

1: The Twilight Zone

The sterile white laboratory hummed with centrifuges, computers, and a system of devices built within the walls to maintain the internal atmosphere. The air's oxygen levels, the atmospheric pressure, and the temperature were constantly maintained via the gentle draft wafting from the room's filtration systems. A man and a woman, both young, worked together examining samples through a microscope and taking notes. Both wore blue rubber gloves, thick plastic safety glasses, and white lab coats embroidered with the words *Lemuria Research Facility* on the upper right breast. Pins were attached just below the embroidery on their coats, displaying each of their names. *Ginger* and *Malachi*.

"How was your walk outside yesterday?" Malachi's face rose from his diligent notes as he offered the young woman a grin. His dark skin contrasted with his white teeth, casting his smile all the brighter. They were poised across from each other with the work spread across a tall shared table.

Ginger frowned as she leaned back on her stool. She turned off the microscope she'd been using and placed the slide back in its box, apparently finished. Ginger flipped the bangs of her short sandy brown hair out of her eyes with a jerk of her head as her eyes grew glassy. She seemed to look somewhere over Malachi's shoulder rather than at his face.

"It was creepy," Ginger admitted with a small shudder. She shook out her hands as though flicking something nasty off her fingertips. "It was beautiful, don't get me wrong, but it was beautiful in a kinda horrifying way. It was hard to move in the atmospheric suit, and it was really cold and dark. The muffled water sounds were... eerie. I'm not usually claustrophobic, but I thought I was going to hyperventilate before the half hour was over."

"Did you?" Malachi's warm low voice chuckled as his grin grew knowingly. "I thought I would have heard about it if the new kid started hyperventilating on her first dive."

"No, I didn't actually." Ginger's eyes rolled behind the plastic glasses. "I held myself together."

"If you were claustrophobic, why would you want to co-op in Lemuria?"

“I’m not claustrophobic, really. It’s just that that aluminum suit made everything stiff and muffled. I tried not to think of it like being in a coffin at the time, but the idea crossed my mind since. I’m used to looking up at the starry night sky, not at the dark heavy ocean.”

Malachi waved an easy gloved hand at her melodrama. “Did you see any fish? Maybe some of the bioluminescent stuff?”

“Yeah.” Ginger nodded and met Malachi’s gaze as her eyes refocused. “A whole school of those thin yellow glowing fish passed us by. Actually, most of the fish we saw were really thin. It made them hard to notice, so Jim had to point out a lot of them for me. The coral was cool, too. Once we moved a little way out from the facility and turned down our lights more stuff started glowing. Remind me, how deep are we here? We’re in the twilight zone, right?”

Malachi nodded, then composed his face and stood straighter as he intoned dramatically, ““It is the middle ground between light and shadow, between science and superstition, and it lies between the pit of a man’s fears and the summit of his knowledge. This is the dimension of imagination. It is an area which we call *the Twilight Zone*.””

“Rod Serling would be proud.”

“It’s also called the mesopelagic zone.” Malachi’s grin returned as he resettled over his pile of notes on the high table. He was tall enough that he could work easily on the high surface while standing, instead of perching atop one of the narrow stools like the one Ginger was using. “We’re about three hundred meters down. Did you get the chance to look up this part of the ocean before you got here?”

“Not as much as I meant to, since it seemed like the co-op department was going to cancel my descent once you got your extension approved for a second quarter. They changed their minds at the last minute so I could be here after all, but by then I was dealing with finals.” The two students shared a knowing look of camaraderie over the chaotic inner workings of Antioch College. “And, to be honest, I was a little surprised I was considered for this co-op at all. I wanted to be here because it sounded amazing, but my self-design major is a mix of astronomy and astrophysics.”

Malachi beamed. “Well, since my major is marine biology, allow me to enlighten you! While you were walking around outside, did you notice any plant life?”

Ginger narrowed her eyes, suspicious of a trick question. “Do coral count as plants?”

“No, coral are invertebrates. Kingdom Animalia. You should know that.”

“Forget I asked. I guess I didn’t see any plants out there then, now that you mention it.”

“That,” Malachi declared with a lecturing pointed finger. “Is because photosynthesis-based life can’t survive down here in the twilight zone. *Some* sunlight reaches here, to a point, but not enough for plants to live off of.”

A furrow crossed Ginger’s pale freckled brow. “Then, what do all the fish eat?”

“Each other.”

Malachi laughed as Ginger’s expression blanched, and he elaborated, “*Or* sometimes plants will sink down here from from the epipelagic zone, and they’ll eat that.”

“But, I thought we had plant samples here to work with.” Ginger gestured toward a tall cabinet against the wall that was full of biological samples.

“Where?”

She slid off the stool, and lead Malachi across the room to the cabinet. She pulled open the doors and indicated several small glass cylinders full of green and red gooey clumps.

“*Oh*, I see what you mean.” Malachi pulled a handful of the samples from the shelf without hesitation. He examined them one at a time, lifting them to the light before handing each to Ginger. She fumbled precariously upon finding that her hands, which were smaller than Malachi’s, couldn’t hold as many containers at a time as he could. She slipped a few into the pocket of her lab coat as he kept examining and then handing her more.

“These are all algae,” Malachi explained. “The doc was doing some experiments with this stuff recently. I think he was trying to see how it would grow in different extreme environments.”

He was about to elaborate before both students startled at the clicking sound of the laboratory door opening. Ginger took a flustered step back from the cabinet, her hands still precariously full.

“Malachi? Miss Reynolds?” The face of Doctor Thomas Tolbert appeared through the gap in the doorway. His bushy grey eyebrows lifted behind his round glasses as he spotted them and entered the lab.

“You can just call me Ginger, Doctor Tolbert,” Ginger said. Malachi placed the last cylinder he’d been holding back on the shelf and met the ex-Antioch professor halfway across the room. Ginger hurried to return all the samples without dropping any before joining them.

“Then you can just call me Doctor Tom,” the doctor told her brightly. He was dressed semi-casually for work in comfortable shoes, with a blue checkered shirt tucked in neatly. He seemed to have discarded his lab coat at some point in the morning. “I’m here with good news. Malachi, I talked the director into letting you join the first surface expedition.”

“What? Really?” Malachi’s jaw dropped as his eyes rounded. Ginger glanced rapidly back and forth between the two men, uncomprehending. The doctor noticed her expression and elaborated for her sake.

“The building of Lemuria has been a scientific breakthrough for study and discovery, but there is a reason that the facility was built in this specific location. Come, both of you,” he gestured toward the door. “I’ll explain while we walk.”

On the way out the students deposited their safety glasses and gloves into the appropriate bins. Doctor Tom led them at a brisk pace around a corner, and along a series of wide corridors which lead from the West Biome to the South Biome. They nodded to the facility’s other staff as they passed. Doctor Tom asked, “Ginger, what do you know about the earth’s geomagnetic field?”

“Uh... it’s generated by the earth’s molten iron core. Electric currents are generated by the convection currents between the inner and outer core in a process called geodynamo, which creates the magnetic field, which shields the earth from solar wind.”

Ginger had to stretch her legs to keep up with the two men, who were both taller than her. Malachi walked at the easiest pace on long legs with his hands in his pockets, clearly accustomed to following around the hurried doctor. The chorus of their tapping, squeaking footsteps fell through the halls in chaotic staccato.

“Very good!” Doctor Tom declared approvingly. “Now, have you heard of the x-point portals that appear when the earth’s magnetic field connects with the magnetic field of the sun?”

“Uh, I think so.”

“And you’re familiar with Einstein’s theory of relativity?”

“Yes.”

“String theory? Quantum mechanics?”

“Um, yes....”

“Do you watch Doctor Who?”

Ginger snorted. “Yeah, but I haven’t seen the latest season yet.”

Doctor Tom beamed. “What do you think about the theory that faster than light travel may allow us to time travel into the past?”

“I’ve heard about it,” she said doubtfully. “But it’s a class two impossibility. It *might* be possible, but if so it would take millenia for us to understand how and why.”

The three entered a very long corridor. It stretched almost twenty meters, mostly straight, without doors or branching halls on either side. There were signs distributed evenly apart on walls with arrows indicating “W” in the direction behind them and “S” in the direction ahead.

“Hey, Doc,” Malachi interjected, expression abruptly uncomfortable. “I hate to bring it up, but isn’t this supposed to be secret? I thought we didn’t share this with newcomers.”

“What, the time portal?” Doctor Tom replied brazenly.

Malachi winced and shot Ginger an apologetic glance. “Yeah. That.”

The doctor’s grin was mischievous. “Why do you think Antioch sent me an astrophysics major?”

Malachi was laughing outright at Ginger’s skeptical disbelief by the time they entered the restricted zone of the South Biome. Malachi and Doctor Tom had taken turns explaining the condensed science, mechanics, and compiled evidence of the time portal’s existence. She still hadn’t been entirely persuaded that they weren’t attempting to prank her when they passed through a series of compression chambers with thick metal doors that slid sideways to open, then sealed with automatic firmness behind them. Finally, they entered a great open cavern of a room with a ramp that descended into a square patch of the ocean.

The water was dark, and mostly empty aside from a few submarine-type vessels which bobbed in a neat line near the ramp. A team was preparing two of these vessels with equipment

and supplies for an expedition. Doctor Tom turned to the students before they could proceed any further.

“Before we meet the director in the control room, I must clarify some things,” he said gravely.

Malachi seemed to quiver with suppressed glee. Ginger’s eyes were unblinking as she listened attentively.

“First, the time portal is real,” the doctor said. “We started by sending equipment and sensors through it and back, and later we sent three different expedition teams in the ultra-deep pod vessels. Everyone who has traveled through the portal has returned safely. We’ve even recorded sea life traveling to and from the portal in the open ocean.

“Second, the portal leads to a time on Earth that exists *billions* of years in the past. We have reason to believe that Earth on the other side of the portal even predates our oxygen-rich environment. Each expedition we’ve sent has traveled a little farther than the last, but this is the first team that will rise all the way to the surface of the ocean on the other side. The people on this team will be the first humans to witness Earth’s sky billions of years ago. We’re sending two pods, and we will be maintaining radio contact at all times via a chain of transponders through the portal and along the planned route of the ascent.”

By now Malachi wasn’t able to entirely contain his excitement. He was bouncing on the balls of his feet, and his smile was so wide it seemed as though the muscles in his cheeks might spasm. His eyes flitted back and forth between Doctor Tom and team preparing the expedition vessels in the water. The energy was catching, and Ginger had started wringing her hands while her attention was fixated on the ex-Antioch professor.

“Finally, Ginger,” he said. “You have a decision to make. The director has agreed to let you join the expedition too, as long as I accompany you and Malachi on the team. Otherwise, you and I will join the observation team here in studying the portal’s activity, the data being sent back to us, and monitoring the expedition’s progress from this side of the portal. You’d be able to learn with the rest of us in real time as we study and analyze any possible time-space phenomenon while the pods travel farther through the other side of the portal than they have before. History is being made both billions of years ago and in the present day, so either

opportunity is significant. I know that this is very sudden and things are moving quickly, but you only have a short time before you have to decide. You can join the expedition through the time portal to the surface of the ocean, or you can remain here and study the time portal itself. Think about it for a few minutes, and come back to me.”

[**2A: Join the expedition through the time portal.**](#)

[**2B: Stay behind and study the time portal.**](#)