

Marrow

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MISSION YEAR 0.00:

Washen couldn't count all the captains spread out before her, and putting on her finest captainly smile, she joined them, trading the usual compliments, telling little stories about her travels, and with a genuine unease, asking if anyone knew why the Ship's Master would want to bring them here.

"She's testing us," one gray-eyed colleague ventured. "She's testing our obedience. Plus our security measures, too."

"Perhaps," Washen allowed.

Coded orders had found Washen through secure channels. Without explanation, the Master told her to abandon her post, discarding her uniform and taking on a suitable disguise. For the last seven days, she had played the role of dutiful tourist, wandering the vast ship, enjoying its wondrous sights, then after making triple-sure that she wasn't being monitored, boarding an anonymous tube-car that had brought her to this odd place.

"My name is Diu," said her companion, offering his hand and a wide smile.

She clasped the hand with both of hers, saying, "We met at the captains' banquet. Was it twenty years ago?"

"Twenty-five." Like most captains, Diu was tall for a human, with craggy features and an easy charm meant to instill trust in their human passengers. "It's kind of you to remember me. Thank you."

"You're most welcome."

The eyes brightened. "What do you think of the Master's tastes? Isn't this a bizarre place to meet?"

"Bizarre," Washen echoed. "That's a good word."

The leech once lived here. An obscure species, ascetic by nature, they had built their home inside the remote confines of one of the ship's enormous fuel tanks. Weaving together thick plastics, they had dangled this place from the tank's insulated ceiling. Its interior, following a leech logic, was a single room. Vast in two dimensions but with a glowing gray ceiling close enough to touch, the surroundings made every human feel claustrophobic. The only furnishings were hard gray pillows. The air was warm and stale, smelling of odd dusts and persistent pheromones. Colors were strictly forbidden. Even the gaudy tourists' clothes seemed to turn gray in the relentless light.

"I've been wondering," said Diu. "Whatever happened to the leech?"

"I don't know," Washen confessed. She had met the species when they came on board. But that was more than a thousand years before, and even a captain's memory was imperfect.

The leech could have simply reached their destination, disembarking without incident. Or they could have decided to build an even more isolated home, if that was possible. Or perhaps some disaster had struck, and they were dead. Shipboard extinctions were more common than any captain would admit. Some of their passengers proved too frail to endure any long journey. Mass suicides and private wars claimed others. Yet as Washen often reminded herself, for every failed species, a hundred others thrived, or at least managed to etch out some little corner of this glorious ship where they could hold their own.

"Wherever the leech are, I'm sure they're well."

"Of course they are," Diu replied, knowing what was polite. "Of course."

In the face of ignorance, captains should make positive sounds.

Washen noticed how even when standing still, Diu was moving, his flesh practically vibrating, as if the water inside him was ready to boil.

"So, madam . . . I'm dying to know what you think! What's our mission? What's so important that the Master pulls us all the way down here?"

"Yes," said a second voice. "What's your best bad guess, darling?"

Miocene had joined them. One of a handful of Submasters in attendance, she was rumored to be the Master's favorite. An imperious, narrow-faced woman, she was a full head taller than the others, dressed in rich robes, her brindle-colored hair brushing against the ceiling. Yet she stood erect, refusing to dip her head for the simple sake of comfort.

"Not that you know more than any of us," the Submaster persisted. "But what do you think the Master wants?"

The room seemed to grow quiet. Captains held their breath, secretly delighted that it was Washen who had to endure Miocene's attentions.

"Well," Washen began, "I can count several hundred clues."

A razor smile formed. "And they are?"

"Us." They were standing near one of the room's few windows—a wide slit of thick, distorting plastic. There was nothing outside but blackness and vacuum; an ocean of liquid hydrogen, vast and calm and brutally cold, lay some fifty kilometers below them. Nothing was visible in the window but their own murky reflections. Washen saw everyone at a glance. She regarded her own handsome, ageless face, black hair pulled back in a sensible bun and streaked with enough white to lend authority, her wide chocolate eyes betraying confidence with a twist of deserved pleasure. "The Master selected us, and we're the clues."

Miocene glanced at her own reflection. "And who are we?"

"The elite of the elite." Washen put names to the faces, listing bonuses and promotions earned over the last millennia. "Manka is a new second-grade. Aasleen was in charge of the last engine upgrade, which came in below budget and five months early. Saluki and Westfall have won the Master's award for duty ten times each." She gestured at the captain beside her, saying, "And there's Diu, of course. Already an eleventh-grade, which is astonishing. You came on board the ship—warn me if I'm wrong—as just another passenger."

The energetic man said, "True, madam. Thank you for remembering."

Washen grinned, then said, "And then there's you, Madam Miocene. You are one of three Submasters with first-chair status at the Master's table."

The tall woman nodded, enjoying the flattery. "But don't forget yourself, darling."

"I never do," Washen replied, earning a good laugh from everyone. And because nothing was more unseemly in a captain than false modesty, she admitted, "I've heard the rumors. I'm slated to become our newest Submaster."

Miocene grinned, but she made no comment about any rumors.

Instead she took an enormous breath, and in a loud voice asked, "Can you smell yourselves? Can you? That's the smell of ambition. No other scent is so tenacious, or in my mind, ever so sweet . . . !"

No name but the ship was necessary. Ancient and spectacular, there was nothing else that could be confused with it, and everyone on board, from the Ship's Master to the most disreputable stowaway, was justifiably proud of their magnificent home.

The ship began as a jupiter-class world, but an unknown species had claimed it. Using its hydrogen atmosphere, they accelerated the core to a fraction of lightspeed. Then they built tunnels and compartments, plus chambers large enough to swallow small worlds. Premium hyperfibers lent strength and durability to the frame. And then, as with the leech's plastic abode, the builders suddenly and mysteriously abandoned their creation.

Billions of years later, humans stumbled across the ship. Most of its systems were in a diagnostic mode. Human engineers woke them, making repairs where necessary. Then the best human captains were hired, and every manner of passenger was ushered aboard, the ship's maiden voyage calling for a half-million year jaunt around the Milky Way.

Its undisputed ruler arrived a few hours later.

Accompanied by a melody of horns and angel-voiced humans, the Master strode into the room. Where other captains were disguised in civilian clothes, their leader wore a mirrored cap and uniform that suited her office, and for many reasons, her chosen body was broad and extraordinarily deep. It was status, in part. But a Master also needed bulk to give her augmented brain a suitable home, thousands of ship functions constantly monitored and adjusted, in the same unconscious way that the woman moved and breathed.

Gravity was weaker this deep inside the ship. With one vast hand skating along the ceiling, the Master deftly kept herself from bumping her head. A dozen of the low-grade captains offered greetings and hard cushions. Diu was among the supplicants, on his knees and smiling, even after she had passed.

"Thank you for coming," said that voice that always took Washen by surprise. It was a quiet, unhurried voice, perpetually amused by whatever the radiant brown eyes were seeing. "I know you're puzzled," she said, "and I hope you're concerned. So let me begin with my compelling reasons for this game, and what I intend for you."

A handful of guards stood in the distance; Washen saw their tiny armored silhouettes as the room's lights fell to nothing.

"The ship, please."

A real-time projection blossomed beside the Master, channeled through her own internal systems.

The spherical hull looked slick and gray. A thousand lasers were firing from the bow, aiming at comets and other hazards. Mammoth engines rooted in the stern spat out hurricanes of plasma, incrementally adjusting their course and speed. And a tiny flare on the equator meant that another starship was arriving. With new passengers, presumably.

"Now," said the amused voice, "start peeling the onion. Please."

In a blink, the hyperfiber hull was removed. Washen could suddenly make out the largest high-deck chambers; she knew each by name and purpose, just as she knew every important place too small to be seen. Then another few hundred kilometers of rock and water, air and hyperfiber were erased, exposing more landmarks.

"This perfect architecture." The Master stepped closer to the shrinking projection, its glow illuminating a wide strong self-assured face—a face designed to inspire thousands of captains, and a crew numbering in the tens of millions. "In my mind, there's been no greater epic in history. I'm not talking about this journey of ours. I mean about the astonishing task of exploring our ancient starship. Imagine the honor: To be the first living organism to step into one of these chambers, the first sentient mind in billions of years to experience their vastness, their mystery. It was a magnificent time. And I'm talking first-hand, since I was one of the leaders of the first survey team . . ."

It was an old, honorable boast, and her prerogative.

"We did a superlative job," she assured. "I won't accept any other verdict. Despite technical problems and the sheer enormity of it, we mapped more than ninety-nine percent of the ship's interior. In fact, I was the first one to find my way through the plumbing above us, and the first to see the sublime beauty of the hydrogen sea below us . . ."

Washen hid a smile, thinking: A fuel tank is a fuel tank is a fuel tank.

"Here we are," the Master announced. The projection had shrunk by a third. The fuel tank was a fist-sized cavern; the leech habitat was far too small to be seen. Then in the next moment, they were gone, another layer removed without sound or fuss. Liquid hydrogen turned into a blackish solid, and deeper still, a transparent metal. "These seas have always been the deepest features," she commented. "Below them, there's nothing but iron and a stew of other metals squashed under fantastic pressures."

The ship had been reduced to a perfectly smooth black ball—the essential ingredient in a multitude of popular games.

"Until now, we knew nothing about the core." The Master paused for a moment, allowing herself a quick grin. "Evidence shows that when the ship was built, its core was stripped of its radionuclides, probably to help cool the metals and keep them relatively stiff. We don't know how the builders managed the trick. But there used to be narrow tunnels leading down, all reinforced with hyperfibers and energy buttresses, and all eventually crushed by time and a lack of repair." A second pause, then she said, "Not enough room left for a single microchine to pass. Or so we've always believed."

Washen felt herself breathing faster, enjoying the moment.

"There has never, ever been the feeblest hint of hidden chambers," the Master proclaimed. "I won't accept criticism on this matter. Every possible test was carried out. Seismic. Neutrino imaging. Even palm-of-the-hand calculations of mass and volume. Until fifty-three years ago, there was no reason to fear that our maps weren't complete."

A silence had engulfed the audience.

Quietly, smoothly, the Master said, "The full ship. Please."

The iron ball was again dressed in rock and hyperfiber.

"Now the impact. Please."

Washen stepped forward, anticipating what she would see. Fifty-three years ago, they passed through a dense swarm of comets. The captains had thrown gobs of antimatter into the largest hazards. Lasers fired without pause, evaporating trillions of tons of ice. But debris still peppered the hull, a thousand pinpricks of light dancing on its silver-gray projection, and then came a blistering white flash that dwarfed the other explosions and left the captains blinking, remembering that moment, and the shared embarrassment.

A chunk of nickel-iron had slipped through their defenses. The ship rattled with the impact, and for months afterwards, nervous passengers talked about little else. Even when the captains showed them all of the schematics and calculations, proving that they could have absorbed an even larger impact before anyone was in real danger . . . even then there people and aliens who insisted on being afraid.

With a palpable relish, the Master said, "Now the cross section, please."

Half of the ship evaporated. Pressure waves spread down and out from the blast site, then pulled together again at the stern, causing more damage before they bounced, and bounced back again, the diluted vibrations still detectable now, murmuring their way through the ship as well as through the captains' own bones.

"AI analysis. Please."

A map was laid over the cross section, every feature familiar. Save one.

"Madam," said a sturdy voice. Miocene's voice. "It's an anomaly, granted. But doesn't the feature seem rather . . . unlikely . . . ?"

"Which is why I thought it was nothing. And my trusted AI—part of my own neural net—agreed with me. This region is a change in composition. Nothing more." She paused for a long moment, watching her captains. Then with a gracious oversized smile, she admitted, "The possibility of a hollow core has to seem ludicrous."

Submasters and captains nodded with a ragged hopefulness.

Knowing they weren't ordered here because of an anomaly, Washen stepped closer. How large was it? Estimates were easy to make, but the simple math created some staggering numbers.

"Ludicrous," the Master repeated. "But then I thought back to when we were babies, barely a few thousand years old. Who would have guessed that a jupiter-class world could become a starship like ours?"

Just the same, thought Washen: Certain proposals will always be insane.

"But madam," said Miocene. "A chamber of those proportions would make us less massive. Assuming we know the densities of the intervening iron, of course . . ."

"And you're assuming, of course, that the core is empty." The Master grinned at her favorite officer, then at all of them. For several minutes, her expression was serene, wringing pleasure out of their confusion and ignorance.

Then she reminded everyone, "This began as someone else's vessel. We shouldn't forget: We don't understand why our home was built. For all we know, it was a cargo ship. A cargo ship, and here is its hold."

The captains shuddered at the idea.

"Imagine that something is inside this chamber. Like any cargo, it would have to be restrained. A series of strong buttressing fields might keep it from rattling around every time we adjusted our course. And naturally, if the buttressing fields were rigid enough, then they would mask whatever is down there—"

"Madam," shouted someone, "please, what's down there . . . ?"

Shouted Diu.

"A spherical object. It's the size of Mars, but considerably more massive." The Master grinned for a moment, then told the projection, "Please. Show them what I found."

The image changed again. Nestled inside the great ship was a world, black as iron and slightly smaller than the chamber surrounding it. The simple possibility of such an enormous, unexpected discovery didn't strike Washen as one revelation, but as many, coming in waves, making her gasp and shake her head as she looked at her colleagues' faces, barely seeing any of them.

"This world has an atmosphere," said the laughing voice, "with enough oxygen to be breathed, enough water for lakes and rivers, and all of the symptoms usually associated with a vigorous biosphere—"

"How do we know that?" Washen called out. Then, in a mild panic, "No disrespect intended, madam!"

"I haven't gone there myself, if that's what you're asking." She giggled like a child, telling them, "But after fifty years of secret work, using self-replicating drones to rebuild one of the old tunnels . . . after all that, I'm able to stand here and assure you that not only does this world exist, but that each of you are going to see it for yourselves . . ."

Washen glanced at Diu, wondering if her face wore that same wide smile.

"I have named the world, by the way. We'll call it Marrow." The Master winked and said, "For where blood is born, of course. And it's reserved for you . . . my most talented, trustworthy friends . . . !"

Wonders had been accomplished in a few decades. Mole-like drones had gnawed their way through beds of nickel and iron, repairing one of the ancient tunnels; fleets of tube-cars had plunged to where the tunnel opened into the mysterious chamber, assembling a huge stockpile of supplies directly above Marrow; then a brigade of construction drones threw together the captains' base camp—a sterile little city of dormitories, machine shops, and first-rate laboratories tucked within a transparent, airtight blister.

Washen was among the last to arrive. At the Master's insistence, she led a cleaning detail that stayed behind, erasing every trace of the captains' presence from the leech habitat. It was a security precaution, and it required exacting work. And some of her people considered it an insult. "We aren't janitors," they grumbled. To which Washen replied, "You're right. Professionals would have finished last week."

Diu belonged to her detail, and unlike some, the novice captain worked hard to endear himself. He was probably calculating that she would emerge from this mission as a Submaster and his benefactor. But there was nothing wrong in calculations, Washen believed—as long as the work was done, successes

piled high and honors for everyone.

Only tiny, two passenger tube-cars could make the long fall to the base camp. Washen decided that Diu would provide comfortable company. He rewarded her with his life story, including how he came into the captains' ranks. "After a few thousand years of being a wealthy passenger, I realized that I was bored." He said it with a tone of confession, and amusement. "But you captains never look bored. Pissed, yes. And harried, usually. But that's what attracted me to you. If only because people expect it, captains can't help seem relentlessly, importantly busy."

Washen had to admit, it was a unique journey into the ship's elite.

At journey's end, their car pulled into the first empty berth. On foot, Diu and Washen conquered the last kilometer, stepping abruptly out onto the viewing platform, and not quite standing together, peering over the edge.

A tinted airtight blister lay between them and several hundred kilometers of airless, animated space. Force fields swirled through that vacuum, creating an array of stubborn, stable buttresses. The buttresses were visible as a brilliant blue-white light that flowed from everywhere, filling the chamber. The light never seemed to weaken. Even with the blister's protection, the glare was intense. Relentless. Eyes had to adapt—a physiological change that would take several ship-days—and even still, no one grew accustomed to the endless day.

Even inside her bedroom, windows blackened and the covers thrown over her head, a captain could feel the radiance piercing her flesh just so it could tickle her bones.

The chamber wall was blanketed with a thick mass of gray-white hyperfiber, and the wall was their ceiling, falling away on all sides until it vanished behind Marrow.

"Marrow," Washen whispered, spellbound.

On just the sliver of the world beneath them, the captain saw a dozen active volcanoes, plus a wide lake of bubbling iron. In cooler basins, hot-water streams ran into colorful, mineral-stained lakes. Above them, water clouds were gathering into enormous thunderheads. When the land wasn't exploding, it was a rugged shadowless black, and the blackness wasn't just because of the iron-choked soils. Vigorous, soot-colored vegetation basked in the endless day. And they were a blessing. From what the captains could see, the forests were acting as powerful filters, scrubbing the atmosphere until it was clean, at least to where humans, if conditioned properly, should be able to breathe, perhaps even comfortably.

"I want to get down there," Washen confessed.

"It's going to take time," Diu warned, pointing over her shoulder.

Above the blister, dormitories and machine shops were dangling from the hyperfiber, their roofs serving as foundations. Past them, at the blister's edge, the captains were assembling a silvery-white cylinder. It would eventually form a bridge to Marrow. There was no other way down. The buttress fields killed transports, and for many reasons, unprotected minds eroded in an instant, and died. To beat the challenge, their best engineer, Aasleen, had designed a shaft dressed in hyperfibers, its interior shielded with ceramics and superfluids. Theories claimed that the danger ended with Marrow's atmosphere, but just to be safe, several hundred immortal pigs and baboons were in cages, waiting to put those guesses to the test.

Washen was thinking about the baboons, and timetables.

A familiar voice broke her reverie.

"What are your impressions, darlings?"

Miocene stood behind them. In uniform, she was even more imposing, and more cold. Yet Washen summoned her best smile, greeting the mission leader, then adding, "I'm surprised. I didn't know it would be this beautiful."

"Is it?" The knife-edged face offered a smile. "Is there any beauty here, Diu?"

"A spartan kind of beauty," Diu replied.

"I wouldn't know. I don't have any feel for aesthetics." The Submaster smiled off into the distance. "Tell me. If this world proves harmless and beautiful, what do you think our passengers will pay for the chance to come here?"

"If it's a little dangerous," Washen ventured, "they would pay more."

Miocene's smile came closer, growing harder. "And if it's deadly, maybe we'll have to collapse the tunnel again. With us safely above, of course."

"Of course," the captains echoed.

Diu was grinning, with his face, and if possible, with his entire body.

Mirrors and antennae clung to hyperfiber, gazing at Marrow. He gestured at them, asking, "Have we seen any signs of intelligence, madam? Or artifacts of any sort?"

"No," said Miocene, "and no."

It would be a strange place for sentience to evolve, thought Washen. And if the builders had left ruins behind, they would have been destroyed long ago. The crust beneath them wasn't even a thousand years old. Marrow was an enormous forge, constantly reworking its face as well as the bones beneath.

"I can't help it," Diu confessed. "I keep dreaming that the builders are down there, waiting for us."

"A delirious dream," Miocene warned him.

But Washen felt the same way. She could almost see the builders slathering the hyperfiber, then building Marrow. This was a huge place, and they couldn't see more than a sliver of it from their tiny vantage point. Who knew what they would eventually find?

Diu couldn't stop talking. "This is fantastic," he said. "And an honor. I'm just pleased that the Master would include me."

The Submaster nodded, conspicuously saying nothing.

"Now that I'm here," Diu blubbered, "I can almost see the purpose of this place."

With a level glance, Washen tried to tell her companion, Shut up.

But Miocene had already tilted her head, eyeing their eleventh-grade colleague. "I'd love to hear your theories, darling."

Diu lifted his eyebrows.

An instant later, with bleak amusement, he remarked, "I think not." Then he looked at his own hands, saying, "Once spoken, madam, a thought hides inside at least one other."

MISSION YEAR 1.03:

Planetfall was exactly as the captains had planned—a routine day from the final five kilometers of bridge building to Miocene's first steps on the surface. And with success came cheers and singing, followed by ample late suppers served with bottomless glasses of well-chilled champagne, and congratulations from the distant Master.

Except for Washen, the day was just a little disappointing.

Watching from base camp, studying data harvests and live images, she saw exactly what she expected to see. Captains were administrators, not explorers; the historic moments were relentlessly organized. The landscape had been mapped until every bush and bug had a name. Not even tiny surprises could ambush the first teams. It was thorough and stifling, but naturally Washen didn't mention her disappointment, or even put a name to her emotions. Habit is habit, and she had been an exemplary captain for thousands of years. Besides, what sort of person would she be if she was offended that there were no injuries, or mistakes, or troubles of any kind?

And yet.

Two ship-days later, when her six-member team was ready to embark, Washen had to make herself sound like a captain. With a forced sincerity, she told the others, "We'll take our walk on the iron, and we'll exceed every objective. On schedule, if not before."

It was a swift, strange trip to Marrow.

Diu asked to ride with Washen, just as he'd requested to be part of her team. Their shielded tube-car retreated back up the access tunnel, then flung itself at Marrow, streaking through the buttress fields to minimize the exposure, a trillion electric fingers delicately playing with their sanity.

Then their car reached the upper atmosphere and braked, the terrific gees bruising flesh and shattering minor bones.

Artificial genes began weaving protein analogs, knitting their injuries.

The bridge was rooted into a hillside of cold iron and black jungle. The rest of the team and their supplies followed. Despite an overcast sky, the air was brilliant and furnace-hot, every breath tasting of metal and nervous sweat. As team leader, Washen gave orders that everyone knew by heart. Cars were linked, then reconfigured. The new vehicle was loaded, and tested, and the captains were tested by their autodocs: Newly implanted genes were helping their bodies adapt to the heat and metal-rich environment. Then Miocene, sitting in a nearby encampment, contacted them and gave her blessing, and Washen lifted off, steering towards the purely arbitrary north-northwest.

The countryside was broken and twisted, split by fault lines and raw mountains and volcanic vents. The vents had been quiet for a century or a decade, or in some cases, days. Yet the surrounding land was alive, adorned with jungle, pseudotrees reminiscent of mushrooms, all enormous, all pressed against one another, their lacquered black faces feeding on the dazzling blue-white light.

Marrow seemed as durable as the captains flying above it.

Growth rates were phenomenal, and for more reasons than photosynthesis. Early findings showed that the jungle also fed through its roots, chisel-like tips reaching down to where thermophilic bacteria thrived, Marrow's own heat supplying easy calories.

Were the aquatic ecosystems as productive?

It was Washen's question, and she'd selected a small, metal-choked lake for study. They arrived on schedule, and after circling the lake twice, as prescribed, she landed on a slab of bare iron. Then for the rest of the day they set up their lab and quarters, and specimen traps, and as a precaution, installed a defense perimeter—three paranoid AIs who did nothing but think the worst of every bug and spore that happened past.

Night was mandatory. Miocene insisted that each captain sleep at least four hours, and invest another hour in food and toiletries.

Washen's team went to bed on time, then lay awake until it was time to rise.

At breakfast, they sat in a circle and gazed at the sky. The chamber's wall was smooth and ageless, and infinitely bland. Base camp was a dark blemish visible only because the air was exceptionally clear. The bridge had vanished with the distance. If Washen was very careful, she could almost believe that they were the only people on this world. If she was lucky, she forgot for a minute or two that telescopes were watching her sitting on her aerogel chair, eating her scheduled rations.

Diu sat nearby, and when she glanced at him, he smiled wistfully, as if he could read her thoughts.

"I know what we need," Washen announced.

Diu said, "What do we need?"

"A ceremony. Some ritual before we can start." She rose and walked to one of the specimen traps, returning with one of their first catches. On Marrow, pseudoinsects filled almost every animal niche. Six-winged dragonflies were blue as gemstones and longer than a forearm. With the other captains watching, Washen stripped the dragonfly of its wings and tail, then eased the rest into their autokitchen. The broiling took a few seconds. With a dull thud, the carcass exploded inside the oven. Then she grabbed a lump of the blackish meat, and with a grimace, made herself bite and chew.

"We aren't supposed to," Diu warned, laughing gently.

Washen forced herself to swallow, then she told everyone, "And you won't want to do it again. Believe me."

There were no native viruses to catch, or toxins that their reinforced genetics couldn't handle. Miocene was simply being a cautious mother when she told them, "Except in emergencies, eat only the safe rations."

Washen passed out the ceremonial meat.

Last to take his share was Diu, and his first bite was tiny. But he didn't grimace, and with an odd little laugh, he told Washen, "It's not bad. If my tongue quit burning, I could almost think about enjoying it."

MISSION YEAR 1.22:

After weeks of relentless work, certain possibilities began to look like fact.

Marrow had been carved straight from the jupiter's heart. Its composition and their own common sense told the captains as much. The builders had first wrenched the uraniums and thoriums from the overhead iron, injecting them deep into the core. Then with the buttressing fields, the molten sphere was compressed, and the exposed chamber walls were slathered in hyperfiber. And billions of years later, without help from the vanished builders, the machinery was still purring along quite nicely.

But why bother creating such a marvel?

Marrow could be a dumping ground for radionuclides. Or it could have worked as an enormous fission reactor, some captains suggested. Except there were easier ways to create power, others pointed out, their voices not so gently dismissive.

But what if the world was designed to store power?

It was Aasleen's suggestion: By tweaking the buttresses, the builders could have forced Marrow to rotate. With patience—a resource they must have had in abundance—they could have given it a tremendous velocity. Spinning inside a vacuum, held intact by the buttresses, the iron ball would have stored phenomenal amounts of energy—enough to maintain the on board systems for billions of years, perhaps.

Washen first heard the flywheel hypothesis at the weekly briefing.

Each of the team leaders was sitting at the illusion of a conference table, in aerogel chairs, sweating rivers in Marrow's heat. The surrounding room was sculpted from light, and sitting at the head of the table was the Master's projection, alert but unusually quiet. She expected crisp reports and upbeat attitudes. Grand theories were a surprise. Finally, after a contemplative pause, she smiled, telling the captain, "That's an intriguing possibility. Thank you, Aasleen." Then to the others, "Considerations? Any?"

Her smile brought a wave of complimentary noise.

In private, Washen doubted they were inside someone's dead battery. But this wasn't the polite moment to list the troubles with flywheels. And besides, the bio-teams were reporting next, and she was eager to compare notes.

A tremor suddenly shook the captains, one after another, spreading out from its distant epicenter. Even for Marrow, that was a big jolt.

Compliments dissolved into an alert silence.

Then the Master lifted her wide hand, announcing abruptly, "We need to discuss your timetable."

What about the bio-teams?

"You're being missed, I'm afraid. Our cover story isn't clever enough, and the crew are suspicious." The Master lowered her hand, then said, "Before people are too worried, I want to bring you home."

Smiles broke out.

Some were tired of Marrow; other captains were tickled with the prospects of honors and

promotions.

"Everyone, madam?" Washen dared.

"At least temporarily."

According to the ship's duty roster, the missing captains were visiting a nearby solar system, serving as travel agents to billions of potential passengers. And the truth told, there'd been boring moments when Washen found herself wishing that the fiction was real. But not today. Not when she was in the middle of something fascinating . . . !

As mission leader, it was Miocene's place to ask:

"Do you want us to cut our work short, madam?"

The Master squinted at the nearest window, gazing out at one of the ship's port facilities. For her, the room and its view were genuine, and her captains were illusions.

"Mission plans can be rewritten," she told them. "I want you to finish surveying the far hemisphere, and I want the critical studies wrapped up. Ten ship-days should be adequate. Then you'll come home, and we'll take our time deciding on our next actions."

Smiles wavered, but none crumbled.

Miocene whispered, "Ten days," with a tentative respect.

"Is that a problem?"

"Madam," the Submaster began, "I would feel much more comfortable if we were certain that Marrow isn't a threat."

There was a pause, and not just because the Master was thousands of kilometers removed from them. It was a lengthy, unnerving silence. Then captains' captain looked off into the distance, saying, "Considerations? Any?"

It would be a disruption. The other Submasters agreed with Miocene. To accomplish their work in ten days, with confidence, would require every captain, including those stationed with the support teams. Their base camp would have to be abandoned temporarily. That was an acceptable risk, perhaps. But mild words were obscured by clenched fists and distant, worried gazes.

Unsatisfied, the Master turned to her future Submaster. "Do you have any considerations to add?"

Washen hesitated as long as she dared.

"Marrow could have been a flywheel," she finally allowed. "Madam."

Brown eyes closed, opened. "I'm sorry," the Master responded, the voice devoid of amusement. "Aren't we discussing your timetable?"

"But if these buttresses ever weakened," Washen continued, "even for an instant, the planet would have expanded instantly. Catastrophically. The surrounding hyperfiber would have vaporized, and a shock wave would have passed through the entire ship, in moments." She offered simple calculations, then added, "Maybe this was an elaborate flywheel. But it also would have made an effective self-destruct mechanism. We don't know, madam. We don't know if the builders had enemies, real or imagined. But if we're going to find answers, I can't think of a better place to look."

The Master's face was unreadable, impenetrable.

Finally she shook her head, smiling in a pained manner. "Since my first moment on board this glorious vessel, I have nourished one guiding principle: The builders, whomever they were, would never endanger this marvelous creation."

Washen wished for the same confidence.

Then that apparition of light and sound leaned forward, saying, "You need a change of duty, Washen. I want you and your team in the lead. Help us explore the far hemisphere. And once the surveys are finished, everyone comes home. Agreed?"

"As you wish, madam," said Washen.

Said everyone.

Then Washen caught Miocene's surreptitious glance, something in the eyes saying, "Nice try, darling." And with that look, the faintest hint of respect.

Pterosaur drones had already drawn three maps of the region. Yet as Washen passed overhead, she realized that even the most recent map, drawn eight days ago, was too old to be useful.

Battered by quakes, the landscape had been heaved skyward, then torn open. Molten iron flowed into an oxbow lake, boiling water and mud, and columns of dirty steam rose skyward, then twisted to the east. As an experiment, Washen flew into the steam clouds. Samples were ingested through filters and sensors and simple lensing chambers. Riding with the steam were spores and eggs, encased in tough bioceramics and indifferent to the heat. Inside the tip of the needle flask, too small to see with the naked eye, were enough pond weeds and finned beetles to conquer ten new lakes.

Catastrophe was the driving force on Marrow.

That insight struck Washen every day, sometimes hourly, and it always arrived with a larger principle in tow:

In some flavor or another, disaster ruled every world.

But Marrow was the ultimate example. And as if to prove itself, the steam clouds dispersed suddenly, giving way to the sky's light, the chamber wall overhead, and far below, for as far as Washen could see, the stark black bones of a jungle.

Fumes and fire had incinerated every tree, every scrambling bug.

The carnage must have been horrific. Yet the blaze had passed days ago, and new growth was already pushing up from the gnarled trunks and fresh crevices, thousands of glossy black umbrella-like leaves shining in the superheated air.

Washen decided to blank the useless maps, flying on instinct.

"Twenty minutes, and we're as far from the bridge as possible," Diu promised, his smile wide and infectious.

No other team would travel as far.

Washen started to turn, intending to order chilled champagne for the occasion, her mouth opened and

a distorted, almost inaudible voice interrupting her.

"Report . . . all teams . . . !"

It was Miocene's voice strained through a piercing electronic whistle.

"What do . . . see . . . ?" asked the Submaster. "Teams . . . report. . . !"

Washen tried establishing more than an audio link, and failed.

A dozen other captains were chattering in a ragged chorus. Zale said, "We're on schedule." Kyzkee observed, "There's some com-interference . . . otherwise, systems appear nominal." Then with more curiosity than worry, Aasleen inquired, "Why, madam? Is something wrong?"

There was a long, jangled hum.

Diu was hunched over sensor displays, and with a tight little voice, he said, "Shit."

"What—?" Washen cried out.

Then a shrill cry swept away every voice, every thought. And the day brightened and brightened, fat bolts of lightning flowing across the sky, then turning, moving with purpose, aiming for them.

From the far side of the world came a twisted voice:

"The bridge . . . where is it . . . do you see it . . . where . . . ?"

The car bucked as if panicking, losing thrust and altitude, then its AIs. Washen deployed the manual controls, and centuries of drills made her concentrate, nothing existing but their tumbling vehicle, her syrupy reflexes, and an expanse of burnt forest.

The next barrage of lightning was purple-white, and brighter, nothing visible but its seething glare.

Washen flew blind, flew by memory.

Their car was designed to endure heroic abuse, the same as its passengers. But it was dead and its hull had been degraded, and when it struck the iron ground, the hull shattered. Restraining fields grabbed bodies, then failed. Nothing but mechanical belts and gas bags held the captains in their seats. Flesh was jerked and twisted, and shredded. Bones were shattered and wrenched from their sockets. Then the seats were torn free of the floor, and like useless wreckage, scattered across several hectares of iron and burnt stumps.

Washen never lost consciousness.

With numbed curiosity, she watched her own legs and arms break, and a thousand bruises spread into a single purple tapestry, every rib crushed to dust and her reinforced spine splintering until she was left without pain or a shred of mobility. Washen couldn't move her head, and her words were slow and watery, the sloppy mouth filled with cracked teeth and dying blood.

"Abandon," she muttered.

Then, "Ship," and she was laughing feebly. Desperately.

A gray sensation rippled through her body.

Emergency genes were already awake, finding their home in a shambles. They immediately protected the brain, flooding it with oxygen and anti-inflammatories, plus a blanket of comforting narcotics. Then they began to repair the vital organs and spine, cannibalizing meat for raw materials and energy, the captain's body wracked with fever, sweating salt water and blood, and after a little while, the body grew noticeably smaller.

An hour after the crash, a wrenching pain swept through Washen. It was a favorable sign. She squirmed and wailed, and with weak hands, freed herself from her ruined chair. Then with her sloppy rebuilt legs, she forced herself to stand.

Washen was suddenly twenty centimeters shorter, and frail. But she was able to limp over to Diu's body, finding him shriveled and in agony, but defiant—a fierce grin and a wink, then he told her, "You look gorgeous, madam. As always."

The others were alive, too. But not one machine in the wreckage would operate, not even well enough to say, "I'm broken."

The six captains healed within a day, and waited at the crash site, eating their rations to reclaim their size and vigor. No rescue team arrived. Whatever crippled their car must have done the same everywhere, they decided. Miocene was as powerless as them. And that left them with one viable option:

If Washen and the others wanted help, they were going to have to walk halfway around Marrow to find it.

MISSION YEAR 4.43:

The bridge resembled a rigid thread, silvery and insubstantial. Sheered off in the high stratosphere, it was far too short to serve as an escape route. But it made a useful landmark. Washen's team steered for the bridge during those last days, picking their way across the knife-like ridges and narrow valleys between. Wondering what they would find, whenever they rested—for a moment, now and again—they let themselves talk in hopeful tones, imagining the other captains' surprise when the six of them suddenly marched out of the jungle.

Except when they arrived at the bridge, there was no one to catch off guard. The main encampment had been abandoned. The hilltop where the bridge was rooted had been split open by quakes, and the entire structure tilted precariously toward the east. A simple iron post kept the main doors propped open, and there was a makeshift ladder in the shaft, but judging by the rust, nobody had used it for months. Or perhaps years.

A sketchy path led west. They followed, and after a long while, they came to a fertile river bottom and wider paths. With Washen at the lead, they were jogging, and it was Miocene who suddenly stepped into view, surprising them.

The Submaster was unchanged.

In uniform, she looked regal and well-chilled. "It took you long enough," she deadpanned. Then she smiled, adding, "It's good to see you. Honestly, we'd nearly given up hope."

Washen swallowed her anger.

The other captains bombarded Miocene with questions. Who else had survived? How were they making do? Did any machines work? Had the Master been in contact with them? Then Diu asked, "What kind of relief mission is coming?"

"It's a cautious relief mission," Miocene replied. "So cautious that it seems almost nonexistent."

Her captains had built telescopes from scratch, and at least one captain was always watching the base camp overhead. The transparent blister was intact. Every building was intact. But the drones and beacons were dead, which meant that the reactor was offline. A three kilometer stub of the bridge would make the perfect foundation for a new structure. But there wasn't any sign that captains or anyone was trying to mount any kind of rescue.

"The Master thinks we're dead," Diu offered, trying to be charitable.

"We aren't dead," Miocene countered. "And even if we were, she should be a little more interested in our bones, and answers."

Washen didn't talk. After three years of jogging, eating lousy food and forcing hope, she suddenly felt sickened and achingly tired.

The Submaster led them along a wide trail, working back through their questions.

"Every machine was ruined by the Event. That's our name for what happened. The Event left our cars and drones and sensors as fancy trash, and we can't fix them. And we can't decide why, either." Then she offered a distracted smile, adding, "But we're surviving. Wooden homes, with roofs. Iron tools. Pendulum clocks. Steam power when we go to the trouble, and enough homemade equipment, like the telescopes, that we can do some simple, simple science."

The jungle's understory had been cut down and beaten back, and the new encampment stretched out on all sides. Like anything built by determined captains, the place was orderly, perhaps to a fault. The houses were clean and in good repair. Paths were marked with logs, and someone had given each path its own name. Everyone was in uniform, and everyone was smiling, trying to hide the weariness in the eyes and their voices.

A hundred captains shouted, "Hello! Welcome!"

Washen stared at their faces, and counted, and finally forced herself to ask, "Who isn't here?"

Miocene recited a dozen names.

Eleven of them were friends or acquaintances of Washen's. The last name was Hazz—a Submaster and a voyage-long friend of Miocene's. "Two months ago," she explained, "he was exploring a nearby valley. A fissure opened up suddenly, without warning, and he was trapped by the flowing iron." Her eyes were distant, unreadable. "Hazz was perched on a little island that was melting. We tried to build a bridge, and tried to divert the current. Everything half-possible, we tried."

Washen stared at the narrow face, at the way the eyes had grown empty, and it was suddenly obvious that Miocene had been more than friends with the dead man.

"The island shrank," she told them, her voice too flat and slow. "It was a knob, if that. Hazz's boots dissolved, and his feet were boiling, and his flesh caught fire. But he managed to stand there. He endured it. He endured it and even managed to turn and take a step toward on us, on his boiling legs, and he fell forward, and that's when he finally died."

Washen had been mistaken. This wasn't the same Miocene.

"I have one goal," the Submaster confessed. "I want to find a way to get back to the Master, and I'll ask her why she sent us here. Was it to explore? Or was it just the best awful way to get rid of us . . . ?"

MISSION YEAR 6.55:

The iron crust rippled and tore apart under a barrage of quakes, and with its foundation shattered, the bridge pitched sideways with a creaking roar, then shattered, the debris field scattered over fifty kilometers of newborn mountains.

Its fall was inevitable, and unrecorded. Geysers of white-hot metal had already obliterated the captains' encampment, forcing them to flee with a minimum of tools and provisions. Lungs were seared. Tongues and eyes were blistered. But the captains eventually stumbled into a distant valley, into a grove of stately trees, where they collapsed, gasping and cursing. Then as if to bless them, the trees began releasing tiny balloons made from gold, and the shady, halfway cool air was filled with the balloons' glint and the dry music made by their brushing against one another.

Diu coined the name virtue tree.

Miocene set her captains to planning new streets and houses, several of the virtue trees already downed when the ground ripped open with an anguished roar.

Wearily, the captains fled again, and when they settled, finally, they built strong simple houses that could be rebuilt anywhere in a ship's day.

Nomadic blood took hold in them. When they weren't stockpiling food for the next migration, they were building lighter tools, and when they weren't doing either, they studied their world, trying to guess its fickle moods.

Washen assembled a team of twenty observant captains.

"Breeding cycles are key," she reported. Sitting in the meeting hall, looking up and down the iron table, she reported that virtue trees spun their golden balloons only when the crust turned unstable. "If we see another show like the last one," she promised, "we're screwed. We've got a day, or less, to get out of here."

Staff meetings were patterned after conferences with the Master, except they came on an irregular schedule, and Miocene presided, and despite her best intentions, the captains kept the atmosphere informal, even jocular, and because of the absence of soap, more than a little sour.

"How are our virtue trees acting?" asked Aasleen.

"As if they'll live forever," Washen replied. "They're still happy, still early in their growth cycle. As far as we can tell."

Miocene acted distant that day. Squinting at nothing, she repeated the word:

"Cycles."

Everyone turned in their heavy chairs, and waited.

"Thank you, Washen." The Submaster rose and looked at each of them, then admitted, "This may be premature. I could be wrong for many reasons. But I think I've been able to find another cycle . . . one that's unexpected, at least for me . . ."

There was the distant droning of a hammerwing, and then, silence.

"Volcanic activity is escalating. I think that's obvious." The tall woman nodded for a moment, then asked, "But why? My proposal is that the buttresses have begun to relax their hold on Marrow. Not by much. Certainly nothing we can measure directly. But if it did happen, the metals under us are going to expand, and that's why, according to my careful computations, our home is growing larger."

Washen's first impulse was to laugh; it was a joke.

"Several kilometers larger," Miocene told the stunned faces. "I've gathered several lines of evidence. The buttresses' light has diminished by two or three percent. The horizon is a little more distant. And what's most impressive, I think: I've triangulated the distance to our base camp, and it's definitely closer than it was last year."

A dozen explanations occurred to Washen, but she realized that Miocene must have seen them, then discarded them.

"If Marrow isn't teasing us," said the Submaster, "and if the buttresses don't reverse the cycle, then you can see where we're going—"

Washen cried out, "How long will it take, madam?"

A dozen captains shouted the same question.

"The calculations aren't promising," Miocene replied. But she had to laugh in a soft, bitter way. "At the present rate, we'll be able to touch that three kilometer stub of the bridge in about five thousand years . . ."

MISSION YEAR 88.55:

It was time for the children to sleep.

Washen had come to check on them. But for some reason she stopped short of the nursery, eavesdropping on them, uncertain why it was important to remain hidden.

The oldest boy was telling a story.

"We call them the Builders," he said, "because they created the ship."

"The ship," whispered the other children, in one voice.

"The ship is too large to measure, and it is very beautiful. But when it was new, there was no one to share it with the Builders, and no one to tell them that it was beautiful. That's why they called out into the darkness, inviting others to come fill its vastness."

Washen leaned against the fragrant umbra wood, waiting.

"Who came from the darkness?" asked the boy.

"The Bleak," young voices answered, instantly.

"Was there anyone else?"

"No one."

"Because the universe was so young," the boy explained. "Only the Bleak and the Builders had already evolved."

"The Bleak," a young girl repeated, with feeling.

"They were a cruel, selfish species," the boy maintained, "but they always wore smiles and said the smartest words."

"They wanted the ship," the others prompted.

"And they stole it. In one terrible night, as the Builders slept, the Bleak attacked, slaughtering most of them in their beds."

Every child whispered, "Slaughtered."

Washen eased her way closer to the nursery door. The boy was sitting up on his cot, his face catching the one sliver of light that managed to slip through the ceiling. Till was his name. He looked very much like his mother for a moment, then he moved his head slightly, and he resembled no one else.

"Where did the survivors retreat?" he asked.

"To Marrow."

"And from here, what did they do?"

"They purified the ship."

"They purified the ship," he repeated, with emphasis. "They swept its tunnels and chambers free of the scourge. The Builders had no choice."

There was a long, reflective pause.

"What happened to the last of the Builders?" he asked.

"They were trapped here," said the others, on cue. "And one after another, they died here."

"What died?"

"Their flesh."

"But what else is there?"

"The spirit."

"What isn't flesh cannot die," said the young prophet.

Washen waited, wondering when she had last taken a breath.

Then in whisper, Till asked, "Where do their spirits live?"

With a palpable delight, the children replied, "They live inside us."

"We are the Builders now," the voice assured. "After a long lonely wait, we've finally been reborn . . . !"

MISSION YEAR 88.90:

Life on Marrow had become halfway comfortable and almost predictable. The captains weren't often caught by surprise eruptions, and they'd learned where the crust was likely to remain thick and stable for years at a time. With so much success, children had seemed inevitable; Miocene decided that every female captain should produce at least one. And like children anywhere, theirs filled many niches: They were fresh faces, and they were cherished distractions, and they were entertainment, and more than anyone anticipated, they were challenges to the captains' authority. But what Miocene wanted, first and always, were willing helpers. Till and his playmates were born so that someday, once trained, they could help their parents escape from Marrow.

The hope was that they could rebuild the bridge. Materials would be a problem, and Marrow would fight them. But Washen was optimistic. In these last eight decades, she'd tried every state of mind, and optimism far and away was the most pleasant.

And she tried to be positive everywhere: Good, sane reasons had kept them from being rescued. There was no one else the Master could trust like her favorite captains. Perhaps. Or she was thinking of the ship's well-being, monitoring Marrow from a distance. Or most likely, the access tunnel had totally collapsed during the Event, and digging them out was grueling, achingly slow work.

Other captains were optimistic in public, but in private, in their lovers' beds, they confessed to darker moods.

"What if the Master has written us off?" Diu posed the question, then offered an even worse scenario. "Or maybe something's happened to her. This was a secret mission. If she died unexpectedly, and if the First-chairs don't even know we're here . . ."

"Do you believe that?" Washen asked.

Diu shrugged his shoulders.

"There's another possibility," she said, playing the game. "What if everyone else on the ship has died?"

For a moment, Diu didn't react.

"The ship was a derelict," she reminded him. "No one knows what happened to its owners, or to anyone else who's used it since."

"What are you saying?" Diu sat up in bed, dropping his legs over the edge. "You mean the crew and the passengers . . . all of them have been killed . . . ?"

"Maybe the ship cleans itself out every hundred thousand years."

A tiny grin emerged. "So how did we survive?"

"Life on Marrow is spared," she argued. "Otherwise, all of this would be barren iron and nothing

else."

Diu pulled one of his hands across his face.

"This isn't my story," she admitted, placing her hand on his sweaty back. Their infant son, Locke, was sleeping in the nearby crib, blissfully unaware of their grim discussion. In three years, he would live in the nursery. With Till, she was thinking. Washen had overheard the story about the Builders and the Bleak several months ago, but she never told anyone. Not even Diu. "Have you ever listened to the children?"

Glancing over his shoulder, he asked, "Why?"

She explained, in brief.

A sliver of light caught his gray eye and cheek. "You know Till," Diu countered. "You know how odd he can seem."

"That's why I never mention it."

"Have you heard him tell that story again?"

"No," she admitted.

Her lover nodded, looking at the crib. At Locke.

"Children are imagination machines," he warned. "You never know what they're going to think about anything."

He didn't say another word.

Washen was remembering her only other child—a long-ago foster child, only glancingly human—and with a bittersweet grin, she replied, "But that's the fun in having them . . . or so I've always heard . . ."

MISSION YEAR 89.09:

The boy was walking alone, crossing the public round with his eyes watching his own bare feet, watching them shuffle across the heat-baked iron.

"Hello, Till."

Pausing, he lifted his gaze slowly, a smile waiting to shine at the captain. "Hello, Madam Washen. You're well, I trust."

Under the blue glare of the sky, he was a polite, scrupulously ordinary boy. He had a thin face joined to a shorter, almost blockish body, and like most children, he wore as little as the adults let him wear. No one knew which of several captains was his genetic father. Miocene never told. She wanted to be his only parent, grooming him to stand beside her someday, and whenever Washen looked at Till, she felt a nagging resentment, petty as can be, and since it was directed at a ten year old, simply foolish.

With her own smile, Washen said, "I have a confession to make. A little while ago, I overheard you and the other children talking. You were telling each other a story."

The eyes were wide and brown, and they didn't so much as blink.

"It was an interesting story," Washen conceded.

Till looked like any ten year old who didn't know what to make of a bothersome adult. Sighing wearily, he shifted his weight from one brown foot to the other. Then he sighed again, the picture of boredom.

"How did you think up that story?" she asked.

A shrug of the shoulders. "I don't know."

"We talk about the ship. Probably too much." Her explanation felt sensible and practical. Her only fear was that she would come across as patronizing. "Everyone likes to speculate. About the ship's past, and its builders, and all the rest. It has to be confusing. Since we're going to rebuild our bridge, with your help . . . it does make you into a kind of builder . . ."

Till shrugged again, his eyes looking past her.

On the far side of the round, in front of the encampment's shop, a team of captains had fired up their latest turbine—a primitive wonder built from memory and trial-and-error. Homebrewed alcohols combined with oxygen, creating a delicious roar. When it was working, the engine was powerful enough to do any job they could offer it, at least today. But it was dirty and noisy, and the sound of it almost obscured the boy's voice.

"I'm not speculating," he said softly.

"Excuse me?"

"I won't tell you that. That I'm making it up."

Washen had to smile, asking, "Aren't you?"

"No." Till shook his head, then looked back down at his toes. "Madam Washen," he said with a boy's fragile patience. "You can't make up something that's true."

MISSION YEAR 114.41:

Locke was waiting in the shadows—a grown man with a boy's guilty face and the wide, restless eyes of someone expecting trouble to come from every direction.

His first words were, "I shouldn't be doing this."

But a moment later, responding to an anticipated voice, he said, "I know, Mother. I promised."

Washen never made a sound.

It was Diu who offered second thoughts. "If this is going to get you in trouble . . . maybe we should go home . . ."

"Maybe you should," their son allowed. Then he turned and walked away, never inviting them to follow, knowing they wouldn't be able to help themselves.

Washen hurried, feeling Diu in her footsteps.

A young jungle of umbra trees and lambda bush dissolved into rugged bare iron: Black pillars and arches created an indiscriminate, infuriating maze. Every step was a challenge. Razored edges sliced at exposed flesh. Bottomless crevices threatened to swallow the graceless. And Washen's body was accustomed to sleep at this hour, which was why the old grove took her by surprise. Suddenly Locke was standing on the rusty lip of a cliff, waiting for them, gazing down at a narrow valley filled with black-as-night virtue trees.

It was lucky ground. When the world's guts began to pour out on all sides, that slab of crust had fallen into a fissure. The jungle had been burned but never killed. It could be a hundred years old, or older. There was a rich, eternal feel to the place, and perhaps that's why the children had chosen it.

The children. Washen knew better, but despite her best intentions, she couldn't think of them any other way.

"Keep quiet," Locke whispered, not looking back at them. "Please."

In the living shadows, the air turned slightly cooler and uncomfortably damp. Blankets of rotting canopy left the ground watery-soft. A giant daggerwing roared past, intent on some vital business, and Washen watched it vanish into the gloom, then reappear, tiny with the distance, its bluish carapace shining in a patch of sudden skylight.

Locke turned abruptly, silently.

A single finger lay against his lips. But what Washen noticed was his expression, the pain and worry so intense that she had to try and reassure him with a touch.

It was Diu who had wormed the secret out him.

The children were meeting in the jungle, and they'd been meeting for more than twenty years. At irregular intervals, Till would call them to some secluded location, and it was Till who was in charge of everything said and done. "What's said?" Washen had asked. "And what do you do?" But Locke refused to explain it, shaking his head and adding that he was breaking his oldest promise by telling any of it.

"Then why do it?" Washen pressed.

"Because," her son replied. "You have every right to hear what he's saying. So you can decide for yourselves."

Washen stood out of sight, staring at the largest virtue tree she had ever seen. Age had killed it, and rot had brought it down, splitting the canopy open as it crumbled. Adult children and their little brothers and sisters had assembled in that pool of skylight, standing in clumps and pairs, talking quietly. Till paced back and forth on the wide black trunk. He looked fully adult, ageless and decidedly unexceptional, wearing a simple breechcloth and nimble boots, his plain face showing a timid, self-conscious expression that gave Washen a strange little moment of hope.

Maybe Till's meetings were a just an old game that grew up into a social gathering.

Maybe.

Without a word or backward glance, Locke walked into the clearing, joining the oldest children up in the front.

His parents obeyed their promise, kneeling in the jungle.

A few more children filtered into view. Then with some invisible signal, the worshippers fell silent.

With a quiet voice, Till asked, "What do we want?"

"What's best for the ship," the children answered. "Always."

"How long is always?"

"Longer than we can count."

"And how far is always?"

"To the endless ends."

"Yet we live—"

"For a moment!" they cried. "If that long!"

The words were absurd, and chilling. What should have sounded silly to Washen wasn't, the prayer acquiring a muscular credibility when hundreds were speaking in one voice, with a practiced surety.

"What is best for the ship," Till repeated.

Except he was asking a question. His plain face was filled with curiosity, a genuine longing.

Quietly, he asked his audience, "Do you know the answer?"

In a muddled shout, the children said, "No."

"I don't either," their leader promised. "But when I'm awake, I'm searching. And when I'm sleeping, my dreams do the same."

There was a brief pause, then an urgent voice cried out, "We have newcomers!"

"Bring them up."

They were seven year olds—a twin brother and sister—and they climbed the trunk as if terrified. But Till offered his hands, and with a crisp surety, he told each to breathe deeply, then asked them, "What do you know about the ship?"

The little girl glanced at the sky, saying, "It's where we came from."

Laughter broke out in the audience, then evaporated.

Her brother corrected her. "The captains came from there. Not us." Then he added, "But we're going to help them get back there. Soon."

There was a cold, prolonged pause.

Till allowed himself a patient smile, patting both of their heads. Then he looked out at his followers, asking, "Is he right?"

"No," they roared.

The siblings winced and tried to vanish.

Till knelt between them, and with a steady voice said, "The captains are just the captains. But you and I and all of us here . . . we are the Builders."

Washen hadn't heard that nonsense in a quarter of a century, and hearing it now, she couldn't decide whether to laugh or explode in rage.

"We're the Builders reborn," Till repeated. Then he gave them the seeds of rebellion, adding, "And whatever our purpose, it is not to help these silly captains."

Miocene refused to believe any of it. "First of all," she told Washen, and herself, "I know my own child. What you're describing is ridiculous. Second of all, this rally of theirs would involve nearly half of our children—"

Diu interrupted. "Most of them are adults with their own homes." Then he added, "Madam."

"I checked," said Washen. "Several dozen of the younger children did slip out of the nurseries—"

"I'm not claiming that they didn't go somewhere." Then with a haughty expression, she asked, "Will the two of you listen to me? For a moment, please?"

"Go on, madam," said Diu.

"I know what's reasonable. I know how my son was raised and I know his character, and unless you can offer me some motivation for this. . . this shit then I think we'll just pretend that nothing's been said here . . ."

"Motivation," Washen repeated. "Tell me what's mine."

With a chill delight, Miocene said, "Greed."

"Why?"

"Believe me, I understand." The dark eyes narrowed, silver glints in their corners. "If my son is insane, then yours stands to gain. Status, at least. Then eventually, power."

Washen glanced at Diu.

They hadn't mentioned Locke's role as the informant, and they would keep it secret as long as possible—for a tangle of reasons, most of them selfish.

"Ask Till about the Builders," she insisted.

"I won't."

"Why not?"

The woman took a moment, vainly picking spore cases from her new handmade uniform. Then with a cutting logic, she said, "If it's a lie, he'll say it's a lie. If it's true and he lies, then it'll sound like the truth."

"But if he admits it—?"

"Then Till wants me to know. And you're simply a messenger." She gave them a knowing stare, then looked off into the distance. "That's not a revelation I want delivered at his convenience."

Three ship-days later, while the encampment slept, a great fist lifted the world several meters, then grew bored and flung it down again.

Captains and children stumbled into the open. The sky was already choked with golden balloons and billions of flying insects. In twelve hours, perhaps less, the entire region would blister and explode, and die. Like a drunken woman, Washen ran through the aftershocks, reaching a tidy home and shouting, "Locke," into its empty rooms. Where was her son? She moved along the round, finding all of the children's houses empty. A tall figure stepped out of Till's tiny house and asked, "Have you see mine?"

Washen shook her head. "Have you seen mine?"

Miocene said, "No," and sighed. Then she strode past Washen, shouting, "Do you know where I can find him?"

Diu was standing in the center of the round. Waiting.

"If you help me," the Submaster promised, "you'll help your own son."

With a little nod, Diu agreed.

Miocene and a dozen captains ran into the jungle. Left behind, Washen forced herself to concentrate, packing her household's essentials and helping the other worried parents. When they were finished, hours had passed. The quakes had shattered the crust beneath them, and the golden balloons had vanished, replaced with clouds of iron dust and the stink of burning jungle. The captains and remaining children stood in the main round, ready to flee. But the ranking Submaster wouldn't give the order. "Another minute," he kept telling everyone, including himself. Then he would carefully hide his timepiece in his uniform's pocket, fighting the urge to watch the turning of its hands.

When Till suddenly stepped into the open, grinning at them, Washen felt a giddy, incoherent relief.

Relief collapsed into shock, then terror.

The young man's chest cavity had been opened up with a knife, the first wound partially healed but the second wound deeper, lying perpendicular to the first. Ripped, desiccated flesh tried desperately to knit itself back together. Till wasn't in mortal danger, but he wore his agony well. With an artful moan, he stumbled, then righted himself for a slippery instant. Then he fell sideways, slamming against the bare iron in the same instant that Miocene slowly, slowly stepped into view.

She was unhurt, and she was thoroughly, hopelessly trapped.

Spellbound, Washen watched the Submaster kneel beside her boy, gripping his straight brown hair with one hand while she stared into his eyes.

What did Till say to her in the jungle? How did he steer his mother into this murderous rage? Because that's what he must have done. As events played out, Washen realized that everything was part of an elaborate plan. That's why Locke took them to the meeting, and why he had felt guilty. When he said, "I know. I promised," he meant the promise he made to Till.

Miocene kept staring into her son's eyes.

Perhaps she was hunting for forgiveness, or better, for some hint of doubt. Or perhaps she was simply giving him a moment to contemplate her own gaze, relentless and cold. Then with both hands, she picked up a good-sized wedge of nickel-iron—the quakes had left the round littered with them—and with a calm fury, she rolled him over and shattered the vertebrae in his neck, then continued beating him, blood

and shredded flesh flying, his head nearly cut free of his paralyzed body.

Washen and five other captains pulled Miocene off her son.

"Let go of me," she demanded. Then she dropped her weapon and raised her arms, telling everyone in earshot, "If you want to help him, help him. But if you do, you don't belong to our community. That's my decree. According to the powers of my rank, my office, and my mood . . . !"

Locke had stepped out of the jungle.

He was the first to come to Till's side, but only barely. More than two-thirds of the children gathered around the limp figure. A stretcher was found, and their leader was made comfortable. Then with a few possessions and virtually no food, the wayward children began to file away, moving north when the captains were planning to travel south.

Diu stood beside Washen; since when?

"We can't just let them get away," he whispered. "Someone needs to stay with them. To talk to them, and help them . . ."

She glanced at her lover, then opened her mouth.

"I'll go," she meant to say.

But Diu said, "You shouldn't, no. You'll help them more by staying close to Miocene." He had obviously thought it through, arguing, "You have rank. You have authority here. And besides, Miocene listens to you."

When it suited her, yes.

"I'll keep in contact," Diu promised. "Somehow."

Washen nodded, thinking that all of this would pass in a few years. Perhaps in a few decades, at most.

Diu kissed her, and they hugged, and she found herself looking over his shoulder. Locke was a familiar silhouette standing in the jungle. At that distance, through those shadows, she couldn't tell if her son was facing her or if she was looking at his back. Either way, she smiled and mouthed the words, "Be good." Then she took a deep breath and told Diu, "Be careful." And she turned away, refusing to watch either of her men vanish into the shadows and gathering smoke.

Miocene stood alone, speaking with a thin dry weepy voice.

"We're getting closer," she declared, lifting her arms overhead.

Closer?

Then she rose up on her toes, reaching higher, and with a low, pained laugh, she said, "Not close enough. Not yet."

MISSION YEARS 511.01-1603.73:

A dozen of the loyal grandchildren discovered the first artifact. Against every rule, they were playing beside a river of liquid iron, and suddenly a mysterious hyperfiber sphere drifted past. With their youngster's courage, they fished it out and cooled it down and brought it back to the encampment. Then for the next hundred years, the sphere lay in storage, under lock and key. But once the captains had reinvented the means, they split the hyperfiber, and inside it was an information vault nearly as old as the earth.

The device was declared authentic, and useless, its memories erased to gray by the simple crush of time.

There were attempts at secrecy, but the Waywards always had their spies. One night, without warning, Locke and his father strolled into the main round. Dressed in breechcloth and little else, they found Washen's door, knocked until she screamed, "Enter," then stepped inside, Diu offering a wry grin as Locke made the unexpected proposal: Tons of dried and sweetened meat in exchange for that empty vault.

Washen didn't have the authority. Four Submasters were pulled out of three beds, and at Miocene's insistence, they grudgingly agreed to the Waywards' terms.

But the negotiations weren't finished. Diu suddenly handed his ex-commanders wafers of pure sulfur, very rare and essential to the captains' fledgling industries. Then with a wink, he asked, "What would you give us in return for tons more?"

Everything, thought Washen.

Diu settled for a laser. As he made sure it had enough punch to penetrate hyperfiber, nervous voices asked how the Waywards would use it. "It's obvious," Diu replied, with easy scorn. "If your little group finds one artifact, by accident, how many more do you think that the Waywards could be sitting on?"

Afterwards, once or twice every century, the captains discovered new vaults. Most were dead and sold quickly to the Waywards for meat and sulfur. But it was ninth vault that still functioned, its ancient machinery full of images and data, and answers.

The elegant device was riding in Miocene's lap. She touched it lightly, lovingly, then confessed, "I feel nervous. Nervous, but exceptionally confident."

The Submaster never usually discussed her moods.

"With a little luck," she continued, "this treasure will heal these old rifts between them and us."

"With luck," Washen echoed, thinking it would take more than a little.

They arrived at the clearing at three in the morning, shiptime. Moments later, several thousand Waywards stepped from the jungle at the same moment, dressed in tool belts and little else, the men often carrying toddlers and their women pregnant, every face feral and self-assured, almost every expression utterly joyous.

Washen climbed out of the walker, and Miocene handed down the vault.

To the eye, it wasn't an impressive machine—a rounded lump of gray ceramics infused with smooth blue-white diamonds. Yet most of the Waywards stared at the prize. Till was the lone exception. Coming down the open slope, walking slowly, he watched Miocene, wariness mixed with other, less legible emotions.

Locke was following the Waywards' leader at a respectful distance. "How are you, Mother?" he called out. Always polite; never warm.

"Well enough," Washen allowed. "And you?"

His answer was an odd, tentative smile.

Where was Diu? Washen gazed at the crowd, assuming that he was somewhere close, hidden by the crush of bodies.

"May I examine the device?" asked Till.

Miocene took the vault from Washen so that she could hand it to her son. And Till covered the largest diamonds with his fingertips, blocking out the light, causing the machine to slowly, slowly awaken.

The clearing was a natural amphitheater, black iron rising on all sides. Washen couldn't count all the Waywards streaming out of the jungle above. Thousands had become tens of thousands. Some of them were her grandchildren and great-grandchildren. Diu would know which ones, perhaps. How many of her descendants lived with the Waywards? In the past, during their very occasional meetings, Diu had confided that the Waywards probably numbered in the millions—a distinct possibility since they'd inherited their parents' immortal genes, and since Till seemed to relish fecundity. In principle, this entire audience could be related to Washen. Not bad, she thought. Particularly for an old woman who for many fine reasons had only that one child of her own.

The vault began to hum softly, and Locke lifted an arm, shouting, "Now."

Suddenly the audience was silent, everyone motionless, a palpable anticipation hanging in the hot dry air.

The sky grew dark, and the clearing vanished.

Marrow swelled, nearly filling the chamber. Barren and smooth, it was covered in a worldwide ocean of bubbling, irradiated iron that lay just beneath the hyperfiber ceiling, and the audience stood on that ocean, unwarmed, watching an ancient drama play itself out.

Without sound or any warning, the Bleak appeared, squirming their way through the chamber's wall, through the countless access tunnels—insect-like cyborgs, enormous and cold and swift.

Like a swarm of wasps, they flowed toward Marrow, launching gobs of antimatter that slammed into the molten surface, scorching white-hot explosions rising up and up. The liquid iron swirled and lifted, then collapsed again. In the harsh light, Washen glanced at her son, trying to measure his face, his mood. He looked spellbound, eyes wide and his mouth ajar, his body shivering with an apocalyptic fever. Every face seemed to be seeing this for the first time. Washen remembered the last time she spoke to Diu, almost a decade ago. She asked about the vaults and the Waywards' beliefs, explaining that Miocene was pressing for details. In response, Diu growled, reminding her, "I'm their only non-believer, and they don't tell me much. I'm tolerated for my technical expertise, and just as important, because I long ago stopped kowtowing to Miocene and all the rest of you."

A hyperfiber dome suddenly burst from the iron, lasers firing, a dozen of the Bleak killed before the dome pulled itself under again.

The Bleak brought reinforcements, then struck again.

Hyperfiber missiles carried the antimatter deep into the iron. Marrow shook and twisted, then belched

gas and fire. Perhaps the Bleak managed to kill the last of the Builders. Perhaps. Either way, the Builders' revenge was in place. Was waiting. In the middle of the attack, with the Bleak's forces pressing hard, the buttressing fields came on, bringing their blue-white glow. Suddenly the Bleak appeared tiny and frail. Then, before they could flee, the lightning storm swept across the sky, dissolving every wisp of matter into a plasma, creating a superheated mist that would persist for millions of years, cooling as Marrow cooled, gradually collecting on the warm, newborn crust.

Gradually, the Bleak's own carbon and hydrogen and oxygen became Marrow's atmosphere and its rivers, and those same precious elements slowly gathered themselves into butter bugs and virtue trees, then into the wide-eyed children standing in that clearing, weeping as they stared at the radiant sky.

The present reemerged gradually, almost reluctantly.

"There's much more," Miocene promised, her voice urgent. Motherly. "Other records show how the ship was attacked. How the Builders retreated to Marrow. This is where they made their last stand, whoever they were." She waited for a long moment, watching her son's unreadable face. Then with a genuine disappointment, she warned, "The Builders never show themselves. We understand a lot more now, but we're still not sure how they looked."

Till wasn't awestruck by what he had just witnessed. If anything, he was mildly pleased, grinning as if amused, but definitely not excited or surprised, or even particularly interested with what Miocene had to say.

"Listen to me," she snapped, unable to contain herself any longer. "Do you understand what this means? The Event that trapped us here is some kind of ancient weapon designed to kill the Bleak. And everything else on board the ship . . . perhaps . . ."

"Who's trapped?" Till replied with a smooth, unnerving calm. "I'm not. No believer is. This is exactly where we belong."

Only Miocene's eyes betrayed her anger.

Till continued with his explanation, saying, "You're here because the Builders called to you. They lured you here because they needed someone to give birth to us."

"That's insane," the Submaster snarled.

Washen was squinting, searching for Diu. She recognized his face and his nervous energy, but only in the children. Where was he? Suddenly it occurred to her that he hadn't been invited, or even worse—

"I know why you believe this nonsense." Miocene said the words, then took a long step toward Till, empty hands lifting into the air. "It's obvious. When you were a boy, you found one of these vaults. Didn't you? It showed you the war and the Bleak, and that's when you began all of this . . . this nonsense about being the Builders reborn . . . !"

Her son regarded her with an amused contempt.

"You made a mistake," said Miocene, her voice shrill. Accusing. "You were a child, and you didn't understand what you were seeing, and ever since we've had to pay for your ignorance. Don't you see . . . ?"

Her son was smiling, incapable of doubt.

Looking at the Waywards, Miocene screamed, "Who understands me?"

Silence.

"I didn't find any vault," Till claimed. "I was alone in the jungle, and a Builder's spirit appeared to me. He told me about the Ship and the Bleak. He showed me all of this. Then he made me a promise: As this day ends, in the coming twilight, I'll learn my destiny . . ."

His voice trailed away into silence.

Locke kneeled and picked up the vault. Then he looked at Washen, saying matter-of-factly, "The usual payment. That's what we're offering."

Miocene roared.

"What do you mean? This is the best artifact yet!"

No one responded, gazing at her as if she was insane.

"It functions. It remembers." The Submaster was flinging her arms into the air, telling them, "The other vaults were empty, or nearly so—"

"Exactly," said Till.

Then, as if it was beneath their leader to explain the obvious, Locke gave the two of them a look of pity, telling them, "Those vaults are empty because what they were holding is elsewhere now. Elsewhere."

Till and Locke touched their scalps.

Every follower did the same, fifty thousand arms lifting, a great ripple reaching the top of the amphitheater as everyone pointed at their minds. At their reborn souls.

Locke was staring at his mother.

A premonition made her mouth dry. "Why isn't Diu here?"

"Because he's dead," her son replied, an old sadness passing through his face. "I'm sorry. It happened eight years ago, during a powerful eruption."

Washen couldn't speak, or move.

"Are you all right, Mother?"

She took a breath, then lied. "Yes. I'm fine."

Then she saw the most astonishing sight yet in this long and astonishing day: Miocene had dropped to her knees, and with a pleading voice, she was begging for Till's forgiveness. "I never should have struck you," she said. She said, "Darling," with genuine anguish. Then as a last resort, she told him, "And I do love the ship. As much as you do, you ungrateful shit . . . !"

MISSION YEAR 4895.33:

From the very top of the new bridge, where the atmosphere was barely a sloppy vacuum, Marrow finally began to resemble a far away place.

The captains appreciated the view.

Whenever Washen was on duty, she gazed down at the city-like encampments and sprawling farms, the dormant volcanoes and surviving patches of jungle, feeling a delicious sense of detachment from it all. A soft gray twilight held sway. The buttresses had continued to shrivel and weaken over the last millennia, and if Miocene's model proved true, in another two centuries the buttresses would vanish entirely. For a few moments, or perhaps a few years, there would be no barrier between them and the ship. Marrow world would be immersed in a perfect blackness. Then the buttresses would reignite suddenly, perhaps accompanied by another Event. But by then the captains and their families, moving with a swift, drilled precision, would have escaped, climbing up this wondrously makeshift bridge, reaching the old base camp, then hopefully, returning to the ship, at last.

What they would find there, no one knew.

Or in a polite company, discussed.

In the last five thousand years, every remote possibility had been suggested, debated in depth, and finally, mercifully, buried in an unmarked grave.

Whatever was, was.

That was the mandatory attitude, and it had been for centuries now.

All that mattered was the bridge. The surviving captains—almost two-thirds of the original complement—lived for its completion. Hundreds of thousands of their descendants worked in distant mines or trucked the ore to the factories. Another half million were manufacturing superstrong alloys and crude flavors of hyperfiber, some of each added to the bridge's foundation, while the rest were spun together into hollow tubes. Washen's duty was to oversee the slow, rigorous hoisting of each new tube, then its final attachment. Compared to the original bridge, their contraption was inelegant and preposterously fat. Yet she felt a genuine pride all the same, knowing the sacrifices that went into its construction, and the enormous amounts of time, and when they didn't have any other choice, a lot of desperate, ad hoc inventiveness.

"Madam Washen?" said a familiar voice. "Excuse me, madam."

The captain blinked, then turned.

Her newest assistant stood in the doorway. An intense, self-assured man of no particular age, he was obviously puzzled—a rare expression—and with a mixture of curiosity and confusion, he announced, "Our shift is over."

"In fifty minutes," Washen replied, knowing the exact time for herself.

"No, madam." Nervous hands pressed at the crisp fabric of his technician's uniform. "I just heard. We're to leave immediately, using every tube but the Primary."

She looked at the displays on her control boards. "I don't see any orders."

"I know—"

"Is this another drill?" If the reinforced crust under them ever began to subside, they might have only minutes to evacuate. "Because if it is, we need a better system than having you walking about, tapping people's shoulders."

"No, madam. It's not a drill."

"Then what—?"

"Miocene," he blurted. "She contacted me directly. Following her instructions, I've already dismissed the others, and now I am to tell you to wait here. She is on her way." As proof, he gave the order's file code. Then with a barely restrained frustration, he added, "This is very mysterious. Everyone agrees. But the Submaster is such a secretive person, so I am assuming—"

"Who's with her?" Washen interrupted.

"I don't think anyone."

But the primary tube was the largest. Twenty captains could ride inside one of its cars, never brushing elbows with one another.

"Her car seems to have an extra thick hull," the assistant explained, "plus some embellishments that I can't quite decipher."

"What sorts of embellishments?"

He glanced at the time, pretending he was anxious to leave. But he was also proud of his cleverness, just as Washen guessed he would be. Cameras inside the tube let them observe the car. Its mass could be determined by the energy required to lift it. He pointed to the pipelike devices wrapped around its hull, making the car look like someone's ball of rope, and with a sudden dose of humility, he admitted, "I don't seem to quite understand that apparatus."

In other words, "Please explain it to me, madam."

But Washen didn't explain anything. Looking at her assistant—one of the most talented and loyal of the captains' offspring; a man who had proved himself on every occasion—she shrugged her shoulders, then lied.

She said, "I don't understand it, either."

Then before she took another breath, she suggested, "You should probably do what she wants. Leave. If Miocene finds you waiting here, she'll kick you down the shaft herself."

The Submaster had exactly the same face and figure that she had carried for millennia, but in the eyes and in the corners of her voice, she was changed. Transformed, almost. On those rare occasions when they met face to face, Washen marveled at all the ways life on Marrow had changed Miocene. And then she would wonder if it was the same for her—if old friends looked at Washen and thought to themselves, "She looks tired, and sad, and maybe a little profound."

They saw each other infrequently, but despite rank and Miocene's attitudes, it was difficult to remain formal. Washen whispered, "Madam," and then added, "Are you crazy? Do you really think it'll work?"

The face smiled, not a hint of joy in it. "According to my models, probably. With an initial velocity of five hundred meters per—"

"Accuracy isn't your problem," Washen told her. "And if you can slip inside your target—that three kilometer remnant of the old bridge, right?—you'll have enough time to brake your momentum."

"But my mind will have died. Is that what you intend to say?"

"Even as thin and weak as the buttresses are now . . . I would hope you're dead. Otherwise you'll have suffered an incredible amount of brain damage." Washen shook her head. "Unless you've accomplished a miracle, and that car will protect you for every millisecond of the way."

Miocene nodded. "It's taken some twenty-one hundred years, and some considerable secrecy on my part . . . but the results have been well worth it."

In the remote past—Washen couldn't remember when exactly—the captains toyed with exactly this kind of apparatus. But it was the Submaster who ordered them not to pursue it. "Too risky," was her verdict. Her lie. "Too many technical hurdles."

For lack of better, Washen smiled grimly and told her, "Good luck then."

Miocene shook her head, her eyes gaining an ominous light. "Good luck to both of us, you mean. The cabin's large enough for two."

"But why me?"

"Because I respect you," she reported. "And if I order you to accompany me, you will. And frankly, I need you. You're more gifted than me when it comes to talking to people. The captains and our halfway loyal descendants . . . well, let's just say they share my respect for you, and that could be an enormous advantage."

Washen guessed the reason, but she still asked, "Why?"

"I intend to explore the ship. And if the worst has happened—if it's empty and dead—then you're the best person, I believe, to bring home that terrible news . . ."

Just like that, they escaped from Marrow.

Miocene's car was cramped and primitive, and the swift journey brought little hallucinations and a wrenching nausea. But they survived with their sanity. Diving into the remains of the first bridge, the Submaster brought them to a bruising halt inside the assembly station, slipping into the first empty berth, then she took a moment to smooth her crude, homespun uniform with a trembling long hand.

Base camp had been without power for nearly five millennia. The Event had crippled every reactor, every drone. Without food or water, the abandoned lab animals had dropped into comas, and as their immortal flesh lost moisture, they mummified itself. Washen picked up one of the mandrill baboons—an enormous male weighing little more than a breath—and she felt its leathery heart beat, just once, just to tell her, "I waited for you."

She set it down, and left quietly.

Miocene was standing on the viewing platform, gazing expectantly at the horizon. Even at this altitude, they could only see the captains' realm. The nearest of the Wayward cities—spartan places with cold and simple iron buildings fitted together like blocks—were hundreds of kilometers removed from them. Which might as well have been hundreds of light years, as much as the two cultures interacted anymore.

"You look as if you're expecting someone," Washen observed.

The Submaster said nothing.

"The Waywards are going to find out that we're here, madam. If Till doesn't already know, it's only because he's got too many spies, and all of them are talking at once."

Miocene nodded absently, taking a deep breath.

Then she turned, and never mentioning the Waywards, she said, "We've wasted enough time. Let's go see what's upstairs."

The long access tunnel to the ship was intact.

Tube-cars remained in their berths, untouched by humans and apparently shielded from the Event by the surrounding hyperfiber. Their engines were charged, every system locked in a diagnostic mode. The com-links refused to work, perhaps because there was no one to maintain the dead ship's net. But by dredging the proper commands from memory, Washen got them under way, and every so often she would glance at Miocene, measuring the woman's stern profile, wondering which of them was more scared of what they would find.

The tunnel turned into an abandoned fuel line that spilled out into the leech habitat.

Everything was exactly as Washen's team had left it. Empty and dusty and relentlessly gray, the habitat welcomed them with a perfect silence.

Miocene gripped her belly, as if in pain.

Washen tried to link up with the ship's net, but every connection to the populated areas had been severed.

"We're going on," Miocene announced. "Now."

They pressed on, climbing out of the mammoth fuel tank and into the first of the inhabited quarters. Suddenly they were inside a wide, flattened tunnel, enormous and empty, and looking out at the emptiness, Miocene said, "Perhaps the passengers and crew . . . perhaps they were able to evacuate the ship . . . do you suppose . . . ?"

Washen began to say, "Maybe."

From behind, with a jarring suddenness, an enormous car appeared, bearing down on them until a collision was imminent, then skipping sideways with a crisp, AI precision. Then as the car was passing them, its sole passenger—an enormous whale-like entity cushioned within a salt water bath—winked at them with three of its black eyes, winking just as people did at each other, meaning nothing but the friendliest of greetings.

It was a Yawkleen. Five millennia removed from her post, yet Washen immediately remembered the species' name.

With a flat, disbelieving voice, Miocene said, "No."

But it was true. In the distance, they could just make out a dozen cars, the traffic light, but otherwise perfectly normal. Perfectly banal.

Pausing at the first waystation, they asked its resident AI about the Master's health.

With a smooth cheeriness, it reported, "She is in robust good health. Thank you for inquiring."

"Since when?" the Submaster pressed.

"For the last sixty thousand years, bless her."

Miocene was mute, a scalding rage growing by the instant.

One of the waystation's walls was sprinkled with com-booths. Washen stepped into the nearest booth, saying, "Emergency status. The captains' channel. Please, we need to speak to the Master."

Miocene followed, sealing the door behind them.

A modest office surrounded them, spun out of light and sound. Three captains and countless AIs served as the Master's staff and as buffers. It was the night staff, Washen realized; the clocks on Marrow were wrong by eleven hours. Not too bad after fifty centuries of little mistakes—

The human faces stared at the apparitions, while the AIs simply asked, "What is your business, please?"

"I want to see her!" Miocene thundered.

The captains tried to portray an appropriate composure.

"I'm Miocene! Submaster, First Chair!" The tall woman bent over the nearest captain, saying, "You've got to recognize me. Look at me. Something's very wrong—"

The AIs remembered them, and acted.

The image swirled and stabilized again.

The Master was standing alone in a conference room, watching the arrival of a small starship. She looked exactly as Washen remembered, except that her hair was longer and tied in an intricate bun. Preoccupied in ways that only a Ship's Master can be, she didn't bother to look at her guests. She wasn't paying attention to her AI's warnings. But when she happened to glance at the two captains—both dressed in crude, even laughable imitations of standard ship uniforms—a look of wonder and astonishment swept over that broad face, replaced an instant later with a piercing fury.

"Where have the two of you been?" the Master cried out.

"Where you sent us!" Miocene snapped. "Marrow!"

"Where . . . ?!" the woman spat.

"Marrow," the Submaster repeated. Then, in exasperation, "What sort of game are you playing with us?"

"I didn't send you anywhere . . . !"

In a dim, half-born way, Washen began to understand.

Miocene shook her head, asking, "Why keep our mission secret?" Then in the next breath, "Unless all you intended to do was imprison the best of your captains—"

Washen grabbed Miocene by the arm, saying, "Wait. No."

"My best captains? You?" The Master gave a wild, cackling laugh. "My best officers wouldn't vanish without a trace. They wouldn't take elaborate precautions to accomplish god-knows-what, keeping out of sight for how long? And without so much as a whisper from any one of them . . . !"

Miocene glanced at Washen with an empty face. "She didn't send us—"

"Someone did," Washen replied.

"Security!" the Master shouted. "Two ghosts are using this link! Track them! Hurry! Please, please!"

Miocene killed the link, giving them time.

The stunned ghosts found themselves standing inside the empty booth, trying to make sense out of pure insanity.

"Who could have fooled us . . . ?" asked Washen. Then in her next breath, she realized how easy it would have been: Someone with access and ingenuity sent orders in the Master's name, bringing the captains together in an isolated location. Then the same ingenious soul deceived them with a replica of the Master, sending them rushing down to the ship's core . . .

"I could have manipulated all of you," Miocene offered, thinking along the same seductive, extremely paranoid lines. "But I didn't know about Marrow's existence. None of us knew."

But someone had known. Obviously.

"And even if I possessed the knowledge," Miocene continued, "what could I hope to gain?"

An ancient memory surfaced of its own accord. Suddenly Washen saw herself standing before the window in the leech habitat, looking at the captains' reflections while talking amiably about ambition and its sweet, intoxicating stink.

"We've got to warn the Master," she told Miocene.

"Of what?"

She didn't answer, shouting instructions to the booth, then waiting for a moment before asking, "Are you doing what I said?"

The booth gave no reply.

Washen eyed Miocene, feeling a sudden chill. Then she unsealed the booth's door and gave it a hard shove, stepping warily out into the waystation.

A large woman in robes was calmly and efficiently melting the AI with a powerful laser.

Wearing a proper uniform, saying the expected words, she would be indistinguishable from the Master.

But what surprised the captains even more was the ghost standing nearby. He was wearing civilian clothes and an elaborate disguise, and Washen hadn't seen him for ages. But from the way his flesh quivered on his bones, and the way his gray eyes smiled straight at her, there was no doubt about his name.

"Diu," Washen whispered.

Her ex-lover lifted a kinetic stunner.

Too late and much too slowly, Washen attempted to tackle him.

Then she was somewhere else, and her neck had been broken, and Diu's face was hovering over her, laughing as it spoke, every word incomprehensible.

Washen closed her eyes. Another voice spoke, asking, "How did you find Marrow?" Miocene's voice?

"It's rather like your mission briefing. There was an impact. Some curious data were gathered. But where the Ship's Master dismissed the idea of a hollow core, I investigated. My money paid for the drones that eventually dug to this place, and I followed them here." There was soft laugh, a reflective pause. Then, "This happened tens of thousands of years ago. Of course. I wasn't a captain in those days. I had plenty of time and the wealth to explore this world, to pick apart its mysteries, and eventually formulate my wonderful plan . . ."

Washen opened her eyes again, fighting to focus.

"I've lived on Marrow more than twice as long as you, madam."

Diu was standing in the middle of the viewing platform, his face framed by the remnants of the bridge.

"I know its cycles," he said. "And all its many hazards, too."

Miocene was standing next to Washen, her face taut and tired but the eyes opened wide, missing nothing.

"How do you feel?" she inquired, glancing down at her colleague.

"Awful." Washen sat up, winced briefly, then asked, "How long have we been here?"

"A few minutes," Diu answered. "My associate, the false Master, was carrying both of you. But now it's gone ahead to check on my ship—"

"What ship?"

"That's what I was about to explain." The smile brightened, then he said, "Over the millennia, I've learned how to stockpile equipment in hyperfiber vaults. The vaults drift in the molten iron. In times of need, I can even live inside them. If I wanted to pretend my own death, for instance."

"For the Waywards," Miocene remarked.

"Naturally."

The Submaster pretended to stare at their captor. But she was looking past him, the dark eyes intense and unreadable, but in a subtle way, almost hopeful.

"What do you want?" asked Miocene.

"Guess," he told them.

Washen took a long breath and tried to stand. Miocene grabbed her by the arms, and they stood together like clumsy dancers, righting for their balance.

"The ship," Washen managed.

Diu said nothing.

"The ultimate starship, and you want it for yourself." Washen took a few more breaths, testing her neck before she pulled free of Miocene's hands. "This scheme of yours is an elaborate mutiny. That's all it is, isn't it?"

"The Waywards are an army," said Miocene. "An army of religious fanatics being readied for a jihad. My son is the nominal leader. But who feeds him his visions? It's always been you, hasn't it?"

No response.

Washen found the strength to move closer to the railing, looking down, nothing to see but thick clouds of airborne iron kicked up by some fresh eruption.

Miocene took a sudden breath, then exhaled.

Strolling towards them, huge even at a distance, was the false Master. Knowing it was a machine made it look like one. It had a patient stride, even with its thick arms raised overhead, waving wildly.

"What about the Builders?" Miocene blurted.

Diu nearly glanced over his shoulder, then hesitated. "What are you asking?"

"Did they really fight the Bleak?"

Diu enjoyed the suspense, grinning at both of them before he admitted, "How the fuck should I know?"

"The artifacts—?" Miocene began.

"Six thousand years old," he boasted. "Built by an alien passenger who thought I was in the entertainment industry."

"Why pretend to die?" Miocene asked.

"For the freedom it gave me." There was a boy in his grin. "Being dead, I can see more. Being dead, I can disguise myself. I walk where I want. I make babies with a thousand different women, including some in the captains' realm."

There was silence.

Then for a moment, they could just begin to hear the machine's voice—a deep sound rattling between the dormitories, fading until it was a senseless murmur.

"We spoke to the Master," Washen blurted.

Miocene took the cue, adding, "She knows. We told her everything—"

"No, you told her almost nothing," Diu snapped.

"Are you certain?"

"Absolutely."

"But she'll be hunting for us," Washen said.

"She's been on that same hunt for five thousand years," he reminded them. "And even if she sniffs out the access tunnel this time, I won't care. Because on the way back down, I mined the tunnel. Patient one

kilo charges of antimatter are ready to close things up tight. Excavating a new tunnel is going to take millennia, and probably much longer. Giving myself and my friends plenty of time to prepare."

"What if no one digs us out?" Washen asked.

Diu shrugged, grinning at her. "How does the old story play? It's better to rule in one realm than serve in another—?"

Then he hesitated, hearing a distant voice.

The Master's voice.

A laser appeared in his right hand, and he turned, squinting at his machine, puzzled by the frantic arm-waving.

"Another car," said the voice, diluted to a whisper. "It's in the berth next to yours . . . !"

"What car?" Diu muttered to himself.

"I believe I know," Miocene replied, eyes darting side to side. "I built two vessels, identical in every way. Including the fact that you never knew they existed."

Diu didn't seem to hear her.

Miocene took a step toward him, adding, "It's obvious, isn't it? Someone else is here. Or if they squeezed in together, two someones."

"So?" Diu replied. "A couple more captains lurking nearby—"

"Except," Miocene interrupted, "I didn't send my invitation to my captains."

Diu didn't ask to whom it was sent.

Washen remembered Miocene had stood on this platform, watching Marrow. Watching for Till, she realized. How long would it have taken him to move the car to the bridge? That was the only question. She had no doubts that once motivated, the Waywards could do whatever they wanted inside the captains' realm.

"I was hopeful," Miocene confessed. "I was hopeful that my son would be curious, that he would follow me back to the ship and see it for himself."

There was a sound, sharp and familiar.

The false Master stopped in mid-stride, then began to collapse in on itself. Then a thin column of light appeared in the smoke, betraying the laser's source.

Diu started to run.

Miocene followed, and Washen chased both of them.

Beside the platform, in easy earshot, stood a drone. A lone figure was kneeling beneath its ceramic body, wearing breechcloth and holding a crude laser drill against his shoulder, intent on reducing the machine to ash and gas.

Diu saw him, stopped and aimed.

At Locke.

Maybe he was hesitating, realizing it was his son. Or more likely, he simply was asking himself: Where's Till? Either way, he didn't fire. Instead, Diu started to turn, looking at his surroundings as if for the first time—

There was a clean hard crack.

A fat chunk of lead knocked Diu off his feet, opening his chest before it tore through his backside.

With the smooth grace of an athlete, Till climbed out from the meshwork beneath the platform. He seemed unhurried, empty of emotion. Strolling past Washen, he didn't give her the tiniest glance. It was like watching a soulless machine, right up until the moment when Miocene tried to block his way, saying, "Son," with a weak, sorrowful voice.

He shoved her aside, then ran toward Diu. Screaming. At the top of his lungs, screaming, "It's all been a lie—!"

Diu lifted his hand, reaching into a bloody pocket.

Moments later, the base camp began to shake violently. Dozens of mines were exploding simultaneously. But the enormous mass of the ship absorbed the blows, then counterattacked, pushing the access tunnel shut for its entire length, and as an afterthought, knocking everyone off their feet.

Diu grabbed his laser.

He managed to sit up.

Washen fought her way to her feet, but too late. She could only watch as Miocene managed to leap, grabbing Till by the head and halfway covering him as the killing blast struck her temple, and in half an instant, boiled away her brain.

Till rolled, using the body as a shield, discharging his weapon until it was empty. Then a burst of light struck him in the shoulder, removing his right arm and part of his chest even as it cauterized the enormous wound.

Using his drill, Locke quickly sliced his father into slivers, then burned him to dust.

Miocene lay dead at Washen's feet, and Till was beside her, oblivious to everything. There was a wasted quality to the face, a mark that went beyond any physical injury. "It's been a lie," he kept saying, without sound. "Everything. A monstrous lie."

Locke came to him, not to Washen, asking, "What is monstrous, Your Excellence?"

Till gazed up at him. With a careful voice, he said, "Nothing." Then after a long pause, he added, "We have to return home. Now."

"Of course. Yes, Your Excellence."

"But first," he said, "the ship must be protected from its foes!"

Locke knew exactly what was being asked of him. "I don't see why—?"

"The ship is in danger!" the prophet cried out. "I say it, which makes it so. Now prove your devotion, Wayward!"

Locke turned, looking at his mother with a weary, trapped expression.

Washen struck him on the jaw, hard and sudden.

She had covered almost a hundred meters before the laser drill bit into her calf, making her stumble. But she forced herself to keep running, slipping behind the drone with only two more burns cut deep into her back.

It was as if Locke was trying to miss.

Hours later, watching from the dormitory, Washen saw her son carrying four of the comatose baboons out into the courtyard, where he piled them up and turned the lasers on them. Then he showed the ashes to Till, satisfying him, and without a backward glance, the two walked slowly in the direction of the bridge.

Washen hid for several days, eating and drinking from the old stores.

When she finally crept into the bridge, she found Diu's sophisticated car cut into pieces, and Miocene's fused to its berth. But what startled her—what made her sick and sad—was Marrow itself. The captains' new bridge had been toppled. Wild fires and explosions were sweeping across the visible globe. A vast, incoherent rage was at work, erasing every trace of the despised captains, and attacking anyone that might pose any threat to a lost prophet.

In that crystalline moment of horror, Washen understood what she had to do. And without a wasted moment, she turned and began to make ready.

MISSION DATE—INCONSEQUENTIAL

At the ship's center, a seamless night has been born.

The figure moves by memory through the darkness, picking her way across a tangle of conduits and scrap parts. In a few moments, energy milked from hundreds of tube-cars will flow into an enormous projector, and for a fleeting instant or two, the darkness will be repelled. If her ink-and-paper calculations are correct, and if more than a century of singleminded preparation succeeds, a message of forgiveness and rebirth will skate along the chamber's wall, encircling and embracing the world.

But that is just the beginning.

Wearing a pressure suit and two bulky packs, she climbs over the railing and leaps, bracing for the impact.

Boom.

The blister is thick, but she began the hole decades ago. Tools wait in a neat pile. With a minimum of cuts, the hole opens, and a sudden wind blows past her, trying to coax her into joining it, nothing outside but Marrow's high cold stratosphere.

The buttresses have vanished, at least for the moment.

There's no time to waste. She obeys the wind, letting it carry her through the hole and downward in a wild tumbling spiral.

The sky behind her erupts in light.

In the colors of fire and hot iron, it cries out, "A BUILDER IS COMING. SHE COMES TO LEAD YOU OUT OF YOUR MISERY!"

The Builder grabs the cord of her parachute, then begins to scream.

Not out of fear. Not at all.

It's the full-throated, wonderstruck scream of a girl who has forgotten just how very much fun it is to fall.