

Maker of Suns

By Jack English

Chapter One: Mission

Paradise Ranch, Rutherford Territory, Mars

Orange and yellow leaves swirled as the sleek craft, shiny as a mirror, landed on the broad, gently sloping lawn. Alexander Stoneheart squeezed Irene Paoli's hand waiting for the craft's door to open; then looked around at the planet they had transformed into their own Garden of Eden. It had been an act of extreme faith and brutal determination. And the man who made it all possible was about to descend from the craft to meet them.

A door opened and a ramp slid out of the craft. A tall thin man walked slowly down it, putting one foot in front of the other as though uncertain of each step. It was Ernst Rutherford, founder and patriarch of Rutherford Engineering. Two nurses and four of his staff followed him.

Stoneheart and Paoli walked forward to greet the old man and noticed he was wearing a slender exoskeleton over his legs and torso. The uncertain motions were those of a machine simulating walking not the certain carriage of a man of action.

"Mr. Rutherford!" Stoneheart called out. "How are you? I believe you know my wife Irene."

"Alexander, my boy." Rutherford extended his hand. The skin was translucent enough to betray its sinew, bone and blood vessels. "And Irene, my dear. How are you?"

"How are you Ernst, you old rascal!" She kissed him on the cheek, hugging him ever so lightly, for fear of breaking some vital connection in his body.

Rutherford was not known for his emotion, a stare from his cold, pale blue eyes could make people sweat. But, today, he had a twinkle in them, which meant he was up to some kind of mischief.

"Dr. Stoneheart, Dr. Paoli." Grafton stood next to Rutherford and nodded politely. He was Rutherford's Chief of Staff. He was a small, trim man, a head shorter than Rutherford, with short, dark hair and an oval face. He would have been considered good looking but for his eyes. They were dark and vaguely shark-like.

As a Rutherford Engineering Officer, Alexander Stoneheart had remade the face of Mars, transforming it from a frozen ball of dust into an idealized version of earth. It was an earth kept in perpetual spring by an atmosphere twice as thick as the home planet's. And it was free of the overcrowding of mother earth. For remaking Mars, Rutherford Engineering ended up owning a quarter of the planet and Stoneheart became the Chief Administrator of this bounty. But the two men standing in front of him were even more powerful. As Chief of Staff, Grafton had

jurisdiction over everything, and everyone, including him. Though as a practical matter, Ernst Rutherford provided Stoneheart with a measure of autonomy and protection. Grafton grudgingly left him alone.

"So what brings you two to Paradise Ranch Mr. Grafton?" Stoneheart nodded respectfully.

"Our leader wouldn't say." His tone was flat. Stoneheart spread his hands in question. "Mr. Rutherford?"

Rutherford placed two fingers together and snapped them crisply down toward Stoneheart's house. "Let's go inside." Then he turned back toward Grafton and with the same command signal said, "Keep them out here."

Grafton turned toward his retinue and waved them back toward the ship. Then he started to follow Rutherford into the house.

"You too Harold." Rutherford shook his two pressed together fingers at the man.

Stoneheart looked over his shoulder at the annoyed Chief of Staff and shrugged.

Rutherford said nothing more until he, Alexander Stoneheart and Irene Paoli were firmly ensconced in their living room.

The idea of terraforming Mars was Rutherford's. But bending the laws of physics to make it happen, of overcoming the thousands of roadblocks the planet threw up, was Alexander Stoneheart's job.

Paradise Ranch was the reward given to him for making the impossible possible. Their ranch

covered a thousand square kilometer plateau. Their home was a simple stone and glass structure which sat on a knoll on the plateau. Green lawns sloped down from the house on three sides to pine and oak forests, beyond. On the fourth side, were a barn and coral where Stoneheart and Paoli kept saddle horses. To the South, the plateau dropped off providing a spectacular view of the plain below.

Ernst Rutherford walked into Stoneheart's living room like he owned it and sat down in a large, overstuffed club chair. "Alexander, do you know there is a move afoot to reconstitute the Colonial Bureau?"

"Heard about it. A lot of people are against it because of the way Carpathian Zott went mad and declared himself Emperor of Mars."

"Why re-establish the Colonial Bureau?" Paoli asked. "For what purpose?"

Rutherford flicked a small data card across the table to her. "This is a classified Military Command study. It estimates that in 100 years earth's population will double again, despite all attempts at population control and have failed and sixty billion souls will become 120 billion. In short, the human race needs space to grow, and if it doesn't get it, psychologists and historians predict a series of genocidal wars."

"So what does the Colonial Bureau want to do?" Stoneheart asked.

"They want to Terri form Venus. They're using your paper on the subject as their feasibility study."

"My paper? But that was highly theoretical. I never backed it up with any serious field work."

"I can't see it." Paoli said. "The planet's temperature is high enough to melt lead and its atmosphere is crushing. I can't think of worse place in the solar system set up colonies. What did you propose?"

"Let's see. I recommended orbiting sun shades to cut sunlight and cool the planet. Then add a few trillions of tons of water, nitrogen, plus some of Irene's biologicals and shake for about ten thousand years and voila, a habitable planet."

Paoli looked at Rutherford and spread her hands. "So what's the problem?"

"None." Rutherford shrugged. "If you have all the resources of the old Colonial Bureau at your disposal, and if you have enough time."

Stoneheart leaned forward. "Do you want us bid on the project?"

Rutherford smiled serenely. "You know, when I was born, the average life expectancy was a hundred and two. Tomorrow, I'll turn a hundred and sixty. I've had almost every part of my body replaced, repaired, or genetically enhanced, everything but this." Rutherford tapped his forehead. "You two might well live for two hundred years."

"I don't understand." Paoli asked. "Why are you telling us all this?"

"All in good time Irene. All in good time." Rutherford nodded his head. "So we have a problem: humanity's need for breathing space; and an opportunity: our ability to create that new space with our technology." Rutherford took a sip of tea. "But the earth's nations don't want Rutherford Engineering involved in terraforming Venus, because they don't want us to end up with a quarter of another planet."

"So we're being cut out of the game!" Stoneheart's voice rose. "What can we do?"

"The doctors say I only have a few months left, and there is one more project I want you to handle for me." The mischievous twinkle returned to Rutherford's cold blue eyes. "I've leased the moons of Jupiter for the next thousand years. We have exclusive mining rights, and we can do anything we want with them. Most of them are pretty useless, but I think we can make Ganymede habitable."

"You mean by building domes on it or something?" Stoneheart asked.

"No, I mean by terraforming it, defrosting it, wrapping an atmosphere around it." Rutherford waved his hands weakly in the air.

Stoneheart exhaled in exasperation. "But it's so far from the sun, there's no way to capture enough energy to keep it thawed out, let alone grow things."

Rutherford's eyes turned cold, hard, piercing. "You know, I watched a rerun of your biography on channel 2270 while in transit. They called you Alexander Stoneheart, Maker of Worlds. I'm asking you to be Alexander Stoneheart, Maker of Suns."

Chapter Two: Starlight, Star Bright, First Star I Make Tonight

"You want me to WHAT! Make a sun? How-hell? I mean, ah... respectfully sir..." Stoneheart stammered.

"Ever wonder why Dr. Sluggo took his transfer off the Martian Habitat Project so quietly?" Rutherford asked.

"Thought about it." Stoneheart said. "He sure-as-hell wasn't the type to go quietly."

"I seduced him with another project, the one I'm giving you now. I thanked him for his theoretical work, and told him the rest was mere construction engineering. Given that frame of mind, we were simply leaving the skut work to you. So, he was happy to move on to the next project. I know that if you hadn't made dozens of scientific breakthroughs, both of you, we could have never Terri formed Mars." "But I didn't tell him that. No, even then I foresaw the need to start terraforming another world. My choice was Titan.

It would have made a wonderful world, but for one problem."

"What's that?" Paoli asked.

"Too far from the sun. We worked on the problem of a substitute energy source for thirty years. Finally Sluggo suggested we convert Jupiter into a sun and Terri form its largest moon, Ganymede. After all, astronomers have been calling Jupiter a failed star for a couple of centuries." Rutherford coughed a couple of times, light shallow coughs, as though that was all he could manage.

"You all right?" Stoneheart slipped to the edge of his chair and placed his hand on Rutherford's arm.

Rutherford nodded yes and brushed his hand away. Ganymede is fifty two hundred kilometers in diameter which makes it somewhat smaller than Mars at sixty nine hundred."

"You still haven't told us how you're going to make a failed star into a successful one? And why just Terri form Ganymede? Why not Io, Europa and Calisto?"

"Gravity, by boy. Gravity. The other moons just don't have enough gravity to hold an atmosphere."

Paoli scratched her head. "I'm a little rusty on my celestial dynamics, but I thought the difference between a star and a planet was that a star was so massive, it's gravity creates the temperatures and

pressures necessary for nuclear fusion. Am I right about that?"

Rutherford raised an eyebrow, his blue eyes penetrating her soul. "And?"

"And Jupiter is only a tenth of a percent as massive as the sun."

He spoke without breaking eye contact with Paoli. "You got quite a gal here Alex. And I thought she only did genetics. So, Alex..." Rutherford continued, "How do we attack the problem?"

"I guess we find the minimum mass needed to make a star and add it to Jupiter." He offered.

"That's one approach." He said.

Stoneheart slid back in his chair, arms stretched wide. "My recollection is that Jupiter would have to be three times more massive than it is to trigger spontaneous fusion. All the other planets in the solar system together don't have that much mass."

"Again I'm impressed." Rutherford said.

"So how do you propose to convert Jupiter into a star?" Paoli asked.

"That, my dear boy is a problem for Alex to solve." Rutherford tapped his forehead lightly with his fingertips.

"And suppose I can't figure it out?" He asked. As he spoke, he saw the frail old man in front of him transform himself into the bold and demanding leader which had created an empire from nothing.

Rutherford stood and Stoneheart stood in response. "I don't recognize CAN'T!" His steely blue eyes bored into Stoneheart's soul. I want another planet to colonize and either you give it to me or I find someone who will." Rutherford poked him in the chest with his index and middle finger.

If anyone else had pushed Stoneheart like that, he would have swatted them across the room. At nearly two meters tall and over a hundred kilos, he had the size and strength to be physically intimidating. But Stoneheart loved that cranky old man, as a guide... as a mentor... as a father. Rutherford sat back down.

"Respectfully, Mr. Rutherford," Stoneheart leaned forward, hands clasped in front of him, "what you're talking about seems like a very long term project and once you're gone, the Executive Council is going to cancel it."

"Thought of that." Rutherford wheezed. "Going to appoint someone to head the company who is absolutely relentless, someone who doesn't understand the words: It can't be done." He launched into a wheezing spell which set off his biosensors. Two nurses and an assistant sprinted into the room, one put an oxygen mask on him, one checked the connection of his biosensors and one administered an injection of something. Rutherford seemed to collapse in his chair.

Stoneheart leapt to his feet. "Is he going to be O.K.?"

One of the nurses slipped Rutherford into a wheel chair and covered him with a blanket. "He needs rest and proper medical attention." The three person flying formation whisked him out of Stoneheart's house and back aboard the ship, sealing it tight.

Chapter Three: Grafton's Demand

An hour after Rutherford had been taken back to his ship, Grafton and two of his aids walked briskly across the broad lawn, up a slight rise toward the house. Ed Skully, a weathered, lanky man in a beat up cowboy hat closed a gate behind a couple of horses he had just led across the lawn. He turned; started to warn them; and caught a glimpse of Stoneheart standing on his front porch nodding "no."

Grafton hadn't taken more than two steps when he slipped on a steaming patty of horse manure hidden by the lawn's ankle high grass. "Shit!" Grafton bellowed as he fell.

"Exactly." Skully whispered from across the lawn.

Grafton's aids rushed to help him. He got to his feet and brushed himself off. An enormous brown stain ran up the back of one leg to the seat of his pants. He resumed his march up to the house with more vigor, but kept his eyes focused on the grass in front of him.

Irene Paoli put her firm hand on Stoneheart's arm, and gripped him hard. "You aren't going to let him track that muck into the house are you Alex?"

He forced a brief smile; then his face turned hard again. "I'll take care of it."

He met Grafton and his entourage at the front door. Grafton took a half a step forward as though expecting the lower ranking officer to step out of the way. Instead, Stoneheart stood there, two meters tall and a hundred kilograms of resolution blocking the door.

Grafton took a step backwards and frowned up at him as though he had broken some unwritten rule of etiquette.

Stoneheart extended his hand toward a table on the patio. Grafton walked over and sat down. Stoneheart sat opposite, and Grafton's minions stood behind him.

Stoneheart motioned toward the other seats. "Nobody stands in my house. Please be seated."

They looked nervously at Stoneheart and then at the Chief of Staff of Rutherford Engineering. To be seated on the same level as Grafton was highly irregular.

"How is Mr. Rutherford?" Stoneheart clasped his hands before him on the table.

"He'll be fine." Grafton said impatiently. "I want to know what he said to you. And I want to know what you said to get him so upset?"

Stoneheart leaned back in his chair, letting his hands rest on his knees. "Do you know why he's here?"

"Said he wanted to discuss crop reports with you." Grafton's tone was flat.

Stoneheart glanced at the aids then held Grafton's gaze. "So why do you ask?"

"Don't play games with me Alex!" Grafton pounded on the table. "He's up to some damned fool scheme, and I want to know what it is! I don't want him committing the company to any big projects. And I don't want you planting any damned fool ideas in the old man's head. So whatever it is, whatever he wants to do, I want to know about it, and I want to know about it NOW!" Grafton pounded the table.

"I assume that if Mr. Rutherford wanted you to know he would have told you."

Grafton leapt to his feet knocking his chair backwards. It clattered along the porch and made a sharp crack as it hit the wall of the house. He held his index and forefinger stiffly together, the Rutherford symbol demanding instant obedience. He jammed the air in Stoneheart's direction. "I'm... not... playing... games... with... you... Alex! I can have you fired from Rutherford Engineering just like you were fired from the National Weather Control Center. And don't you forget it!"

Grafton strode off across the lawn toward his spaceship, his two terrified aides trailing silently behind.

Stoneheart glanced at the corral. Skully was standing there, half leaning on a fence rail. He had been watching the scene on the porch, his cowboy hat pulled forward to shade his eyes. One of the horses stood next to him. It rubbed its head against Skully's shoulder and he absentmindedly stroked the animal.

Skully couldn't hear everything that was said on the porch, but he caught the occasional shouted word and knew it was trouble. His eyes followed Grafton as he walked briskly down the slight incline of the green lawn, heedless of hidden dangers.

Skully watched, as if in slow motion, as Grafton's left foot shot out in front of him and he spread his hands as he fell backwards.

"Shit!" Grafton bellowed.

"Exactly." Skully chuckled.

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