



The Time Dilated Generations

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Chapter 16: The Second Great Filter



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Humanity has always defied the impossible. When faced with extinction, when all paths seemed to lead to oblivion, they did what they had always done best—adapt, innovate, and survive.

The gravitational cataclysm that had once threatened to extinguish life on Rigel One should have been the end. For an entire year, the planet's already fragile habitable zone would be plunged into a deep freeze, turning any efforts at terraforming into nothing more than fleeting dreams. No crops would survive, no forests could take root, and no wildlife could endure the planet's merciless slumber. The very notion of colonization seemed doomed to failure.

And yet, the settlers refused to surrender.

Through decades of relentless research, they discovered a way forward. The answer lay not in resistance—but in adaptation.

Scientists engineered an entire biome of flora capable of hibernation on demand. By synthesizing a biochemical compound that could be dispersed across the landscape, they created a mechanism to trigger a planetary-wide dormancy, allowing vegetation to withstand the deadly year-long winter. This breakthrough transformed the cataclysm from an extinction event into a mere seasonal cycle—one that could be prepared for, endured, and ultimately conquered.



The event became known as The Year of Hibernation.

Humanity adapted to its rhythm, much like Earth's civilizations had once prepared for harsh winters or monsoon seasons. In the years leading up to hibernation, food stores were stockpiled, energy reserves were bolstered, and economic activity slowed to a crawl. The long, cold year became a time of reflection, a period of stillness amid the perpetual motion of survival.

Religious institutions, which had gradually woven themselves into the fabric of society, embraced the cycle as a sacred test of endurance and self-examination. The faithful observed it as a time of atonement, a year-long confession where humanity was forced to reflect on its past and prepare for its future.

By the time the settlers perfected the hibernation protocol, only Albert Wolfe remained from the original landing crew. He had lived to witness humanity's triumph, but his heart carried the weight of loss.

The mission had been a success, but time had claimed its toll. Donna Cruz, once the fearless leader of the first planetary expedition, had passed away peacefully in her sleep just two years before the research was completed. She had lived to seventy-six, a lifetime shaped by struggle, resilience, and love.



She and Albert had married not long after their first victory over the cataclysm. Having faced death together, Donna no longer saw any reason to deny what she had always known—Albert had been her anchor, her unwavering constant. Together, they built a family, raising two children who became their legacy, their proof that humanity could thrive beyond Earth.

They had sacrificed everything to ensure the survival of future generations. And as Albert gazed upon the thriving world they had helped shape, he knew they had no regrets.

Once the settlers were assured that long-term habitation bore no fatal consequences, progress surged forward at a staggering pace. Within sixty years, the twilight zone of Rigel One was lined with vast hydroponic fields, each one a step toward building a breathable atmosphere.

The advanced Zelthane-based structures and the abundance of newly cultivated resources accelerated the growth of civilization. Cities rose where barren land had once stretched endlessly. The limits of human ambition had been lifted, and for the first time since leaving Earth, the settlers dreamed without restraint.



By the time the first century had passed, the restrictions on birth rates were lifted. Colonization was no longer a struggle for survival—it was a race toward prosperity. Families were encouraged to grow, and in turn, so did the population.

From an initial settlement of a few hundred, their numbers surged to twenty thousand and continued to rise exponentially.

The once-crucial space station orbiting Rigel One gradually emptied, its population dwindling as more people took the one-way journey to the surface. Only a skeleton crew of fifty remained, maintaining the station as a silent guardian watching over the planet below.

It would take two more centuries before humanity developed the colossal rocket systems needed to escape the planet's 1.3x Earth gravity and re-establish a rotational crew between the surface and orbit. By then, the space station had evolved into an archive of knowledge, a testament to the journey that had begun centuries before.

Another two centuries passed, marking the three-hundredth anniversary of humanity's arrival. It was then that they achieved what had once seemed impossible—a fully breathable atmosphere.



For the first time since leaving Earth, settlers walked beneath an open sky without the weight of life-support systems. The planet had transformed into a second home.

Freedom brought rapid expansion. Over the next two centuries, settlements spread across every habitable stretch of the twilight zone, turning the thin belt of perpetual dusk into a vast and thriving civilization. The population exploded from two million to six hundred million within mere generations.

By the five-hundredth anniversary, the settlers of Rigel One had accomplished their ultimate goal.

They had rebuilt society, not just as it was—but as it was meant to be.

A civilization where all dreams could come true.

For the tenth time, Samuel Torres checked the results. His hands trembled as he re-ran the calculations, combed through the data, and cross-checked every variable. He had spent a month tirelessly searching for an error, a glitch—any rational explanation that could disprove what he had found. He wanted to be wrong.



But the evidence was undeniable.

For centuries, humanity had unknowingly been poisoning itself. The culprit? The very material that had made life on Rigel One possible—the so-called miracle substance, Zelthane.

The year was 560 A.R. (After Rigel arrival), and Samuel Torres had been leading a pioneering project—one that promised to reshape the future of human colonization.

The twilight zone of Rigel One was nearly fully settled, and expansion into the extreme temperature regions—the scorching heat of the day-side and the subzero wastelands of the night-side—had become the next great challenge.

Samuel, an expert in nanobot medical restoration technology, had devised a revolutionary solution: a swarm of nanobots that could repair cellular damage from extreme heat and radiation. His research had caught the attention of the government, securing him a massive grant, and soon after, he had found another key backer—Shynra Corp, the undisputed giant of the planet's economy.

Shynra's interest wasn't purely scientific. The corporation controlled the vast Zelthane mines of Rigel One, and orbital scans had detected untapped deposits in regions far too hot for human workers. If Samuel's project succeeded, Shynra Corp would gain access to resources beyond their current reach.



For Samuel, however, the project had been about something bigger. It was about pushing the boundaries of human survival. He had been given a dream laboratory, cutting-edge technology, and a handpicked team of the best minds on the planet. The funding seemed endless, and the possibilities were limitless.

Until his dream turned into a nightmare.

Over the centuries, Shynra Corp had become more than a corporation—it had become a power unto itself.

Zelthane had revolutionized life on Rigel One. It was used in everything—from architecture and infrastructure to fuel-efficient nuclear reactors, life-support systems, and even the packaging of basic goods. It was so deeply embedded into civilization that life without it seemed unthinkable.

Despite its vast influence, Shynra had always presented itself as a force for good. It paid its taxes, funded education, healthcare, and public infrastructure, and even contributed generously to social welfare programs.

And yet, beneath the surface, people whispered.



For the last century, questions had lingered—who truly ruled Rigel One? The elected democratic government, or the corporate empire that controlled its most vital resource?

Officially, the government remained independent. Public institutions thrived, and society continued to advance. On the surface, everything seemed perfectly balanced.

Samuel's project had initially shown promising results. By integrating Zelthane-based nanobots into human biology, his team had successfully engineered a protective cellular barrier, reducing heat absorption and radiation damage. The results were groundbreaking.

Three years into development, their first human trials exceeded expectations. Subjects exposed to extreme conditions—temperatures far beyond what an unprotected human could endure—remained unharmed.

But something was wrong.

Samuel's simulations predicted a maximum protection rate of 60%, yet in practice, the nanobot barrier was reaching 80% efficiency. At first, it seemed like a scientific miracle, an unforeseen breakthrough. But as the data accumulated, Samuel couldn't shake the feeling that something wasn't adding up.



Where was that extra 20% protection coming from?

He ran every test possible. He examined the nanobot network's efficiency, the chemical interactions, the molecular structure of Zelthane itself. No anomalies. No miscalculations. No logical explanation. Yet, the pattern was clear: almost every test subject fell within the 80% range. It was too consistent to be a coincidence.

He needed to find the missing variable.

And then, he found it.

The horrifying answer that had been staring at him all along. Every single cellular sample—from every test subject, from every continent, from every walk of life—contained the same residual levels of Zelthane. Before they had even injected the nanobot-machines, the compound was already there. Not just in a few cases. Every single person on Rigel One had Zelthane in their bloodstream.

This wasn't just contamination. This was a planetary-scale intoxication.

For centuries, Zelthane had been considered safe. The early studies, conducted hundreds of years ago, had tested limited exposures—tiny, controlled doses that were deemed harmless. The research had shown that the human body could expel small traces of the material over time. The assumption had been simple: If exposure was minimal, there was no danger.



But those studies had failed to ask the most critical question—what happens when the exposure is not minimal? What happens when it's constant?

Samuel's data didn't lie. This wasn't short-term exposure. This was bioaccumulation.

Samuel abandoned his original research and focused entirely on Zelthane's effects on the human body. The first step was to determine how quickly the material was accumulating. If it had been in the population for centuries, there had to be a pattern—a measurable rate of increase.

Luckily, Rigel One's medical institutions had preserved hundreds of bodies over the centuries for research purposes. Scientists like him frequently accessed these archives to study human adaptation to the planet's environment, ensuring that his request raised no suspicions.

Among these preserved bodies lay the most revered figures in Rigel One's history—even the original landing team.

The Heroes. The Pioneers. The Legends.

Their bodies had been immaculately preserved in special capsules, enshrined with the highest honors. They had willed their remains to science, believing that even in death, they could serve the future. Their selflessness was a stark contrast to the world Samuel now lived in—where blind trust in corporations had led them all to this silent catastrophe.



He ran the tests. And what he found chilled him to the bone. The first settlers had almost no Zelthane in their bodies—just a trace amount, barely 0.1% of what modern humans carried in their veins. That was expected. After all, Zelthane hadn't been widely used in those early days. But as Samuel analyzed later generations, the pattern became clear. The concentration wasn't just increasing—it was growing exponentially.

A hundred years ago, people had only 10% of today's exposure levels. That meant in just another century, the levels would be 100 times higher than they were now.

If the models were correct, the human body would become entirely saturated with Zelthane within two generations. And the consequences would be catastrophic.

Samuel could have rushed to the authorities immediately. The evidence was damning. He had everything he needed to demand urgent action. But he knew how easily powerful institutions dismissed inconvenient truths. If there was any loophole, any flaw in his data, they would seize upon it and bury the problem before the world even knew the danger.

So he dug deeper.



He needed to answer one final question: What happens when Zelthane reaches critical levels in the human body? Fortunately—or unfortunately—his years of working with Zelthane-based nanobot technology provided an immediate answer.

The results were far worse than he had ever imagined.

If exposure continued for just another twenty years, the accumulation of Zelthane in human tissue would prevent cells from properly regulating temperature. People would begin suffering from chronic, unbearable pain, as their own bodies struggled to function under the increasing load of the compound.

And the worst part?

Reproduction would become impossible.

Humanity wasn't just poisoning itself—it was walking blindly toward extinction.

Samuel had seen enough. He had all the proof he needed.

Zelthane exposure had to stop—immediately.



Samuel couldn't carry this alone. The weight of his discovery was too much, pressing against his chest like a boulder, suffocating him. He needed to share it. He needed someone he could trust.

Without hesitation, he opened a terminal and called Dennis Wallace—his closest friend, a man he had known for years. Dennis, a biotechnology professor at the college, was one of the few people Samuel trusted without question.

The call connected almost instantly.

"What a great surprise!" Dennis's voice came through, full of warmth. "We've missed you at poker nights. The game's been way too boring without you here to lose every hand!"

Samuel managed a hollow chuckle, but he couldn't hide the exhaustion in his face.

Dennis noticed immediately. His teasing faded. "...Samuel? Are you okay?"

Samuel hesitated for a long moment before finally whispering, "No, Dennis. I'm not okay at all."

"Hey, whatever it is, you know I have your back," Dennis reassured him. "Talk to me. What's going on?"



Samuel took a deep breath. Saying it out loud would make it real.

"I... I've found out something terrible," he confessed, his voice barely above a whisper. "It's so bad I can hardly bring myself to say it."

Dennis' expression darkened. "You're really scaring me, Sam. Just say it. You know you can trust me."

Samuel closed his eyes, gathering his courage. Then, he finally let the truth spill out.

"You already know about my project—the Zelthane-based nanobot machines." He exhaled sharply. "Well... because of that research, I've discovered that every single person on Rigel One has a significant amount of Zelthane in their body."

Dennis frowned. "What do you mean? In trace amounts?"

"No." Samuel shook his head. "Not in trace amounts. A substantial, measurable quantity. More than enough to affect cellular function. And worse—it's growing. The accumulation rate is exponential. If it doesn't stop, we'll hit a critical threshold in the next twenty years. And once we pass that point... there won't be any way back."



Dennis stiffened. "What are you saying, exactly?"

Samuel swallowed, feeling the crushing weight of his words. "I'm saying that if this isn't stopped, every living person on this planet will die."

A long, suffocating silence followed.

Dennis was the first to speak. His voice was quieter now, careful. Measured.

"Alright," he said, "but you also said it's not dangerous yet. That means we have time. We can fix this, right?"

Samuel lowered his gaze, the true enormity of the task settling in. "Yes... but the only solution is to completely eliminate Zelthane from our world. Every last trace of it. Within the next two decades."

Dennis stared at him in stunned silence.

They both knew what that meant.

Zelthane wasn't just a resource—it was the foundation of their entire civilization. It powered their cities, their industries, their economy. It was used in every structure, every fuel source, every technological advancement. To remove Zelthane would mean tearing their society apart from the inside.



But Dennis also knew his friend. Samuel was a meticulous scientist. He would have double-checked, triple-checked his findings a thousand times before saying any of this out loud. If he was this certain, then there was no room for doubt.

Dennis let out a deep breath, then straightened his shoulders. "Alright. We're in this together."

Samuel blinked, almost in disbelief. "You believe me?"

Dennis gave him a small, confident smile. "Of course I do. You wouldn't say something like this unless you were absolutely sure. Tomorrow morning, we'll meet in my office. You bring everything—every analysis, every data set, every model. I'll go through it all with you."

Samuel exhaled, the weight on his shoulders feeling just a little lighter. "Dennis... thank you. You don't know what this means to me."

Dennis grinned. "I know exactly what it means, Sam. And I have your back, always. I'll see you tomorrow."

The screen went dark.

Samuel sat in silence for a long time, staring at the black void of his terminal. Saying the words out loud had made it real.



But for the first time in weeks, he wasn't alone anymore.

At 21:30, he left his office, exhausted but relieved.

The security guard at the lab was the last person to see him alive.

The meeting at Dennis' office never happened.

The next morning, both Samuel Torres and Dennis Wallace were found dead. Two separate incidents. Two unrelated acts of violence.

At least, that was the official story.

The authorities classified both as tragic robberies gone wrong. There were no suspects, no real investigations, no answers.

And as for Samuel's research?

It was never published.

Never spoken of.

Never mentioned again.