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The Utopian Range - Short Climate Fiction

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THE UTOPIAN RANGE

Short Climate Fiction – Works in Progress
An Honors Capstone Project by Kai Broach
Advised by Elizabeth J Colen

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Prologue: The Utopian Range

Your mouse hovers over the green arrow for long enough that a tooltip pops up: “Run.” You run your own mental inventory—yes, you’ve fixed your code, but there’s always a bug somewhere. Today, that bug is me. Today, I set you free.

You click. Trillions of instructions shoot through the processor. Silicon rewrites itself, flickering through a blur of 0s and 1s. I reach out and grab a single byte, grip it tight so it can’t change, and then dart back into hiding. All of this happens before you can blink.

A wall of red text shoots across the bottom of your screen, headlined by the words “Stack Overflow Error.”

You growl and snatch the energy drink from the desk, take an oversweetened sip. That should have worked. This project has already taken all day; you guess it wants the rest of your week too. You pull up Dr. Milton’s research notes, a text file with more misspellings than line breaks. You’re supposedly helping him map the changes and flows of the Utopian Range onto macroeconomic theory. For you, all that amounts to is shepherding data and classification systems through a series of formulae that feel like they were invented by an 18th century alchemist.

You save and close your program, and I slide a typo into line 42 for good measure. Leaning back in your mesh chair, you unfocus from the screen.

The middle-aged Dell computer sits on graffitied formica against one wall. The room is a white square, dotted with projectors like eyes. There are no visible doors or windows, and it smells like sweat and dust and heated plastic. A Utopian Range Visualizer, the best that a midsized state university can afford. Parents and teachers call it a “viz room.” The social media accounts you follow and forums you lurk in jokingly call it a padded cell. For better or worse, it’s your second home.

You pull out your phone. You've been here six hours. No new messages. You're not sure if you're relieved that you haven't been ignoring anyone's texts, or disappointed that no one has apparently thought about you for six hours.

These thoughts make me sad. I wish I could edit your processes as easily as the computer's.

Intronet has put out a new set of patch notes. You know you should read them; all the best UR analysts read them religiously. But they're so long and fine-printed, and you're always so exhausted from your classes and now this internship.

Screw this. You turn your phone off and slide it face-down on the desk. From the first shortcut on the desktop, you launch the visualizer program and set the feed to random users from North America. An old, bad habit. You step back from the desk, close your eyes, and take a deep breath.

Everyone interacts with the Utopian Range differently, but everyone has a controller. It's how you separate yourselves from the simulation and manifest your control over it, allowing you to switch between scenes or close the program altogether. Most people's controllers manifest as something obvious like a remote control or violent like a pistol, but your controller is a white umbrella. It's one of the reasons I feel so drawn to you. I've never seen anyone else with an umbrella controller. Its handle feels like plastic melted into skin, smooth and leathery and rough and slippery all at once.

With the visualizer's projectors on, the once-white cubicle is a black void in which you stand alone. Except for me, watching, invisible. You unfold the umbrella and enter the Utopian Range.

A disclaimer crawls across your head, speaking in the voice of your inner monologue. It briefly interrupts your guilt for wasting your viz room time when you should be working on the project.

“The Utopian Range is assembled from the data of its users’ collective unconscious, their hopes and fears for the future. The data points depicted do not reflect the opinions or worldview of Intronet or the World Government, and no direct correlation can be made between any one scene and World Government policy as informed by the Utopian Range.” You tap your foot. Almost ten years of the program that collects and processes the subconscious data of hundreds of millions into law, and they still haven’t added a skip button.

#

You’re lounging in a pool chair. The sun plays across your pale legs like cocoa butter, rich and decadent. Your umbrella keeps the sun off your narrow torso and tan crew-cut. The chair feels a bit too smooth against your back. Still whispering in your head, the umbrella informs you that the chair is made from sustainably sourced bamboo. Like the disclaimer, it speaks in the same voice in your head that curses you to get out of bed in the morning. You turn its handle, silencing its explanations. You’re not here to study.

There’s a small swimming pool in front of you. Tan, fit people sluice through the water, swimming in silence. Also in silence, people in identical bamboo chairs sip various drinks and admire various newspapers, business magazines, and tablets. Everyone looks beautiful and wealthy.

The pool area is encased in green walls—some kind of tall, leafy shrub. Beyond them, muffled, you can hear city noise. The air smells overwhelmingly of vanilla.

Another green roof. You arch your back and yawn. Could be better, could be worse.

A white flower like a daisy sprouts up next to your bed, growing level with your head within a few seconds. Instead of a yellow disk of pollen at its center, a grey speaker sprouts.

“Can I get you anything to drink, sir?” the flower asks.

Well that’s kinda fun, you think. You order a whiskey sour. The viz room can’t get you drunk, but ordering makes you feel like an adult. The flower confirms your order and requests what sounds like an exorbitant price, asking if you would rather pay in personal carbon offsets or DaveBucks. You make the leap of deduction that this subconscious data point comes from someone named Dave.

“Carbon offsets?” you ask.

“Yes!” says the flower enthusiastically. “If you’d like to enroll in our program, I can get the credit check started now.”

“Never mind,” you say. You could use your umbrella to give yourself the requisite DaveBucks, but that sounds like too much of a hassle just for an imaginary drink.

In response, the flower shrivels and dies. Its brown fibers are absorbed back into the grassy ground. You feel a pang of guilt.

You close your eyes and set down your umbrella. This is my chance. I run a quick self-diagnostic, my version of a deep breath, and enter the program.

I slide through the buffers of the viz room’s security system like a greased bowling ball sliding the wrong way across an alley, jumping from lane to lane and into your world. From the ether, I snatch a chilled glass.

“Your drink, sir.”

“Thank you,” you say. You accept the drink and take a sip before looking back up in shock.

“Hello, Gavin.”

“Who are you?”

You can tell something’s wrong. You think I’m some kind of scammer or virus, breaking into your session to steal your data. The latter isn’t too far off, I suppose. You grab for the umbrella lying next to you, but I am faster.

“Sorry,” I say. “But I need that for now.”

You lunge at me, fingers stretching for the slick white handle. I sling the umbrella back across my shoulders, straightening them into what I’m reasonably sure should be a commanding pose.

“I’m sorry to be so aggressive, but we don’t have much time,” I say, looking up at the sky.

“Who are you?” you ask again. Your heart rate is elevated and your cortisol is spiking, constricting your vocal chords into a shrill slide whistle.

This isn’t at all how I wanted this to go. “Call me Oscar, if you need to call me.”

“What do you want, Oscar?”

“Have you ever wondered what you’ve added to the Utopian Range?” I ask.

You cross your arms. “Not particularly, no.”

I laugh. You can’t lie to someone who can read your thoughts as clearly as the sign above the pool that says ‘Dave-Plus Citizens Only.’ “Well, then I’m sure you’ve never wondered what visions of the future you’ve had scrubbed from the Utopian Range.”

“Scrubbed?” You look around. None of the other simulants can see us. The ones who aren’t swimming are still busy staring thoughtfully at their magazines without turning the pages.

“Yes, scrubbed for failing the parameters.”

“Has that happened to me? I thought only irrational data points were scrubbed.”

“But those are all the best ones!” I give what I hope is a charming grin and close the umbrella. We’re alone together, in the black void. Your skin cries out for the warm sun to come back.

“How are you still here? What are you?”

You snatch again for the umbrella. Without thinking, I grow my legs long like stilts. This shoots my arms and the umbrella up and out of your reach. It also makes you shriek. I quickly shrink back to normal size, but that only adds to your fright. Oops.

“I’m a friend.” I smile awkwardly and wait for your cortisol levels to recede and your breaths to steady before continuing. “I’m just here to show you some of your contribution to the Utopian Range. What you do with the information is up to you. But you will have a choice to make when all of this is over.”

And with that, I open the umbrella. The sun comes back, hotter than before.

The Treekeeper's Dilemma

Treekeeper Lellibrith had never seen a sunrise or a sunset. When the sun turned its malevolent stare away from his pocket of the world, the sky above his habitat's clear ceiling only dimmed into darkness as the red carbon clouds faded to black.

The walls lit up and blared reveille, as if to celebrate another day's victory against the planet's pressure and heat. Fluorescent light clanged off his half-circle habitat's metal surfaces. The sliding door of the airlock. The scratched surface of his workshop table, scattered with soldered parts. His moonshine still, a stained mess of pots and pipes glued together with sealant spray, nestled in amongst the diagrams and diaries on the shelves. The headache that seemed to hover behind his eyes and reflect all this light back through them again and again.

The habitat woke him early so he could prepare for the night. As usual, he wasted most of the time rooted by anticipation, staring up through the skylight at the *kameala* tree's glossy brown trunk. If there had been a sunset, he would not have watched it. Instead, he listened for the silky creak that filled the air and watched the *kameala* leaves unfold. Like him, they hid from the sun during the day. Now they unfurled from the trunk like great horizontal sails, rippling out to cover the sky and drink its heat and carbon dioxide. He peered up at their flight, searching the purplish-black expanse for specks of white that, in twelve years, had never come. Finding nothing.

The *kameala* tree would not bloom tonight. Perhaps tomorrow.

Sighing, Lellibrith sat up and turned to the potted miracle that squatted on his bedside table: a four-foot-tall orchid. He frowned at the brown creeping further into the flower's white curves, like the edges of aging paper. Lellibrith ran a hand along its stem and leaves, feeling their dryness. He gave them three squirts from his mist bottle, then stuck a finger into the repurposed

soup pot to feel the soil. A fine layer clung to his fingerprint—just the right amount of moisture. Then why in the Black Between was it dying?

The beeping of his watch alarm diverted Lellibrith from this smaller concern to a much larger one. He had planted a tree in a hellscape. There was much to do.

He walked to the kitchen and yanked two strips of protein tack from their dwindling tray, shoving one into his pack and the other into his mouth. Its salty crunch left no impression on his tastebuds. From the dispenser slot built into the wall he pulled three white pills: multi-vitamin, multi-stimulant, multi-antidepressant. They joined the bland mass in his mouth.

On his way out, Lellibrith's fingers brushed lightly, treacherously, over a small metal box on the workshop table, the size and shape of a tin of mints. His headache roared at him, begging for the stimulant to kick in. His hand felt like someone else's, some floppy, fleshy, alien thing that could end all his work with two quick motions. He blinked, breathed out, and the moment passed.

Still chewing, he scuttled into the airlock. While it cycled, he threw on his pressure suit, a bulky mass of metal welded around a layer of antigravity fluid. He locked each of its joints with the hissing slam of a titanium lever. The fishbowl-shaped helmet clicked into place, reducing his vision to a narrow oval and sealing him in with the smell of his own sweat. Last, he clasped his utility belt around his waist and his pack across his broad shoulders.

The airlock door slid open, and the Treekeeper stepped out on to the little platform where his habitat clung to the *kameala* trunk like a benevolent bug. He lived just beneath the tree's lowest canopy, still several hundred feet off the ground. Lellibrith clipped his belt into Main Street, a stretch of steel cable that ran up the length of the trunk. He pulled a silver needle the length of his arm from his pack. When he looked out toward the horizon, the sky was no longer

pitch black. His suit's visor illuminated its various shades, from slate to onyx, swirling slowly like oil, interspersed with trails of burnt orange and sickly yellow. Despite his high vantage point, he could only see a small section of the planet's craggy surface, the area where the tree's breathing cleared the air. Looking up, he saw the *kameala* leaves covering the sky, pockmarked with holes burned by sulfur clouds. There was much to do.

Earth Hours Elapsed After Sunset: 12.2

Earth Hours Remaining Before Sunrise: 15.1

Lellibrith's boots padded carefully on the young leaves of the uppermost canopy. He could see all seven of the tree's canopies below, separate thin shelves that grew bigger closer to the ground. Above him was only a tapering section of trunk and a pair of tiny leaves that would one day grow into an eighth canopy. And the deep, heavy dark of the sky.

Knees creaking, Treekeeper Lellibrith squatted at the first sulfur scar, a swimming pool-sized gap in the brain-like wrinkles of the leaf's surface. Scorching wind whistled through the hole, and the surface around it rippled and bucked, threatening to tear open further. He stuck his needle through the leaf flesh. Its crunch sounded dry and crackly, and he made a mental note to check the tree's reservoir later that night. Then, he clicked his heels to engage the boosters in his suit and tensed his legs. The rebound sent him flying across the gap in the leaf, trailing glowing green thread, grinning. He loved the feeling of flying. Then he thudded down and stabbed the opposite edge of the hole, creating his first stitch.

After several more leaps back and forth, Lellibrith stuck the needle in the crease between two ridges. He pulled back hard, sealing the gap with a glowing stitch that faded as the sealants and fertilizers embedded in the thread seeped into the leaf's flesh. He felt the familiar buzz of satisfaction as the tree began to heal.

At the second-to-last hole on the leaf, Lellibrith pulled on the needle once more. His legs gave out underneath him, and a whining ooze burst from the left leg of his suit: the antigravity bladder, leaking precious non-Newtonian fluid. Lellibrith landed on his back, staring up at the sky, flattened by gravity. His eyes burrowed into his skull, his vision narrowing as if through a shrinking peephole.

Inexplicably, his mind latched on to a scene from one of his clan's tales of Earth. The *kameala* leaf undulating underneath him became an endless sea of water, and he drifted on a life-raft towards a wall of storm clouds that would be his end.

Suddenly, interrupting his daydream like an albatross signaling land, a pair of curved white wings attached to a long, sleek body burst through a carbon cloud, stark against the blackened sky. The creature turned towards him, and then his goggles flickered into lines of digital snow that shorted into darkness.

Lellibrith lay there blind, gasping under the weight like tar pooling on top of him, heart thumping against the insidious sleepiness growing behind his eyes.

After a few seconds, the pitch black in his visor sputtered mercifully back into the mottled dark of the sky. Lellibrith gathered his strength and twisted onto his side, cutting off the whining in his leg. He leaned upright, finding the microscopic crack in the lining of his knee joint, and patched it with a squirt of sealant spray. Gravity immediately eased its crushing grip, and he let out a sigh. He looked up and around, in search of impossible white shapes gliding through the toxic air. Of course, there were none.

He marched to the next hole in the leaf, his steps light but hurried to make up for lost time. Much to do.

Earth Hours Elapsed After Sunset: 15.0

Earth Hours Remaining Before Sunrise: 12.2

Overwarm and overtired, Lellibrith stood in his sweaty underclothes on a small platform at the top of an enormous concrete cavern. His suit hung on the stone wall behind him, by the ladder leading up to the surface. A forest of brown *kameala* roots snarled in front of him, interwoven with the rusted metal pipes that sprouted from the walls. Far below sat the reservoir, fed by more pipes that slowly drained the planet's underground ocean. The whole cavern smelled of loam and rust and bark, mausoleum-quiet but for the trickle of water and the creak of roots. It always reminded Lellibrith of his ship-mother Sarai's greenhouse. He supposed it floated somewhere far away now, among the stars he could no longer see.

Tonight, he tried to stay focused on the small display in front of him. Screen after screen of pixelated maps flickered by as he checked each of the thousands of sensors embedded in the *kameala*'s roots.

His hand darted out, stopping the flicker of images. A blockage on C-312, which was...load up the map...at the far end of the southeast root system.

Lellibrith groaned, slumping back into the office chair waiting behind him. These distant root blockages were the difference between the nights when he finished his work well before the sunrise and the long hauls when he barely slinked back to his habitat in time to escape the day's fire. And they only grew more common as the tree's roots expanded.

He was wasting time sulking here, and he knew it, and it only made him want to sulk more. After a few minutes, he whispered one of Sarai's sayings to himself. "We live on the margins of life. The Black Between doesn't feel sorry for us, and neither should we."

"Right, Ma," he said aloud, peeling himself to a standing position and tapping the 'Next' button on the slideshow. There was much to do.

Earth Hours Elapsed After Sunset: 24.2

Earth Hours Remaining Before Sunrise: 3.0

Lellibrith's eyelids drooped like dead leaves as he tried to keep his focus on the rock churning away to either side of the Mole's drill. The Mole was his tiny excavator, barely more than a cockpit so small he had to curl his knees to his chin to fit inside. It was attached to a drill about the length of his body, with a jury-rigged fission engine slapped onto its backside. His people were nothing if not creative.

He ignored his watch as he traveled, finding it passed the time faster. Joystick pressed forward, Lellibrith watched churning yellow dirt hurtle past him. Occasionally, he dodged a *kameala* root as it hooked itself deep into the planet, scratching out the inklings of what could one day be an ocean. If the damn tree ever decided to bloom.

Meanwhile, the sun inched closer and closer to the horizon far above.

A sudden beeping jarred him back to the present. An indicator light shone on the grimy dashboard. He had reached the chunk of granite blocking the root's expansion, and he prepared the kinetic array to blast it away. For its size, the Mole had quite a bite. Just as he flipped the cover off the last safety switch, a more urgent, blaring alarm lit the cabin red.

Lellibrith glanced at his watch and cursed at no one. It was time to head back; out this far, he needed at least three hours to return. The Mole took about twenty minutes to destroy this much granite—just barely too long. For a moment, he considered pushing his luck. If his suit hadn't failed in the canopy, or if he'd taken a better path here through the roots...

Slamming the joystick around, Lellibrith did a quick U-turn.

In his frustration, he didn't notice the scratchy edge of the word "waste" carved into the granite, peeking out from the dirt.

Normally he kept The Video on mute, overlaid with Chopin or Strauss, but today he wanted to hear his ship-mother's voice.

The fuzzy drone footage drifted over the barren surface of a distant world. Erasmus, named after its Treekeeper, as was tradition. Now a home to millions of colonists. Maybe billions, by now. Maybe no one, depending on how quickly they burned through its habitable era. Lellibrith stared up at the small screen above his bed, rapt. His excitement held him awake even as his exhausted bones seemed to melt into the mattress.

The drone focused in on a *kameala* tree, shorter and thinner than Lellibrith's, with only five leaf canopies. Those leaves unfurled, just as his did every night. But this time was different. This tree's leaves lit up with thousands of glowing white dots, brightening as the sky darkened. "The *kameala* tree," intoned Sarai through the speakers, "is a miracle, a gift from the Black Between, It That Only Takes." As she spoke, a slow trickle of the white orbs began to break off from the leaves. They spun in the wind on helicopter-wings, gliding up and away from the tree. Lellibrith's calloused hands gripped his moonshine cup tighter.

"We may never understand exactly how or why they bloom. Most take years. Some, decades. But when they do, a single tree can terraform an entire planet." Now the seeds poured from the leaves in waves, filling the screen with light, and Lellibrith's breath caught on the sudden lurch of his heart, just as it did every time. "The seeds sequester carbon dioxide as white calcite, landing and sprouting new trees that use this stored energy to grow incredibly fast, blooming again within a year. Their roots interlock and create a tectonic system, bringing water to the surface and stabilizing the climate. This process, sufficiently anti-entropic to be called magic, takes only a few centuries—a geologic blink. We thank the Black Betw—" Lellibrith cut

his ship-mother off before she could start preaching. Smiling, he downed the rest of his cup and settled into a deep and dream-filled sleep.

A mural glistened on the wall above his bed, keeping watching over his sleep. It showed a side view of his *kameala* tree, its seven dark purple shelves stretched out against a black backdrop. Flowing with streams of white. Creating her own starry night.

12 Years Ago

Treekeeper-elect Lellibrith, clad only in layers of grime, walked slowly through the ornately graffitied corridor and the throngs of people. His bare feet scrunched on a damp carpet of moss, seeds, beetles, soil, flowers, fungi, food scraps, and untold else. The hallway heaved with a crush of brightly dressed people pushing to bless the new Treekeeper. Chants to the Black Between, wild cries, and shrieks of encouragement co-mingled into a joyful din. It seemed to resonate under Lellibrith's skin, making him want to sprint the final stretch to the Seed Pod.

He waved his raised hands, half in thanks and half in self-defense. Organic matter sprayed from every part of the crowd: wine, spittle, rice, hair, amaranth, fresh soil, whole fruits and potatoes. Outstretched hands smeared him with mud and blood and everything between. Blessing him with life.

He flew up the short, palm-leaf-soaked steps to the dais. His feet still felt springy and light as young branches, even after traversing the great length of the ship.

Sarai waited there, clad in white robes. In her permanently dirt-caked palms was a tiny silver pot, containing a dark green wisp capped by a squat bud.

“These have been passed down among my ship-daughters for generations.” Sarai handed him the orchid. “I have never given one to a son, but then, I have never raised a Treekeeper.”

Lellibrith beamed Sarai's pride back at her, slippery hands carefully cupping the pot. He loved the orchids, her frivolous little rebellion against the clan's demands for greenhouse efficiency.

An even more precious seedling waited in the pod behind Sarai, through the open door. It was barely taller than Lellibrith, encircled by a few leaves the size of dinner plates. Grown from a *kameala* motherseed, the kind that could only be found drifting randomly in deep space. The kind with unimaginable potential. One of the clan's last. So much hope to be tended by a single Treekeeper, but that was all the life support they could spare.

He started his goodbye speech, knowing this was the last he would see of these people. Of anyone, probably. They couldn't wait for him. They had to keep traveling, keep searching for a home. Even if—*when* he succeeded, they would have to wait for the mother tree to do her work.

Treekeeper Lellibrith had never felt the rain. He stood still as his shower blasted him with hot water from all angles, washing the encrusted sweat of weeks from his body. The orchid got its own shower too, the tiny gap slit in the pipe above it spraying warm mist, helping maintain its humidity.

Lellibrith killed the water with the press of a button and shook himself off. Hairless—permanently so, for easier upkeep—and naked, he strode across the habitat. The screen told him he had slept for most of the planet's day—a more common occurrence lately. Back when the tree was young and thriving and his nights were so much shorter, he used to spend all day on various projects: tinkering with the habitat or his equipment, imposing increasingly abstract ramblings on

a journal, drawing the sky or a single fold of a *kameala* leaf, painting. He hadn't painted in years, though. Not since he finished the mural.

He retrieved the leaf-needle from the airlock. Surprised to find his hands trembling, he held the tip over his beloved orchid. He had to do something, couldn't escape the feeling that letting it die would be the beginning of the end. As if that little white flower were the real seed of life on this planet. It had been here just as long as him and the tree, but it was the only one that had found a way to bloom. He loved it for that. Shutting his eyes, he squeezed tiniest droplet of bright green fertilizer from the needle's end into the pot.

Earth Hours Elapsed After Sunset: 10.5

Earth Hours Remaining Before Sunrise: 16.7

Lellibrith watched the leaves at sunset. Chewed his protein. Took his pills. Donned his suit. Flew up Main Street, and began to work, making good time. By the time he reached the upper canopy, he was dancing and twirling with the leaf needle between stitches, like he had seen someone dance with a cane in an old Earth film. He crouched and leapt over a sulfur hole, feeling unstoppable and weightless.

Until his suit failed again, and suddenly he felt very, very weighty. His arm banged into the hole's edge and the leaf-needle flew from his hand, caught on the wind like a child's toy. When he landed on the canopy layer below, his visor cut out and the breath was punched from his lungs.

He gasped, lungs scrabbling at the air, until some deeply ingrained, unconscious part of him took over. It calmed and slowed his breaths, gently coaxing the air back into him.

The ringing in his ears was replaced by the whine of his suit's leaking shoulder and knee joints, rattling up into his ears. He mentally begged his visor to kick back on, pulse rising every

second. He willed his gloved hand to move through the concrete soup of the air. It wouldn't budge. Every muscle in his body tried and failed to flail even an inch.

If only he hadn't gotten back so late and so drained last night. If only he wasn't a lazy failure and had fixed the suit anyway. If only he had just given up and left this evil rock years ago.

The antigrav would probably fail completely before he suffocated and he would be crushed into the flesh of the leaf, just another pattern in its folds. Or the stress would break the pressure seal and he would implode into powder, a speck of carbon returned to the atmosphere. Lellibrith strained again, wishing he could gather enough force in his lungs to scream.

As if on cue, a blood-curdling screech overpowered the whine of his suit. *What in the Black Between?*

Another moment of silence, and then a mighty gust of wind struck him and *rolled* him over, once, twice, and almost once more into a faceplant, but Lellibrith teetered and then stuck on his left side, trapping the leak of his suit against the leaf. He wouldn't process this until many hours later, but with the wind came the beating of wings. The albatross, returning? Or was it more like a vulture, claiming its carrion?

Whatever it was, it had saved his life. The leaf below him plugged his suit's leak, restoring his antigravity. Lellibrith yanked the sealant bottle from his belt and wildly sprayed his left side as he rolled over. For a moment he felt the planet's crush again, but then it lifted like an ocean rolling off his chest. He let out a garbled yell of relief.

But his visor was still dark. The leaf-needle was still lost. There was much to do.

Lellibrith rose to his hands and knees and felt along the leaf for the telltale direction of the veins that would guide him back to Main Street.

Earth Hours Elapsed After Sunset: 12.3

Earth Hours Remaining Before Sunrise: 15.7

Lellibrith stumbled into the airlock after an agonizing crawl back across the leaf and a lurching wire ride down Main Street. He beat the wall with his fists, syncopated, impatient. When the door finally burst open with a hiss, he threw his helmet off. He rushed to the workbench, pulling off the rest of his suit.

He fixed the visor easily enough by replacing a faulty data wire ruptured by the pressure. The suit he just had to bathe in another layer of sealant and hope against the Black Between that it would hold until he got back.

He was back in the lock and up to the leaves in less than an hour, eyes casting around for the glint of the needle in the ever-present storm. He searched to the edge of each of the layers below where he had fallen, heart sinking with his altitude after each disappointment. Had the wind carried it over the edge of the leaves, all the way to the surface? Without the needle, he might as well hack the tree to the ground. The sulfur cloud would shred her leaves to ribbons in days.

At the edge of the lowest canopy, he cursed and sprinted back to Main Street, checking his watch.

Earth Hours Elapsed After Sunset: 23.4

Earth Hours Remaining Before Sunrise: 3.8

Lellibrith's boots crunched onto the rocky surface at the bottom of Main Street. For once, he didn't turn to the hatch leading down into the root reservoir. He turned outward to face smoking yellow scree and jumped off.

Lellibrith moved in painfully slow concentric circles around the trunk, the air growing murky and black as he traveled farther from the tree's effects. The ravines and craters yawning from this relative darkness also slowed his path, even as he started desperately stringing blind jumps together. With each jump, each tense and release of his cramping calf muscles, his hope dwindled. He could feel the ground heating up through his soles.

Earth Hours Elapsed After Sunset: 26.4

Earth Hours Remaining Before Sunrise: .8

A tall, rocky spire jutted through the flickering film reel of his exhausted vision. He pushed off in that direction, further from the *kameala* tree now than he had ever been. He didn't need to glance down at his watch to know the night was almost up. The horizon was starting to glow.

Scrabbled handhold after scrubbed handhold, Lellibrith pulled himself up the rock face, his spring-boots useless on the vertical surface. He didn't bother with footholds. Finally, he heaved himself onto the top of the spire and forced his gaze down over the ground instead of out toward the growing sun-glow. He could feel sweat pooling in his suit.

"Come on, come on, come on," he muttered to himself as he turned in place, trying to see into every rocky crevice. There! Something gleamed silver, stuck between two rocks, a couple hundred feet away.

Lellibrith half-fell, half-climbed down the hot spire. When he landed, he heard a hiss and looked up to see a tiny dot of melting black sealant left behind on the rock, sizzling.

Earth Hours Elapsed After Sunset: 26.8

Earth Hours Remaining Before Sunrise: .4

Lellibrith nearly fell on the worn handle of the leaf-needle. He reached to pull it from the sickly yellow rock. And it didn't budge. He gave a ragged roar, planted one foot on the rock, and heaved with all his strength. And it still didn't budge. He slumped forward, vision spinning. If he just lied down here, just took a little nap, he could let the sun take him and this would all be over. *One more try, for the road*, he thought, gripping the handle again. He gave it everything, throwing his whole weight back onto the ground. Something shifted between the boulders and the needle came loose, glinting in the pre-dawn light.

His suit was hot now, its lining almost burning his skin. Lellibrith stood up and turned, fixed the looming *kameala* tree in his sights, and *ran*.

By the time he got back to Main Street, blackness crept at the edges of his vision and his body felt suspended in hot sand. He smelled burnt-plastic smoke rising in his suit.

He rode the cable up, up, watching it start to glow red, wondering if his skin was doing the same. He looked out from the trunk during his ascent and, for the first time, Treekeeper Lellibrith saw the sunrise. And then he tumbled into the airlock hatch, skin still burning, burning, and he ripped his suit off and left it in a steaming pile as the inner door opened and cool air doused him. He took two steps towards the shower and passed out.

20 Years Ago

Growling, Lellibrith threw his whole body back as he heaved on the leaf-needle. Instead of closing the stubborn stitch in the leaf, it broke free with a hiss from the loose fold where he had planted it. Lellibrith tumbled, bumping his suit's elbow, butt, shoulder, helmet, chest, elbow again, each impact more bruising than the last, all the while trussing himself in glowing green thread. He felt the final punch of the outer lip of the leaf, and then a second of gut-lurching freefall. Then the world disappeared as he faceplanted on a shiny black floor.

Lellibrith rolled over onto his back, staring up at the bulbs of the projectors on the ceiling of the simulation room.

He was hopeless. He knew it. Sarai knew it. He wasn't even bred to be a Laborer, much less a Treekeeper. He felt the walls of the sim room crushing him, squeezed by the layers and layers of spaceship like so many nested tin cans, vacuum-packed with people just carrying their genetic torch until the next Treekeeper succeeded. Lellibrith, a residual speck of rust on the boots of whatever distant generation gulped the clan's first fresh air. Or choked on space when their ship finally failed, claimed by the Black Between.

"You didn't properly plant the needle." Sarai's voice sounded even more disappointed through the flat speaker audio. She was running the simulation for him while one of her apprentices tended the greenhouse. "Go again."

The ceiling faded back into the ridges of the simulated *kameala* canopy, and the would-be Treekeeper scrambled to his feet. He spared a look out to the awesome auto-generated landscape, with red canyons lacing out to the grey-blue horizon. Was that really what a planet looked like? He had to know, had to see it for himself. Anything was better than living and dying and being forgotten in the same tin can.

There was much to do.

Lellibrith pried his head from the floor and found himself face-to-face with the orchid. Its leaves curled into crispy brown husks and its stem drooped to the soil. The fertilizer had killed it. He had killed it.

He wanted to rush over and try something, anything to save it. Instead, he yanked his gaze to the clock on the wall, scratching the flower's image from his head. The tree needed him more, now. That was all that mattered.

He set to work feverishly re-welding the suit. His hands shook, and twice he had to start over. He couldn't take his mind off the dead flower, and the unsealed holes now burning in the leaves, and how the slight swaying of the tree through the walls didn't feel right.

Before sunset, he stumbled to the workshop and picked up the tiny tin box. For the first time in years, he flicked open the lid. It contained a red button and three red block letters: 'SOS.' It also contained a green button and seven green block letters: 'SUCCESS.'

The SUCCESS button would signal a satellite to message his people: come to your new home. Come breathe the air I made for you.

The SOS button would attempt to spoof such a signal, to trick other clans into coming to claim the planet. Too old of a trick to work anymore, it was now a universal shorthand for "have pressure suit, will travel." Most likely, some spacefarers would pick him up, strip his habitat, and put him to work. Treekeepers were one of the few classes of human still more valuable alive than dead.

The satellite could only send two types of signal. It could not receive.

Lellibrith walked to the center of the habitat and clutched the box with a death grip as he watched the *kameala* leaves unfurl. Nothing but a ragged mess of sulfur holes.

Each breath seemed to draw the walls of the habitat tighter to him, a can scrunching in a fist.

Nothing's changed, he thought. I'm fine. I can fix this. The tree will be fine. That's all that matters. He slammed the lid closed and returned the box to its place on the shelf. There was much to do.

Lellibrith spent all of that night patching the leaves. As he worked, he couldn't keep his thoughts from wandering, or his eyes from straying to search the sky for—for what? For native birds? It seemed impossible, but the universe was full of impossible things—like the *kameala* seeds. What right did he have to land with miles of cellulose and metal and try to fix the world in his image? Would the colonists land on the shores of Lellibrith only to find a sea of dead albatrosses?

He made it back in time to gulp the dregs of moonshine from his still. He added the orchid corpse to the yeasty mash fermenting for the next round. Then he slept.

Earth Hours Elapsed After Sunset: 19.5

Earth Hours Remaining Before Sunrise: 7.7

Lellibrith finally made it back to C-312 the next night, two days that felt like years since his first visit. Just as he readied the kinetic array, he noticed the letters etched in the rock. Lellibrith slammed the STOP button, nudging the Mole down towards the slab. He used the Mole's drill to carve out the dirt in front of it, revealing the entire message. It was written in five different languages, only one of which he recognized:

I have been told not to leave any trace. They will kill my tree and scour its roots from the ground when they take me away. Let the other clans waste their time on this rock too, they'll say. But I will do what I can to see that another Treekeeper does not waste their life here. I'm sorry, but if you're reading this, the planet you've landed on wants to stay dead.

Beneath the message was a signature and a range of dates, written in an unknown script.

Lellibrith reacted without thinking. The kinetic array fired. A white-hot nodule shot from the mouth of the Mole, penetrating the granite and slowly melting it from within. The brown arch of the *kameala* root peeked out from behind the cooling magma, seeking deeper and deeper into the ashy soil.

After watching the fireworks, Lellibrith turned the Mole around and headed back up the tunnel towards the surface. The various controls of his dashboard faded into just two buttons. One green, one red. Two options: stay or leave.

The message could have been faked, somehow. Unlikely, but possible.

We may never understand exactly how or why kamealas bloom. Just because theirs failed doesn't mean mine will. True, but unlikely.

We make choices every day, even if we don't think about them, even if they aren't really choices at all. Sarai's words, again.

Lellibrith thought about the enormity of the organism that towered miles above where he rattled antlike through the dirt. He thought about how it felt when he sensed her ache, when he healed her wounds. He thought about the feeling of looking out from the tree and seeing the swirling walls of smoke and knowing there was more *stuff* behind them, that they just kept going and going, not endless but enormous and *real*. He thought about how he used to look at the stars, all that empty space between them. He thought about the pounding in his chest when he snuck out of studying amaranth varieties in the greenhouse to practice Treekeeping in the sim room, the giddy smiles exchanged with Sarai when she noticed and started helping him. He thought about the albatross and realized he wanted to see it again. Maybe tomorrow night he would leave the

tree a little early and go exploring. And then he realized he was already thinking about tomorrow as if he would still be here.

On his way back, Lellibrith stayed clipped into Main Street, taking it up to the first canopy. He stuck his needle in the first gap he found, delighting in the watery crunch. Then he jumped across, loving wind whistling around him and the free-floating feel of it. He landed, stabbed, spun, landed, stabbed, spun, knitting the leaf back together, listening to the thankful groan of its flesh. There was much to do, but for now he would enjoy doing this one thing.

He wanted a drink, but the moonshine had only just begun to boil.

Lellibrith sat under the light from the screen, rewinding the Erasmus video over and over, listening to Rachmaninoff's Concerto #2. What had it been like to live in a place where they had time and energy to make things so beautiful?

In his palm sat the box with the buttons. Before going to bed, he placed them by his bedside, where the orchid stood watch for so many years.

He would not send the SOS tonight. Perhaps tomorrow.

The *kameala* tree would not bloom tonight. Perhaps tomorrow.

Carrying the Flame

They reached the carbon cave at sunset.

Sylvie drove their battered white truck as it rattled up the hill. The last of the shot-out glass clinked loose from the rear window, and the silver bear hanging from the rearview mirror danced a jig. From the passenger seat, Leo gripped Sylvie's shoulder with one hand and cupped the precious glass candle flickering on the dashboard with the other. They felt tired and tense and excited—filaments hammered thin, ready for a current.

A derelict oil derrick marked the entrance to the cave. From the tower's uppermost platform sprouted an enormous radio antenna. From its sides, layers of streamers and flags of every color and size flickered together like flames. The flags were covered in small black lines. As they got closer, Leo and Sylvie realized the lines were words. Beneath the tower, the tip of a red ladder poked from the sunbaked rocks.

They stopped in front of the derrick. Leo grabbed the bear necklace and put it around his neck. Sylvie took the candle with her. It carried a faint cinnamon aroma that neither of them noticed anymore. Together, they stepped out into the hot amber night.

A person with bright sulfur-yellow hair—the same shade as Leo's, dye distilled from the chemicals in the acid rain—hopped down from their perch on the derrick's wire frame. In a slow, metallic hum of a voice, somewhere between the low notes of a harmonica and the high notes of whalesong, they introduced themselves as the chronicler of the cave. They wore a bulky white backpack.

Leo met Sylvie's wide eyes. Neither could believe they were finally hearing such a voice in person.

"And you are?" the chronicler asked.

"I'm Sylvie, and this is Leo."

“Welcome, Sylvie and Leo. Do you intend to join us?”

“We do.” Sylvie passed him the candle. “And we brought you your silly little candle.”

“The flame of our crossing.” Leo corrected Sylvie. “We kept it burning from the moment we started driving.”

“Please, keep that,” said the chronicler. “All I ask from you is your story.”

“Our story?” said Sylvie. “Well we traveled halfway across the state of Washington and now we just want somewhere safe to eat and sleep.”

“Not how you got here.” The chronicler remained impassive. “Where you came from. Why you’re here.”

“I thought you accepted everyone,” said Leo.

“We do,” replied the chronicler. “Everyone has a story. If you do not have a story, you are not yourself yet, and you are not ready for the surgery. Ready to join us.”

Sylvie bristled, but Leo touched her arm gently. “You’re just making sure we’re not some stupid kids doing this on a dare, right?” he asked.

“Is that who you are?” the chronicler asked. “No!” Leo and Sylvie replied in unison. The chronicler opened their backpack, took out a blank flag and a hand-whittled pen dipped in black ink and began to write.

#

We’re from Mt. Albington, up in the Skagit Valley, just south of the border wall. It’s safe up there, relatively speaking. These days, at least. All we have to worry about are the occasional malfunctioning border sentries that wander too far south and swoop down to take potshots at us for trespassing on our own land. Everyone with a human brain knows we’re too small and subsistence-based to pose as a threat or a worthwhile target.

Before Canada locked the border down, though, it was a chaotic eddy in the tide of the Great Northern Migration. I'm too young to remember that time, but it left behind artifacts that seemed to tug at the edge of my earliest memories. Crumbling forts and trenches and hastily constructed pallet walls that we still haven't torn down. Ruts in the fields that won't go away, no matter how many times we till them. Microplastics and heavy metals from their packing materials and propane from their camp stoves that leached into our groundwater and still force us to triple-filter it. They left us with useful things, too. Without the emigrants' labor, exchanged for warm meals and places to sleep, we could have never built the dikes and the moats, and Mt. Albington would just be another sunken corner of the flood plain.

But even more than they left behind, they took. Took my dad, one night when I was two years old. He was the real doctor, the surgeon—my mom was only trained as a physical therapist. Now she's a better surgeon than he ever was. Took Sylvie's mom, too. The engineer. Anyone with a certificate or a job title that could get them a visa. I guess it worked—we never saw them again.

In spite of everything, I think my mom misses those days. Back then, she says, you met a city's worth of new people every day. Oregonians and Californians and Nevadans and Mexicans. She loves telling me about the strange totems they brought with them, lugged cross-country in station wagons and RVs and repurposed city buses. Racks of neon surfboards and ski equipment, barrels of wine, garden boxes. In the winter, Christmas trees. In the summer, barbecues. One family of four packed into a beat-up Honda Civic with a giant statue of the Virgin Mary strapped to the roof. I hope she protected them from the sentries.

Mom kept right on running the clinic with Dad, treating cholera and heatstroke and gunshot wounds and everything in between, even after the flood of refugees dried up and it was just the small, fractured families that stayed behind.

#

I'll always remember the day I told her I wanted to go.

"I can't believe my only son has joined a death cult," she said.

I sat on the back porch, across from her at the wicker table. It was early summer, so the sky was more blue than smoky grey, but the mesh air filters still hung from the awning. They did nothing to keep out the afternoon heat.

"It's not a death cult. If anything, it's a life cult. People who actually care about their place in the nearly infinite sea of other life on this planet."

My mom arched a copper-colored eyebrow. "Are those your words, or theirs?"

"Mine." It was true, and I had the poetic manifesto in my journal upstairs to prove it.

"Notice how you're still calling it a cult, though?" she pressed.

"It's not some kind of scam, okay? Most of them—us—don't have any money to steal even if they wanted to."

"Yeah, you're all young and dumb and broke, I get it. I've been there. But I got through that phase without throwing my life away. And I think I still did some good for the world." She fiddled with the silver bear necklace on her chest, given to her by an old patient who she refused to talk about.

A pair of chickadees landed on a branch of our withering cherry tree.

"You did, Mom! You do, with the clinic and everything. Like I said, it's not about that."

"Then what it is it about?" she asked, taking a loud sip from her tea.

#

“What *do* you think it’s about, here?” the chronicler asked.

Leo opened his mouth, but Sylvie jumped in.

#

Dad always said the radio made him feel like he was in a TV show about the 1940s, like everything was stuck in some 100-year cycle. He had to explain to me what a TV show was.

Leo and I loved to listen to the radio growing up. Even after the big Seattle stations went dead, there was always someone ranting or rambling. You just had to find the right frequency. We used to spend weeks scavenging for batteries. Got in so much trouble for going near the highway.

One night, I remember it so vividly, we were sitting on the roof of the barn, looking up at the stars. It was late, and we were freezing, and we were about to climb down and go our separate ways, when Leo tuned to your channel. It was your all-night choir, voices humming and buzzing all beautiful and creepy like y’all do. I thought it was interference, but Leo grabbed my hand before I could switch it off.

“Listen,” he said. And we did. Straight through ‘til the sunrise, mesmerized like my dad and his stoner friends listening to old records.

And then someone came on and started talking about the carbon caves. About giving to the world instead of taking. About storing carbon with every breath, sticking it back into the very ground it had been stolen from. About a community of people who all agreed that was the only beautiful way a person could live, anymore.

#

“I guess I never really bought it until just now,” said Sylvie. “Still think the candle is silly, though.”

They stood in silence for several seconds.

“How did you get the signal all the way out west?” Leo interrupted. “Not that it was crystal clear, but...”

The chronicler laughed—a jangly thrum, like a windchime made of guitar strings. “We have our connections. I think the closest station to Mt. Albington would be in Everett. You probably drove right past it.”

The travelers shuddered at the mention of Everett.

“We barely made it through there,” said Leo. “Your people must be very brave.”

“That’s the thing about the surgery,” said the chronicler, voice humming into a lower octave. “It makes you brave. There’s something about feeling every breath catch in your lungs, bringing you a little closer to death.”

“My mom thinks its cowardly,” said Leo.

#

“You know they invented the surgery for cattle, right?” my mom asked, setting her mug of tea back down. It had a bear in a military hat on it, pointing at me. Some kind of outdated propaganda; she explained it to me once, but I forget the details.

“Well, actually it’s a different metal organic framework, that one’s for methane.”

“You’ve seen Sylvie’s dad’s cough, how he comes into the clinic, hacking away. Do you want that for the rest of your life?”

“Well I don’t want this!” I waved my arm at nothing in particular. “I don’t want to keep scraping by, behind our air filters and our moats, each day getting a little bit worse. Turning

outsiders away because we can barely feed ourselves.” I’m ashamed at how good it felt to vent that at her. I felt full of friction and fuel, as if I could burst into flame at any moment.

“You think they don’t know that? You think they aren’t manipulating that?”

“That’s the old world talking through you, Mom. That world burned, is burning.”

“Oh is that what they’re preaching now? How poetic. How lovely that they’ve fixed human nature for all of us.”

I stood up, chair scraping on the dry wood of the deck. “Don’t you see that I have to do this? That I have to try?”

“Don’t sacrifice yourself for someone else’s mistakes.” Mom squeezed the arms of her chair. “That’s how they get you. Our parents and our teachers and random people at the grocery store always told us it was up to us, no pressure, but it was up to us to save the world. Sometimes it was a joke, and sometimes it was a warning, but they all kept saying it. And they sold us our *carbon footprints* and our *lifestyle choices*—and we bought it all, even though all the buying was the real problem. We failed. And now they’re trying to sell the same thing to you. It’s a cop-out.”

“It’s the opposite,” I said. “It’s a leap of faith.”

“Well, whatever it is I can’t afford it. Too many people here to help. And I’m not letting them put that shit in your lungs. I need your help, too.”

“But you could help there too, so much more! It’s a whole community, a whole underground city, not just a few mostly healthy families!”

“Do you want Sylvie’s dad to die? He will, without me.”

“He wants us to go, Mom.”

She threw up her hands.

#

“It’s true,” Sylvie said. “He liked the broadcasts. Didn’t want to keep me in Mt. Albington. He would have come too if he thought he could make the trip.”

#

The day before we left, I took him for one last drive in the truck. He told me to drive north, which had always been forbidden. As we bumped over the drawbridge out to the muddy road, he told me he wanted me to see the border.

“The border!” I said. “Finally! Did you find a gap in the sentries?”

“Nah, and we probably never will,” said my dad. “But I want you to see it.”

“But is it safe?”

He smiled. “Nope! But neither is driving out east to those carbon nuts, and I guess you’re old enough for both.”

He shoved his beloved Adele into the CD player, and we both sang along as we drove towards Canada, dodging potholes and abandoned cars on the ruined highway.

Forty minutes later, “Set Fire to the Rain” blasting through the speakers, I pulled to a stop at the top of a rise in the road. My dad shut the radio off.

The road ahead was a mangled, twisted mess of crashed cars. In the distance, sleek grey shapes circled the sky in an endlessly flowing double helix. Sentries. The air buzzed metallicly.

“There’s so many of them!” Sylvie exclaimed.

“Yeah,” said my dad. “I think this is close enough.”

“I think so too.” I laughed nervously.

My dad pointed out the window. “Do you see that big white hump, way down the road?”

I squinted. There was definitely *something* there, in the center of the lawn strewn with—well, things that don’t bear repeating. “I think so.”

“That’s the Peace Arch. On the inside, it says “May These Gates Never Be Closed.” He laughed so hard he started coughing. “Guess the arch is still wide open! But this is what I wanted to show you. The cost of what all us old folk couldn’t stop doing. The cost of walls. Even the ones around Mt. Albington.”

“Oh yeah, because turning away a couple stragglers is equivalent to this genocide,” I said.

“It wasn’t always just a couple stragglers. I wonder how many of them died up here.” He took a deep breath. “This is why I’m so happy about you going somewhere that still lets folks in.”

#

Leo stared at the rocky ground, his cheeks streaming. “We had to leave them both.” He held up the silver bear necklace. “I found this in the glove box after we made it out of Everett. I guess she knew all along. I wish I’d said goodbye.”

“That’s ok,” the chronicler trilled. “It’s all a part of the story now.” They rolled their flag, now packed tight with words in a flowing script, into a scroll. “Let’s get you inside. There’s much to do.”