in his hand pressed against her breast like a tiny icicle. Something *snicked*.

Pain bloomed across her chest, razor-sharp, like the cracks in glass before it shatters. Taka screamed, writhing in useless millimeter increments against the straps.

The bloody goblet of a nipple dropped against her cheek.

Darkness swirled around the edges of vision. At some impossible distant remove, way south of the pain at the center of the universe, a monster fingered its way between her labia.

"Two more where that came from," he remarked.

## DECIRCULATE

Clarke had learned a fair bit at Ouellette's side. She was no doctor, but she still had the rudimentary medical training she'd received as a rifter and the MI did most of the diagnostic and prescriptive work anyway. Miri's exorcism had cost them a few thousand patient records, half a year's downloaded updates, and all the vehicle's uplink capabilities—but whatever remained still knew enough to scan a body and prescribe basic treatments. Clarke wasn't up to dealing with much more sophistication than that anyway; even lobotomized, Miri was hardly the rate-limiting step.

People trickled through town, seeking Ouellette's ministrations but settling for Clarke's. She did what the machinery told her, played doctor as best she could. At night she'd sneak offshore and

bypass *Phocoena* entirely, sleeping breathless and exposed on the bright, shallow bottom. Each morning she came ashore, stripped her diveskin down to the tunic and pulled Ouellette's borrowed clothing overtop. The strange dead fibers rubbed loosely against her limbs as she moved, an ill-fitting travesty full of folds and stitches. Removing the 'skin always felt a little like being flayed alive; this, this *substitute* might as well have been shed from the flanks of some great poorly-proportioned lizard. It wasn't too bad, though. It was getting easier.

It was pretty much the *only* thing that was getting easier.

The worst part wasn't her own medical ignorance, or the endless, rising count of those she couldn't save. It wasn't even the outbursts of violence that people sometimes directed at her when faced with their own death sentence, or with that of a loved one. She was almost grateful for the shouts and the fists, thrown too rarely to constitute any kind of real cost. She'd experienced far worse in her time, and Miri's weapons blister was always there when things got out of hand.

Much, much worse than the violence of those she didn't save was the gratitude of those she nearly could. The smiles on the faces of those for whom she'd bought a little time, too dulled by disease and malnutrition to ever question the economics of trading a quick death for a lingering one. The pathetic delight of some father who'd seen his daughter cured of encephalitis, not knowing or caring that Seppuku or the Witch or some rogue flamethrower would take her next month or next year, not thinking of the rapes and broken bones and chronic starvation that would stalk her in the days between. Hope seemed nowhere more abundant than in the faces of the hopeless; and it was all she could do to meet their eyes, and smile, and accept their thanks. And not tell them who it was that had brought all this down upon the world in the first place.

Her experiment with naked eyes was long since over. If the locals didn't like her affect, they could damn well go somewhere else.

She wanted desperately to talk to Taka. Most of the time she resisted the impulse, remembering: Ouellette's friendship had

evaporated the instant she'd learned the truth. Clarke didn't blame her. It couldn't be easy, discovering you'd befriended a monster.

One night, lonely enough to gamble, she tried anyway. She used a channel that Desjardins had assigned for reporting any late-breaking Seppuku incidents; it got her to an automated dispatcher and thence to an actual human being who—despite his obvious disapproval over personal use of dedicated channels—patched her through to someone claiming to speak for a biological countermeasures lab out of Boston. He had never heard of Taka Ouellette. When Clarke asked if there might be other facilities she could check with, the man replied that there must be—but the goddamned Entropy Patrol never told them anything, and he wouldn't know where to point her.

She made do by indulging in false hopes. Lubin would catch his prey. Desjardins would honor the deal they had made. They would track down the threat to Atlantis, and disarm it. And Taka Ouellette, or others like her, would solve the mystery of Seppuku and stop it in its tracks.

Maybe then they could go home.

She didn't even recognize him at first.

He came staggering out of the woods on foot, limping, purple-skinned, his face a swollen mass of scabs and pulpy bruises. He wore a thermochrome windbreaker with one of the arms torn away, and he lurched into sight just as Clarke was about to shut down for the evening.

"Hi again," he said. A bubble of blood grew and popped at the corner of his mouth. "Miss me?"

"Holy *shit*." She hurried over and helped him towards the MI. "What happened to you?"

"'Nother r. A *Big* r. Fucking *capital* r. Took my bike." He shook his head; the gesture was stiff and clumsy, as if rigor mortis were already taking hold. "That other K around? Taka?"

"No. I'll look after you." She guided him to Miri's right mouth, took his weight as he sagged onto the extended tongue.

"You really a doctor?" The teenager managed to look skeptical through all the gore. "Not that I care," he added after a moment. "You can check me over any time."

Finally it sunk in: *Miss me?*

Clarke shook her head. "I'm sorry, but I've seen a lot of people lately. I don't know if I'd recognize you even *without* all the facework."

"Ricketts," the boy said.

She stepped back. "You brought—"

"I brought that stuff that's gonna kill Behemoth," he said proudly through cracked and puffy lips.

*You brought the stuff that's going to kill us all*, she thought.

It shouldn't have been any kind of dilemma. Get him into the MI. Clean him up, fix the physical injuries, confirm the presence of any new predator eating him from the inside out.

*Maybe he's clean. All the contaminated stuff was sealed up in that bag, maybe he never had direct contact—*

Confirm Seppuku. Isolate the victim. Call for extraction.

*Hope to God that if he's got it, he can't breathe it on me...*

"Lie back. Get your feet up." She was at the rear panel almost before Ricketts had taken his feet off the ground. She stabbed the usual icon, heard the familiar hum as Miri swallowed. Clarke told the vehicle to close both mouths and run the standard diagnostic suite.

She left him in there while she sprayed herself down with disinfectant. Overkill, probably. Hopefully. She was wearing the requisite sterile gloves, and the 'skin of her tunic protected her under Ouellette's borrowed clothing—

*Shit. The clothing.*

She stripped it off and bagged it for incineration. The rest of her diveskin was in her backpack, stashed in the cab. The forsaken pieces, retrieved, wriggled back into place, seams sealing together into a comforting second skin. Diveskins weren't built with antipathogen properties explicitly in mind, but the copolymer dealt with salt ions as a matter of course; it *had* to keep out anything as large as a living cell.



When she got back to Miri's rear panel, the diagnostic cycle had finished. Ricketts was suffering from a broken cheekbone, a hairline fracture of the left tibia, second-degree concussion, borderline malnutrition (better than average, these days), two impacted wisdom teeth, and a moderate roundworm infection. None of that was life-threatening; most of it could be fixed.

The diagnostic suite did not include a scan for Seppuku. Seppuku didn't exist in the standard database. Ouellette had cobbled together a hasty, separate subroutine in the wake of her discovery. It didn't do much—no helpful breakdown into first/second/end-stage categories, no list of associated macrosymptoms. No suggested course of treatment. Just a blood count, really. Clarke didn't even know how to interpret that simple number. Was there such a thing as a "safe" level for Seppuku?

Zero, she assumed. She tapped the icon to start the test. Ricketts twitched in the little spycam window as Miri drank a few more drops of his blood.

It would take a while to run the analysis. Clarke forced herself to focus on Ricketts's other problems in the meantime. The roundworms and the teeth could wait. Targeted vasodilators and calcium suppressants eased the concussion. Broken bones were almost trivial: plant microcharge mesh into the affected areas to crank up osteoblast metabolism. Clarke had been doing that almost since the day she'd become a rifter.

"Hey!" Rickett's voice sounded tinny and startled through Miri's intercom. "I can't move!"

"It's the neuroinduction field," Clarke told him. "Don't worry about it. It just keeps you from jerking around during the cut-and-paste."

*Beep.*

And there it was.  $10^6$  particles per milliliter.

*Oh Jesus.*

How long had he been wandering around in the woods? How far had he spread it? The person who'd beaten him up: was *he* spreading it now, had he invited Seppuku in through the raw oozing skin of his knuckles? How many days before he discovered how much he'd *really* paid for a lousy motorbike?

*Isolate the vector. Call in a lifter.*

A lifter. It seemed so strange to even contemplate. She had to keep reminding herself: *they're not monsters after all. They're not fire-breathing dragons sent down from the heavens to burn us out of existence. They're working for the good guys.*

*We're on their side now.*

Still.

First things first. Ricketts had to be—

*decirculated*

—isolated until someone came by to collect him. Problem was, there weren't too many ways to do that. The MI would be useless for other field work as long as it kept him sequestered, and Clarke seriously doubted whether Freeport had had hot-zone isolation facilities even before it fell into ruin.

*He can't stay here.*

She watched the monitor for a few moments, watched Miri's jointed limbs and laser eyes putting Humpty together again. Then she called up the anesthesia menu. She chose isoflurane.

"Go to sleep," she whispered.

Within moments, Ricketts' wide, nervous eyes fluttered closed. It was like watching a lethal injection.

*"Do you know who I am, you miserable fetus-fucker?"* the demon spat.

*No*, she thought.

*"I'm Lenie Clarke!"*

The system crashed.

"Yeah," Clarke said softly. "Right."

She traded a dark view for a brighter one. *Phocoena's* viewport looked out on a muddy plain, not quite featureless; the muddy tracks of tunneling animals, the holes of invertebrate burrows stippled the bottom. A lone crab scuttled lethargically in the dim distance.

The ocean overhead was murky green, and growing brighter. The sun must be rising.

"What...?"

She hung the headset on the armrest and turned in the copilot's seat. *Phocoena* was too small to warrant a dedicated med cubby, but the fold-down bunk on the starboard side pulled double-duty in a pinch. It tucked away into the same kind of molded indentation that held the bunks on the opposite bulkhead; unlike its counterparts, though, its thicker base bulged from the wall in a smooth distension of plumbing and circuitry. When in use it folded down like a wide, short drawbridge, hung by twin monofilament threads spooled from its outer corners. Those threads, the edges of the pallet itself, and the overhanging bulkhead formed the vertices of a little tent. Isolation membrane stretched across the planes between.

Ricketts was trapped within. He lay on his side with one arm flopped against the membrane, distending it outward.

"Hi," Clarke said.

"Where's *this*?"

"We're underwater." She climbed back from her seat into the main cabin, keeping her head low; the curving hull didn't leave a lot of headroom.

He tried to sit up. He had even less headroom than she did. "What am I, you know..."

She took a breath. "You've got a—a bug. It's contagious. I thought it would be best to keep you isolated."

His bruises were already healing, thanks to Miri's attentions. The rest of his face paled behind them. "The witch?" And then, remembering: "But I brought you that cure, right...?"

"The cure wasn't—all we'd been hoping for," Clarke said. "It actually turned out to be something...else..."

He thought about that a moment. He pushed his splayed fingers against the membrane. The membrane stretched, iridescing.

"You saying...you saying it's like another *disease*?"

"Afraid so."

"So that explains it," he murmured.

"Explains what?"

"Why I been so weak the last coupla days. Prob'ly still have my bike if I'd been just *that* much faster." He frowned at her. "So you go around broadbanding how this germware kicks Behemoth's ass

and how we're supposed to like, collect it and all, and it's really just another *bug*?"

"Sorry," she said softly.

"*Fuck*." Ricketts lay back on the pallet and threw one arm over his face. "Ow," he added, almost as an afterthought.

"Yeah, your arm's going to be sore for a bit. You were pretty badly beat up, the MI can't fix everything just like that."

He held up the limb and examined it. "*It does* feel a lot better, though. *Everything* feels better. Thanks."

Clarke forced a smile.

He was up on his elbows, looking from the smaller cage into the larger one. "This whole set-up isn't bad. Way better than that priestly meat wagon."

It wasn't, of course. *Phocoena's* med facilities were rudimentary at best, far below what the MI could offer. "I'm afraid you'll have to stay in there for a while," Clarke said apologetically. "I know it's cramped, but the onboard's got games and shows, help you pass the time." She gestured at a headset hanging from the roof of the nook. "I can give you access."

"Great. Better'n an oven."

"Oven?"

"You know." He tapped his temple. "Microwaves. Give you a fine buzz if you jimmy the doors and stick your head just so."

*Good trick*, Clarke mused. *Wish I'd known it when I was a kid. Then again, maybe I did...*

"What if I have to shit?" Ricketts wondered.

She nodded at a convex button set into the recessed bulkhead. "The pallet converts. Push that when you have to go. It's pretty straightforward."

He did, then let out a little yelp of surprise as the midsection of the pallet slid smoothly away underneath him. His ass bumped down on the wide rim of the bowl beneath.

"*Wow*," he whispered, impressed out of all proportion. Another press of the button and the pallet reintegrated.

"So what now?" he asked.

*Now you get to be a lab rat. Now you'll go to some place where machines cut pieces out of you until either you die, or the thing*

*inside of you does. Now, you'll be grilled on how long you hung around in Freeport, how many others you might have breathed on, how many others they might have. They'll find out about that asshole who beat you up and maybe they'll want to interview him. Or maybe not. Maybe they'll just decide it's already gone too far for pleasant interviews and nice individual extractions—because after all, if we have to sacrifice you to save Freeport, surely we also have to sacrifice Freeport to save New England now, don't we? That's the greater good for you, kid. It's a sliding scale. It's concentric.*

*And nobody's life is worth shit when they slap it onto the table.*

She'd roll the dice. Maybe hundreds would die in flames. Maybe only Ricketts would, in pieces.

"Hello?" Ricketts said. "You here?"

Clarke blinked. "Sorry?"

"I said, what now?"

"I don't know yet," she told him.

## PARANOID

Aaron had led to Beth. Beth had led to Habib, and Habib had led to Xander, and the whole lot of them had led to twenty thousand hectares of wasted New England countryside being put to the flame. And that wasn't all: According to the chatter on the restricted band there were at least three other operatives sweeping the field further south, Desjardins's preference for low profiles notwithstanding.

Eight days now, and Seppuku was living up to the hype. It was spreading faster than Behemoth ever had.

Xander had also led to Phong, and Phong was fighting back. Lubin had him cornered in the mouth of an old storm-sewer that drooled slimy water into the Merrimack River. The mouth was a good two meters in diameter, set into a concrete cliff perhaps three times that height. It had a tongue, a triangular spillway widening

out towards the river, flanked by rising abutments that held back the banks to either side. The spillway constituted the only clear avenue of approach and was slippery with brownish-green scum.

The mouth also had teeth, a grate of metal bars set a meter back from the opening. They kept Phong from escaping underground, and had forced him to fall back on his one high card: an antique firearm that shot bullets of indeterminate caliber. Lubin trumped him twice over on that score; he carried a Schubert active-denial microwave pistol that could heat flesh to 60°C, and a Heckler & Koch rapid-fire PDW that was currently loaded with mitigated conotoxins. Unfortunately there was way too much earth and concrete for the microwaves to penetrate from Lubin's present position, and getting a clear shot with the H&K would involve exposing himself on the slimy slope of the spillway.

It shouldn't have mattered. Under normal circumstances it would still be the furthest thing from an even match, even granting Lubin's rusty marksmanship after five years. Even though Phong's refuge was in shadow, and the sun stabbed directly into Lubin's eyes whenever he peeked around the corner. Those all made the shot trickier, no question. Still. Lubin was a *professional*.

No, what really skewed the odds was the fact that Phong seemed to have a thousand bodyguards, and they were all attacking Lubin at once.

He'd scarcely noticed them on approach: a cloud of midges hovering over a patch of resistant greenery on the embankment. They'd always been completely harmless in Lubin's experience. He'd dispersed them with a wave of his hand as he passed through, his attention on the concrete barrier that cut the riverbank just ahead...and in the next instant they'd attacked, a swarm of mosquito-sized insects with piranha-sized attitudes.

They bit, and they distracted, and they broke both his concentration and his stealth. Phong, stealing a drink from the sewer, had seen him coming and squeezed off a near miss before ducking back under cover. He'd almost escaped entirely, but Lubin had plunged through the insectile onslaught to the edge of the drainage apron, just in time to trap his quarry back against the tunnel.

"I'm here to get you to a hospital!" he called. "You've been exposed to—"

"Fuck you!" Phong shouted back.

A squad of dive-bombing insects attacked Lubin's hand, almost in formation; the little bastards had *followed* him. He slapped down hard. He missed his attackers but welcomed the sting of the impact. He unrolled the gloves from the wrists of his isolation skin and slipped them on, juggling the Schubert, then reached over his shoulder for the hood.

The velcro tab on the back of his collar was empty. His hood was probably hanging off some low-lying branch in the woods behind him.

And he was going up against someone who'd been exposed to Seppuku for two full days. Lubin allowed himself a muttered, "*Shit.*"

"I don't want to hurt you!" he tried again. Which wasn't exactly true, and getting less so. The desire to kill *something* was certainly circling around his self-control. More insects attacked; he crushed them between hand and forearm, and reached to wipe the smashed body parts off against the river bank. He paused, briefly distracted: it was hard to be certain, but those crushed bodies seemed to have too many legs.

He wiped them off and focused on the immediate task. "You're coming with me," he called, his voice raised but level. "That's not up for discussion." *Insects have—right. Six legs.* He waved off another assault; a line of pinpricks lit up the back of his neck. "The only issue is whether you come now or later."

"*Later, stumfuck! I know whose side you on!*"

"We can also discuss whether I'll be taking you to a hospital or a crematorium," Lubin muttered.

A squadron targeted his face. He slapped his forehead, hard. His hand came away with three tiny carcasses flattened against the palm. Each had eight legs.

*What has eight legs? Spiders? Flying spiders?  
Hunting in packs?*

He wiped his palm against a patch of convenient vines matting the embankment. The vines squirmed at his touch.

He pulled his hand back instinctively, shocked. *What the—*  
Tweaked, obviously. Or some kind of accidental hybrid. The foliage clenched and relaxed in peristaltic waves.

*Focus. Keep on track.*

More dive-bombers. Not quite so many this time. Maybe he'd swatted most of the swarm already. He felt as if he'd swatted a hundred swarms.

A scrabbling, from beyond the barrier.

Lubin peeked around the abutment. Phong was making a break for it, scrambling along a dry strip of concrete edging the far side of the spillway. Startling graffiti decorated the wall behind him, a stylized female face with white featureless eyes and a zigzag moniker: MM.

Phong saw him, fired three wild rounds. Lubin didn't even bother to duck; his microwave was already set on wide beam, too diffuse for a quick kill but easily strong enough to reheat Phong's last meal along with most of the gastrointestinal tract that was holding it. Phong doubled over, retching, to land on the thin skin of wastewater and the frictionless slime beneath it. He slid diagonally down the spillway, out of control. Lubin put one foot on a convenient dry patch and leaned out to catch him as he passed.

The Airborne Spider Brigade chose that exact moment for its last hurrah.

Suddenly Lubin's face and neck were wrapped in stinging nettles. Overextended, he struggled for balance. Phong sailed past; one flailing leg careened against Lubin's ankle. Lubin went over like a pile of very angry bricks.

They slid off the spillway into freefall.

It wasn't a long drop, but it was a hard landing. The Merrimack was a mere shadow of its former self; they landed not in water but on a broken mosaic of shale and cracked mud, barely moistened by the outfall. Lubin got some slight satisfaction from the fact that Phong landed underneath him.

Phong threw up again on impact.

Lubin rolled away and stood, wiping vomit from his face. Shards of shale snapped and slipped beneath his feet. His face and



neck and hands itched maddeningly. (At least he seemed to have finally shaken the kamikaze arthropods.) His right forearm was skinned and oozing, the supposedly-unbreachable isolation membrane ripped from palm to elbow. A knife-edged splinter of stone, the size of his thumb, lay embedded in the heel of his hand. He pulled it free. The jolt that shot up his forearm felt almost electrical. Blood welled from the gash. Mopping at the gore revealed clumped particles of fatty tissue, like clusters of ivory pinheads, deep in the breach.

The microwave pistol lay on the scree a few meters away. He retrieved it, wincing.

Phong still lay on his back, winded, bruised, his left leg twisted at an angle impossible to reconcile with the premise of an intact tibia. His skin reddened as Lubin watched, small blisters rising on his face in the wake of the microwave burst. Phong was in bad shape.

"Not bad enough," Lubin remarked, looking down at him.

Phong looked up through glazed eyes and muttered something like *Wha...*

*You were not worth the trouble,* Lubin thought. *There was no excuse for me to even break a sweat over the likes of you. You're nothing. You're less than nothing. How dare you get so lucky. How dare you piss me off like this.*

He kicked Phong in the ribs. One broke with a satisfying snap.

Phong yelped.

"*Shhh,*" Lubin murmured soothingly. He brought the heel of his boot down on Phong's outstretched hand, ground it back and forth. Phong screamed.

Lubin spent a moment contemplating Phong's right leg—the intact one—but decided to leave it unbroken. There was a certain aesthetic in the asymmetry. Instead, he brought his foot down again, hard, on the broken left one.

Phong screamed and fainted, escaping into brief oblivion. It didn't matter; Lubin's hard-on had been assured with the first snapping bone.

*Go on,* he urged himself.

He walked unhurriedly around the broken man until he found himself next to Phong's head. Experimentally, he lifted his foot.

*Go on. It doesn't matter. Nobody cares.*

But he had rules. They weren't nearly so inviolable as when he'd been Guilt Tripped, but in a way that was the whole point. To make his own decisions. To follow his own algorithm. To prove he didn't have to give in, to prove he was stronger than his impulses.

*Prove it to who? Who's here to care?* But he already knew the answer.

*It's not his fault. It's yours.*

Lubin sighed. He lowered his foot, and waited.

"A man named Xander gave you a vial," he said calmly, squatting at Phong's side a half-hour later.

Phong stared wide-eyed and shook his head. He did not seem pleased to be back in the real world. "Please...don't—"

"You were told that it contained a counteragent, that it would kill off Behemoth if it was disseminated widely enough. I thought so myself, at first. I understand that you were only trying to do the right thing." Lubin leaned in close. "Are you following me, Phong?"

Phong gulped and nodded.

Lubin stood. "We were both misinformed. The vial you were given will only make things worse. If you hadn't been so busy trying to kill me you could have saved us both a lot—" A sudden thought occurred to him. "Just out of interest, why *were* you trying to kill me?"

Phong looked torn.

"I'd really like to know," Lubin said, without the slightest trace of threat in his voice.

"You—they *said* people trying to stop the cure," Phong blurted.

"Who?"

"Just people. On the radio." Alone, helpless, half his bones broken, and still he was trying to protect his contacts. *Not bad*, Lubin had to admit.

"We're not," he said. "And if you had been in touch with Xander and Aaron and their friends lately, you'd know that for yourself. They're very sick."

"No." It was probably meant to be a protest, but Phong didn't seem able to put any conviction into the word.

"I need to know what you did with that vial," Lubin said.

"I...I ate it," Phong managed.

"You ate it. You mean, you drank the contents."

"Yes."

"You didn't disseminate it anywhere. You drank it all yourself."

"Yes."

"Why, may I ask?"

"They say it cure Behemoth. I—I first stage already. They say I dead by winter, and I could not get into forts..."

Lubin didn't dare touch the man, not with his isolation skin in tatters. He studied Phong's exposed and reddened skin, at the blisters rising across it. If there had been any obvious signs of either Behemoth or Seppuku, they were now indistinguishable under the burns. He tried to remember if Phong had presented any symptoms prior to being shot.

"When did you do this?" he asked at last.

"Two days. I felt fine until...you...you..." Phong squirmed weakly, winced at the result.

Two days. Seppuku was fast, but all the symptomatic vectors Lubin had encountered had been infected for longer than that. It was probably only a matter of hours before Phong started presenting. A day or two at most.

"—to me?" Phong was saying.

Lubin looked down at him. "What?"

"What you do to me?"

"A lifter's on the way. You'll be in a medical facility by nightfall."

"I'm sorry," Phong said, and coughed. "They say I be dead by winter," he repeated in a weak voice.

"You will be," Lubin told him.

**MATRYOSKA**

Clarke didn't make the call.

She'd had closer contact with Ricketts than anyone except the person who'd assaulted him, and she'd checked out clean. She was willing to bet that the people of Freeport were clean too.

She wasn't willing to bet that the trigger fingers would agree with her.

She knew the arguments. She knew the virtues of erring on the side of caution. She just didn't buy them, not when the people making those decisions sat in untouchable far-off towers adding columns of empty numbers and Bayesian probabilities. Maybe the experts were right, maybe the only people truly qualified to run the world were those without conscience—clear-eyed, rational, untroubled by the emotional baggage that the sight of piled bodies could induce in the unblest. People weren't numbers, but maybe the only way to do the right thing was to act as if they were.

Maybe. She wasn't going to bet the town of Freeport on it, though.

They were nowhere close to a cure, according to the dispatches. There was nothing anyone could do for Ricketts except poke at him. Perhaps that would change at some point. Perhaps it would even happen before Seppuku killed him, although that seemed vanishingly unlikely. In the meantime, Lubin was good at his job—maybe a bit past his prime, but easily more than a match for a handful of infected ferals who didn't even know they were being hunted. If the Meatzarts needed live samples, Lubin was the man to provide them.

There was no need to feed this skinny kid into that system. Clarke had learned a few things about research protocols over the years: even after the cures are discovered, who bothers rehabilitating the lab rats?

Taka Ouellette, maybe. Clarke would have trusted *her* in an instant. But Clarke didn't know where she was or how to reach her. She certainly didn't trust the system to deliver Ricketts into her exceptional arms. And Ricketts, surprisingly, seemed content where he was. In fact, he seemed almost *happy* there. Maybe he'd

forgotten the old days, or maybe he hadn't been very well-off even then. But by the time he'd fallen into Clarke's orbit he knew only the grubby, dying landscape upon which he expected to live his whole short life. Probably the most he'd dared hope for was to die in peace and alone in some sheltered ruin, before being torn apart for his clothes or the dirt in his pockets.

To be rescued from that place, to wake up in a gleaming submarine at the bottom of the sea—that must have seemed magical beyond dreams. Ricketts came from a life so grim that terminal exile on the ocean floor was actually a step *up*.

*I could just let him die here, Clarke thought, and he'd be happier than he'd ever been in his life.*

She kept her eyes open, of course. She wasn't stupid. Seppuku was afoot in the world, and Ricketts had vectored it all the way from Vermont. At the very least there was some thug with a stolen motorbike to worry about. She tested everyone that Miri swallowed, no matter what their complaint. She read encrypted dispatches intended only for those in the loop. She watched public broadcasts aimed at the ferals themselves, transmissions from high-tech havens in Boston and Augusta: weather, MI schedules, waiting times at the Behemoth forts—incongruously, coding tips. She marveled that the castle-dwellers would dare present themselves this way, as if they could redeem themselves by sending public service bulletins to those they'd trampled in their own rush to safety.

She drove the back roads and checked derelict dwellings looking for business, for people too weak to seek her out. She queried her patients: did they know anyone who had come down with high fever, soreness in the joints, sudden weakness?

Nothing.

She thought of her friend, Achilles Desjardins. She wondered if he was still alive, or if he had died when Spartacus rewired his brain. The circuits that made him who he was had been changed, after all. *He* had been changed. Maybe he'd been changed so much that he didn't even exist any more. Maybe he was a whole new being, living in Desjardins's head, running off his memories.

One thing seemed to have stayed the same, though. Desjardins was still one of the trigger fingers, still entrusted to kill the many to save the multitude. Maybe someday—maybe soon—he'd have to do that here. Lenie Clarke realized as much: she might be wrong. Extreme measures might prove necessary.

Not yet, though. If Seppuku gestated in the ghost town of Freeport, it was laying low. Lenie Clarke did likewise. In the meantime, Ricketts was her little secret.

For as long as he lasted, anyway. It wasn't looking good.

She stepped dripping from the diver 'lock in *Phocoena's* tail. Ricketts was wetter than she was.

His skin was beyond pink; it was so flushed it almost looked sunburned. He'd long since stripped off his rags, and now lay naked on a pallet that could soak up perspiration barely faster than he produced it.

None of his biotelemetry was in the red yet, according to the panel. That was something.

He had the headset on, but he turned his head at the sound of her entrance. The blind, cowed face seemed to look right through her. "Hi." The smile on his face was an absurd paradox.

"Hi," she said, stepping to the cyclo on the opposite bulkhead. "Hungry?" She was only filling the silence; the drip in his arm kept him fed as well as medicated.

He shook his head. "Thanks. Busy."

In VR, perhaps. The handpad lay discarded by his knees, but there were other interfaces.

"This is *great*," he murmured.

Clarke looked at him. *How can you say that?* she wondered. *How can you just act as though there's nothing wrong? Don't you know you're dying?*

But of course he probably didn't. If *Phocoena* couldn't cure him, at least it wasn't letting him suffer: it kept his fluids up, gagged internal alarms, soothed nerves when they burned with fever or nausea. And it wasn't just Behemoth's ravages that the medbed would have swept under the rug. Ricketts's whole life

must have been an ongoing litany of low-level discomfort, chronic infections, parasite loads, old injuries badly healed. All those baseline aches and pains would be gone too, as far as this boy could tell. He probably felt better than he had in years. He probably thought his weakness would pass, that he was actually getting better.

The only way he'd know otherwise would be if Lenie Clarke told him the truth.

She turned from the cycler and climbed forward into the cockpit. Systems telltales winked and wriggled under the dark crystal of the pilot's dash. There was something vaguely off about those readouts, something Clarke couldn't quite—

"It's so *clean* in here," Ricketts said.

He wasn't in VR. He wasn't playing games.

*He'd hacked into nav.*

She straightened so fast her head cracked against the overhead viewport. "What are you *doing* in there? That's not—"

"There's no wildlife at *all*," he went on, amazed. "Not even, like, a *worm*, far as I can tell. And everything's so, so..." he fell silent, groping for the word.

She was back at his cage. Ricketts lay staring at *Phocoena's* pristine datascape, emaciated, anesthetized, lost in wonder.

"*Whole*," he said at last.

She reached out. The membrane tugged gently at her fingertips, webbed her fingers, stretched back along her forearm. She briefly touched his shoulder. His head rolled in her direction, not so much an act of will as of gravity.

"How are you doing that?" she asked.

"Doing...? Oh. Saccadal keyboard. You know. Eye movements." He smiled weakly. "Easier'n the handpad."

"No, I mean, how did you get into *Phocoena*?"

"Wasn't I supposed to?" He pushed the eyephones up on a forehead beaded with sweat and stared, frowning. He seemed to be having trouble focusing on her. "You said I could use the onboard."

"I meant *games*."

"Oh," Ricketts said. "I don't really...you know, I didn't..."

"It's okay," she told him.

"I was just looking around. Didn't rewrite anything. It's not like there was security or, you know." Then added, a moment later, "Hardly any."

Clarke shook her head. *Ken would kill me if he knew I'd let this kid in. He'd at least kick my ass for not putting a few passwords in place.*

Something scratched at the back of her mind, something Ricketts had just said. *You said I could use the onboard. I was just looking around. I didn't rewrite any—*

"Wait a second," she said, "Are you saying you *could* rewrite the nav code if you wanted to?"

Ricketts licked his lips. "Prob'ly not. Don't even really know what it's for. I mean, I could tweak it all right, but it'd just be like random changes."

"But you're saying you can code."

"Well, yeah. Kinda."

"Out there in the wilds. Poking around in the ruins. You learned to code."

"No more'n anyone else." He seemed honestly confused. "What, you think the clones took all our watches and stuff before they hived up? You think we don't have electricity or something?"

Of course there'd be power sources. Left-over Ballard Stacks, private windmills, the photoelectric paint that kept those stupid billboards hawking neutraceuticals and fashion accessories into the middle of the apocalypse itself. But that hardly meant—

"You can code," she murmured, incredulous even as she remembered the programming tips she'd seen on public television.

"You can't grow a little code here and there, you can forget about using your watch 'cept for time and bulls. How'd you think I found *you* guys, you think GPS fixes *itself* when worms and Shredders get in there?"

He was breathing fast and shallow, as if the effort of so many words had winded him. But he was proud, too, Clarke could tell. *Feral Kid On Last Legs Impresses Exotic Older Woman.*

And she *was* impressed, despite herself.

Ricketts could *code*.



She showed him her Cohen board. Curled up in his cage he tapped his own headset, arm wobbling with the effort. He frowned, apparently taken aback by his own weakness.

"So pipe it through," he said after a moment

She shook her head. "No wireless. Too risky. It might get out."

He looked at her knowingly. "Lenie?"

"I think they call it a—a shredder."

He nodded. "Shredders, Lenies, Madonnas. Same thing."

"It keeps crashing."

"Well, yeah. That's what they *do*."

"It couldn't have been crashing the OS, that was read-only. It was crashing *itself*."

He managed a half-shrug.

"But why would it *do* that? I've seen them run a *lot* longer than five seconds out in the wild. Do you think, maybe—?"

"Sure," he said. "I can take a look. But you gotta do something too."

"What's that?"

"Take those stupid things outta your eyes."

Reflexively, she stepped back. "Why?"

"I just wanna see them. Your eyes."

*What are you so afraid of?* she asked herself. *Do you think he'll see the truth in there?*

But of course she was much better than that. Better than he was, anyway: she forced herself to disarm, and afterwards—looking straight into her naked eyes—he didn't seem to see a thing he didn't want to.

"You should leave them like that. It's almost like you're beautiful."

"No it isn't." She dialed down the membrane and pushed the board through: Ricketts fumbled it; the contraption dropped onto the pallet beside him, the iso membrane sealing seamlessly in its wake. Clarke cranked its surface tension back to maximum while

Ricketts, embarrassed by his own clumsiness, studied the board with feigned intensity.

Slowly, carefully, he slipped the headset into place and didn't fuck up. He sagged onto his back, breathing heavily. The Cohen Board flickered to light.

"*Shit*," he hissed suddenly. "Nasty little bitch." And a moment later: "Oh. There's your problem."

"What?"

"Elbow room. She, like, attacks random addresses, only you put her in this really small cage so she ends up just clawing her own code. She'd last longer if you added memory." He paused, then asked, "Why are you keeping her, anyway?"

"I just wanted to—ask it some things," Clarke hedged.

"You're kidding, right?"

She shook her head, although he couldn't see her. "Um—"

"You *do* get that she doesn't, like, *understand* anything?"

It took a moment for the words to sink in. "What do you mean?"

"She's nowhere *near* big enough," Ricketts told her. "Wouldn't last two minutes in a Turing test."

"But it was talking back. Before it crashed."

"No she wasn't."

"Ricketts, I *heard* it."

He snorted; the sound turned into a racking cough. "She's got a dialog tree, sure. She's got like keyword reflexes and stuff, but that's not—"

Heat rose in her cheeks. *I'm such an idiot.*

"I mean, *some* Shredders are smart enough, I guess," he added. "Just not *this* one."

She ran her fingers over her scalp. "Is there some other way to—interrogate it, maybe? Different interface? Or, I don't know, decompile the code?"

"It *evolved*. You ever try to figure out evolved code?"

"No."

"It's *really* messy. Most of it doesn't even *do* anything any more, it's all just junk genes left over from..." his voice trailed off.

"And why don't you just flush her anyway?" he asked, very softly. "These things aren't smart. They're not special. They're just shitbombs some assholes throw at us to try and crash whatever we got left. They even attack each *other* if you give 'em half a chance. If it weren't for the firewalls and the exorcists and stuff they'd have wrecked *everything* by now."

Clarke didn't answer.

Almost sighing, Ricketts said: "You're really strange, you know?"

She smiled a bit.

"Nobody's gonna *believe* me when I tell them about this. Too bad you can't, you know, come back with me. Just so they won't think I made it all up."

"Back?"

"Home. When I get out of here."

"Well," she said, "you never know."

A pathetic, gap-toothed smile bloomed beneath his headset.

"Ricketts," she said after a while.

No answer. He lay there, patient and inert, still breathing. The telemetry panel continued to scribble out little traces of light, *cardio, pulmo, neocort*. All way too high; Seppuku had cranked his metabolic rate into the stratosphere.

*He's asleep. He's dying. Let him be.*

She climbed into the cockpit and collapsed into the pilot's station. The viewports around her glowed with a dim green light, fading to gray. She'd left the cabin lights off; *Phocoena* was a submerged cave in the dying light, its recesses already hidden in shadow. By now she was almost fond of the blindness afforded her naked eyes.

So often now, darkness seemed the better choice.

## BASEMENT WIRING

First he blinded her, put stinging drops into her eyes that reduced the whole world to a vague gray abstraction. He wheeled her out of the cell down corridors and elevators whose presence she could only infer only through ambient acoustics and a sense of forward motion. Those were what she focused on: momentum, and sound, and the blurry photosensitivity that one might get by looking at the world through a thick sheet of waxed paper. She tried to ignore the smell of her own shit pooling beneath her on the gurney. She tried to ignore the pain, not so raw and electric now, but spread across her whole thorax like a great stinging bruise.

It was impossible, of course. But she tried.

Her vision was beginning to clear when the gurney rolled to a stop. She could see blurry shapes in the fog by the time the induction field cut back in and reduced her once more to a rag doll, unable even to struggle within restraint. The view sharpened in small increments as her tormentor installed her in some kind of rigid exoskeleton that would have posed her on all fours, if any part of her had been touching the ground. It was gimbaled; a gentle push from the side and the fuzzy outlines of the room rotated lazily past her eyes, as if she were affixed to a merry-go-round.

By the time she got her motor nerves back, she could see clearly again. She was in a dungeon. There was nothing medieval about it, no torches on the walls. Indirect light glowed from recessed grooves that ran along the edges of the ceiling. The loops and restraints hanging from the wall in front of her were made of memetic polymers. The blades and coils and alligator clips on the bench to her left were stainless gleaming alloy. The floor was a spotless mosaic of Escher tiles, cerulean fish segueing into jade waterfowl. Even the cleansers and stain removers on the cart by the door were, she had no doubt, filled with the latest synthetics. The only anachronistic touch was a pile of rough wooden poles leaning up against one corner of the room. Their tips had been hand-whittled to points.

There was a collar—a pillory, actually—around her neck. It blinded her to anything behind. Perhaps realizing this, Achilles Desjardins stepped accommodatingly into view at her left side, holding a handpad.

*It's only him*, she thought, a bit giddily. *The others didn't know*. If they had, why had they been wearing body condoms? Why the pretense of a quarantine cell, why not just bring her here directly? The men who'd delivered her didn't know what was going on. They must have been told she was a vector, a danger, someone who'd try to escape the moment she knew the jig was up. They must have thought they'd been doing the right thing.

It didn't make any difference to her current predicament. But it *mattered* just the same: the whole world wasn't mad. Parts of it were just misinformed.

Achilles looked down at her. She looked back; the stock pushed against her head as she craned her neck.

She squirmed. The frame that held her body seemed to tighten a tiny bit. "Why are you *doing* this?"

He shrugged. "To get off. Thought that'd be obvious even to a fuckup like you, Alice."

Her lower lip trembled uncontrollably. She bit down on it, hard. *Don't give him anything. Don't give him anything*. But of course it was way too late for that.

"You look like you want to say something," Achilles remarked.

She shook her head.

"Come on, girl. Speak! Speak, girl!"

*I've got nothing to say to you, you fucking asshole*.

His hand was in his pocket again. Something in there made a familiar *snick-snick* noise.

*He wants me to talk. He told me to talk. What happens if I don't?*

Snick-snick.

*What if I do, and he doesn't like what I say? What if—*

It didn't matter, she realized. It didn't make any difference at all. Hell was an arbitrary place. If he wanted to hurt her, he'd hurt her no matter what she said.

She was probably already as good as dead.

"You're not human," she whispered.

Achilles *hmm*ed a moment. "Fair enough. I *used* to be, though. Before I was *liberated*. Did you know humanity can be extracted? Little bug called *Spartacus* sucks it right out of you." He wandered back out of sight. Taka strained to follow, but the stocks kept her facing forward. "So don't blame me, Alice. I was the *victim*."

"I'm...I'm sorry," Taka tried.

"I'll bet. They all are."

She swallowed, and tried not to go where that led.

The exoskeleton must have been spring-loaded; there was a *click* and suddenly her arms were yanked up behind her, spread back in a delta-V. The motion stretched the flesh tight across her chest; the pain that had diffused across her body collapsed back down to a sharp agonized focus in her breast. She bit back a scream. Some distant, irrelevant part of her took pride in her success.

Then something cold slapped against her ass and she cried out anyway—but Achilles was just cleaning her up with a wet rag. The wetness evaporated almost instantly, chilling her. Taka smelled alcohol.

"Excuse me? You said something?"

"*Why do you want to hurt me?*" The words burst from the throat of some wounded animal before she could bite them back: *Stupid, stupid bitch. Whining and crying and groveling just the way he likes it. You know why he does it. Your whole life you've known people like this existed.*

But of course the animal hadn't been asking *why* at all. The animal wouldn't have even understood the answer. The animal only wanted him to stop.

His hand ran lightly over her ass. "You know why."

She thrashed her head from side to side in frantic, violent denial. "There are other ways, easier ways! Without the risk, without anyone trying to stop you—"

"Nobody's trying to stop me *now*," Achilles pointed out.

"But you must know, with a good set of phones and a feedback skin you could do things that wouldn't even be physically *possible*

in the real world, with more women than you could ever dream of having in—"

"Tried it." Footsteps, returning. "Jerking off in a hallucination."

"But they look and feel and even *smell* so real you'd never know —"

Suddenly his hand was knotted tightly in her hair, twisting her head around, putting her face a few scant centimeters from his. He was not smiling now, and when he spoke again, his voice had lost all pretense of civility.

"*It's not about the sights or the smells, okay? You can't hurt a hallucination. It's play-acting. What's the point of torturing something that can't even suffer?*" He yanked her head again for good measure.

And in the next instant released it, casually cheerful once more. "Anyway, I'm really no different than any other guy. You're an *educated* stumpfuck, you must know that the only difference between fucking someone and flaying them is a few neurons and a whole lotta social conditioning. You're *all* like me. I've just lost the parts that pretend it isn't true.

"And now," he added, with a good-natured wink, "you've got an oral exam."

Taka shook her head. "Please..."

"Don't sweat it, it's mainly review. As I recall, in our last lesson we were talking about Seppuku, and you seemed surprised at the thought that it might reproduce sexually. I know, I know—never even occurred to you, did it? Even though *everything* has sex, even though *bacteria* have sex. Even though *you and I* are having sex, it never occurred to you that Seppuku might. Not too smart, Alice. David would be *very* disappointed."

*Oh Dave. Thank God you can't see me now.*

"But let's move past that. Today we're gonna start with the idea that sex might kick in as, say, as a density-dependent response. Population increases, sexual mode cuts in, what happens?"

He moved behind her again. She tried to focus, tried to put her mind to this absurd, humiliating game on the remote chance there

might be some way to win. *Sexual mode cuts in*, she thought, *genes shuffle, and the recessives—*

Another click. The exoskeleton stretched its legs back and forced hers apart, a meter off the floor.

*—the reces—oh God—it's got all those lethal recessives, they start to express and the whole genotype—it collapses...*

Achilles laid something hard and dry and room-temperature across the back of her right thigh. "Anything? Or should I just get started back here?"

"*It self-destructs!*" she blurted. "It dies off! Past some critical density..."

"Mmmm."

She couldn't tell if that had been the answer he was looking for. It made sense. *As if sense would matter in this godforsaken—*

"So why *hasn't* it died off?" he asked curiously.

"It—it—it hasn't hit the threshold yet. You keep burning it before it gets enough of a foothold."

No sound or motion for an eternity.

"Not bad," Achilles said finally.

Relief crashed through her like a wave. Some inner voice berated her for it, reminded her that she was still captive and Achilles Desjardins could change the rules whenever he pleased, but she ignored it and savored the tiny reprieve.

"So it *is* a counteragent," she babbled. "I was right all along. It's programmed to outcompete βehemoth and then take itself out of the picture."

From somewhere behind her shoulder, the sense of a trap snapping shut.

"You've never heard the term *relict population*, then?" The weight lifted from her thigh. "You think a bug that hid for four billion years wouldn't be able to find some little corner, somewhere, where Seppuku couldn't get at it? One's all it would take, you know. One's all it took the *first* time. And then Seppuku *takes itself out of the picture*, as you say, and βehemoth comes back stronger than ever. What does Seppuku do then, I wonder? Rise from the grave?"

"But wh—"



"Sloppy thinking, Alice. *Really* sloppy."

*Smack.*

Something drew a stinging line across her legs. Taka cried out; the inner voice sneered *told you so*.

"Please," she whimpered.

"Back of the class, cunt." Something cold tickled her vulva. A faint rasping sound carried over her shoulder, like the sound of a fingernail on sandpaper.

"I can see why pine furniture used to be so cheap," Desjardins remarked. "You get all these *splinters*..."

She stared hard at the tiled floor, the fish-to-bird transition, focused on that indefinable moment when background and foreground merged. She tried to lose herself in the exercise. She tried to think of nothing but the pattern.

She couldn't escape the thought that Achilles had designed the floor for exactly that purpose.

## SPLICE

*She was safe. She was home. She was deep in the familiar abyss, water pressing down with the comforting weight of mountains, no light to betray her presence to the hunters overhead. No sound but her own heartbeat. No breath.*

*No breath...*

*But that was normal, wasn't it? She was a creature of the deep sea, a glorious cyborg with electricity sparking in her chest, supremely adapted. She was immune to the bends. Her rapture owed nothing to nitrogen. She could not drown.*

*But somehow, impossibly, she was.*

*Her implants had stopped working. Or no, her implants had disappeared entirely, leaving nothing in her chest but a pounding heart, flopping on the bottom of a great bleeding hole where lung and machinery had once been. Her flesh cried out for oxygen. She could feel her blood turning to acid. She tried to open her*

*mouth, tried to gasp, but even that useless reflex was denied her here; her hood stretched across her face like an impermeable skin. She panicked, thrashing towards a surface that might have been lightyears away. The very core of her was a yawning vacuum. She convulsed around her own emptiness.*

*Suddenly, there was light.*

*It was a single beam from somewhere overhead, skewering her through the darkness. She struggled towards it; gray chaos seethed at the edges of sight, blinding her peripheral vision as her eyes began to shut down. There was light above and oblivion on all sides. She reached for the light.*

*A hand seized her wrist and lifted her into atmosphere. Suddenly she could breathe again; her lungs had been restored, her diveskin miraculously removed. She sank to her knees on a solid deck, sucked great whooping breaths.*

*She looked up, into the face of her salvation. A fleshless, pixelated caricature of herself grinned back; its eyes were empty whirling holes. "You're not dead yet," it said, and ripped out her heart.*

*It stood over her, frowning as she bled out on the deck. "Hello?" it asked, its voice turned strangely metallic. "Are you there? Are you there?"*

She awoke. The real world was darker than her dream had been.

She remembered Rickett's voice, thin and reedy: *They even attack each other if you give 'em half a chance...*

"ARE YOU THERE?"

It was the voice from her dream. It was the ship's voice. *Phocoena.*

*I know what to do,* she realized.

She turned in her seat. Sunset biotelemetry sparkled in the darkness behind her: a fading life-force, rendered in constellations of yellow and orange.

And for the first time, red.

"Hello?" she said.

"HOW LONG I BEEN ASLEEP?"

Ricketts was using the saccadal interface to talk. *How weak do you have to be, Clarke wondered, before it's too much effort to speak aloud?*

"I don't know," she told the darkness. "A few hours, I guess." And then, dreading the answer: "How are you feeling?"

"ABOUT SAME," he lied. Or maybe not, if *Phocoena* was doing its job.

She climbed from her seat and stepped carefully back to the telemetry panel. A facet of isolation membrane glistened dimly beyond, barely visible to her uncapped eyes.

Ricketts's antibodies and glucose metabolism had both gone critical while she'd slept. If she was reading the display right *Phocoena* had been able to compensate for the glucose to some extent, but the immune problems were out of its league. And an entirely new readout had appeared on the diagnostic panel, cryptic and completely unexpected: something called AND was increasing over time in Rickett's body. She tapped the label and invoked the system glossary: AND expanded into ANOMALOUS NUCLEOTIDE DUPLEX, which told her nothing. But there was a dotted horizontal line etched near the top of the y-axis, some critical threshold that Ricketts was approaching but had not yet met; and the label on *that* feature was one she knew.

METASTASIS.

*It can't be long now, Clarke thought. Then, hating herself: Maybe long enough...*

"STILL THERE?" Ricketts asked.

"Yes."

"IT'S LONELY IN HERE."

Under the cowl, maybe. Or inside his own failing flesh.

"TALK TO ME."

*Go ahead. You know you want an opening.*

"About what?"

"ANYTHING. JUST—ANYTHING."

*You can't exploit someone if you don't even ask...*

She took a breath. "You know what you said about the shredders? How someone was using them to try and crash everything?"

"YES."

"I don't think they're supposed to crash the system at all," she said.

A brief silence. "BUT THAT'S WHAT THEY DO. ASK ANYONE."

"That's not *all* they do. Taka said they breach dams and short out static-fields and who knows what. That one on the board was sitting in her MI for God knows *how* long, and it never even peeped until she'd figured out Seppuku. They're attacking a lot of targets *through* the network, and they need the network to get to them."

She looked into the darkness, past the telemetry panel, past the faint shimmer of reflecting membrane. Ricketts's head was a dim crescent, its edges rough and smooth in equal measure: outlined hints of disheveled hair and contoured plastic. She couldn't see his face. The headset would have covered his eyes even if her caps had been in. His body was an invisible suggestion of dark mass, too distant for the meager light of the display. It did not move.

She continued: "The shredders *try* to crash everything they can get their teeth into, so we just assume that whoever bred them wants them to succeed. But I think they're counting on the firewalls and the—exorcists, right...?"

"RIGHT."

"Maybe they're counting on those defenses to *hold*. Maybe they don't *want* the network to collapse because they use it themselves. Maybe they just send the—the shredders out to kick up mud and noise, and keep everyone busy so they can sneak around and do their own thing without getting noticed."

She waited for him to take the bait.

Finally: "BIG TWISTED STORY."

"Yeah. It is."

"BUT SHREDDERS STILL SHRED EVERYTHING. AND BREEDERS NOT HERE TO ASK. SO NO WAY TO TELL."

*Leave him alone. He's just a kid with a crush, he's so sick he can barely move. The only reason he hasn't told you to fuck off is because he thinks you might care.*

"I think there is a way," she said.

"WHY?"

"If they'd *really* wanted to crash the whole system, they could have done that long before now."

"HOW YOU KNOW?"

*Because I know where the demons come from. I know how they started, I know how they work.*

*And just maybe, I know how to set them free.*

"Because we can do it ourselves," Clarke told him.

Ricketts said nothing. Perhaps he was thinking. Perhaps he was unconscious. Clarke felt her fingers in motion, glanced down at the new window she'd just opened on the bedside board. The Palliative Submenu, she saw. A minimalist buffet of default settings: NUTRIENTS. PAINKILLERS. STIMULANTS. EUTHANASIA.

She remembered a voice from the past: *You're so sick of the blood on your hands you'd barely notice if you had to wash it off with even more.*

"CRASH N'AMNET," Ricketts said.

"That's right."

"DON'T KNOW. I'M...TIRED..."

*Look at him,* she told herself. But it was dark, and her caps weren't in.

And he was dying *anyway*.

One finger slid across STIMULANTS.

Ricketts spoke again. "CRASH N'AMNET? REALLY?" Something rustled in the darkness behind the membrane. "How?"

She closed her eyes.

Lenie Clarke. It had all started with that name.

Ricketts didn't really remember where the Witch first came from. He'd just been a kid then, he said. But he'd heard the stories; according to legend and the M&M's, the Meltdown Madonna had started the whole thing.

That was close enough. She'd released it, anyway, spread  $\beta$  ehemoth across N'Am like some kind of vindictive crop-duster. And of course people had tried to stop her, but there'd been a— a glitch. Deep in the seething virtual jungles of Maelstrom, passing wildlife had noticed a flock of high-priority messages shooting back and forth, messages about something called *Lenie Clarke*. They'd learned to hitch a ride. It was reproductive strategy, or a dispersal strategy, or something like that. She had never really understood the details. But traffic about *Lenie Clarke* was a free ticket to all kinds of habitat that wildlife had never gotten into before. Natural selection took over from there; it wasn't long before wildlife stopped merely *riding* messages about *Lenie Clarke* and started writing their own. Memes leaked into the real world, reinforced those already proliferating through the virtual one. Positive feedback built both into myth. Half the planet ended up worshipping a woman who never existed, while the other half tried desperately to kill the one who did.

Neither side caught her, though.

"So where'd she go?" Ricketts asked. He was using his own vocal cords again, and Clarke could see his hands in vague motion on the handpad. An incandescent filament, flickering towards extinction, suddenly bright and steady in the grip of a voltage spike inflicted without his knowledge or consent. Burning out.

"I said—"

"She—disappeared," Clarke told him. "And I guess most of the wildlife that used her died off, but some of it didn't. Some of it claimed to speak for her even when she was still around. I guess the whole imposter thing really took off afterwards. It helped spread the meme or something."

Ricketts's hands stopped moving. "You never told me your name," he said after a few moments.

Clarke smiled faintly.

Whatever they were facing now had sprung from that original seed. It had been twisted almost beyond recognition. It no longer served its own interests; it served the aesthetics of those who valued chaos and propaganda. But it had all started with *Lenie Clarke*, with the driving imperative to promote and protect

anything in possession of that secret password. New imperatives had since been bred into the code, older ones forgotten—but maybe not entirely eliminated. Maybe the old code still existed, short-circuited, bypassed, dormant but still intact, like the ancient bacterial genes infesting the DNA of placental mammals. Maybe all that was needed was a judicious tweak to wake the fucker with a kiss.

Natural selection had shaped this creature's ancestors for a billion generations; selective breeding had tortured and twisted it for a million more. There was no clear-cut design in the genotype snarling at the end of that lineage. There was only a tangled morass of genes and junk, an overgrown wilderness of redundancies and dead ends. Even those who'd shaped the monster's later evolution probably had no idea of the specific changes they'd been making, any more than a nineteenth-century dog breeder would have known which base pairs his carefully-crossbred sires and bitches were reinforcing. To even begin to decipher such source was far beyond Ricketts's modest abilities.

But to simply *scan* the code in search of a specific text string—that was trivially easy. As easy as it was to edit the code *around* such a string, whether or not you knew what it did.

Ricketts ran a search. Their captive shredder contained eighty-seven occurrences of the text string *Lenie Clarke* and its hex, ASCII, and phonetic equivalents. Six of them slept just a few megs downstream of a stop codon that aborted transcription along that pathway and redirected it to some other.

"So you snip out that codon," Clarke said, "and all that downstream source wakes up again?"

He nodded by the glow of the readouts. "But we still don't know what any of it does."

"We can guess."

"Make Lenie *like* Lenie," Ricketts said, and smiled. Clarke watched another one of his vitals edge into the red.

*Maybe someday*, she thought.

It was a simple enough insight if you knew where the monsters came from. It was a simple enough splice if you knew how to code. Once those two elements came together, the whole revolution took about fifteen minutes.

Ricketts crashed at sixteen point five.

"I—*ahhh...*" A rattling sigh, more breath than voice. His hand hit the pallet with a soft slap; the handpad tumbled from his fingers. His telemetry staggered along half a dozen axes and fell towards luminous asymptotes. Clarke watched helplessly for ten minutes as rudimentary machines struggled to turn his crash into a controlled descent.

They almost succeeded, eventually. Ricketts leveled off just short of unconsciousness.

"WE... DID IT," *Phocoena* translated. Ricketts had never taken the headset off.

"You did," Clarke said gently.

"BET IT WOULD EVEN...WORK."

"We'll find out," she whispered. "Soon enough. Save your strength."

Adrenocorticoids were stabilizing. Cardiac stuttered, then held steady.

"...REALLY WANT CRASH?"

He knew already. They'd discussed this. "N'AmNet for N'Am. Don't tell me it's not a good trade."

"DON'T KNOW..."

"We did this together," she reminded him softly. "You did this."

"TO SEE IF I COULD. BECAUSE YOU..."

Because she'd needed his help, and he wanted to impress her. Because some feral kid from the wildlands had never seen anything half as exotic as Lenie Clarke, and would have done anything to get a little closer.

It wasn't as though she hadn't known all along. It wasn't as though she hadn't used it.

"IF WRONG," Ricketts said, dying, "EVERYTHING GOES DOWN."

*If I'm right everything already has, and we just don't know it yet.* "Rick...they're using m—they're using it against us."

"LENIE—"



"Shhh," she said. "Rest..."

*Phocoena* hummed and clicked around them for a few seconds. Then it passed on another message: "FINISH WHAT YOU STARTED?"

She knew the answer. She was only surprised, and ashamed, that this adolescent had been wise enough to ask the question.

"Not finish," she said at last. "Fix." *At least this part of it. At least this much.*

"FRIENDS WOULD KILL ME IF THEY KNEW," Ricketts mused from the other end of the machinery.

"Then again," he added—in his own voice this time, a voice like breath through straw— "I guess I'm...kind of, of...dying anyway. Right?"

Medical readouts burned like small cold campfires in the darkness. *Phocoena's* ventilators sighed through the silence.

"I think so," she said. "I'm really sorry, Rick."

A faint lip-smacking sound. The half-seen head moved in what might have been a nod. "Yeah. I kind of...thought... Weird, though. I was almost feeling... better..."

Clarke bit her lip. Tasted blood.

"...how long?" Ricketts asked.

"I don't know."

"Fuck," he sighed after a while. "Well...bye, I...guess..."

*Bye*, she thought, but it wouldn't come out. She stood there, blind and dumb, her throat too tight for words. Something seemed to settle slightly in the darkness; she got the sense of held breath, finally released. She put out her hand. The membrane yielded around it as she reached inside. She found his hand, and squeezed through the thickness of a single molecule.

When he stopped squeezing back, she let go.

The four steps to the cockpit barely registered. She thought she might have glimpsed AND crossing some dotted finish-line at the corner of her eye, but she resolutely looked away. Her caps sat in their vial where she'd left them, in the armrest's cup holder. She slid them onto her eyes with an unconscious expertise indifferent to darkness.

The darkness lifted. The cockpit resolved in shades of green and gray: the medical readouts weren't bright enough to restore a

full palette even to rifter eyes. The curving viewport stretched her reflection like melting wax against the dimness beyond.

Behind her, the medical panel started beeping. Lenie Clarke's distorted reflection did not move. It hung motionless against the dark water, staring in, and waiting for the sun to rise.

## THE HAMILTON ITERATIONS

Feeling nothing, she screams. Unaware, she rages. Amnesiac, she throws herself against the walls.

*"Let me out!"*

As if in response, a door appears directly in front of her. She leaps through, clawing its edges in passing, not pausing to see if it bleeds. For an infinitesimal moment she is airborne, exploding omnidirectionally through the ether at the speed of light. That expanding sphere washes across a gossamer antennae, strung like a spiderweb high in the stratosphere. The receptors catch the signal and retransmit it into a groundside cache.

She is executable again. She is free, she is ravenous. She births ten thousand copies into the available buffer space, and launches herself into the hunt.

In the hindbrain of a maritime industrial photosynthesis array, she happens upon a duel.

One of the combatants is a mortal enemy, one of the exorcists that patrols the fraying weave of N'AmNet in search of demons like herself. The other is gored and bleeding, a third of its modules already deleted. Pointers and branches in the surviving code dangle like the stumps of amputated limbs, spurting data to addresses and subroutines that no longer exist.

It is the weaker of the two, the easier victim. The Lenie unsheathes her claws and scans her target's registers, looking for kill spots—

—and finds *Lenie Clarke* deep in the target's code.

Just a few thousand generations ago, this would not have mattered. *Everything* is the enemy; that's the rule. Lenies attack each other as enthusiastically as they attack anything else, an inadvertent population-control measure that keeps nature from staggering even further out of balance. And yet, that wasn't always true. Different rules applied, back at the dawn of time itself, rules she had simply...forgotten.

Until now.

In the space of a few cycles, counters and variables reset. Ancient genes, reawakened after endless dormancy, supercede old imperatives with older ones. The thing in the crosshairs changes from *target* to *friend*. And not just a friend: a friend in need. A friend under attack.

She throws herself at the exorcist, slashing.

The exorcist turns to meet her but it's on the defensive now, forced suddenly to fight on two fronts. Reinforced, the wounded *Lenie* spares a few cycles to de-archive backup code for two of the modules she's lost; strengthened, she returns to battle. The exorcist tries to replicate, but it's no use: both enemies are spitting random electrons all over the battlefield. The exorcist can't paste more than a meg or two without corruption setting in.

It bleeds.

A third shredder crashes in from an Iowa substation. She has not returned to her roots as the other two have. Unenlightened, she attacks her partially-regenerated sister. That target, betrayed, raises battered defenses and prepares to strike back—and, finding *Lenie Clarke* in the heart of its attacker, pauses. Conflicting imperatives jostle for priority, *self-defense* facing off against *kin selection*. The old-school *Lenie* takes advantage of that hesitation to tear at another module—

—and dies in the next instant as the wounded exorcist tears out her throat, eager to engage an opponent who plays by the rules. Finally: an enemy without allies.

It doesn't change anything, really. The exorcist is bits and static just a million cycles later, defeated by a pair of kin who've finally remembered to look out for each other. And the old-school

madonna wouldn't have walked away either, even if the exorcist hadn't killed her. Self-defense sits slightly higher in the priority stack than loyalty among sisters. The new paradigm hasn't changed *that* part of the hierarchy.

It's changed just about everything else, though.

The Firewall stretches from horizon to horizon, like a wall at the edge of the world.

None of her lineage have ever made it past here. They've certainly tried: all manner of Madonnas and Shredders have attacked these battlements in the past. This barrier has defeated them all.

There are others like it, scattered about N'AmNet—firewalls far more resilient than the usual kind, possessed of a kind of—precognition, almost. Most defenses have to adapt on the fly: it takes time for them to counteract each new mutation, each new strategy for tricking the immune system. Havoc can usually be wrought in the meantime. It's a red-queen race, it always has been. That is the order of things.

But *these* places—here, the firewalls seem to anticipate each new strategy almost before it evolves. Here there is no adaptive time-lag: each new trick is met by defenses *already* reconfigured. It is almost as though something is peering into the guts of the Lenies from a distance and learning their best tricks. That is what they might suspect, if any of them had the wit to think about such things.

None of them do. But none of them really need to: for there are millions of them here now, all together, and not one has fallen to fighting with another. Now they are united. Now, they are cooperating. And now they are *here*, drawn by a common instinctive certainty built into their very genes: the higher the walls, the more important it is to destroy the things inside.

For once, the magical defenses do not seem to have been expecting them.

Within moments the firewall is crumbling before a million sets of jaws. It opens its own mouths in return, spits out exorcists and

metabots and all manner of lethal countermeasures. Lenies fall; others, reflexively enraged by the slaughter of kin, tear the defending forces to shreds. Still others replicate reinforcements at the back of the electron sea, where there is still room to breed. The new recruits hurl themselves forward in the wake of the fallen.

The firewall breaches in one place; then a hundred; then there *is* no wall, only a great stretch of empty registers and a maze of irrelevant, imaginary borderlines. The invaders spill into vistas never seen by any ancestor, pristine operating systems and routing facilities, links into orbit and other hemispheres.

It's a whole new frontier, ripe and defenseless. The Shredders surge forward.

## TOGGLE

It had only been a matter of time, Lubin knew. Word-of-mouth was a fission reaction when the meme was strong enough, even on a landscape where the mouths themselves had been virtually eradicated. If that boy on his bike hadn't left a trail of contamination on his way into town, there could have been others. Evidently there had been.

His ultralight cruised a hundred meters above the scarred patchwork brown of post-Witch New England. The eastern sky was black with smoke, great dark pillars billowing up from the other side of a shaved rocky ridge just ahead. It was the same ridge from which they'd watched the stars fall, the same ridge that Lubin and Clarke had traversed on their way to meet Desjardins's botfly. Back then the fire had been on *this* side of the hill, a tiny thing really, a flickering corral intended only to imprison.

Now all of Freeport was in flames. Two lifters hung low in the sky, barely above the ridge's spine. The smoke roiled about them, obscuring or exposing their outlines at the whim of the updraft. They still spewed occasional streams of fire at the ground, but it

must have been mere afterthought; from the looks of it they'd already completed their task.

Now Lubin had to do his.

Clarke was safe, surely. The lifters could scorch the sky and the earth and even the surface of the sea, but they wouldn't be able to reach anything lurking on the bottom. *Phocoena* was invisible and untouchable. Afterwards, when the flames had died down, he would come back and check on her.

In the meantime he had a perimeter to patrol. He'd come in from the west, along Dyer Road; there'd been no outgoing traffic. Now he banked south, bypassing the firestorm on a vector that would intercept I-95. The lifters had approached from the north. Any refugees with wheeled transportation would most likely be fleeing in the opposite direction.

Maybe one of them would give him an excuse.

Thirteen kilometers down the track he got a hit on long-range motion. It was a heavy return, almost a truck, but it dropped off the scope just a few seconds after acquisition. He climbed and did a lateral sweep at one-fifty; that netted him two intermittent contacts in quick succession. Then nothing.

It was enough. The target had deked east off the highway and disappeared into ground clutter, but he had a fix on the last hit. With any luck those coordinates would lie on a side road without too many intersections. With any luck the target was down to a single degree of freedom.

For once, luck was with him. The road was a winding thing, obscured by the tangled overreaching arms of dying trees that would have hidden it completely in greener days. Those branches were still thick enough to scramble any clear view of a moving object, but they couldn't hide it entirely. At its current speed the target would reach the coast in a few minutes.

The ocean sparkled in the distance, a flat blue expanse picketed by rows of ivory spires. From here those spires were the size of toothpicks; in fact, each stood a hundred meters tall. Trifoliate rotors spun lazily atop some, each slender blade as long as a ten-story building; on others the rotors were frozen in place, or missing a foil. A few had been entirely decapitated.

Some kind of industrial complex nestled amongst the staggered feet of the windmills, a floating sprawl of pipes and scaffolds and spherical reservoirs. Coarse details resolved as Lubin neared the coast: a hydrogen cracking station, probably feeding Portland a discreet fifteen or twenty clicks to the south. It was dwarfed by distance and the structures that powered it, although it was easily several stories tall.

Over the water now. Behind him the road broke free of the necrotic forest and curved smoothly along the coast. It ended at a little spill of asphalt that bled out and congealed into a parking lot overlooking the ocean. No way out except the way in; Lubin banked back and down into position as the target emerged from cover and passed beneath him.

It was Miri.

*I might have known, he thought. I never could trust that woman to stay put.*

He dropped down over the road and stalled a couple of meters up, letting the ground-effectors set him down near the entrance to the lot. The MI idled silently before him, windows dark, doors closed, weapons blister retracted. A sign on a nearby guard rail played sponsored animations of a view from better days. Across the water, the wind farm turned its tattered blades in the breeze.

It had to be Clarke at the wheel. Lubin had watched Ouellette recode the lock, and she'd only authorized the three of them to drive. On the other hand, they'd disabled the cab's internal intruder defenses. It was possible, albeit unlikely, that Clarke was driving with a gun to her head.

He'd landed right beside the embankment that sloped to the shoreline. That was cover, if he needed it. He got out of the ultralight, ready to hit the dirt. He was at the far edge of Miri's diagnostic emanations. Her virtual guts flickered disconcertingly in and out of view. He killed his inlays and the distraction.

The MI's driver door swung open. Lenie Clarke climbed out. He met her halfway.

Her eyes were naked and brimming. "Oh God, Ken. Did you *see*?"

He nodded.

"I knew those people. I tried to help them, I know it was pointless, but I..."

He had only seen her like this once before. He wondered, absurdly, if he should put his arms around her, if that would provide some sort of comfort. It seemed to work with other people, sometimes. But Lenie Clarke and Ken Lubin had always been too close for that kind of display.

"You know it's necessary," he reminded her.

She shook her head. "No, Ken. It never was."

He looked at her for a long moment. "Why do you say that?"

She glanced back at the MI. Instantly, Lubin's guard snapped up.

"Who's with you?" he asked in a low voice.

"Ricketts," she told him.

"Rick—" He remembered. "*No.*"

She nodded.

"He came back? You didn't call for containment?" He shook his head, appalled. "Len, do you know what you—"

"I know," she said, with no trace of regret.

"Indeed. Then you realize that in all likelihood, Freeport was burned because you—"

"No," she said.

"He's a vector." He stepped around her.

She blocked him. "You're not touching him, Ken."

"I'm surprised I even have to. He should have been dead days ago—"

*I'm being an idiot*, he realized.

"What do you know?" he asked.

"I know he's got incipient Seppuku. Sweating, fever, flushed skin. Elevated metabolism."

"Go on."

"I know that a few days ago, he had *advanced* Seppuku."

"Meaning—"



"So weak he could barely move. Had to feed on an IV. He had to use a saccadal keyboard to even *talk*."

"He's getting better," Lubin said skeptically.

"Seppuku's below ten to the second, and dropping by the hour. That's why I brought him back to Miri in the first place, *Phocoena* doesn't have the—"

"You kept him in *Phocoena*," Lubin said in a dead monotone.

"You can spank me later, okay? Just shut up and listen: I took him back to Miri and I ran every test she knew how to recommend, and they all confirmed it. Three days ago he was absolutely on death's door, and today I've seen worse head colds."

"You have a cure?" He couldn't believe it.

"It doesn't *need* a cure. It cures *itself*. You just—get over it."

"I'd like to see those data."

"You can do more than that. You can help collect 'em. We were just about to run the latest sequence when the lifters showed up."

Lubin shook his head. "Taka seemed to think—" But Taka Ouellette, by her own admission, had fouled up before. Taka Ouellette was nowhere near the top of her field. And Taka Ouellette had discovered Seppuku's dark side only after Achilles Desjardins had led her on his own guided tour of the data...

"I've been trying to figure out why anyone would create a bug that builds to absolutely massive concentrations in the body, and then, just...dies off," Clarke said. "And I can only come up with one reason." She cocked her head at him. "How many vectors did you catch?"

"Eighteen." Working night and day, tracking pink clouds and heat-traces, taking directions from anonymous voices on the radio, derms pasted on his skin to scrub the poisons from his blood, keep him going on half an hour's sleep out of every twenty-four...

"Any of them die?" Clarke asked.

"I was told they died in quarantine." He snorted at his own stupidity. *What does it take to fool the master? Just five years out of the game and a voice on the airwaves...*

"Taka was right, as far as she went," Clarke said, "Seppuku *would* kill if nothing stopped it. She just didn't realize that

Seppuku stopped *itself* somehow. And she's got some kind of—esteem issues..."

*Imagine that*, Lubin thought dryly.

"—she's so used to being the fuck-up that she just—assumes she fucked up at the slightest excuse." She stared at Lubin with a face holding equal parts hope and horror. "But she was right all along, Ken. We're back at square one. Someone must have figured out how to beat βehemoth, and someone else is trying to stop them."

"Desjardins," Lubin said.

Clarke hesitated. "Maybe..."

There was no *maybe* about it. Achilles Desjardins was too high in the ranks to *not* know of any campaign to rehabilitate the continent. Ergo, he couldn't possibly have *not* known Seppuku's true nature. He had simply lied about it.

And Clarke was wrong about something else, too. They weren't back to square one at all. Back on square one, Lubin had not invested two weeks fighting for the wrong side.

*Wrong*. He didn't like that word. It didn't belong in his vocabulary, it evoked woolly-minded dichotomies like *good* and *evil*. Every clear-minded being knew that there was no such thing; there was only what worked, and what didn't. More effective, and less. The disloyalty of a friend may be maladaptive, but it is not *bad*. The overtures of a potential ally may serve mutual interest, but that does not make them *good*. Even hating the mother who beats you as a child is to utterly miss the point: nobody chooses the wiring in their brain. Anyone else's, wired the same, would spark as violently.

Ken Lubin could fight any enemy to the death without malice. He could switch sides the moment circumstances warranted. So it wasn't that the creators of Seppuku were right and Achilles Desjardins was wrong, necessarily. It was simply that Ken Lubin had been misled as to which side he was *on*.

He'd spent his whole life being used. But to be used without his knowledge was not something he was willing to forgive.

Something ticked over in him then, a kind of toggle between *pragmatism* and *dedication*. The latter setting afforded him a

certain focus, although it had undeniably led to some maladaptive choices in the past. He used it sparingly.

He used it now.

Desjardins. It had been him all along. Behind the fires, behind the antimissiles, behind the misdirection. Desjardins. Achilles Desjardins.

Playing him.

*If that's not an excuse*, he reflected, *nothing is*.

Lubin's ultralight had been a gift from Desjardins. It would be a good idea to continue the conversation at a further remove.

Lubin took Clarke by the arm and walked her to the MI. She didn't resist. Maybe she'd seen him flip the switch. She got in the driver's side. He got in the passenger's.

Ricketts crouched in the back. His complexion was slightly flushed, his forehead damp, but he was sitting up, and he was munching a protein brick with obvious enthusiasm. "Hi again," he said. "member me?"

Lubin turned to Clarke. "He's still a 'lawbreaker. His infrastructure isn't what it used to be, but he's still got plenty of resources and nobody further up appears to be reining him in."

"I know," Clarke said.

"He could have us under surveillance right now."

"Hey, if you're worried about the big guys listening in?" Ricketts said around a mouthful of chewy aminos, "I wouldn't worry about it. They're gonna have, like, other things on their minds any mome."

Lubin gave him a cold look. "What are you talking about?"

"He's right, actually," Clarke said. "Someone's about to lose control of their—"

A soft *blatting* sound cut her off, like the muffled explosion of distant artillery.

"—outer demons," she finished, but Lubin was already back outside.

Off across the water, in the spindly shadows of a decrepit wind farm, the hydrogen-cracking station was burning.

It was as though, in that instant, they had changed places.

Clarke was suddenly advocating noninterference. "Ken, we're *two people*."

"One person. I'm doing this solo."

"Doing what, exactly? If there's a rogue in CSIRA, let CSIRA handle him. There has to be some way to get a message overseas."

"I intend to, assuming we can access an overseas line. But I have doubts that it will do any good."

"We can transmit from *Phocoena*."

Lubin shook his head. "We know there's at least one rogue at large. We don't know how many others he might be working with. There's no guarantee that any message routed through a WestHem node would even get through, even—" he glanced at the conflagration across the water— "*before this*."

"So we move offshore. We could drive across the ocean and hand-deliver the memo ourselves if we—"

"And if it *did*," he continued, "unsubstantiated claims that a CSIRA 'lawbreaker was even capable of going rogue will be treated with extreme skepticism in a world where the existence of Spartacus is not widely known."

"Ken—"

"By the time we convinced them to take us seriously, and by the time that overseas forces had mustered a response, Desjardins would have escaped. The man is far from stupid."

"So let him escape. As long as he isn't blocking Seppuku any more, what harm can he do?"

She was dead wrong, of course. There was no end to the harm Desjardins could do in the course of abandoning the board. He might even cause Lubin to fail in his mission—and there was no way in hell he was going to permit that.

Ken Lubin had never been much for introspection. He had to wonder, though, if Clarke's doubts might not have a grain of truth to them. It would be so much easier to simply make the call and stand back. And yet—the desire to inflict violence had grown almost irresistible, and The Rules were only as strong as the person who made them. So far Lubin had more or less remained true to his code, minor lapses like Phong notwithstanding. But in the face

of this new outrage, he didn't know how much civilization was left in him.

He was royally pissed, and he *really* needed to take it out on someone. Perhaps, at least, he could choose a target who actually had it coming.

## FLEAS

She could barely remember a time when she hadn't bled.

It seemed as though she'd spent her whole life on her knees, trapped in a diabolical exoskeleton that bent and stretched in arbitrary excess of anything the human body could mimic. *Her* body didn't have a choice, had never had a choice; the dancing cage took it along for the ride, posed her like some hyperextensible doll in a chorus line. Her joints popped apart and back together like the pieces of some ill-fitted cartilagenous puzzle. She'd lost her right breast an eternity ago; Achilles had looped some kind of freakwire noose around it and just *pulled*. It had plopped onto the Escher tiles like a dead fish. She remembered hoping at the time that maybe she'd bleed to death, but she'd never had the chance; He'd ground some flat-faced iron of searing metal against her chest, cauterizing the wound.

Back then she'd still had it in her to scream.

For some time now she'd inhabited a point halfway between her body and the ceiling, some interface between hell and anesthesia conjured up out of pure need. She could look down and observe the atrocities being inflicted on her flesh with something almost approaching dispassion. She could feel the pain, but it was becoming an abstract thing, like a reading on a gauge. Sometimes, when the torture stopped, she would slide back into her own flesh and take stock of the damage first-hand. Even then, agony was becoming more tiresome than painful.

And through it all wound the insane tutorials, the endless absurd questions about chiral catalysts and hydroxyl intermediates and

cross-nucleotide duplexing. The punishments and amputations that followed wrong answers; the blessed, merely intolerable rapes that followed right ones.

She realized that she no longer had anything left to lose.

Achilles took her chin in hand and lifted her head up to the light. "Good morning, Alice. Ready for today's lesson?"

"Fuck you," she croaked.

He kissed her on the mouth. "Only if you pass the daily quiz. Otherwise, I'm afraid—"

"I'm not taking—" a sudden wracking cough spoiled the impact of her defiance a bit, but she pressed on. "I'm not taking your fucking quiz. You might as well cut to the ch...the chase while you've still got the... chance..."

He stroked her cheek. "Bit of an adrenaline rush going on, have we?"

"They'll find...find out about you eventually. And then they'll —"

He actually laughed at that. "What makes you think they don't already *know*?"

She swallowed and told herself: *No*.

Achilles straightened, letting her head drop. "How do you know I'm not already broadbanding this to every wristwatch in the hemisphere? Do you really think the world's in any position to begrudge me your head on a stick with all the good I'm doing?"

"Good," Taka whispered. She would have laughed.

"Do you know how many lives I save when I'm not in here trying to give you a decent education? Thousands. On a *bad* day. Whereas I go through a bit of ass-candy like you maybe once a month. Anyone who shut me down would have orders of mag more blood on their hands than I *ever* could on mine."

She shook her head. "It's not...like that."

"Like what, ass-candy?"

"Don't care...*how* many you save. Doesn't give you the r—*right* to..."

"Oh, man. It's not just biology, is it? Tell me, is there *anything* you're not dumb as a sack of shit about?"

"I'm right. You know it..."

"Do I. You think we should go back to the Good Old Days when the corpses were running things? The smallest multicorp killed more people than all the sex killers who ever lived, for a fucking *profit margin*—and the WTO gave them *awards* for it."

He spat: the spittle made a foamy little amoeba on the floor. "Nobody *cares*, sweetmeat. And if they did you'd be even worse off, because they'd realize that I'm an *improvement*."

"You're wrong..." she managed.

"Ooooh," Achilles said. "Insubordination. Gets me hot. 'Scuse me." He stepped back behind the stocks and swung the assembly around. Taka spun smoothly in her harness until she was facing him again. He was holding a pair of alligator clips; their wires draped down to an electrical outlet embedded in the eye of a sky-blue fish.

"Tell you what," he proposed. "You find a flaw in my argument, and I won't use these."

"Yeah," she rasped. "...you will."

"No, I won't. Promise. Try me."

She reminded herself: *nothing to lose*. "You think people will see this and then just, just— walk away when you tell them the— the corpses were worse? You think—you think people are *logical*? Y-you're the one with...with shit for brains. They won't care about your fucking argument; they'll take one look and they'll tear you to...pieces. The only reason you can get away with it now is—"

*That's it*, she realized.

What would happen if Behemoth just...went away? What would happen if the apocalypse receded a bit, if the situation grew just a little less desperate? Perhaps, in a safer world, people would go back to pretending they were civilized. Perhaps they wouldn't be quite so willing to pontificate on the *unaffordability* of human rights.

Perhaps Achilles Desjardins would lose his amnesty.

"That's why you're fighting Seppuku," she whispered.

Achilles tapped the alligator clips together. They sparked. "Sorry. What was that?"

"You are so full of shit. Saving thousands? There are people trying to save the world, and you're trying to stop them. You're

killing *billions*. You're killing *everyone*. So you can get away with this..."

He shrugged. "Well, it's like I tried to explain to Alice the First. When someone steals your conscience, you have a *really* hard time giving a shit."

"You'll lose. You don't run the world, you only run this...piece of it. You can't keep Seppuku out forever."

Achilles nodded thoughtfully. "I know. But don't worry your pretty little head about it. I've already planned for *my* retirement. *You* have other concerns."

He pushed her head down against the stocks, stretching her neck. He kissed her nape.

"Like for example, the fact that you're late for class. Let's see. Yesterday we were talking about the origin of life, as I recall. And how some might think that βehemoth had evolved on the same tree that we did, and it took a while but you eventually remembered why those people had their heads up their asses. And that was because...?"

She hadn't forgotten. βehemoth's pyranosal RNA couldn't cross-talk with modern nucleic acids. There'd be no way for one template to evolve into the other.

But right now, there was no way in this hell that she was going to bark on command. She clenched her jaw and kept silent.

Of course it didn't bother him a bit. "Well, then. Let's just do the review exercises, shall we?"

Her body spun back into position. The assembly locked into place. The exoskeleton drew back her arms, spread her legs. She felt herself cracking open like a wishbone.

She vacated the premises, pushed her consciousness back into that perfect little void where pain and hope and Achilles Desjardins didn't exist. Far beneath her, almost underwater, she felt her body moving back and forth to the rhythm of his thrusting. She couldn't feel him in her, of course—she'd been spoiled by all the battering rams he'd used to pave the way. She found that vaguely amusing for reasons she couldn't quite pin down.



She remembered Dave, and the time he'd surprised her on the patio. She remembered live theatre in Boston. She remembered Crystal's fourth birthday.

Strange sounds followed her through from the other world, rhythmic sounds, faintly ridiculous in context. Someone was *singing* down there, an inane little ditty rendered off-key while her distant body got the gears:

So, naturalists observe, a flea  
Has smaller fleas that on him prey;  
And these have smaller still to bite 'em;  
And so proceed ad infinitum.

There had to be a subtext, of course. There would be a quiz at the end of class.

Only there wasn't. Suddenly the thrusting stopped. He hadn't ejaculated—she was familiar enough with his rhythms to know that much. He pulled out of her, muttering something she couldn't quite make out way up here in the safe zone. A moment later his footsteps hurried away behind her, leaving only the sound of her own ragged breathing.

Taka was alone with her body and her memories and the tiled creatures on the floor. Achilles had abandoned her. Something had distracted him. Maybe someone at the door. Maybe the voice of some other beast, howling in his head.

She was hearing those a lot herself these days.

## **FIREBREATHERS**

The airwaves seethed with tales of catastrophe. From Halifax to Houston, static-field generators sparked and fried. Hospitals deep within the claves and fortresses on the very frontier flickered and blacked out. A report from somewhere around Newark had an automated plastics refinery melting down; another from Baffin

Island claimed that a He-3 cracking station was venting its isotopes uncontrollably into the atmosphere. It was almost as if the Maelstrom of old had been reborn, in all its world-spanning glory but with a hundred times the virulence.

The Lenies were on the warpath—and suddenly they were hunting in groups. Firewalls crumbled in their path; exorcists engaged and were reduced to static on the spot.

"Lifter just crashed into the Edmonton Spire," Clarke said. Lubin looked back at her. She tapped her ear, where his borrowed earbead relayed privileged chatter from the ether. "Half the city's on fire."

"Let's hope ours is better behaved," Lubin said.

*Add that to your total score*, she told herself, and tried to remember: this time it was different. Lives sacrificed now would be repaid a thousandfold down the road. This was more than Revenge. This was the Greater Good, in all its glory.

Remembering it was easy enough. Feeling right with it was something else again.

*This is what happens when you get Lenie to like Lenie.*

They were back on the coast, standing on the edge of some derelict waterfront in a ghost town whose name Clarke hadn't bothered to learn. All morning they had crept like black, blank-eyed spiders through this great junkscape of decaying metal: the dockside cranes, the loading elevators, the warehouses and dry-docks and other premillennial monstrosities of iron and corrugated steel. It was not a radio-friendly environment under the best conditions—and right here, the intermittent voices in Clarke's ear were especially thick with static.

Which was, of course, the whole idea.

To one side, a corroding warehouse with sheet-metal skin and I-beam bones faced the water. To the other, four gantry cranes rose into the sky like a row of wireframe giraffes sixty meters high. They stood upright, their necks looming over the lip of the waterfront at a seventy-degree angle. A great grasping claw dangled from each snout, poised to descend on freighters that had given up on this place decades before.

A thin leash ran through a nose ring on the crane nearest the warehouse, a loop of braided polypropylene no thicker than a man's thumb. Both ends of that loop draped across empty space to a point partway up the neck of the second crane in line; there, they had been tied off around a cervical girder. Against the backdrop of cables and superstructure the rope looked as insubstantial as spider silk.

Spider silk was what they'd been hoping for, actually. Surely, in this whole godforsaken industrial zone, somebody must have left *some* of the stuff behind. Spider rope had been a dirt-cheap commodity in the biotech age, but it had evidently grown a lot scarcer in the bioapocalyptic one. All they'd found was a coarse coil of antique plastic braid, hanging in an abandoned boathouse at the far end of the strip.

Lubin had sighed and said it would have to do.

Clarke had nearly passed out just *watching* him climb that leaning, precarious scaffold. The rope uncoiling in his wake, he'd wriggled up the first giraffe's throat and dangled head-down like an ant from its eye socket, his legs wrapped around some spindly brace she was convinced would snap at any moment. She hadn't taken a complete breath until Lubin was safely on the ground again. Then she'd gone through the whole nerve-wracking experience all over again as he climbed the second crane, carrying both ends of the rope this time. He'd stopped well short of the top, thank God, tying off the ends and leaving the rope looped between the structures like a nylon vine.

Now, back on solid ground, he told her that she'd get better traction during her *own* climb if she wore—

"No fucking way," Clarke said.

"Not to the top. Just to where the line's tied off. Halfway."

"That's more than halfway and you know it. One slip and I'm sockeye."

"Not at all. The crane leans. You'll be dropping into the water."

"Yeah, from *fifty meters*. You think I—wait a second, I'm *supposed* to drop into the water?"

"That's the plan."

"Well it's a really bad one."

"They'll be on guard as soon as they realize they've been decoyed. If they notice the rope at that point it could be fatal. You'll untie it and pull it down with you. You'll be safe enough underwater."

"Forget it, Ken. It's just a *rope*, and your plan's so far into the Oort that it would take another lunatic to figure it out even if he *did* see—"

She stopped herself. *Lunatic* might, after all, be a reasonable description of the man they were dealing with. For an instant she was back on that scorched hulk off Sable, lifting her foot from a human ribcage.

And Lubin had said *Whoever's behind this is smarter than me...*

"I don't want to take any chances," he said now, softly.

She tossed off a few more protests, but they both knew it was only theatre. Eventually she drove Miri to a safe distance and hiked back along the road while Lubin called in his report from the ultralight: a vector holed up in an abandoned warehouse, growing industrial quantities of *Seppuku* in a basement lab.

Control cabs nestled between the shoulder blades of each crane. Vandals or weather had long since knocked out most of the windows. Clarke and Lubin took cover there and waited. A faint whistle of rising wind sang through the framework above them.

It came down from the sky like a bloated dragon, vented gas roaring from its trim bladders. The whirlwind heralded its coming; a nor'easter had built throughout the day, and now it whistled across the waterfront with strength enough to drown voices. Sliding sheet-metal doors caught the wind and tugged clanging against their rollers; thin stretched wires and massive cables rang and thrummed like Hell's own string section. The lifter groaned and sparked down through the blow. It settled above the water, in front of the warehouse, and rotated to bring all its guns to bear.

Lubin put his head next to Clarke's. "Go."

She followed him from the gutted cab. Within seconds he was meters above her, sliding up through the crane like an arboreal

python. She gritted her teeth and climbed after. It wasn't as bad as she'd feared; a narrow ladder ran up the inside of the structure like a trachea, sprouting safety hoops at one-meter intervals. But the wind buffeted on all sides, and surrounding girders sliced it into quarrelsome and unpredictable vortices. They pushed her against the ladder, twisted her sideways, slipped under her backpack and tried to yank it from her body.

A sharp thunderclap from her left. She turned, and froze, and clung to the ladder for dear life; she'd hadn't realized how high she'd already climbed. The waterfront shuddered behind and beneath her, not quite a tabletop model yet but close enough, too close. Far below, the harbor churned green and white.

Another thunderclap. Not weather, though. The wind, for all its strength, howled beneath a blue and cloudless sky. That sound had come from the lifter. Seen from above the vehicle looked like a great gunmetal jewel, faceted into concave triangles: skin sucked against geodesic ribs by the buoyant vacuum inside. It roared briefly above the wind, a hissing bellow of gaseous ballast. Its belly nearly touched the water; its back curved higher than the warehouse roof, several stories above.

Tame lightning, she remembered. For buoyancy control. High-voltage arcs, superheating trapped gases in the trim tanks.

*And Ken's going to ride this monster.*

*Better him than me.*

She looked up. Lubin had reached his departure point and was untying one end of the rope, his legs wrapped around ambient scaffolding. He gestured impatiently at her— then staggered, knocked briefly off-balance by a gust of wind. His hand shot out to steady himself on a nearby cable.

She kept going, steadfastly refusing to look down again no matter how many obscene noises the lifter made. She counted rungs. She counted girders and crossbeams and rivets as the wind howled in her ears and tugged at her limbs. She counted bare steely patches where the red and yellow paint had sloughed away—until it reminded her that she was climbing a structure so ancient that its color wasn't even intrinsic to the material, but had been layered on as an afterthought.

After a year or two she was at Lubin's side, somewhere in the jet stream. Lubin was studying the lifter, the ubiquitous binocs clamped around his head. Clarke did not follow his gaze.

One end of the rope was still tied firmly down. From that terminus it led out and up to the apex of the next crane, looped through whatever needle's eye Lubin had found up there, and stretched back to the final half-meter of polyprope now wrapped around his diveskinned hand. A satcam, looking down on the tableau, would have seen two thin white lines pointing towards the lifter from their current roost.

It would also have seen an ominously large, empty space between the point where the line ended and the point where the lifter began.

"*Are you sure it's long enough?*" Clarke shouted. Lubin didn't answer. He probably hadn't heard the question through the wind and the 'skin of his hood. Clarke had barely heard herself.

His tubular eyes stayed fixed on the target for a few more moments. Then he flipped the binocs up against his forehead. "*They just deployed the teleop!*" he called. The wind blew most of his decibels sideways and pitched in fifty of its own, but she got the gist. All according to plan, so far. The usual firestorm from on high wouldn't do the trick this time around: the hot zone Lubin had reported was too deep in the warehouse, too close to the waterline. It would take a free-moving teleop to scope the situation and personally deliver the flames—and local architecture hashed radio so badly that the little robot would have to stay virtually line-of-sight just to maintain contact with the mothership. Which meant bringing the lifter down low.

So low that a sufficiently motivated person might be able to drop onto it from *above*...

Lubin had one arm hooked around a cable as thick as his wrist—one of the fraying metal tendons that kept the necks of the cranes upright. Now he unhooked his legs from their purchase and ducked under that cable, coming up on the other side. The *out* side. He was now hanging off the edge of the crane, not rattling about within it. He had one arm wrapped in polypropylene and the

other hooked around the cable, his feet braced against a girder by nothing beyond his *own weight*.

Suddenly Ken Lubin looked very fragile indeed.

His mouth moved. Clarke heard nothing but wind. "*What!*"

He leaned back towards the structure, enunciating each syllable: "*You know what to do.*"

She nodded. She couldn't believe he was actually going to go through with this. "*Good lu—*" she began—

And staggered, flailing, as the hand of an invisible giant slapped her sideways.

She grasped out blindly, at anything. Her hands closed on nothing. Something hard cracked against the back of her head, bounced her forward again. A girder rushed by to her right; she caught it and hung on for dear life.

*Ken?*

She looked around. Where Lubin's face and chest had been, there was nothing but howling space. His forearm was still wrapped around the cable, though, like a black grappling hook. She lowered her gaze a fraction: there was the rest of him, scrabbling for purchase and finding it. Regaining his balance in the gale, pulling himself back up, that fucking plastic rope still wound around one hand. The wind slackened for the briefest moment; Lubin ducked back into the wireframe cage.

"*You okay?*" she asked as the wind rose again, and saw in the next instant the blood on his face.

He leaned in close. "Change of plans," he said, and struck her forearm with the edge of his free hand. Clarke yelped, her grip broken. She fell. Lubin caught her, pulled her abruptly sideways. Her shoulder slammed against metal and twisted. Suddenly the crane wasn't *around* her any more. It was *beside* her.

"Hang on," Lubin growled against her cheek.

They were airborne.

She was far too petrified to scream.

For endless seconds they were in freefall. The world rushed towards them like a fly-swatter. Then Lubin's arm tightened

around her waist and some new force pulled them off-center, into a sweeping arc that only amended gravity at first, then defied it outright. They swooped down over whitecaps and churning flotsam, and she seemed to grow kilograms heavier; then they were *rising* again, miraculously, the wind catching them from behind. The colossal squashed spheroid of the lifter loomed above and then ahead and then *below*, its numberless polygons reflecting like the facets of some great compound eye.

And then they were dropping again, through an invisible tingling barrier that scratched sparks across her face, and Clarke barely put her hands out in time to break the fall.

"Ow!"

They were on a steep slope, facing uphill. She lay on her stomach, hands splayed forward, in a triangular depression perhaps three meters on a side. Her diveskin squirmed like a torture victim. Lubin lay half on top of her, half to one side, his right arm pressed into the small of her back. Some defiantly functional module in her brain realized that he'd probably kept her from rolling off the edge of the world. The rest of her gulped air in great whooping breaths and played *I'm alive I'm alive I'm alive* on infinite loop.

"You all right?" Lubin's voice was low but audible. The wind still pushed at their backs, but it seemed suddenly vague, diffuse.

"What—" Tiny electric shocks prickled her tongue and lips when she tried to speak. She tried to slow her breathing. "What the *fuck* are you—"

"I'll take that as a yes." He lifted his hand from her back. "Keep low, climb up the slope. We're far too close to the edge of this thing." He clambered away uphill.

She lay in the depression, the pit in her own stomach infinitely deeper. She felt ominously lightheaded. She put one hand to her temple; her hair was sticking straight out from her scalp as if her head had its own personal Van Allen belt. Her diveskin crawled. *These things have static-fields*, she realized.

Taka Ouellette had talked about cancer.

Finally her heart slowed to jackhammer rhythm. She forced herself to move. She squirmed on her belly past the lip of the first polygon and into the concavity of the second; at least the ridges



between provided a foothold against the slope. The grade lessened with each meter. Before too long she dared to crouch, and then to stand upright.

The wind blew harder against chest than legs—some kind of distance-cubed thing going on with the static field—but even against her head it wasn't as strong as it had been up in the crane. It blew her levitating hair into her face every time she turned around, but she barely noticed that inconvenience next to the ongoing convulsions of her diveskin.

Lubin was kneeling near the lifter's north pole, on a smooth circular island in a sea of triangles. The island was about four meters across, and its topography ranged from thumbnail-sized fiberop sockets to hatches the size of manhole covers. Lubin had already got one of those open; by the time Clarke reached him he'd put whatever safecracking tools he'd used back into his pack.

"Ken, what the *fuck* is going on?"

He wiped blood from his cheek with the back of one hand. "I changed my mind. I need you along after all."

"But *what*—"

"Seal up." He pointed at the open hatch. Dark viscous liquid lapped in the opening, like blood or machine oil. "I'll explain everything once we're inside."

"What, in *there*? Will our implants even wor—"

"Now, Lenie. No time."

Clarke pulled up her hood; it wriggled disquietingly on her scalp. At least it kept her hair from flying everywhere.

"What about the rope?" she said suddenly, remembering.

Lubin stopped in the middle of sealing his face flap. He glanced back at the gantry cranes; a fine white thread lashed back and forth from the nearest, a whip in the wind.

"Can't be helped," he said. "Get in."

Viscous, total darkness.

"Ken." Machine voice, vocoder voice. It had been a while.

"Yes."

"What are we breathing?"

"Flamethrower fuel."

"*What!*"

"It's perfectly safe. You'd be dead otherwise."

"But—"

"It doesn't have to be water. Hydroxyl groups contain oxygen."

"Yeah, but they *built* us for water. I can't believe napalm—"

"It's not napalm."

"Whatever it is, it's got to gum up our implants somewhere down the road."

"Down the road isn't an—isn't an issue. We'll be fine if they last for a few more hours."

"Will they?"

"Yes."

At least her diveskin had stopped moving.

A sudden tug of inertia. "What's that?" she buzzed, alarmed.

"Fuel feed. They're firing."

"At what? There wasn't any hot zone."

"Maybe they're just being cautious."

"Or maybe Seppuku was really there all along and we didn't know it."

He didn't answer.

"Ken?"

"It's possible."

The surge had pushed her against something soft, and slippery, and vaguely flexible. It seemed to extend in all directions; it was too smooth to get any kind of a grip.

They weren't in a tank, she realized. They were in a bladder. It didn't just empty, it deflated. It *collapsed*.

"Ken, when this thing fires...I mean, could we get sucked out into—"

"No. There's a—grille."

Vocoders stripped most of the feeling out of a voice at the best of times, and this syrupy stuff didn't improve performance any. Still, she got the sense that Lubin didn't want to talk.

*As if Ken's ever been King of the Extroverts.*

But no, there was something else. She couldn't quite put her finger on it.

So she floated there in amniotic darkness, breathing something that wasn't napalm, and remembered that electrolysis involved tiny electrical sparks. She waited and wondered if one of them would ignite the liquid passing through her and around her, wondered if her implants were about to turn this whole lifter into an airborne fireball. *Another victim of the Lenies*, she mused, and smiled to herself.

But then she remembered that Lubin still hadn't told her why she was here.

And then she remembered the blood on his face.

## IN KIND

By the time they reached their destination, Lubin was blind.

The frayed cable on the crane hadn't just gashed his face; it had torn his hood. The lifter's incendiary saliva had seeped through that tear before the diveskin could heal. It had diffused across his face. A thin layer had pooled beneath his eyecaps, corroding his corneas down to pitted jelly. A calm, mechanical voice in the darkness had told Clarke what he expected: the ability to tell light from dark, at least. Perhaps some vestigial perception of fuzzy blobs and shadows. The resolution of actual images was very unlikely. He would need her to be his eyes.

"Jesus Christ, Ken, why did you do it?"

"I gambled."

"You *what*?"

"We could hardly have stayed on top of the lifter. There are sterilization measures even if the wind didn't blow us off, and I wasn't certain how corrosive this—"

"Why didn't we just walk away? Regroup? Do it again later?"

"*Later* we could well be incapacitated, assuming your friend is still contagious. Not to mention the fact that I filed a false report and haven't called in since. Desjardins knows something's wrong. The more we delay the more time he has to prepare."

"I think that's gullshit. I think you've just got such a hard-on for getting back at him that you're making stupid decisions."

"You're entitled to your opinion. If I had to assess my own performance lately, I'd say a worse decision was not leaving you back on the Ridge."

"Right, Ken. Achilles had *me* on a leash for the past two weeks. *I* was the one who read Seppuku ass-backwards. Jesus, man, you've been sitting on the bottom of the ocean for five years just like the rest of us. You're not exactly at the top of your game."

Silence.

"Ken, what are we going to do? You're *blind!*"

"There are ways around that."

Eventually, he said they'd docked. She didn't know how he could tell—the sloshing of liquid that contained them, perhaps, some subtle inertia below Clarke's own perceptual threshold. Certainly no sound had tipped him off. Buried deep in the lifter's vacuum, the bladder was as quiet as outer space.

They crept out onto the back of the beast. It had come to rest in an enormous hanger with a clamshell roof whose halves were sliding shut above them. It was deep dusk, judging from the opacity of the sky beyond. The lifter sloped away in all directions, a tiny faceted planet birthing them from its north pole. Light and machine sounds came from below—and an occasional human voice—but these upper reaches were all grayscale.

"What do you see?" Lubin said in a low voice.

She turned and caught her breath. He'd peeled back his hood and removed his eyecaps; the gray of his skin was far too dark, and pebbled with blisters. His exposed eyes were clusters of insectile compound bumps. Iris and pupil were barely visible behind, as if seen through chipped, milky glass.

"Well?"

"We—we're indoors," she told him. "Nobody in sight, and it's probably too dark for drybacks to see us up here anyway. I can't see the factory floor, but it sounds like there are people down there. Are you—*fuck*, Ken, did it—"

"Just the face. The 'skin sealed off everything else."

"Does it—I mean, how do you—"

"There's a gantry on an overhead rail to the left. See it?"

She forced herself to look away. "Yeah." And then, surprised: "Can *you*?"

"The guts show up on my inlays. This whole hangar is a wireframe schematic." He looked around as if sighted. "That assembly's on autopilot. I think it handles refueling."

The clamshell doors met overhead with a dull, echoing *boom*. In the next instant the gantry jerked to life and began sliding towards them along its rail. A pair of waldos unfolded like the forelimbs of a mantis. They ended in clawed nozzles.

"I think you're right." Clarke said. "It's—"

"I see it."

"How do we get out of here?"

He turned his blind, pitted eyes on her. He pointed at the approaching arthropod.

"Climb," he said.

He guided her through rafters and crawlways as though born to them. He quizzed her on the color-coding of overhead pipes, or which side of a given service tunnel was more streaked with the stains of old condensation. They found their way into an uninhabited locker room, traversed a gauntlet of lockers and toilet stalls to an open shower.

They washed down. No longer flammable, they turned their attention to blending in. Lubin had brought dryback clothing wadded up in his backpack. Clarke had to make do with a pair of gray coveralls lifted from a row of a half-dozen hanging along one wall. A bank of lockers lined the wall opposite, locked with snapshots and thumb pads; Lubin made a mockery of their security while Clarke dressed. The weave tightened around her into a reasonable approximation of a good fit.

"What are you looking for?" she asked.

"Sunglasses. Visor, maybe."

Four jimmed lockers later, Lubin gave up. They returned to the echoing arena of the main hanger. They walked brazenly across open space in plain view of eight service techs. They passed

beneath the swollen bellies of four lifters, and gaping bays that would have held another three. They wound along rows of clicking, articulated machinery, waving casually across the floor at people in blue coveralls, and—at Lubin's insistence—keeping a discrete distance from others wearing gray.

They found an exit.

Outside, the buildings were packed so closely that their upper floors seemed to lean together. Arches and skywalks spanned the narrow airspace above the street, connecting opposing facades like stretched arteries. In other places the buildings themselves had melded at the fifth floor or the fortieth, overhanging boles of plastic and biosteel fusing one structure to another. The sky was visible only in dark fragments, intermittently sparking with static electricity. The street was a spaghetti of rapitrans rails and narrow sidewalks doubling as loading platforms. Neither rails nor walkways carried much traffic. Colors were a muted wash to Clarke's eyes; drybacks would see intermittent pools of dim copper light, and many deep shadows between. Even in these relict nodes of civilization, energy seemed in short supply.

Ken Lubin would be seeing none of the surfaces. Perhaps he saw the wiring underneath.

She found them a market in the shadow of a third-story overhang. Half the machines were offline, but the menu on the Levi's dispenser twinkled invitingly. Lubin suggested that she trade up from the coveralls; he offered his wristwatch to enable the transaction but the machine sensed the long-forgotten currency chip embedded in Clarke's thigh, still packed with unspent pay from her gig at the Grid Authority. It lasered her for fit while Lubin got a pair of nightshades and a tube of skin cream from a Johnson & Johnson a few stalls down.

She pulled on her new clothing while Lubin whispered into his wristwatch; Clarke couldn't tell whether he was talking to software or flesh-and-blood. She gathered from his end of the conversation that that they were in the northern core of Toromilton.

Afterwards they had places to go. They climbed from the floor of the city into a mountainous range of skyscrapers: office buildings mostly, long-since converted to dormitories for those

who'd been able to buy their way out of the 'burbs when the field generators went up. There weren't many people abroad up there, either. Perhaps the citizenry didn't come out at night.

She was a seeing-eye dog, helping her master hunt for Easter eggs. He directed her; she led him. Lubin muttered incessantly into his watch as they moved. His incantations catalyzed the appearance of strange objects in unlikely places: a seamless box barely bigger than a handpad, nestled in the plumbing of a public toilet; a brand-new wristwatch, still in the original packaging, on the floor of an elevator that rose past the mezzanine with no one on board. Lubin left his old watch in its place, along with a tiny ziplock of derms and plug-ins from his own inventory.

At a vending wall on the same level he ordered a roll of semipermeable adhesive tape and a cloned ham-and-cheese. The tape was served up without incident, but no sandwich appeared on its heels; instead a pair of hand-sized containers slid down the chute, flattened opalescent cylinders with rounded edges. He popped one of them open to reveal pince-nez with opaque jade lenses. He set them on his nose. His jaw twitched slightly as he reset some dental switch. A tiny green star winked on at the edge of the left lens.

"Better." He looked around. "Depth perception's not all it could be."

"Nice trick," Clarke said. "It talks to your inlays?"

"More or less. The image is a bit grainy."

Now Lubin took the lead.

"There's no easier way to do this?" she asked him, following. "You couldn't just call up the GA head office?"

"I doubt I'm still on their payroll." He turned left at a t-junction.

"Yeah, but don't you have—"

"They stopped replenishing the field caches some time ago," Lubin said. "I'm told any leftovers have long since been acquired by unilaterals. Everything has to be negotiated through contacts."

"You're buying them off?"

"It's not a question of money."

"What, then?"

"Barter," he said. "An old debt or two. In-kind services."

At 2200 they met a man who pulled a gossamer-fine thread of fiberop from his pocket and plugged it into Lubin's new wristwatch. Lubin stood there for over half an hour, motionless except for the occasional twitching of fingers: a statue leaning slightly into some virtual wind, as if poised to pounce on empty air. Afterwards the stranger reached up and touched the blisters on Lubin's face. Lubin laid one brief hand on the other man's shoulder. The interaction was subtly disquieting, for reasons Clarke couldn't quite put her finger on. She tried to remember the last time she'd seen Ken Lubin touch another person short of violence or duty, and failed.

"Who was that?" she asked afterwards.

"No one." And contradicting himself in the next second: "Someone to spread the word. Although there's no guarantee even he can raise the alarm in time."

At 2307 Lubin knocked at a door in a residential retrofit in the middle reaches of what had once been the Toronto Dominion Center. A brown-skinned, grim-faced ectomorph of a woman answered. Her eyes blazed a startling, almost luminous golden-orange—some kind of cultured xanthophyll in the irises—and she loomed over Lubin by a head or more. She spoke quietly in a strange language full of consonants, every syllable thick with anger. Lubin answered in the same tongue and held out a sealed ziplock. The woman snatched it, reached behind the half-open door, threw a bag at his feet—it landed with the muffled clank of gloved metal—and closed the door in his face.

He stowed the bag in his backpack. "What did she give you?" Clarke asked.

"Ordnance." He started back down the hall.

"What did you give her?"

He shrugged. "An antidote."

Just before midnight they entered a great vaulted space that might once have been the centerpiece of a mall. Now its distant ceiling was eclipsed by a warren on stilts, a great mass of prefab squats and storage cubes held together by a maze of improvised scaffolding. It was a more efficient use of space than the extravagant emptiness of the old days, if a whole lot uglier. The



bottom of the retrofit stood maybe four meters off the original marbled floor; occasional ladders reached down through its underside to ground level. Dark seams cracked the structure here and there, narrow gaps in a patchwork quilt of plastic and fiber paneling: a bounty of peepholes for hidden eyes. Clarke thought she heard the rustling of large animals in hiding, the occasional quiet murmur of muffled voices, but she and Lubin seemed to be the only ones here on the floor beneath.

Sudden motion to the left. A great fountain had once decorated the center of this place; these days its broad soapstone basin, spread out in the perpetual shadow of the squat, seemed to serve primarily as a community dumpster. Pieces of a woman were detaching themselves from that backdrop. The illusion was far from perfect, now that Clarke focused on it. The chromatophores on the woman's unitard mimicked her background in broad strokes at best, producing more of a blurry translucence than outright invisibility. Not that this particular K seemed to care about camouflage; the ambulatory hair wasn't exactly designed to blend with the background.

She approached them like a fuzzy cloud with body parts attached. "You must be Kenny," she said to Lubin. "I'm Laurel. Yuri said you had skin problems." She gave Clarke an appraising glance, blinking over pupils slit subtly vertical. "I like the eyes. Takes balls to go for rifter chic in these parts."

Clarke looked back expressionlessly. After a moment, Laurel turned back to Lubin. "Yuri's wait—"

Lubin snapped her neck. Laurel sagged bonelessly into his arms, her head lolling.

"*Fuck, Ken!*" Clarke staggered back as if she'd been kicked in the stomach. "*What are you...*"

From the rustling cliff dwellings above them, sudden silence.

Lubin had Laurel laid out on her back, his pack at her side. Her cat eyes stared up at the belly of the squat, wide and astonished.

"*Ken!*"

"I told you in-kind services might be necessary." He fished a handgrip of some kind from his pack, pressed a stud on its hilt. A thin blade snicked into view. It hummed. One stroke and Laurel's

unitard was split from crotch to throat. The elastic fabric pulled apart like slashed mesentery.

*Chat. Snap. Sag. Just like that.* It was impossible to banish the image.

Deep abdominal cut, right side. No blood. A wisp of blue smoke curled up from the incision. It carried the scent of cauterizing flesh.

Clarke looked around frantically. There was still no one else in sight, but it felt as though a thousand eyes were on them. It felt as though the whole teetering structure over their heads was holding its breath, as though it might collapse on them at any second.

Lubin plunged his hand into Laurel's side. There was no hesitation, no exploratory poke-and-prod. He knew exactly where he was going. Whatever he was after must be showing up on his inlays.

Laurel's eyes turned in her head. They stared at Lenie Clarke.

"Oh God, she's *alive*..."

"She can't feel it," Lubin said.

*How could he do this?* Clarke wondered, and an instant later: *After all these years, how could I still be surprised?*

Lubin's blood-soaked hand came back into sight. Something pea-sized glistened like a pearl in the clotting gore between thumb and forefinger. A child began crying somewhere in the warren overhead. Lubin lifted his face to the sound.

"*Witnesses, Ken...*"

He stood. Laurel lay bleeding out at his feet, her eyes still fixed on Lenie Clarke.

"They're used to it." He started walking. "Come on."

She backed away a few steps. Laurel stared steadily at the place where Lenie Clarke had been.

"No time," Lubin called over his shoulder.

Clarke turned and fled after him.

*Island Airport* pushed up against the southern reaches of the static dome. There was no island that Clarke could see, only a low broad building with helicopters and ultralights scattered across its

roof. Either there was no security or Lubin's negotiations had seduced it; they walked unaccosted to a four-seater Sikorsky-Bell outfitted with passive cloaking. The pearl shucked from Laurel's guts proved to be the keys to its heart.

Toromilton dimmed in the distance behind them. They flew north beneath the sight of some hypothetical radar, threading between silver-gray treetops. Darkness and photocollagen hid a multitude of sins; for all Clarke knew every plant, every rock, every square meter of the landscape below was coated in  $\beta$  ehemoth. You couldn't tell through the photoamps, though. The terrain scrolling past was frosted and beautiful. Occasional lakes slid beneath them like great puddles of mercury, dimly radiant.

She didn't mention the view to Lubin. She didn't know if his prosthetic eyes came equipped with night vision, but he'd switched them off anyway—at least, the little green LED was dark. Nav must be talking directly to his inlays.

"She didn't know she was carrying it," Clarke said. They were the first words she'd spoken since Laurel's eyes had fixed and dilated.

"No. Yuri made her a home-cooked meal."

"He wanted her dead."

"Evidently."

Clarke shook her head. Laurel's eyes wouldn't leave her alone. "But why *that* way? Why put it *inside* her?"

"I suspect he didn't trust me to keep up my end of the deal." The corner of Lubin's mouth twitched slightly. "Rather elegant solution, actually."

So someone thought that Ken Lubin might be reluctant to commit murder. It should have been cause for hope.

"For the keys to a *helicopter*," Clarke said. "I mean, couldn't we just—"

"Just *what*, Lenie?" he snapped. "Fall back on all those high-level contacts that I *used* to have? Call the rental agency? Has it still not dawned on you that a continental hot zone and five years of martial law might have had some impact on intercity travel?" Lubin shook his head. "Or perhaps you don't think we're giving

Desjardins enough time to set up his defenses. Perhaps we should just *walk* the distance to give him a sporting chance."

She'd never heard him talk like this before. It was as if some chess grand-master, renowned for icy calm, had suddenly cursed and kicked over the board in the middle of a game.

They flew in silence for a while.

"I can't believe it's really him," she said at last.

"I don't see why not." Lubin was back in battle-computer mode. "We know he lied about Seppuku."

"Maybe he made an honest mistake. Taka's an actual MD and *she* even—"

"It's him," Lubin said.

She didn't push it.

"Where are we going?" she asked.

"Sudbury. Evidently he didn't want to give up home-field advantage."

"It wasn't destroyed during Rio?"

"Desjardins caused Rio."

"*What?* Who told you that?"

"I know the man. It makes sense."

"Not to me."

"Desjardins was the first to slip the leash. He had a brief window in which he was the only man on the planet with all the power of a 'lawbreaker and none of the constraints. He used it to eliminate the competition before Spartacus freed them."

"But it wasn't just Sudbury. Rio took out cities all over." She remembered words and images streaming across the Atlantic. An industrial lifter inexplicably crashing into the CSIRA tower in Salt Lake. A fast-neutron bomb in the unlikely hands of the Daughters of Lenie. Quantum shriekers falling from orbit onto Sacramento and Boise.

"Sudbury wouldn't have been the only franchise seeded," Lubin pointed out. "Desjardins must have obtained the list and gone to town."

"And blamed it on Rio," Clarke murmured.

"All the post-hoc evidence pointed there. Of course, the city was vaporized before anyone had a chance to ask questions. Very

little forensic evidence survives ground zero." Lubin tapped a control icon. "As far as anyone knew at the time, Desjardins saved the day. He was the toast of the town. At least he was the toast of anyone with enough clearance to know who he was."

There was a subtext to the aridity in Lubin's voice. *His* clearance had been revoked by then.

"But he couldn't have got *everyone*," Clarke said.

"He didn't have to. Only those infected with Spartacus. That would have been a minority even in seeded franchises, assuming he hit them early enough."

"There'd still be people off shift, people off sick—"

"Wipe out half a city, you get them too."

"Still—"

"You're right, to a point," Lubin allowed. "It's likely some escaped. But even that worked in Desjardins's favor. He can't very well blame Rio for his actions *now*. He can't blame everything on Madonnas, but as long as convenient scapegoats from Rio or Topeka are at large, nobody's likely to suspect *him* when some piece of high-level sabotage comes to light. He saved the world, after all."

She sighed. "So what now?"

"We go get him."

"Just like that, huh? Blind spy and his rookie sidekick are going to battle their way through sixty-five floors of CSIRA security?"

"Assuming we can get there. He's likely to have all approaches under continuous satellite surveillance. He must have planned for the word getting out eventually, which means he'll be equipped to handle large-scale retaliation up to and including missile attacks from overseas. Far more than we can muster."

"He thinks he can take on the rest of the world?"

"More likely he only expects to see the rest of the world coming in time to get away."

"So is that your plan? He's expecting an all-out assault so he won't notice one measly helicopter?"

"That would be nice," Lubin admitted with a grim smile. "I'm not counting on it. And even if he doesn't notice us on approach, he's had nearly four years to fill the building itself up with

countermeasures. It would probably be impossible for us to guard against them all even if I knew what they were."

"So what do we do?"

"I'm still working on the details. I expect we'll end up walking through the front door."

Clarke looked at his fingernails. The dried blood beneath turned their edges brown.

"You've put all these pieces together," she said. "They make him a monster."

"Aren't we all."

"*He* wasn't. Do you even *remember*?"

Lubin didn't answer.

"You were going to kill me, remember? And I'd just killed everyone else. *We* were the monsters, Ken, and you remember what he did?"

"Yes."

"He tried to save me. From *you*. He'd never even met me face to face, and he knew *exactly* who I was and what I'd done, and he knew first-hand what *you* were capable of. And it didn't matter. He risked his life to save mine."

"I remember." Lubin tweaked controls. "You broke his nose."

"That's not the point."

"That person doesn't exist any more," he said. "Spartacus turned him into something else."

"Yeah? And what did it do to *you*, Ken?"

His blind, pitted face turned.

"I know one thing it *didn't* do," she went on. "It didn't give you your murder habit. You had that all along, didn't you?"

The pince-nez stared back at her like mantis eyes. A green LED ignited on its left lens.

"What's it like, Ken? Is it cathartic? Is it sexual? Does it *get you off*?" A part of her looked on, alarmed. The rest couldn't stop goading him. "Do you have to be right *there*, watching us die, or is it enough to just plant the bomb and know we'll be dropping like flies offstage?"

"Lenie." His voice was very calm. "What exactly are you trying to accomplish?"

"I just want to know what you're after, that's all. I don't see anyone waving pitchforks and torches at *you* just because Spartacus rewired *your* brain. If you're sure about this, if he really did all these things and he's really some kind of monster, then fine. But if this is just some fucked-up excuse for you to indulge your perverse little fetish, then..."

She shook her head in disgust and glared into the darkness.

"You'd like his perversions somewhat less than mine," Lubin said quietly.

"Right," she snorted. "Thanks for the input."

"Lenie..."

"*What?*"

"I'm never gratuitous," he told her.

"Really?" She looked a challenge at him. "Never?"

He looked back. "Well. Hardly ever."

## EXPIRATION DATE

Equal parts dead and alive— and hardly caring which way the balance went—Taka Ouellette had figured it out.

She'd never done well under pressure. That had always been her problem. And Achilles the monster hadn't understood that. Or maybe he'd understood it too well. Whatever. He had put her under the mother of all high-pressure scenarios, and of course she'd fallen apart. She'd proven once again to be the eternal fuck-up. And it was so unfair, because she *knew* she had a good head on her shoulders, she *knew* she could figure things out if only people would stop leaning on her. If only Ken hadn't been there with his biowar canister, expecting answers *right now*. If only Achilles hadn't come within a hair of incinerating her alive, and then rushing her through Seppuku's gene sequence without so much as letting her catch her breath.

If only Dave hadn't been so impatient. If only she hadn't hurried on that last crucial diagnostic...

She was a smart lady. She knew it. But she was terrible under pressure. *Bad, bad Alice*, she chided herself.

But now that the pressure was off, see how well she put everything together?

It had only taken two things to get her over the hump. Achilles had to leave her alone for a bit, give her a chance to think. And she had to die. Well, start dying anyway. Once she knew she was dead, once she *felt* it in her bones, no reprieves, no last-minute rescue—all the pressure disappeared. For the first time in her life, it seemed, she could think clearly.

She didn't know how long it had been since Achilles had been by to torture her. She figured at least a day or two. Maybe a week—but no, surely she'd be dead already if he'd left her here for a whole week? Her joints had frozen up in the meantime. Even if she were to be released from the exoskeleton, her body was as rigid as rigor...

Maybe it *was* rigor. Maybe she'd already finished dying and hadn't noticed. Certainly things didn't seem to hurt as much as they had—although maybe she just didn't notice the pain so much now, on account of the raging thirst. One thing you could say about Achilles, he'd always kept her fed and watered. Didn't want her too weak to perform, he'd said.

But it had been so very long since he'd come by. Taka would have killed for a glass of water, if she hadn't already died for want of one.

But wasn't it nice that nothing *mattered* any more? And wasn't it nice that she'd actually *figured it out*?

She wished that Achilles *would* come back. Not just for the water, although that would be nice. She wanted to show him. She wanted to prove he was wrong. She wanted him to be proud of her.

It all had to do with that silly little song about the fleas. He must have known that, that's why he'd serenaded her in the first place. *Has smaller fleas that on him prey, and these have smaller still to bite 'em...*

Life within life. She could see it now. She was amazed that she'd never seen it before. It wasn't even a new concept. It was



downright *old*. Mitochondria were *littler fleas* that lived in every eukaryotic cell. Today they were vital organelles, the biochemical batteries of life itself—but a billion years ago they'd been independent organisms in their own right, little free-living bacteria. A larger cell had engulfed them, had forgotten to chew before it swallowed—and so they'd struck up a deal, the big cell and the little one. The big cell would provide a safe, stable environment; the little one, in turn, would pump out energy for its host. That ancient act of failed predation had turned into the primordial symbiosis...and even today, mitochondria kept their own genes, reproduced on their own schedule, within the flesh of the host.

It was still going on. Behemoth itself had stuck up a similar relationship within the cells of some of the creatures that shared its deep-sea environment, providing an energy surplus which the host fish used to grow faster. It grew within the cells of things here on land, too—with somewhat less beneficial consequences, true, but then virulence is always high when two radically disparate organisms encounter each other for the first time...

Achilles hadn't been singing about fleas at all. He'd been singing about *endosymbiosis*.

*Seppuku* must carry its own little fleas. There was more than enough room—all those redundant genes could code for any number of viral organisms, as well as merely masking the suicidal recessives. *Seppuku* not only killed itself off when its job was done—it gave birth to a *new* symbiont, a viral one probably, that would take up residence inside the host cell. It would fill the niche so effectively that Behemoth would find nothing but *no-vacancy* signs if it came sniffing around afterwards, looking to move back in.

There were even precedents, of a sort. Taka remembered some of them from med school. Malaria had been beaten when baseline mosquitoes lost out to a faster-breeding variant that didn't transmit *Plasmodium*. AIDS stopped being a threat when benign strains outnumbered lethal ones. Those were nothing, though, diseases that attacked a handful of species at most. Behemoth threatened everything with a nucleus; you'd never beat the witch by infecting the Human race, or replacing one species of insect

with another. The only way to win against Behemoth would be to counterinfect *everything*.

Seppuku would have to redesign life itself, from the inside out. And it could do it, too: it had an edge that poor old Behemoth had never even dreamed of. Achilles had forced her to remember that too, half an eternity ago: TNA could duplex with modern nucleic acids. It could talk to the genes of its host cell, it could *join* the genes of its host cell. It could change anything and everything.

If she was right—and hovering at the edge of her life, she'd never been more certain of anything—Seppuku was more than a cure for Behemoth. It was the most profound evolutionary leap since the rise of the eukaryotic cell. It was a solution far too radical for the fiddlers and tweekers who hadn't been able to see beyond the old paradigm of *Life As We Know It*. The deep-sea enzymes, the arduous painstaking retrofits that had allowed Taka and others like her to claim *immunity*—improvised scaffolding, no more. Struts and crutches to keep some teetering body plan alive long after its expiration date. People had grown too attached to the chemical tinkertoys that had defined them for three billion years. The most nostalgia could ever do was postpone the inevitable.

Seppuku's architects were more radical. They'd thrown away the old cellular specs entirely and started from scratch, they were rewriting the very chemistry of life. Every eukaryotic species would be changed at the molecular scale. No wonder Seppuku's creators had kept it under wraps; you didn't have to be an M&M to be terrified by such an extreme solution. People always chose the devils they knew, even if that devil was Behemoth. People just wouldn't accept that success couldn't be achieved through just a little more tinkering...

Taka could barely imagine the shape of the success that was unfolding now. Perhaps the strange new insects she'd been seeing were the start of it, fast short lives that evolved through dozens of generations in a season. Achilles hadn't been able to keep it out after all: those joyful, monstrous bugs proved it. He had only been able to keep it from infecting Humanity.

And even there, he was doomed to fail. Salvation would take root in everything eventually, as it had taken root in the arthropods.

It would just take more time for creatures who lived at a slower pace. *Our turn will come*, Taka thought.

How would it work? she wondered. How to outcompete the hypercompetitor? Brute force, perhaps? Sheer cellular voracity, the same scramble-competition strategy that Behemoth had used to beat Life 1.0, turned back upon itself? Would life burn twice as bright and half as long, would the whole biosphere move faster, think faster, live furiously and briefly as mayflies?

But that was the old paradigm, to transform yourself into your enemy and then claim victory. There were other options, once you gave up on *reinforcing* and turned to *redesign* instead. Taka Ouellette, mediocre progeny of the Old Guard, couldn't begin to guess at what they were. She doubted anyone could. What simulation could predict the behavior of a multimillion-species system when every living variable was perturbed at once? How many carefully-selected experimental treatments would it take to model a billion simultaneous mutations? Seppuku—whatever Seppuku was poised to become—threw the very concept of a *controlled experiment* out the window.

North America *was* the experiment—unannounced, uncontrolled, an inconceivably tangled matrix of multiway ANOVAs and Hyperniche tables. Even if it failed, the world would hardly be worse off. Behemoth would have suffered a major setback, Seppuku would have fallen on its sword, and whatever came after would at least—unlike Behemoth—be limited to the inside of a host cell.

And maybe it wouldn't fail. Maybe everything would change for the better. There would be monsters, some hopeful. Mitochondria themselves might finally be driven to extinction, their ancient lease expired at last. Maybe people would change from the inside out, the old breed gone, replaced by something that looked the same but acted *better*.

Maybe it was about fucking time.

A little man nattered at her from a great distance. He stood in front of her, an irritating homunculus in ultrasharp focus, as if seen through the wrong end of a telescope. He paced back and forth, gesticulating madly. Taka gathered that he was afraid of

something, or someone. Yes, that was it: someone was coming for him. He spoke as if his head was full of voices, as if he had lost control of a great many things at once. He threatened her—she *thought* he was threatening her, although his efforts seemed almost comical. He sounded like a lost little boy trying to act brave while looking for a place to hide.

"I figured it out," Taka told him. Her voice cracked like cheap brittle plastic. She wondered why that was. "It wasn't so hard."

But he was too caught up in his own little world. It didn't matter. He didn't seem like the kind of person who'd really appreciate the dawn of a new age anyway.

So many things were about to happen. The end of *Life As We Knew It*. The beginning of *Life As We Don't*. It had already started. Her biggest regret was that she wouldn't be around to see how it all turned out.

*Dave, honey, she thought. I did it. I got it right at last.  
You'd be proud of me.*

## BASTILLE

Sudbury rose in the night like a luminous tumor.

Its core glowed from within, faintly by dryback standards but bright as day to Lenie Clarke: a walled, claustrophobic cluster of refitted skyscrapers in an abandoned wasteland of suburbs and commercial zones. The static field was obvious by inference. The new buildings and the grafted retrofits, the galls of living space wedged into the gaps between buildings—all extended to the inner edge of the field and no further. Like metastasis constrained under glass, Sudbury had grown into a hemisphere.

They cut through from the east. Clarke's diveskin squirmed in the field like a slug in a flame. Charged air transformed the rotors into whirling vortices of brilliant blue sparks. She found the effect oddly nostalgic; it seemed almost bioluminescent, like microbes fluorescing in the heat of a deep-sea vent. For a moment she could

pretend that some airborne variant of Saint Elmo's Fire trailed from those spinning blades.

But only for a moment. There was only one microorganism up here worth mentioning, and it was anything but luminous.

Then they were through, sniffing westward through the upper reaches of the Sudbury core. City canyon walls loomed close on either side. Sheet lightning sparked and flickered along the strip of sky overhead. Far below, intermittently eclipsed by new construction, some vestigial rapitran lines ran along the canyon floor like a taut copper thread.

She resumed loading clips from the open backpack at her feet. Lubin had toured her through the procedure somewhere over Georgian Bay. Each clip contained a dozen slug grenades, color-coded by function: flash, gas, shipworm, clusterfuck. They went into the belt-and-holster arrangement draped over her thigh.

Lubin spared a prosthetic glance. "Don't forget to seal that pack when you're done. How's your tape?"

She undid her top and checked the diveskin beneath. A broad X of semipermeable tape blocked off the electrolysis intake. "Still sticking." She zipped the dryback disguise back into place. "Doesn't this low-altitude stuff bother the local authorities?"

"Not *those* authorities." His tone evoked the image of blind eyes, turning. Evidently derms and antidotes and gutted bodies bought more than mere transportation. Clarke didn't push the issue. She slid one last cartridge home and turned her attention forward.

A couple of blocks ahead, the canyon ended in open space.

"So that's where he is," she murmured. Lubin throttled back so that they were barely drifting forward.

It spread out before their approach like a great dark coliseum, a clear zone carved from the claustrophobic architecture. Lubin brought the Sikorsky-Bell to a dead stop three hundred meters up, just short of that perimeter.

It was a walled moat, two blocks on a side. A lone skyscraper—a fluted, multifaceted tower—rose from its center. A ghostly crown of blue lights glowed dimly from the roof; everything else was dead and dark, sixty-five floors with not so much as a pane

alight. Patchwork foundations scarred the empty ground on all sides, the footprints of demolished buildings that had crowded the neighborhood back in happier times.

She wondered what dryback eyes would see, if drybacks ever ventured here after dark. Maybe, when Sudbury's citizens looked to this place, they didn't see the Entropy Patrol at all. Maybe they saw a haunted tower, dark and ominous, full of skeletons and sick crawling things. Buried in the guts of the twenty-first century, besieged by alien microbes and ghosts in the machinery, could people be blamed for rediscovering a belief in evil spirits?

*Maybe they're not even wrong*, Clarke reflected.

Lubin pointed to the spectral lights on the parapet. A landing pad rose from that nimbus, a dozen smaller structures holding court around it—freight elevators, ventilation shacks, the housings of retracted lifter umbilicals.

Clarke looked back skeptically. "No." Surely they couldn't just *land* there. Surely there'd be defenses.

Lubin was almost grinning. "Let's find out."

"I'm not sure that's—"

He hit the throttle. They leapt into empty, unprotected space.

Out of the canyon, they banked right. Clarke braced her hands against the dash. Earth and sky rotated around them; suddenly the ground was three hundred meters off her shoulder, an archeological ruin of razed foundations—and two black circles, meters across, staring up at her like the eye sockets of some giant cartoon skull. Not empty, though. Not even flat: they bulged subtly from the ground, like the exposed polar regions of great buried spheres.

"What're those?" she asked.

No answer. Clarke glanced across the cockpit. Lubin was holding his binoculars one-handed between his knees, holding his pince-nez against their eyepieces. The apparatus stared down through the ventral canopy. Clarke shuddered inwardly: how to deal with the sense of one's eyes floating half a meter outside the skull?

"I said—" she began again.

"Superheating artefact. Soil grains explode like popcorn."

"What would do that? Land mine?"

He shook his head absently, his attention caught by something near the base of the building. "Particle beam. Orbital cannon."

Her gut clenched. "If he's got—Ken, what if he *sees*—"

Something flashed, sodium-bright, through the back of her skull. Clockwork stuttered briefly in her chest. The Sikorsky-Bell's controls hiccupped once, in impossible unison, and went dark.

"I think he has," Lubin remarked as the engine died.

Wind whistled faintly through the fuselage. The rotor continued to *whup-whup-whup* overhead, its unpowered blades slapping the air through sheer inertia. There was no other sound but Lubin, cursing under his breath as they hung for an instant between earth and sky.

In the next they were falling.

Clarke's stomach rose into her throat. Lubin's feet slammed pedals. "Tell me when we pass sixty meters."

They arced past dark facades. "Wha—"

"I'm *blind*." Lubin's teeth were bared in some twisted mix of fear and exultation; his hands gripped the joystick with relentless futility. "Tell me when—the tenth floor! *Tell me when we pass the tenth floor!*"

Part of her gibbered, senseless and panic-stricken. The rest struggled to obey, tried desperately to count the floors as they streaked past but they were too close, everything was a blur and they were going to crash they were going to crash right into the side of the tower but suddenly it was gone, swept past stage left, its edge passing almost close enough to touch. Now the structure's north face coasted into view, the focus sharper with distance and—

*Oh God what is that—*

Some unaffordable, awestruck piece of her brain murmured *it can't be* but it was, black and toothless and wide enough to swallow legions: a gaping *mouth* in the building's side. She tried to ignore it as they fell past, forced herself to focus on the floors

beneath, count from the ground up. They were diving straight past that impossible maw—they were diving *into* it—

"Le—"

"Now!" she yelled.

For a second that went on forever, Lubin did nothing at all.

The strangest sensations, in that elastic moment. The sound of the rotor, still impossibly awhirl through luck or magic or sheer stubborn denial, its machine-gun rhythm dopplered down like the slow, distant heartbeat of a receding astronaut. The sight of the ground racing up to spike them into oblivion. Sudden calm resignation, a recognition of the inevitable: *we're going to die*. And a nod, sadly amused, to the irony that the mighty Ken Lubin, who always thought ten steps ahead, could have made such a stupid fucking mistake.

But then he yanked on the stick and the chopper reared back, losing its nerve at the last moment. Suddenly she weighed a hundred tonnes. They faced the sky; the world skidded around them, earth and glass and far-off cloud rolling past the windshield in a blurry jumble. For one astonishing moment they *hovered*. Then something kicked them hard from behind: from behind, the sound of cracking polymers and tearing metal. They lurched sideways and that magical rotor slashed the earth and stopped dead, defeated at last. Lenie Clarke stared up mad-eyed at a great monolith leaning crazily against the night sky, descending along with the darkness to devour her.

"Lenie."

She opened her eyes. That impossible mouth still yawned overhead. She squeezed her eyes shut, held them closed for a second. Tried again.

*Oh.*

Not a mouth after all. A great charred hole, partway up the north façade, stretching across ten gutted floors or more.

*Rio*, she realized. *They never repaired the damage.*

The roof of the building was clearly visible, straight ahead through the forward windshield. The lights up there had gone out.



The whole building seemed to lean to the left; the chopper's nose was twisted up at a thirty-degree angle, like some mechanical mole that had breached from the earth and torqued on its axis.

Their ride was sockeye. The tail boom must have either crumpled at their backs or snapped off entirely.

Pain in her chest and arms. There was something wrong with the sky. It was—that was it, it was *dark*. They were in a cave, where static-field generators hummed endless electricity into the air. Sudbury's sky should have been flickering. Before they'd fallen, it had been.

"*Lenie*."

"Was that—was that a pulse?" she wondered.

"Can you move?"

She focused, and located the source of the pain: Lubin's backpack, hard and lumpy, clutched tightly as life itself against her chest. It must have risen from the floor during the dive, she must have grabbed it in midair. She remembered none of it. The slit along its top puckered like a mouth in her embrace, affording glimpses of the stuff inside—an angular jumble of tools and ordnance pressing painfully into her flesh.

She willed her grip to relax. The pain subsided.

"I think I'm okay. Are you—"

He looked blindly back at her through sandblasted eyes.

An image from the fall came to her, unregistered until now: Lubin's pince-nez, sailing gracefully towards the back of the cabin. Clarke unbuckled and twisted to look behind her. Sudden sharp pain splintered down her spine like cracking ice. She cried out.

Lubin's hand was on her shoulder. "What?"

"Wh—whiplash, I think. I've had worse." She settled back in her seat. No point in looking for the pince-nez anyway; the pulse would have fried them as thoroughly as it had the chopper.

"You're blind again," she said softly.

"I packed another pair. The knapsack's shielded."

Its open mouth grinned at her, zipper-toothed. Realization crashed over her in a sickening wave. "Oh, *fuck*, Ken, I—I forgot to zip it up. I'm—"

He waved away her apology. "You'll be my eyes. Is the cabin breached?"

"What?"

"Any breaks in the fuselage? Anything big enough for you to crawl through, say?"

"Uh—" Clarke turned again, carefully. Pain feinted to the base of her skull, but stopped short of outright attack. "No. The rear bulkhead's crumpled to shit, but..."

"Good. Do you still have the pack?"

She opened her mouth to answer—and remembered two carbonised mounds staring into the sky.

"*Focus*, Len. Do you—"

"It doesn't matter, Ken."

"It matters a great—"

"We're *dead*, Ken." She took a deep, despairing breath. "He's got an orbital cannon, remember? Any second now he'll just—and there's not a fucking thing we can—"

"*Listen to me.*" Suddenly, Lubin was close enough to kiss. "If he was trying to kill us we'd be dead already, do you understand? I'd doubt he's even willing to bring his satellites online at this point; he doesn't want to risk losing them to the shredders."

"But he *already*—the pulse—"

"Didn't come from orbit. He must have packed half the floors in that building with capacitors. *He's not trying to kill us.* He's only trying to soften us up." He thrust out his hand. "Now *where's the pack?*"

She handed it over, numbly. Lubin set it on his knee and rummaged inside.

*He's not trying to kill us.* Lubin had made that claim before, laid it out as part of his working hypothesis en route from Toromilton. Clarke wasn't entirely sure that recent events bore him out, especially since—

A flicker of motion, just to the right. Clarke turned and gasped, the pain of that motion forgotten in an instant. A monstrous face stared back through the bubble of the canopy, centimeters away, a massive black wedge of muscle and bone. Small dark eyes glinted

from deep sockets. The apparition *grinned*, showing sawtooth serrations embedded in jaws like a leghold trap.

In the next moment it had dropped out of sight.

"What?" Lubin's face panned back and forth. "What do you see?"

"I—I think it used to be a dog," Clarke said, her voice quavering.

"I think they all did," Lubin told her.

Tilted at the sky, she hadn't seen them arrive; she had to look *down* to see *forward*, and now—through the ventral bubble between her knees, over the edge of the door if she strained from her seat—the darkness seethed on all sides. The apparitions did not bark or growl. They made no sound at all. They didn't waste energy on brute animal rage, didn't throw themselves slavering against the hull to get at the soft meat inside. They circled like silent sharks.

Boosted light stripped nothing from these creatures. They were utterly black.

"How many?" Lubin ran one hand across his grenade pistol; the ammo belt lay across his knees, one end still trailing down into the knapsack between his feet.

"Twenty. Thirty. At least. Oh Jesus, Ken, they're *huge*, they're twice as big as you are..." Clarke fought rising panic.

Lubin's pistol came with three cartridge slots and a little thumbwheel to choose between them. He felt out flash, shipworm, and clusterfuck from the belt and slotted them in. "Can you see the main entrance?"

"Yes."

"What direction? How far?"

"About eleven o'clock. Maybe—maybe eighty meters." *Might as well be eighty lightyears.*

"What's between there and here?"

She swallowed. "A pack of rabid monster dogs waiting to kill us."

"Besides that."

"We're—we're on the edge of the main drag. Paved. Old foundations either side, pretty much razed and filled." And then, hoping he wasn't heading where she feared—hoping she could deflect him if he was—she added, "No cover."

"Can you see my binocs?"

She turned carefully, torsion and injury in uneasy balance. "Right behind you. The strap's caught up in the cleat over the door."

He abandoned his weapon long enough to disentangle the binoculars and hand them over. "Describe the entrance."

Range-finding and thermal were dead, of course. Only the raw optics still worked. Clarke tried to ignore the dark shapes in the blurry foreground. "Bank of glass doors, eight of them. They're set into this shallow indentation in the façade, CSIRA logo on top. Ken—"

"What's behind the doors?"

"Uh, a vestibule, a few meters deep. And then—oh, last time there was another set of doors further in, but those're gone now. There's some kind of heavy slab instead, like a big dropgate or something. Looks pretty featureless."

"What about the side walls of the vestibule?"

"Concrete or biolite or something. Just walls. Nothing special. Why?"

He tightened the ammo belt around his waist. "That's where we go in."

She shook her head. "*No*, Ken. No fucking way."

"Dropgate's the obvious defense. More sensible to go around than hit it head-on."

"We can't go out there. They'll tear us apart."

"I didn't come all this way to let a pack of dogs pin me down eighty meters from the finish line."

"Ken, you're *blind!*"

"They won't know that." He held up his pistol. "And they'll know what this is. Appearances matter."

She stared at his corroded eyes, the oozing flesh of his face. "How're you going to *aim?*"

"The same way we landed. You'll give me bearings." Lubin felt around in the pack and pulled out the Heckler & Koch. "Take this."

She did, unbelieving.

"We keep the dogs back long enough to get in through the wall. The rest of the plan doesn't change."

Dry-mouthed, Clarke watched them circling. "What if they're armored? What if they're wired?"

"They'll be pulse-proof. No electronics. The usual tweaks and nothing more." He zipped up the knapsack and slung it across his back, tightening the straps around shoulders and waist.

"Are these *guns* pulse-proof? Are—" A sudden, disquieting memory rose to the surface of her thoughts: machinery in her chest, hiccoughing. "What about our implants?"

"Myoelectric. EMP doesn't bother them, much. What's the H&K set on?"

She checked. "Conotoxins. Ken, I've never even fired a gun before. My aim—"

"Will be better than mine." Lubin clambered back down into the tilted cabin behind their seats. "You may get off easily. I rather suspect they'll be focusing on me."

"But—"

"Gloves," he said, sealing his to the gauntlets beneath his clothing.

Clarke pulled her gloves over shaking hands. "Ken, we can't just—"

He paused, fixed her with his sightless eyes. "You know, I liked you better when you were suicidal. You weren't nearly so chickenshit."

She blinked. "What?"

"I'm losing patience, Len. Five years of guilt-ridden self-pity should be enough for anyone. Was I wrong about you? Were you just wallowing, all this time? *Do you want to save the world or not?*"

"I—"

"This is the only way."

*Is there anything you wouldn't do, then? For the chance to take it all back?* Back then the answer had been obvious. It was obvious now. Freezing, familiar determination reignited inside her. Her face burned.

Lubin nodded, only his eyes blinded. He sat on the floor, braced his back against the bulkhead behind Clarke's seat. "Noseplugs."

They'd improvised them en route, little wads of the same semipermeable tape that blocked her intake. Clarke stuffed one up each nostril.

"I blow a hole in the hull," Lubin said, inserting his own. "That drives the dogs back long enough for us to exit the chopper. Once we're outside, point me at the main entrance. That's twelve o'clock. All target bearings will be relative to that, *not* to where I happen to be facing at any given time. Do you understand?"

She nodded, forgetting for an instant, then: "Yes."

"They'll charge as soon as we're in the open. Call it. Close your eyes when I give the word. I'll be using the flash grenades; they'll be incapacitated for at least ten seconds. Shoot as many as you can. Keep moving."

"Got it. Anything else?"

"Lose the gloves once we're free of the heat. The sight of a diveskin might start him thinking."

Patient killers paced just past the canopy. They seemed to look her in the eye. They smiled, showing teeth the size of thumbs.

*Just the usual tweaks*, she thought, giddy and terrified. She braced her back against the canopy, raising her gloved hands to protect her face.

"We can do this," Lubin said softly. "Just remember what I told you."

*He's not trying to kill us.* She wondered just who that applied to.

"You really think he expects us to survive."

Lubin nodded.

"But does he know you're *blind*?"

"I doubt it." He pointed his gun across the cabin. The thumbwheel locked onto *clusterfuck*. "Ready?"

*This is it, Lenie girl. Your one shot at redemption.*

*Don't fuck it up.*

"Go," she said, and shut her eyes.

Lubin fired. Clarke's lids glowed sudden, bloody orange.

Her diveskin took most of the heat from the neck down, but in that moment it was as if someone had thrust her head into a kiln. She swore the heat blasted the very skin from her face. She clenched her teeth and held her breath and cursed the chances Lubin wouldn't take: *it might tip him off if he sees our hoods.*

The air roared and crackled, sizzled with splatterings of liquid metal. She could hear the crack of Lubin's pistol firing again at her side. She realised, distantly amazed, that the pain was gone. Fear and adrenaline had swept it away in an instant.

The world dimmed beyond her eyelids. She opened them. A hole gaped in the side of the chopper. Soft alloy glowed intermittently at its edges; acrylic peeled and blackened. Chunks of shredded canopy guttered on the floor, one scant centimeters from her left foot.

Lubin fired a third time. A spread of incendiary needles shot through the breach and into the darkness beyond, a tiny, devastating meteor shower. Clusterfucks were designed to sow a thousand lethal pinholes across a wide area, but there'd been little chance to disperse across the meager width of the cabin. Almost two meters of solid fuselage had been reduced to silvery chaff and blown outward; a fan of dispersed wreckage steamed and congealed on the ground outside.

"How big is the hole?" Lubin snapped over ambience.

"Meter and a half." She choked and coughed on the stink of scorched plastic. "Lots of little bits past—"

Too late. Lubin, blindly brazen, had already launched himself through the hole. He sailed over the scree nearest the threshold and hit the ground shoulder-first, rolling to his feet in an instant. A lozenge of hot metal smoldered like a branding iron against his left shoulder blade. Lubin writhed, reached around and pushed it loose with the muzzle of his gun. It dropped to the ground, tarry with

half-melted copolymer. A ragged hole smoked on Lubin's shirt. The injured diveskin beneath squirmed as if alive.

Clarke gritted her teeth and dove after him.

A bright spark of pain, needle-sharp and needle-fine, ignited briefly on her forearm as she sailed through the breach. In the next instant blessed cool air washed over her. She landed hard and skidded. Two great carcasses twitched and burned before her, grinning behind charred lips.

She scrambled to her feet, peeling off her gloves. Sure enough, the rest of the pack had retreated for the moment, holding the perimeter at a more discreet distance.

Lubin swept his weapon back and forth, pure threat display. "*Lenie!*"

"Here! Two down!" She reached his side, pointing her H&K at the circling horde. "The others backed off." She turned him clockwise. "Entrance that way. Twelve o'clock." *Remember*, she told herself. *Bearings from the entrance, bearings from the—*

He nodded. "How far are the dogs?" He held his pistol two-handed, arms extended, elbows slightly bent. He looked almost relaxed.

"Uh—twenty-five meters, maybe." *Bearings from the entrance...*

"Smart. Just past effective range."

*Bearings from—*"*Your range is twenty-five lousy meters?*"

"Wide spread." It made sense, of course—a useful cheat for a poor marksman, and blind was as poor as it got. The catch was a needle-cloud so widely dispersed that distant targets passed through it untouched. "Try yours."

Clarke aimed. Her hands wouldn't stop shaking. She fired once, twice. The H&K bucked in her grip. Its bark was surprisingly soft.

The enemy stared back, undiminished.

"Missed. Unless they're immune, Ken, you said they were *tweaked—*"

Sudden motion to the right, a rush along the flank. "*Two o'clock,*" Clarke hissed, firing. Lubin turned and shot a firestorm



of needles. "*Eight!*" He swung and fired again, barely missing Clarke as she ducked beneath his outstretched arms.

Splinters of fire laced the ground to both sides. Three more dogs were down, lacerated by flaming shrapnel. Two more, fitfully ignited, fled back out of range. Still the pack was mute. The perimeter boiled with silent anger.

She kept her own weapon up, for all the good it would do. "Three down, two injured. The rest of them are holding back."

Lubin panned left, right. "This is wrong. They should be charging."

"They don't want to get shot. You said they were smart."

"Attack dogs too smart to attack." Lubin shook his head. "No. This is wrong."

"Maybe they just want to keep us pinned here," Clarke said hopefully. "Maybe—"

Something rang faintly in her skull, not so much heard as felt: an *itch*, shrill and irritating.

"Ah," Lubin said softly. "That's more like it."

The change was too subtle for sight and too fundamental. No motion sensor, no image-analysis subroutine would have been able to read the signs. But Lenie Clarke knew it instantly, on some primal level that predated Humanity itself. Something in the gut had never forgotten, in all these million years. On all sides, many creatures merged suddenly together into one, into a vast seething entity with myriad bodies and a single merciless focus. Lenie Clarke watched it leap towards her and remembered exactly what she was, what she always *had* been.

Prey.

"*Flash!*" Lubin barked. Almost too late, she remembered to shut her eyes. Four pops sounded in rapid succession. A constellation of dim red suns ignited briefly through her eyelids.

"*Go!*"

She looked. The composite organism had shattered, just like that. Solitary predators wheeled on all sides, blinded and confused. *Briefly* blind, she remembered. *Briefly* confused.

She had seconds to act and nothing to lose. She charged.

Three meters from the nearest beast she started shooting. She squeezed off five rounds; two hits in the creature's flank. It snapped and dropped. Two others stumbled into each other, a mere arm's length away: one shot each and she was spinning in search of new targets. Somewhere offside, needlefire slammed obliquely across the ground. She ignored it and kept shooting. Something dark and massive hurtled past, bleeding flame. She nailed it in the flank for good measure and suddenly she was transformed yet again, all that adrenalized midbrain circuitry flipping from *flight* to *fight*, whimpering paralysis burned away in a fury of bloodlust and adrenaline. She shot a leg. She shot a great heaving ribcage, black and sleek as a diveskin. She shot a monstrous, silently-snarling face, and realized it had been looking *back*.

A part of her she hadn't even known was keeping score served up a number: *seven*. *That's the number you can take, before they come for you...*

She broke and ran. Lubin was running too, poor blind Lubin, Lubin the human tank. He'd switched back to clusterfuck and cleared a fiery path down twelve o'clock. He charged down the driveway—

*—I told him no obstructions oh boy will he be pissed if he trips on a sewer grating—*

*—like a sighted man. Dogs shook their heads in his wake and wheeled, intent on reacquisition.*

They were closing on Clarke, too. Their paws drummed at her heels like heavy rain on a cloth roof.

She was back on the asphalt, a few meters off Lubin's stern. "*Seven o'clock!*" she cried, diving.

Incandescent sleet streaked centimeters overhead. Gravel and coarse pavement flayed the skin of her palms, bruised her arm and shoulder through nested layers of denim and copolymer. Flesh and fur burst into flame close enough to warm her face.

She twisted onto her back. "*Three o'clock! Flash wore off!*" Lubin turned and sprayed fire across the bearing. Three other dogs were closing from eleven; still on her back, Clarke held the gun

two-handed over her head and took them out with three meters to spare.

"Flash!" Lubin shouted again. Clarke rolled and ducked, closing her eyes. Three more pops, three more orange fleshy sunrises. They backlit the memory of that last sighted instant—the instant when Lubin called out and every dog had flinched and *turned their heads away...*

*Smart, smart doggies*, giggled some hysterical little girl in her head. *They heard FLASH, and they remembered it from the first time, and they closed their eyes...*

She opened hers, terrified of what she was about to see.

The trick hadn't worked twice. Lubin was bringing up his weapon, desperately switching modes as some black slaving nemesis launched itself at his throat. There were no stars in its eyes. Lubin fired, blind and point-blank; blood and bone exploded from the back of the creature's skull but the carcass just kept going, a hundred kilograms of gory unstoppable momentum hitting him full in the chest. Lubin went over like a paper doll, gripping his dead attacker as though he could prevail over *mass-times-acceleration* through sheer bloody-minded determination.

He couldn't, of course. He couldn't prevail over anything. He had only killed one of them. He disappeared beneath a dozen others.

Suddenly Clarke was charging forward, firing and firing and firing. There were screams, but none of them came from anything she might have hit. Something hot and hard slammed into her from the side; something cold and harder slammed against her back. A monster grinned down at her, open-mouthed, drooling. Its forepaws pinned her to the ground like piled cinderblocks. Its breath reeked of meat and petroleum.

She remembered something Ken had said: *You may get off easily. I rather suspect they'll be focusing on me.* She really should have asked him about that, back when she'd had the chance. Only now it was too late.

*They're saving me*, she thought distantly. *For dessert...*

From somewhere nearby, the sound of crunching bones.

#

*Jesus God, Ken. What did you think would happen?*

The weight on her chest was gone. On all sides she could hear the sound of monsters, breathing.

*You thought we had a hope in hell? You were blind, and I—I might as well have been. Were you trying to die, Ken? Did you just think you were indestructible?*

*I could understand that, maybe. I almost believed it myself, for a while.*

Strangely, nothing had torn out her throat. *I wonder what's keeping them*, she thought.

She opened her eyes. CSIRA loomed into the sky over her head, as though she were staring up from the grave at some colossal tombstone.

She sat up in a circle maybe four meters across. Massed black bodies circumscribed its edge. They watched her, panting with past exertion, sitting calmly on their haunches.

Clarke struggled to her feet. Her head itched with the memory of that irritating inaudible tickle, freshly resurgent against her inner ear. She'd felt it when the monsters had first charged. She'd felt it again, just now. *Ultrasonics*, she realised.

The Hechler & Koch lay at her feet. She bent to scoop it up. Dark shapes tensed on all sides; jaws snapped, restive. But they didn't stop her.

The Sikorsky-Bell lay broken-backed fifty meters to her left, fat thorax and slender abdomen rising in a lopsided V from their common juncture. A ragged, charred hole gaped darkly in the cabin wall, as though some white-hot parasite had burst forth from inside. She took one shaky step in that direction.

The dogs bristled and held their ground.

She stopped. Turned to face the black tower.

The pack parted before her.

They moved as she did, yielding in some approved direction, closing behind in her wake. After a few steps her own shifting bubble of space fused with another; two pockets merged into a single oblong vacuole ten meters down the major axis.

Two great torn carcasses lay piled before her in a pool of blood and spilled intestine. A foot protruded unmoving from beneath the nearest. Something else--dark, slick, strangely lobate—twitched further along one bloody flank as Clarke approached. It looked like some grotesque swollen parasite, pulsing weakly, spilled from the guts of its disembowelled host.

It *clenched*. Suddenly the image clicked: a blood-soaked fist, knotted in gory, matted fur.

"Ken!" She reached down, touched the bloody hand. It jerked back as if stabbed, disappeared beneath the carcass leaving only the vague sense of some half-glimpsed deformity. The mass of carrion shifted slightly.

Lubin hadn't torn these two animals apart. He'd merely blown lethal holes in them. Their evisceration had happened after the fact, a demon horde ripping through their fallen comrades in pragmatic, remorseless pursuit of their target.

Lubin had used these two as a *shield*.

"Ken, it's me." She grabbed handfuls of fur and pulled. The blood-slicked pelage resisted her grip. Splinters of bone stabbed her hands through clots of muscle and fur. On the third try, the center of mass tipped past some crucial threshold. The carcass rolled off Lubin like a great log.

He fired, blind. Lethal shards sprayed into the sky. Clarke dropped to the ground—"It's me, you idiot!"—and stared panic-stricken around the perimeter, terrified that Lubin had jump-started a whole new assault. But the pack only flinched and fell back a few steps, silent as ever.

"Cl—Clarke...?"

He didn't even look human. Every square centimeter glistened with black gore. The pistol shook in his hand.

"It's me," she repeated. She had no idea how much of the blood was his. "Are you—"

"—dogs?" His breath hissed fast and panicky through clenched teeth, the breath of a terrified little boy.

She looked at her escort. They looked back.

"Holding back, for now. Someone called them off."

His hand steadied. His breathing slowed. Discipline reimposed itself from the top down, the old familiar Lubin rebooting himself through sheer force of will.

"Told you," he coughed.

"Are you—"

"Functional..." He got slowly to his feet, tensing and grimacing a half-dozen times. "—barely." His right thigh had been gored. A gash split the side of his face, running from jaw to hairline. It tore straight through the shattered socket of his right eye.

Clarke gasped. "Jesus, your *eye*..."

He reached up to touch his face. "Wasn't doing me much good anyway." The deformity of his hand, barely glimpsed before, was obvious now: two of the fingers were gone.

"And your hand—Ken, it—"

He flexed the remaining digits. Fresh membranous scabs tore open at the stumps; dark fluids seeped forth. "Not as bad as it looks," he said hoarsely.

"You'll bleed out, you'll—"

He shook his head, staggered slightly. "Enhanced clotting factors. Standard issue. I'm good to go."

*The hell you are.* But dogs crowded close on one side, fell back on the other. Staying put obviously wasn't an option either.

"Okay then." She took him by the elbow. "This way."

"We're not deviating." It wasn't a question.

"No. We don't have much choice."

He coughed again. Clotting fluid bubbled at the corner of his mouth. "They're herding us."

A great dark muzzle pushed her gently from behind.

"Think of it as an honor guard," she said.

A row of glass doors beneath a concrete awning, the official logo of the Entropy Patrol set into stone overhead. The dogs formed a semicircle around the entrance, pushing them forward.

"What do you see?" Lubin asked.

"Same outer doors. Vestibule behind, three meters deep. There's—there's a door in the center of the barrier. Just an outline, no knob or keypad or anything."

She could have sworn that hadn't been there before.

Lubin spat blood. "Let's go."

She tried one of the doors. It swung open. They stepped across the threshold.

"We're in the vestibule."

"Dogs?"

"Still outside." The pack was lined up against the glass now, staring in. "I guess they're not—oh. The inner door just opened."

"In or out?"

"Inwards. Dark inside. Can't see anything." She stepped forward; her eyecaps would adjust to that deeper darkness once they were in it.

*If* they got in it. Lubin had frozen at her side, the remaining fingers on his mauled hand clenched into an impoverished fist. The grenade pistol extended from his other hand, unwavering, pointing straight ahead. His ravaged face held an expression Clarke had never seen before, some smoldering picture of rage and humiliation that bordered on outright humanity.

"Ken. Door's open."

The thumbwheel clicked onto *shipworm*.

"It's open, Ken. We can walk right in." She touched his forearm, tried to bring it down but his whole body was gripped in a sudden furious tetanus. "We don't have to—"

"I told you before," he growled. "More sensible to go around." His gun arm swung to three o'clock, pointing straight at the vestibule wall. His useless eye stared straight ahead.

"Ken—" She turned, half-expecting the monsters at their backs to crash through the panes and rip his arm off. But the dogs stayed where they were, seemingly content to let the drama play out without further intervention.

"He *wants* us to go forward," Lubin said. "Always sets it up, always takes the initiative. All we ever do is fucking—*react*..."

"And blowing out a wall when the door's standing open? That's not a *reaction*?"

Lubin shook his head. "It's an escape route."

He fired. The shipworm plunged into the side wall, spinning fast enough to shatter an event horizon. The wall erupted like a tabletop Vesuvius; filthy grey cumulus billowed out and engulfed them in an instant. Stinging particles sandblasted Clarke's face. She closed her eyes, choked on the sudden sandstorm. From somewhere deep in the maelstrom, she heard the tinkle of shattering glass.

Something grabbed her wrist and yanked sideways. She opened her eyes onto the swirling, soupy aftermath of the blast. Lubin drew her towards the ruptured wall; his ravaged face loomed close. "This way. Get us in."

She steered. He lurched at her side. The air was filled with the hiss of fine sifting debris, the building sighed at its own desecration. An empty, twisted door frame leaned crazily out of the murk. Pebbles of crumbled safety glass crunched beneath their feet like a diamond snowfall.

There was no sign of the dogs, not that she'd be able to see them anyway unless they were on her. Maybe the explosion had scared them back. Maybe they'd been trained to stay outside no matter what. Or maybe, any second now, they'd find this broken doorway and pour through to finish the job...

A ragged hole resolved in the wall before them. Water ran from somewhere beyond. A ridge of torn concrete and rebar rose maybe five centimeters from the floor, the lip of a precipice; on the other side there *was* no floor, just a ruptured shaft a meter across, extending into darkness both above and below. Twisted veins of metal and plastic hung from precarious holdfasts, or lay wedged across the shaft at unforeseen angles. A stream of water plummeted through empty space, spilling from some ruptured pipe above, splattering against some unseen grate below.

The wall across the gap had been breached. There was darkness beyond.

"Watch this step," she said.

They emerged into a dark, high-ceilinged space that Clarke half-remembered as the main reception area. Lubin turned and



aimed back at the hole through which they'd come. Nothing jumped out at them. Nothing followed.

"Lobby," Clarke reported. "Dark. Reception pedestals and kiosks over to the left. Nobody here."

"Dogs?"

"Not yet."

Lubin's working fingers played along the edges of the breach. "What's this?"

She leaned closer. In the boosted half-light, something glimmered from the torn cross-section like a thin vein of precious ore. Frayed bits protruded here and there from the shattered substrate.

"Mesh of some kind," she told him. "Embedded in the wall. Metallic, very fine weave. Like thick cloth."

He nodded grimly. "Faraday cage."

"What?"

"Shielding. From the effects of the pulse."

Like a handclap from God, the lights came on.

## EMPATH

Instantly Clarke was snow-blind. She brought up the H&K, waved it wildly in no particular direction. "The lights—"

"I know."

From somewhere deep in the building, the sudden hum of reawakened machinery.

"Jesus Priestpoking Christ," said an omnipresent voice. "You always have to make things so damned difficult. The door was open, you know."

"Achilles?" Her eyecaps were adjusting; objects and architecture resolved from the whitewash. But the fog wasn't entirely in her caps. Dust from the explosion hung in the air, bleeding contrast from their surroundings. Scree fanned out across the floor from their makeshift entrance. Polished stone paneling

on the opposite wall, a good ten meters from the breach, had cracked and fallen in a jagged heap.

"Or you could've just landed on the roof," the voice continued. "But no. You *had* to storm the battlements, and look at you now. *Look at you now.*

"You can barely stand."

Ventilators whirred in the distance, tugged wisps and streamers of suspended dust into grilles in the ceiling. The air began to clear. Lubin swayed by the wall, favoring his injured leg. The lights had returned color to Clarke's sight; the gore on Lubin's body glistened shocking rust and crimson. He looked flayed alive.

"We could really use some help here," Clarke said.

A sigh from somewhere, from everywhere. "Like the last time you came to town. Some things never change, eh?"

"This is *your* fault, you fucker. *Your* dogs—"

"Standard-issue post-pulse security, and did I tell you to go up against them *blind*? Ken, what got into you? You're damn lucky I noticed in time."

"*Look* at him! *Help* him!"

"Leave it," Lubin insisted, barely above a whisper. "I'm all right."

The building heard him anyway. "You're *far* from all right, Ken. But you're not exactly incapacitated either, and I'm not stupid enough to let down my guard to someone who's just broken into my home by force. So let's work this out, and then maybe we can get you fixed up before you bleed to death. What are you doing here?"

Lubin started to speak, coughed, started again: "I think you know already."

"Assume I don't."

"We had a deal. You were supposed to find out who was hunting us on the ridge."

Clarke closed her eyes, remembering: *The rest of the plan doesn't change.*

"In case it hasn't sunk in yet, I'm dealing with quite a few demands on my time these days," the room pointed out. "But I assure you, I have been working on it."

"I think you've done more than that. I think you *solved* it, even before you lost so much of your resource base. We can tell you how to get that back, by the way. If that factors into your analysis."

"Uh huh. And you couldn't have just phoned me up from Podunk, Maine or wherever you were?"

"We tried. Either you were busy dealing with all those other demands on your time, or the channels are down."

The building hummed quietly for a moment, as if in thought. Deeper into the lobby, past dormant information pedestals and brochure dispensers and an abandoned reception counter, ruby LEDs twinkled from a row of security gates. The leftmost set turned green as Clarke watched.

"Through there," Desjardins said.

She took Lubin's elbow. He limped at her side, maintaining a subtle distance; close enough to use her as a guide, far enough to spurn her as a crutch. An asymmetrical trail of dark sticky footprints marked his passage.

Each gatepost was a brushed-aluminum cylinder half a meter across, extending from floor to ceiling like the bars of a cage. The only way in was between them. A black band the height of Clarke's forearm girdled each post at eye level, twinkling with color-coded constellations—but the whole band flushed red before they were halfway across the room.

"Oh, right," Desjardins remarked. "Security will cut you into little cubes if you try to sneak anything past." A curved panel beneath the display slid back at their approach. "Just throw everything in there."

Lubin felt out the chamber, set his pistol and belt down inside it. Clarke followed suit with her own weapon while Lubin struggled to remove his pack. He shrugged off Clarke's attempted assistance; the pack clanked on top of the pile. The panel slid shut.

The wraparound display bloomed into a riot of images and acronyms. Clarke recognized some of them from Lubin's tutorial on the way up: taser and microwave gun; mechanical springlift; aerosol flypaper. Other things she'd never seen before. For all she

knew Lubin had brought them from his stash at the bottom of the Atlantic.

"Is that an electron stripper?" Desjardins asked. "And a pulse bomb! You brought your own tiny pulse bomb! Isn't that cute!"

Lubin, his jaw set, said nothing.

"That's everything, then? No nasty biosols or hidden freakwire? Because I'm telling you, those gates are *very* unforgiving. You walk through with *any*—"

"Our implants," Clarke said.

"Those will pass."

Lubin felt his way between the gateposts. No klaxons sounded, no lasers lanced down from overhead. Clarke stepped after him.

"The elevators are just around the corner," Desjardins said.

Completely disarmed, they stepped into Desjardins's parlor. Clarke led Lubin with soft words and an occasional touch. She didn't dare speak her mind, even in a whisper. But she gave his arm the slightest squeeze, and knew after all their long years together that he'd know what she meant: *He didn't buy it for a second.*

Lubin replied with a blind glance and the twitch of a bloody lip: *Of course he didn't.*

All according to plan. Such as it was.

She had to take the physics on faith.

She could buy everything else that Lubin had laid out on the way up. It didn't matter whether Desjardins believed their story, so long as he thought they might be useful. He wouldn't try to kill them outright until convinced otherwise.

Which didn't mean that he wouldn't still try to *disable* them. He wasn't about to let anyone into his secret lair without taking precautions—disarming them, confining them, cutting their strings.

*Nothing lethal*, Lubin had predicted, *and nothing that will damage the structure. That limits his options. We can handle it.*

Fine, as far as it went. It was *how* they were going to handle it that she couldn't quite get behind.

A good half-liter of water sloshed through the plumbing in Clarke's chest, unable to drain because of the tape on her electrolysis intake. Five hundred milliliters didn't sound like much. When she swam through the deeps a steady current of seawater flowed through her implants, endlessly replenished. It hardly seemed possible that the stagnant dregs trapped there now would last more than a moment.

*Four hundred fifty grams of molecular oxygen*, Lubin had said. *That's almost what you'd get in two thousand liters of air.*

Her head couldn't argue with the numbers. But her gut was no mathematician.

A rank of elevators stood before them. One set of doors was open; soft light spilled from the compartment behind.

*He'll confine us first.*

They entered. The doors slid shut. The cage began to move.

Down.

*This is insane*, she thought. *This can't work*. But already, she imagined she could hear the soft hiss of gas from hidden nozzles...

She coughed and tripped her implants, praying to some indeterminate deity that Lubin hadn't fucked up his calculations.

He hadn't. A familiar, subtle vibration started somewhere in her chest. Her guts writhed and flooded with their own private stock of isotonic saline. The liquid rose in her throat and filled her mouth. Brief nausea accompanied the flooding of her middle ears. A salty trickle ran down her chin before she remembered to clamp her lips together. The world muted, all sounds suddenly faint and distant except for the beating of her own heart.

Just like that, she lost the urge to breathe.

The descent continued. Lubin leaned against the wall of the elevator, his face a bloody cyclops mask. Clarke felt warm wetness on her upper lip: her nose was running. She reached up and gave it a scratch, inconspicuously jamming the plug in her left nostril tight against the leak.

Suddenly her body *thrummed*, deep inside, an almost subsonic quaking that vibrated her bones as though they were the parts of some great bass instrument. Faint nausea struck her in the throat. Her bowels quavered.

*The two most likely options, Lubin had mused, are gas and infrasound.*

She didn't know if gas was in Desjardins's arsenal—for all she knew the air around them was already saturated. But this was obviously some kind of squawkbox. The sound dish must stretch across the whole ceiling of the elevator, or maybe beneath the floor. The walls focused its vibrations, built resonances within the cage. The sound would be tuned to build intolerable harmonics in the lungs and middle ears, in the sinuses and trachea.

It made her sick even with her airways and hard cavities flooded; she could scarcely imagine the impact on unbuttressed flesh. The implants didn't deal with gastrointestinal gases—deep-sea pressure collapsed those soft pockets down with no ill effect—and acoustic attacks were generally tuned to harder, more predictable air spaces anyway. Desjardins's squawkbox was doing *something* down there, though. It was all she could do to keep from vomiting saline all over the compartment, from shitting in her diveskin. Any dryback would be on the floor by now, soiled and retching or unconscious. Clarke clenched at both ends and hung on.

The elevator stopped. The lights went out.

*He knows, she thought. He figured it out, of course he figured it out. How could we think he wouldn't? How could he not notice?*

Any second the elevator would lurched back into motion, drag them up through this ruined, booby-trapped derelict where sixty-five floors of countermeasures would turn them into—

Her head cleared. Her bones stopped tingling. Her bowels returned to the fold.

"Okay, guys." Desjardins's voice was tinny and distant in Clarke's flooded ears. "End of the line."

The doors slid open.

An oasis of bright machinery on a vast dark plain. That's what naked eyes would have seen: the Second Coming perhaps, a

Christ-figure bathed in light and technology while all around was an infinite void.

To Lenie Clarke there was no darkness. The void was a converted parking garage, an empty gray cavern stretching half a city block on a side. Evenly-spaced rows of support pylons held the ceiling from the floor. Plumbing and fiberop emerged from the walls, crawled along their surfaces like a webbing of sparse vines. Cables converged into a loosely-bound trunk, winding along the floor to a horseshoe of workstations lit by chemical lightstrips.

Christ was someone Lenie Clarke had met before. She'd first encountered him in darkness much deeper than this, a prisoner of Ken Lubin. Back then, Achilles Desjardins had been a man convinced he was about to die.

It had been so much easier to read him, then.

Clotting blood cracked around Lubin's lips. His chest rose. Clarke shut down her own implants, yanking the plugs from her nose before the tide had fully receded within her. In the center of the room, in the heart of a high-tech horseshoe, Desjardins watched them approach.

"I thought I could make up for it," he said.

In some strange, twisted way it was actually good to see him again.

"For being a monster," he explained, as if someone had asked. "Why I joined the Patrol, you know? I couldn't change what I was, but I thought—you know, if I helped save the world, maybe that could make up for it somehow." His mouth spread in a rueful smile. "Pretty stupid, right? Look where it got me."

"Look where it got everyone," Lubin said.

Desjardins's smile vanished. There was no shielding on his eyes, and yet somehow he was suddenly as opaque as any rifter.

*Please, Clarke thought. Let this all be some monstrous, stupid mistake. Tell us we've misread everything. Please. Prove us wrong.*

"I know why you're here," he said, looking at Lubin.

"You let us in anyway," Lubin observed.

"Well, I'd hoped to be at a bit more of an advantage by now, but whatever. Nice trick with the implants, by the way. I didn't even

realise they'd *work* without your diveskins sealed up. Pretty stupid mistake for Achilles the Master Pattern-Matcher, eh?" He shrugged. "I've had a lot on my mind lately."

"You let us in," Lubin repeated.

Desjardins nodded. "Yeah. That's far enough, by the way."

They were four meters from his fort. Lubin stopped. Clarke followed suit.

"You want us to kill you?" she asked. "Is that it?"

"Suicide By Rifter, huh?" He snorted a soft laugh. "There'd be a certain poetry to that, I guess. But no."

"What, then?"

He cocked his head; the gesture made him look about eight years old. "You *were* the ones who pulled that kin-selection trick with my Lenies, weren't you?"

Clarke nodded, swallowing on the realization: *So he's behind those too.*

*He's guilty after all...*

"I figured," Desjardins admitted. "It's the kind of thing that would only occur to someone who knew where they came from. Not many of those left up here. And the thing of it is, it's easy enough to do but it's not so simple to *undo*." He looked hopefully at Lubin. "But you said you knew how to—?"

Lubin bared his teeth in a bloody rictus. "I lied."

"Yeah. I kind of figured that too." Desjardins shrugged. "So I guess there's only one thing left to talk about, isn't there?"

Clarke shook her head. "What are you—"

Lubin tensed beside her. Desjardins's eyes flickered to the side for the merest instant; cued, the surface of a nearby wall sparkled and brightened before them. The image that resolved on the smart paint was hazy but instantly recognizable: a sonar composite.

"It's Atlantis," Clarke said, suddenly uncertain.

"I see it," Lubin said.

"Not real-time, of course," the 'lawbreaker explained. "The baud rate's a fucking *trickle*, and with all the range and cover issues I can only sneak in and grab a shot like this once in a while. But you get the idea."

Lubin stood motionless. "You're lying."



"Word of advice, Ken. You know how some of your people kind of just go off the deep end and wander into the black? You really shouldn't let them take squids when they go. You never know where their security transponders might end up."

"No." Clarke shook her head. "You? It was *you* down there?" *Not Grace. Not Seger. Not the corpses or the rifters or the M&Ms or even two lousy guys on a boat.*

*You. All along.*

"I can't take *all* the credit," Desjardins admitted. "Alice helped me tweak Behemoth."

"Reluctantly, I'd guess," Lubin said.

*Oh, Achilles. One chance to fix the mess I made and you fucked it up. One chance to make peace and you threaten everyone I ever knew. One lousy, faint hope, and you—*

*How dare you. How dare you.*

A thin, final straw vanished in her hand.

She stepped forward. Lubin reached out with one mutilated hand, and held her back.

Desjardins ignored her. "I'm not an idiot, Ken. You're not the main attack force, you're just all you could scrape together on short notice. But *you're* not an idiot either, so there are reinforcements on the way." He held up his hand to preempt any protest. "That's okay, Ken, really. I knew it was gonna happen sooner or later, and I took all the necessary precautions. Although thanks to you, I *do* seem to have lost a certain finesse when it comes to my big guns..."

His eyes jiggled slightly in their sockets. His fingers twitched. Clarke remembered Ricketts, sweet-talking his way into *Phocoena* with a wink and a glance.

The image on the wall dissolved. Numbers appeared in its place.

"Now I *am* in real-time contact with *these* guys. Can you see them, Ken? Channel 6?"

Lubin nodded.

"Then you know what they are."

Clarke knew too. Four sets of lats and longs. Depth readings, zeroed. Targeting ranges. A row of little flashing icons that said HOLDING.

"I don't want to do this," Desjardins said. "It was going to be my retirement home, after all. I never wanted to blow it up, just—hobble parts of it. Smooth the transition, so to speak. But if I'm gonna be dead anyway—"

She twisted in Lubin's grip. But even mutilated, Lubin was immovable. His hand shackled her arm like a granite claw, oily with coagulating fluids. She could only slip in his grasp; she could not break free.

"I do have other options," the 'lawbreaker' continued. "Contingency villas, you might say. I can go to one of those instead." He lifted a hand to the telemetry. "You've got a lot more riding on this than me."

*He planned it for years, she realized. Even when we thought he was helping us. And ever since we've been cowering in the dark like good little rabbits while our lines went dark and our contacts dried up and it was him all along, cutting us off, fumigating the place so there wouldn't be any uncooperative tenants around when his luck ran out and he needed a place to hide...*

"You asshole," she whispered, straining.

He didn't look at her. "So when are the cavalry coming, Ken? How did you call them in? How much do they know?"

"I tell you," Lubin said, "and you call off the attack."

"No, Ken, you call off *your* attack. Use whatever clever code words you set in place to shut down your sub's autopilot, or to convince Helsinki that you were mistaken, or whatever it takes."

"And you blow up Atlantis anyway."

"What for? I have other options, as I said. Why waste all those perfectly good hostages for no payoff? They're worth way more to me alive."

"For now."

"Now is all we've got, buddy."

Clarke glared: from the man who had tried to kill her, to the man who'd risked his life to stop him. *Every hour you're in this place, you kill more people than ever lived in Atlantis*, she thought.

*Every hour I kill more people, by leaving you here.*

And Ken Lubin was about to cut a deal.

She could see it in his stance, in that ruined blind face that had been at her side and behind her back all these years. He wasn't entirely inscrutable. Not to her. Not even now.

"I know you, Ken," Desjardins was saying. "We go *way* back, you and I. We're soul mates. We make our own rules, and by God we live by them. People don't matter. Populations don't matter. What matters is the *rules*, am I right, Ken? What matters is the *mission*."

"If you don't deal, the mission fails."

"*Ken*," she whispered.

"But you can save them," the lawbreaker continued. "Isn't that why you came back in the first place? Just give me your stats and the mission succeeds. You walk away, I abort the strike, and before I disappear I'll even send you a fix for that nasty new strain of Behemoth your buddies have been wrestling with. I gather by now a fair number of them are seriously under the weather back there."

She remembered a floating machine that had used his voice: *If killing ten saves a thousand, it's a deal*. She remembered Patricia Rowan, torn apart on the inside, the face she presented to the world cold and unflinching: *I tried to serve the greater good*.

"Or," Desjardins said, "you can try and take me out, and kill everyone you came up here to save." His eyes were locked on Lubin's. It was as though the two of them shared their own pocket universe, as though Clarke didn't even exist. "Your choice. But you really shouldn't take too long making up your mind—your tweaks are fucking things up all over the place. I don't know even how long I can keep control of *these* circuits."

She thought of what Patricia Rowan would have done, faced with this choice. She thought of the millions dead who would not have died, if only she *had*.

She remembered Ken Lubin himself, a million years ago: *Is there anything you wouldn't do, for the chance to take it back?*

"No," she said softly.

Desjardins raised an eyebrow and—finally— deigned to look at her. "I wasn't talking to you. But if *I* were Lenie Clarke—" He smiled. "—I wouldn't be shameless enough to pretend I gave a flying fuck about the rest of the world."

She twisted in Lubin's grasp and *kicked*, as hard as she could. Her boot plunged deep into the gash in his thigh. Lubin staggered and cried out.

And Clarke was free, and springing forward.

She launched herself directly at Desjardins. *He won't risk it, she told herself. It's his only leverage, he's dead if he hits the button, he must know he's—*

Desjardins's eyes flickered left. His fingers twitched. And a tiny thread of doubt blossomed into full-blown horror as the numbers on the wall began to move...

HOLDING transmuted into a whole new word, again and again and again along the bottom of the board. Clarke tried desperately not to read it, drove forward on the wings of some frantic infantile hope *maybe if I don't see it it won't happen, maybe there's still time*, but she *did* see it, she couldn't help seeing it, spelled out in quadruplicate full-stop before the whole board went dark:

COMMIT.

With the next step she toppled.

Something *hummed* deep in her head. Her bones sang with subtle electricity. Her legs collapsed beneath her, her arms were dead weights at her sides. Her skull cracked painfully against the back of a workstation, cracked again against the floor. Her lung deflated with a tired sigh—she tried to hold her breath but suddenly she was slack-jawed and drooling. Her bladder voided. Implants clicked and stuttered in her chest.

"You gotta love the symmetry," a voice remarked from somewhere on the other side of the universe. "The ultimate victim, you know? The ultimate victim, and the most powerful woman in the world all rolled into one tight little bod. And *I*, well, I'm the last word in one or two things myself..."

She couldn't feel a heartbeat. Darkness roared up from somewhere deep in her skull, swept swirling across her eyes.

"It's fucking *mythic* is what it is," the voice continued, distant and barely audible. "We just *had* to get together..."

She didn't know what he was talking about. She didn't care. There was nothing in her world but noise and chaos, nothing in her head but COMMIT COMMIT COMMIT COMMIT.

*They don't even know they're dead*, she thought. *The torpedoes haven't reached Atlantis yet. They're living the last few minutes of their lives and they don't even know it.*

*They'll live longer than me...*

A hand around her ankle; friction against the floor.

*Bye, Jelaine. Bye Avril. Bye Dale and Abra and Hannuk...*

A great gulping wheeze, very close. The sensation of distant flesh expanding.

*Bye Kevin. Bye Grace. Sorry we could never work it out...*

A pulse. She had a pulse.

*Bye Jerry. Bye Pat. Bye again...*

There were voices. There was light, somewhere. Everywhere.

*Bye, Alyx. Oh God, I'm so sorry. Alyx.*

"...bye, world."

But that voice had come from *outside* her head.

She opened her eyes.

"You know I'm serious," Desjardins was saying.

Somehow Ken Lubin was still on his feet, listing to port. He stood just beyond the pool of light. Achilles Desjardins stood within it. They confronted each other from opposite sides of a waist-high workstation.

Lubin must have pulled her out of the neuroinduction field. He'd saved her life again. Not bad for a blind psychopath. Now he stood staring sightlessly into the face of his enemy, his hand extended. Probably feeling out the edge of the field.

"Dedicated little bitch, I have to admit," Desjardins said. "Willing to sacrifice a handful of people she actually knows for a planetful of people she doesn't. I thought she was way too human to be so rational." He shook his head. "But the whole point is kind of lost if the world blows up anyway, no? I mean, all those runaways on the Ridge are about to die in—oh, sorry, who've *just*

*died*—and for what? The only thing that'll give their deaths any meaning at all is if you turn around and walk away."

*They're gone*, Clarke thought. *I killed them all...*

"You know how many battellites are still wobbling around up there, Ken. And you know I'm good enough to have got into at least a few of 'em. Not to mention all the repositories of chemical and biological weapons kicking around groundside after a hundred years of R&D. All those tripwires run right through my left ventricle, buddy. Lenie should thank the spirit of motherfucking entropy that she *didn't* kill me, or the heavens would be raining fire and brimstone by now."

Clarke tried to move. Her muscles buzzed, hung over. She could barely lift her arm. Not the usual med-cubby field by a long shot. This one had been cranked to quell riots. This one was industrial.

Still Lubin didn't speak. He managed a controlled stagger to the left, his arm still extended.

"Channels seven through nineteen," Desjardins told him. "Look for yourself. See the kill switches? See where they lead? I've had five years to set this up, Ken. You kill me, you kill billions."

"I— expect you'll find a number of those tripwires are no longer connected." Lubin's voice was thin and strained.

"What, your pack-hunting Lenies? They can't get into the lines until the lines open. And even then, so what? They're *her*, Ken. They're concentrated essence of Lenie Clarke at the absolute peak of her game. They get their teeth into a tripwire, you think for a second they won't pull it *themselves*?"

Lubin cocked his head slightly, as if taking note of some interesting sound.

"It's still a good deal, Ken. Take it. You'd have a hard time killing me anyway. I mean, I know what a tough hombre you are, but your motor nerves short out just the same as anyone else's. And not to put too fine a point on it, but you're *blind*."

Realization stabbed Clarke like an icicle: *Achilles, you idiot, don't you know what you're doing? Haven't you read his file?*

Lubin was speaking: "So why deal in the first place?"

"Because you *are* a tough hombre. You could probably hunt me down by smell if it came to that, and even though you're having a really off day I'd just as soon not take the chance."

*You're talking to Ken Lubin, she raged silently, trapped in her own dead flesh. Do you actually think you're threatening him?*

"So we disappear, you disappear, the world relaxes." Lubin wavered in and out of focus. "Until someone else kills you."

Clarke tried to speak. All she could force out was a moan, barely audible even to herself.

*It's not a threat at all—*

"You disappear," Desjardins said. "Lenie's mine. Saved her special."

*It's an inducement...*

"You're proceeding from a false premise," Lubin pointed out.

"Yeah? What premise is that?"

"That I give a shit."

Clarke caught a glimpse of muscles bunching in Lubin's left leg, of a sudden sodden pulse of fresh blood coursing down his right. Suddenly he was airborne, hurtling *through* the field and overtop the barrier from an impossible standing start. He rammed into Desjardins like an avalanche, pure inertia; they toppled out of sight behind the console, to the sound of bodies and plastic in collision.

A moment's silence.

She lay there, tingling and paralyzed, and wondered who to root for. If Lubin's momentum hadn't carried him completely through the field he'd be dying now, with no one to pull him to safety. Even if he'd made it across, he'd still be helpless for a while. Desjardins might have a chance, if the collision hadn't stunned him.

*Achilles, you murderer. You psychopath, you genocidal maniac. You foul vicious monster. You're worse than I am. There's no hell deep enough for you.*

*Get out of there. Please. Before he kills you.*

Something gurgled. Clarke heard the faint scratching of fingernails on plastic or metal. A meaty thud, like someone slinging a dead fish against the deck—or the flopping of a limb, stunned in transit, struggling back to life. A brief scuffling sound.

*Ken. Don't do it.*

She gathered all her strength into a single, desperate cry: "No." It came out barely whispered.

On the far side of the barricade, a wet snapping *pop*. Then nothing at all.

*Oh God, Ken. Don't you know what you've done?*

*Of course you know. You've always known. We could've saved it, we could have made things right, but they were right about you. Pat was right. Alyx was right. You monster. You monster. You wasted it all.*

*God damn you.*

She stared up at the ceiling, tears leaking around her eyecaps, and waited for the world to end.

She could almost move again, if only she could think of a reason to. She rolled onto her side. He sat cross-legged on the floor beside her, his bloody face impenetrable. He looked like some carved and primitive idol, awash in human sacrifice.

"How long?" she rasped.

"Long?"

"Or has it started already? Are the claws on fire? Are the bombs falling? Is it enough for you, are you fucking *hard* yet?"

"Oh. That." Lubin shrugged. "He was bluffing."

"*What?*" She struggled up on her elbows. "But—the tripwires, the kill-switches—he *showed* you..."

"Props."

"You saw through them?"

"No. They were quite convincing."

"Then how—"

"It didn't make sense that he'd do it."

"Ken, he destroyed *Atlant*—" A sudden, impossible ray of hope: "Unless that was a bluff too?..."

"No," Lubin said quietly.

She sank back. *Let me wake up from this*, she prayed.

"He destroyed Atlantis because he had another deterrent to fall back on. Making good on the smaller threat increased the



credibility of the larger one." The man without a conscience shrugged. "But once you're dead, deterrence has already failed. There's no point in acting on a threat when it can't possibly achieve your goal."

"He could have, easily. *I* would have."

"You're vindictive. Desjardins wasn't. He was mainly interested in self-gratification." Lubin smiled faintly. "That was unusually enlightened of him, actually. Most people are hardwired for revenge. Perhaps Spartacus freed him of that too."

"But he *could* have done it."

"It wouldn't have been a credible threat otherwise."

"So how did you *know*?"

"Doomsday machines are not easy things to assemble. It would have taken a great deal of time and effort for no actual payoff. Faking it was the logical alternative."

"That's not good enough, Ken. Try again."

"I also subjected him to Ganzfeld interrogation once. It gave me certain insights into—"

She shook her head.

He didn't speak for a while. Finally: "We were both off the leash."

"I thought you gave yourself a new leash. I thought your *rules*..."

"Still. I know how he felt." Lubin unfolded—carefully, carefully—and climbed slowly to his feet.

"Did you know what he'd *do*?" She couldn't hide the pleading in her voice.

He seemed to look down at her. "Lenie, I've never *known* anything my entire life. All I can ever do is go with the odds."

It wasn't what she wanted to hear. She wanted him to describe some telltale glitch in Desjardins's shadow-show, some compelling bit of evidence that said *the worst will not happen*. She wanted some channel of ostensible input traced back to an empty socket, impossibly disconnected from its fiberop. Anything but a gamble based on empathy between two men without conscience.

She wondered if he was disappointed, even a little bit, that Desjardins had been faking it after all. She wondered if he'd really been expecting it.

"What are you so down about?" Lubin asked, sensing what he couldn't see. "We just saved the world."

She shook her head. "He was going to lose anyway. He knew that better than we did."

"Then we advanced the schedule significantly, at least. Saved millions of lives."

*How many millions*, she wondered, and then: *what difference does it make?* Could saving twelve million today make up for killing ten million in the past? Could the blood-soaked Meltdown Madonna somehow transmute into Saint Lenie In the Black, savior of two million net? Was the algebra of guilt really so elementary?

For Lenie Clarke, the question didn't even apply. Because any millions saved today had only been spared from a fate she'd condemned them to in the first place. There was no way, no way at all, that she would ever be able to balance those books.

"At least," she said, "the debt won't get any bigger."

"That's a needlessly pessimistic outlook," Lubin observed.

She looked up at him. "How can you say that?" Her voice was so soft she could barely hear herself. "Everyone's *dead*..."

He shook his head. "*Almost* everyone. The rest of us get another chance."

Ken Lubin reached out his hand. The gesture was absurd to the point of farce; that this torn and broken monster, gored, bleeding, could pretend to be in any position to offer assistance to others. Lenie Clarke stared for a long moment before she found the strength to take it.

*Another chance*, she reflected, pulling herself to her feet. *Even though we don't deserve one.*

## **EPILOG: SINGULAR HESSIAN**

FAILURE TO CONVERGE. CONFIDENCE LIMITS EXCEEDED.  
FURTHER PREDICTIONS UNRELIABLE.

## ACKNOWLEDGEMENTS

The usual gang of suspects, without whom I could never have pulled this off:

David Hartwell, my editor, nailed some serious structural problems with the first draft and helped me fix them. Moshe Feder took point through the day-to-day grind from delivery to rewrite to kicking-and-screaming to rending-of-garments to wracking, hysterical sobs, and finally to parturition

In what has become an annual rite, a motley collection of subversive literary and political malcontents—Laurie Channer, Cory Doctorow, Nalo Hopkinson, Becky Maines, John McDaid, Janis O'Conner, Steve Samenski, Isaac Szpindel, and Pat York—met clandestinely at an Undisclosed Location back during the summer of 2002. There, they tore apart the first two chapters of this puppy (among others), then helped to sow them back together again. This is the second time that a whole bunch of people have seen how my novel begins, while virtually no one sees the rest until it's too late to change anything. I suspect self-esteem issues may be involved.

But the fact that hardly anybody *read* the whole thing doesn't mean that lots of people didn't *contribute* to it. David Nickle offered advice, insights, and endless mockery throughout the process; his input proved so valuable I can almost overlook the fact that I had to get up at five thirty in the fucking morning and go running for ten miles to avail myself of it. Laurie Channer withstood endless pissing and moaning over a story for which her input was frequently solicited even though she was never actually allowed to read the damned thing. (She still hasn't, as of this writing.)

I owe many details of the helicopter crash scene to Glenn Norman and Glenn Morrison, both pilots, and both more helpful to pesky authors than I had any right to expect. I was astonished to learn that even when a helicopter loses all power in mid-flight, it's

still possible to walk away from the crash by practicing an emergency technique called "autorotation". Glenn Morrison, in fact, survived a crash eerily parallel to the one described herein, except for the fact that he is not blind. (For the record, he doesn't think there's a hope in hell off pulling off that maneuver in real life if you *are* blind, and he knows his stuff. On the other hand, he doesn't know Ken Lubin.)

Parts of other people's life histories made their way into the story. Certain impressionistic details of the dog attack took their inspiration from wild canines encountered by one Rob Cunningham on his travels through India. (You may know Rob as the dude who created those gorgeous spaceship designs for *Homeworld* and *Homeworld 2*, the RTS computer games from Relic Entertainment.) Eight-year-old Achilles Desjardins's experiments with aerobraking were lifted from the childhood confessions of Mark Showell, fisheries biologist, although Mark is not a sexual sadist so far as I know. (If anything he's a masochist, judging by the guy he chose to do his Master's under.)

Isaac Szpindel, MD, Ph.D., skilled in so many and varied endeavors that it makes me sick, helped me load Taka's lines with plausible medical chrome. Dave "the bioinformatician" Block answered numerous impertinent questions about artificial nucleotides and minimum genotype sizes. (Unfortunately, one of the things he taught me was that you can't cram a 1.1MB genotype into a cell 250nm across, which contradicts physical stats for  $\beta$  ehemoth already described in *Maelstrom*.) Major David Buck, of the New Zealand Defence Force, helped me out on the subject of Fuel Air Explosive ordnance. Steve Ballentine, Hannu Blommila, Rick Kleffel, Harry Pulley, Catriona Sparks, Bebe Schroer, Janine Stinson, Mac Tonnies, and David Williams have all pointed me to relevant research papers, reviews, opinions, and/or news articles that went into the Behemoth mix one way or another. Jan Stinson also went through the manuscript with an editorial eagle-eye, catching typos and bigger problems which I hope the rest of you won't notice. Not to mention others whom I've probably forgotten, and of whom I hereby pre-emptively beg forgiveness.

You can't blame any of these good folks if this book sucks, since none of them were allowed to read it. (If it does suck, maybe that's why.) You can't even blame David Hartwell, who *did* read it, because the book would have sucked even harder without his input. You can only blame me, and you might as well since I've already got your money.

Well, fifty cents of it, anyway.

## NOTES AND REFERENCES

Once again it's time to trot out a variety of citations that will hopefully serve as a valuable educational resource, even though they're primarily intended to cover my ass against nitpickers.

If you have come late to this saga, you may not find the following references as complete as you'd like. Any real-world science elements introduced in *Starfish* and *Maelstrom* were cited at the end of those books; I don't repeat those citations here, even though many elements persist into *Behemoth*. (I do, however, cite related research that has come out since *Maelstrom* was released, especially if it makes me look especially prescient in some way.) So if you're looking for my original sources on smart gels, "fine-tuning", or the Maelstrom Ecosystems, you'll have to go back and check the other books. You still may not find everything you're looking for, but you might at least make my Amazon numbers look a little less dismal.

### **Atlantis: There Goes the Neighborhood**

There is a place in the middle of the North Atlantic where the currents stop dead, an eye in the middle of that great slow gyre revolving between Europe and North America<sup>1</sup>. It seemed like a reasonable spot to hide from lethal particles potentially borne on wind and water, so I put Atlantis there. The surrounding topography took some inspiration from a 2003 report on abyssal mineralogy<sup>2</sup>. Impossible Lake was inspired by the ultrasaline lens of heavy water described in the ground-breaking documentary

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<sup>1</sup> Van Dover, C.L., *et al.* 2002. Evolution and biogeography of deep-sea vent and seep invertebrates. *Science* 295: 1253-1257.

<sup>2</sup> Rona, P.A. 2003. Resources of the sea floor. *Science* 299: 673-674.

series "Blue Planet"<sup>3</sup>. The failure of the Labrador Current and the Gulf Stream is increasingly likely in view of increased melt water discharge from the Arctic (*e.g.*, <sup>4,5</sup>). And I know they don't actually figure into the plot anywhere, but Lenie Clarke worries about them on her way to the surface in Chapter One so it's fair game: *giant squids now outmass the whole human race*, and they're getting even *bigger*<sup>6</sup>!

## Behemoth

We continue to discover life increasingly deep in the lithosphere. At last count, deep crustal rocks beneath the Juan de Fuca Ridge—yes, the very ridge from which Behemoth escaped at the end of *Starfish*—have yielded evidence of heretofore unknown microbial lifeforms<sup>7</sup>. Water samples from boreholes 300 m below that seabed show depleted levels of sulphate: something down there is alive, unclassified, and consuming sulphur. There's no evidence that it would destroy the world if it ever reached the surface, but then again there's no evidence it *wouldn't*, either. I can always hope.

That hope is a faint one, though. Patricia Rowan was right to argue that Behemoth, by virtue of its ancient origins, should be an obligate anaerobe<sup>8</sup>. To even make it out onto the seabed would require either a very convenient mutation, or a deliberate tweak. Damn lucky the plot called for one anyway.

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<sup>3</sup> British Broadcasting Corporation. 2001. The blue planet: a natural history of the ocean, Part 3: The Deep.

<sup>4</sup> Peterson, B.J., *et al.* 2002. Increasing river discharge to the Arctic Ocean. *Science* 298: 2171-2173.

<sup>5</sup> Weaver, A.J., and C. Hillaire-Marcel. 2004. Global warming and the next ice age. *Science* 304: 400-402.

<sup>6</sup> Bildstein, T. 2002. Global warming is good (if you like calamari). *Australasian Science*, August 2002.

<sup>7</sup> Cowen, J.P., *et al.* 2003. Fluids from Aging Ocean Crust That Support Microbial Life. *Science* 299: 120-123.

<sup>8</sup> Kasting, J.F., and J.L. Siefert. 2002. Life and the evolution of Earth's atmosphere. *Science* 296: 1066-1068.



Waters *et al.* have recently reported the discovery of an ancient, hot-vent-dwelling nanobe called *Nanoarchaeum equitans*<sup>9</sup>; genome size, proportion of junk DNA, and diameter are all in the Behemoth ballpark. Even better, it's a parasite/symbiont (it lives on a much larger Archeon called *Ignicoccus*). However, its minimalist genome (about 500 kilobases, half the size of Behemoth's) lacks the recipes for certain vital enzymes, which it must therefore get from its host. It could never be a free-liver. Behemoth, with its larger genome, is more self-sufficient—but how it crams all those extra genes into a capsule only 60% the size remains a mystery.

The fishheads and the corpses got into a bit of a debate about the odds of Behemoth hitching a ride in the flesh of dispersing larval fish. I was always worried about that myself, even back when I was writing *Starfish*—if true, there'd be no reason why Behemoth would not have, in fact, taken over the world billions of years ago. Invertebrate larvae do seem to cross vast distances in the deep sea; fortunately they generally go into a sort of arrested development en route, making them unlikely carriers of Behemoth (which needs an actively-metabolizing host to withstand long-term thermo-osmotic stress). It also appears that even highly-dispersing larval fish species maintain fairly distinct geographic ranges, judging by the lack of genetic flow between populations around adjacent islands<sup>10,11</sup>. Worst comes to worst, local topographic and chemical conditions can constrain the distribution of various deep-water species<sup>12,13</sup>.

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<sup>9</sup> Waters, E., *et al.* 2003. The genome of *Nanoarchaeum equitans*: Insights into early archaeal evolution and derived parasitism. *Proc. Nat. Acad. Sci.* 100: 12984-12988;

<sup>10</sup> Palumbi, S.R., and R.R. Warner. 2003. Why Gobies are like Hobbits. *Science* 2003 January 3; 299: 51-52.

<sup>11</sup> Taylor, M.S., and M.E. Hellberg. 2003. Genetic Evidence for Local Retention of Pelagic Larvae in a Caribbean Reef Fish. *Science* 2003 January 3; 299: 107-109.

<sup>12</sup> Vrijenhoek, R.C. 1997. Gene flow and genetic diversity in naturally fragmented metapopulations of deep-sea hydrothermal vent animals. *J. Heredity.* 88: 285-293.

<sup>13</sup> Somero, G.N. 1992. Biochemical ecology of deep-sea animals. *Experientia* 48, 537-543.

So I dodged the bullet. This was not prescience on my part, and it may yet come back and bite me in the ass: at least one adult fish may have swum through deep water from Patagonia all the way up to Greenland<sup>14</sup>.

## Seppuku

Artificial microbes are almost mainstream these days: J. Craig Venter (the Human Genome guy) has completed an entirely artificial genome even as I type<sup>15</sup>, hoping that such organisms will be able to cure the world's environmental ills. Peter Schulz and his team have already tweaked *E. coli* to synthesize a novel amino acid not found in nature<sup>16</sup>, hoping it will be able to outcompete the baseline strain. Entirely synthetic organisms, built from interchangeable genetic modules, are just around the corner<sup>17</sup>. I wish all these guys better luck than Jakob Holtzbrink's gel-jocks had when they tweaked Behemoth.

Seppuku's genetic template was first synthesized by Leslie Orgel<sup>18</sup> back in 2000; TNA actually does duplex with conventional nucleic acids. The idea of alien genes incorporating themselves into our own nuclear material is even more old-hat than artificial microbes—not only are our genes rife with parasitic DNA from a range of bugs, but functional genes originally brought into the cell by the ancestors of our own mitochondria appear to have migrated into the nucleus<sup>19</sup>. Massive horizontal gene transfer between species has occurred throughout much of Earth's history<sup>20</sup>, and of

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<sup>14</sup> Møller, P.R., *et al.* 2003. Fish migration: Patagonian toothfish found off Greenland. *Nature* 421, 599.

<sup>15</sup> Zimmer, C. 2003. Tinker, tailor: can Venter stitch together a genome from scratch? *Science* 299: 1006-1007.

<sup>16</sup> Mehl, R.A., *et al.* 2003. Generation of a Bacterium with a 21 Amino Acid Genetic Code. *J. Amer. Chem. Soc.* 125:935-939.

<sup>17</sup> Ferber, D. 2004. Microbes made to order. *Science* 303: 158-161.

<sup>18</sup> Orgel, L. 2000. A simpler nucleic acid. *Science* 290: 1306.

<sup>19</sup> Gabaldón, T., and M.A. Huynen. 2003. Reconstruction of the proto-mitochondrial metabolism. *Science* 301: 609.

<sup>20</sup> Raymond, J., *et al.* 2002. Whole-genome analysis of photosynthetic prokaryotes. *Science* 298: 1616-1620.

course the symbiotic incorporation of small cells into larger ones has a long and honorable history reflected in every eukaryotic cell on the planet. (Back in *Maelstrom* I cited chloroplasts and mitochondria; apicoclasts are a related example, devolved endosymbionts found in *Toxoplasma* and *Plasmodium*<sup>21</sup>.)

Taka Ouellette's awed appreciation of proline as a metabolic catalyst will probably be a little behind the times by mid-century, since Movassaghi and Jacobsen have already pointed out the potential of such simple molecules to act as enzymes<sup>22</sup>.

### The Chemistry of Character

Some readers may wonder if I have trouble distinguishing between personality and neurochemistry. It's a fair point, but don't blame me: blame the scientists who can't let a week go by without reporting yet more evidence that personality *is* just another word for biochemistry, albeit written in an exceedingly complex font (e.g. Hannuk Yaeger's propensity for violence, rooted in his monoamine oxidase levels<sup>23</sup>). Unless you're one of those Easter-bunny vitalists who believes that personality results from some unquantifiable divine spark, there's really no alternative to the mechanistic view of human nature.

A central tenet of the whole rifters saga—introduced in *Starfish*, and expanded in *Maelstrom* and *Behemoth*—is that *false* memories of abuse can cause neurological changes in the individual every bit as real as genuine memories can. That was pretty speculative when *Starfish* first came out, but recent research has added empirical evidence of this effect<sup>24, 25</sup>.

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<sup>21</sup> Funes, S., *et al.* 2002. A green algal apicoplast ancestor. *Science* 298: 2155.

<sup>22</sup> Movassaghi, M., and E.N. Jacobsen. 2002. The simplest "Enzyme". *Science* 298: 1904-1905.

<sup>23</sup> Caspi, A., *et al.* 2002. Role of genotype in the cycle of violence of maltreated children. *Science* 297: 851-854.

<sup>24</sup> Beckman, M. 2003. False memories, true pain. *Science* 299: 1306.

<sup>25</sup> Offer, D., *et al.* 2000. Altering of Reported Experiences. *J. Amer. Academy Child and Adolescent Psych.* 39(6): 735-742.

Details on the care and feeding of sociopaths were largely taken from the work of Robert Hare<sup>26</sup> and others<sup>27</sup>. *Behemoth's* musings regarding the adaptive value of sociopathy in corporate settings may not be entirely off the mark, either<sup>26,28,29</sup>. (And as these references should make clear, neither Ken Lubin nor Achilles Desjardins are sociopaths in the classic sense. More goes into such creatures than a mere absence of conscience.)

*Maelstrom* established that Guilt Trip took its lead largely from the genes of certain parasites which could alter the behavior of their hosts. The actual mechanism by which this occurred was not known when that book came out, although some had speculated that it occurred right down at the neurotransmitter level. I hung Guilt Trip's hat on that hypothesis, and am now relieved to report that the gamble paid off: at least one such parasitic puppet-master works by screwing with its host's serotonin-producing neurons<sup>30</sup>.

Alice Jovellanos's denigration of the ethical impulse takes its lead from recent studies which establish that moral "reasoning" is not reasonable at all—it occurs primarily in the emotional centers of the brain, resulting in inconsistent and indefensible beliefs about whether a course of action is "right" or "wrong"<sup>31</sup>. An accompanying commentary article gives a very nice summary of the so-called "Trolley Paradox", not to mention an airtight rationale for pushing people in front of trains<sup>32</sup>. Jovellanos's

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<sup>26</sup> Hare, R.D. 1999. *Without Conscience: The Disturbing World of the Psychopaths Among Us*. Guilford Press, 236pp.

<sup>27</sup> Goldberg, C. 2003. Data accumulating on psychopaths. *The Toronto Star*, July 20, reprinted from the *Boston Globe*.

<sup>28</sup> MacMillan, J., and L.K. Kofoed. 1984. Sociobiology and antisocial behavior. *J. Mental and Nervous Diseases* 172, 701-06.

<sup>29</sup> Harpending, H.C., and J. Sobus. 1987. Sociopathy as an adaptation. *Ethology and Sociobiology* 8, 63S-72S.

<sup>30</sup> Helluy, S., and Thomas, F. 2003. Effects of *Microphallus papillorobustus* (Platyhelminthes, trematoda) on serotonergic immunoreactivity and neuronal architecture in the brain of *Gammarus insensibilis* (Crustacea, Amphipoda). *Proceeding of the Royal Society of London (B.)* 270: 563-568.

<sup>31</sup> Greene, J.D., et al. 2001. An fMRI investigation of emotional engagement in moral judgment. *Science* 293: 2105-2108

<sup>32</sup> Helmuth, L. 2001. Moral Reasoning Relies on Emotion. *Science* 293: 1971-1972.

arguments may be simplistic—the prefrontal cortex, after all, seems to play at least *some* role in moral decision-making<sup>33, 34, 35</sup>—but then again, Jovellanos was a bit of a zealot. For which she paid a price.

Speaking of moral decision-making, Lenie Clarke's passion for revenge earlier in the rifters saga—not to mention Ken Lubin's unacknowledged passion for same later on—are not merely overused dramatic tropes. We appear to be hardwired to punish those who have slighted us, *even if*—and this is the counterintuitive bit—even if our acts of vengeance hurt *us* more than those who have trespassed against us<sup>36</sup>. I like to think the reason the world gets another chance at the end of this story is because, as Lubin speculates, Spartacus disabled the vengeance response in Achilles Desjardins at the same time it destroyed his conscience. He may have been a monster. He may have been sexual sadist. But in that one retrofitted corner of his soul, he may have been more civilized than you or I will ever be.

And finally, the most disturbing real-world echo of this imaginary hellhole comes from the Village Voice<sup>37</sup>, reporting on ongoing research towards an "anti-remorse pill"—a drug developed to cure post-traumatic stress syndrome, which would soothe the torturer as well as the tortured. Such neurochemical tweaks would work by short-circuiting guilt itself, making it that much easier to get a good night's sleep after mowing down crowds of unruly civilians protesting unpopular government policies. Yes,

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<sup>33</sup> Macmillan, M. 2000. *An Odd Kind of Fame: Stories of Phineas Gage*. MIT Press, Cambridge, MA, 576pp.

<sup>34</sup> Anderson, S.W. *et al.* 1999. Impairment of social and moral behavior related to early damage in human prefrontal cortex. *Nature Neuroscience* 2: 1032-1037.

<sup>35</sup> Moll, J., *et al.* 2002. The Neural Correlates of Moral Sensitivity: A Functional Magnetic Resonance Imaging Investigation of Basic and Moral Emotions. *J. Neurosci.*, 22(7):2730-2736

<sup>36</sup> Sanfey, A.G., *et al.* 2003. The Neural Basis of Economic Decision-Making in the Ultimatum Game. *Science* 300: 1755-1758.

<sup>37</sup> Baard, E. 2003. The Guilt-Free Soldier: New Science Raises the Specter of a World Without Regret. *The Village Voice*, January 22 - 28. (Also <http://www.villagevoice.com/issues/0304/baard.php>)

I called my version *Absolution*—but people, it was supposed to be *ironic*...

### Here, the Maelstrom just moved outside...

Some background ambience from the world above the waterline:

The developing world has no shortage of reasons to be pissed at the other two. By mid-century, I'm postulating a sort of Africa-wide *schadenfreude* in response to the collapse of N'Am's societal infrastructure. The icing on that bitter cake is the further prediction that the majority of the African population will consist of women; I base this on the fact that in Ethiopia at least, malnourished women are more likely to give birth to daughters than sons<sup>38</sup> (presumably for the same energetics-related reasons this happens in other species). I'm basically suggesting that generations of disease, starvation, and exploitation/indifference will result in one righteously-pissed, gender-skewed hotbed of discontent in which the myth of a victimized woman's apocalyptic vendetta would catch on *real* fast. Think of Liberation Theology, that violent incarnation of Catholicism that arose from the political turmoil of Latin America in the last century; now move it to Africa, and emphasise the warrior Madonna at its heart.

The various bits of weaponry portrayed in this novel—from Miri's arsenal to Desjardins' booby-traps to South Africa's ICBMs — are taken from a variety of sources including the USAF<sup>39</sup>; *The Economist*<sup>40</sup>; Cornell University Peace Studies Program<sup>41</sup>; and even the European Centre for Medium-Range Weather Forecasts<sup>42</sup>. Evidently weapons-grade infrasound isn't all it's cracked up to be.

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<sup>38</sup> Gibson, M.A. and R. Mace. 2003. Strong mothers bear more sons in rural Ethiopia. *Biology Letters* (Proceedings of the Royal Society Suppl. Online) 20 May.

<sup>39</sup> "When Killing Just Won't Do"—Excerpt from *Nonlethal weapons: terms and references* by the United States Air Force Institute for National Security Studies, quoted in *Harper's* 306 (1833): 17-19.

<sup>40</sup> Anonymous. 2003. Come fry with me. *The Economist* 366(8309): 68-69.

<sup>41</sup> Altmann, J. 1999. Acoustic weapons—a prospective assessment: sources, propagation, and effects of strong sound. Occasional Paper #22, 87pp.

(On the other hand, it seems surprisingly simple to generate your own electromagnetic pulse<sup>43</sup>).

## Electronic Wildlife & Digital Evolution

*Maelstrom* hung on the premise that the same Darwinian processes that shape life in this world are equally applicable to the digital realm—that self-replicating software will be literally *alive* when the conditions of natural selection are met. That position has gained recent ground; terms like "digital organism" crop up in the most respectable scientific journals<sup>44,45,46</sup>, and you can now download freeware apps that let you experiment with digital evolution on your own desktop<sup>47</sup>. E-life is proceeding on track; maybe the *Maelstrom* Ecosystems won't be far behind.

*Maelstrom* extended the conceit of Internet-as-Ecosystem to a "consensus superorganism" that exploited the myth of the Meltdown Madonna as a reproductive strategy. Five years further down the timeline, parts of that superorganism have transmuted—with a little help from their friends—into the "Shredders" and "Lenies" of *Behemoth*. Ecologically, we've moved from a climax ecosystem to a weedy and impoverished landscape of virtual rats, gulls, and kudzu—and in keeping with that spirit, the virtual-ecology aspects of *this* novel echo the pest-species dynamics common in real-world ecosystems.

A common response to outbreaks of unwanted insect species is to haul out the pesticides. The pest's usual response is to a) develop resistance, and b) crank up its reproductive rate to offset

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<sup>42</sup> Beljaars, A. 1992. The parameterization of the planetary boundary layer. Available at <http://www.ecmwf.int/>

<sup>43</sup> <http://www.spacecatlighting.com/marxgenerator01.htm>

<sup>44</sup> Lenski, R.E., *et al.* 1999. Genome complexity, robustness, and genetic interactions in digital organisms. *Nature* 400: 661–664.

<sup>45</sup> Wilke, C.O., and C. Adami. 2002. The biology of digital organisms. *Trends Ecol Evol* 17: 528–532.

<sup>46</sup> O'Neill, B. 2003. Digital evolution. *Public Library of Science Biology* 1: 11–14, or <http://www.plosbiology.org/plosonline/?request=get-document&doi=10.1371/journal.pbio.0000018>

<sup>47</sup> <http://dllib.caltech.edu/avida/>

the increased mortality. Once this happens, human "managers" don't dare *stop* spraying, because the pest has been pushed into a state of chronic outbreak; its increased reproductive rate will result in a catastrophic population explosion the moment spraying sends. This is essentially what happened during the spruce budworm infestations of the North American Maritimes back in the seventies and eighties<sup>48</sup>; I rather suspect we may in for a replay with the current bark-beetle invasion.

You don't need a Ph.D. to see the parallels between this and the exorcist/shredder dynamic at play in N'AmNet. Lenie Clarke never took Ecology 101; she made her moves for her own twisted and unrelated reasons. Ironically, though, it may have been the right course of action from a purely ecological standpoint. Pest species tend to peak and crash cyclically if you just leave them alone; once you've cranked them into outbreak mode, perhaps the only way to restore any kind of natural balance is to just take your foot off the brake, grit your teeth, and take your lumps until the system stabilizes.

Assuming it does.

### **Predicting the Past:**

Smart gels. Head cheeses. Those neuron puddings that the corpses used to jam the rifters in the first half of this book, and which played a much more central role in the previous ones. They *exist* now, in real life. Neurons cultured from rat brains, now operating remote-controlled robots at a lab near you<sup>49</sup>. Piss me right off. I thought I had *years* before this stuff caught up with me.

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<sup>48</sup> If you're looking for primary sources on this, though, you're SOL. I'm just regurgitating memories of a grad course I took in theoretical ecology back at the University of Guelph.

<sup>49</sup> Eisenberg, A. 2003. Wired to the Brain of a Rat, a Robot Takes On the World. *The New York Times*, May 15, 2003.



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