

Silicon Ballet

Reuben had no eyes. He would not, in any case, know that the primary planet, vast and surrounded by rings, was hidden from view on the other side of his planetoid. His home world that forever showed only one face to the gas giant that held them in its gravitational grip.

Half of the time, his side of the moon faced the sun. He was fortunate. Had he lived on the other side, he would have received only half the light from the distant star and the rest would be reflected, pale, from the orb above.

Thin metallic feelers probed beyond the confines of his silicon shell. They tested the temperature of his surroundings. Now, with the sky gradually lightening, he was registering somewhere around minus one hundred and eighty degrees centigrade. Dawn approaches. He had nearly survived another long night.

Reuben emitted a series of high pitched, localised bursts of sound. The thick atmosphere, consisting during this pre-dawn period of hydrogen, some helium and mostly nitrogen, carried the returns to his receptors. Dimly, he made out liquid and moved carefully, slowly, towards it. Each of his eighteen legs probed individually at the ground and, proving solid, hooked into it.

The sky grew lighter. Reuben was unaware of light

but was acutely aware of temperatures that were now heading up the scales of Fahrenheit and Centigrade rapidly. The nitrogen condensate thinned into gas followed by tenuous webs of oxygen and argon, neon and ammonia. Methane and ethane rain damped his carapace. The beeps from Reuben's transmitter become more positive. He toned them down and adjusted the scale and frequency to avoid detection from a predator.

At last he found the liquid. Carbon dioxide. Still solid at the edges, the day was close enough to liquify the rest a little distance out from Reuben's front feet. He waited. Not long now.

He grew aware of a fuzzy return on his receivers. The carbon dioxide was boiling off in the distance. Huge roiling clouds rolled towards him as they ran from the tiny, distant sun. Just for a moment it rained, then the sun rose and blew away the clouds, searing the landscape dry. Hydrocarbons turned the sky faint orange.

Reuben wasted no time and set off into the lake-bed to feed on the drying organisms that had swum in the liquid carbon dioxide, feeding on the hydrocarbons, in the short moments between solidity and gas. The change of state was the only time available for them to grow, breed and multiply. As the liquid turned into gas, they hardened into minute shells - zygotes, that preserved them so they could continue the cycle at dusk tonight.

Reuben had little time to feed and retreat before the dusk came. Occasionally, his radar would pick out a smooth semi-hemispherical shape lying in the lake-bed. He was vaguely aware that they were dead; corpses of his own ilk that had fed too long and failed to get out before the carbon dioxide liquefied around them, and then solidified into a temporary sarcophagus.

Under his silicon shell, Reuben's second heart pumped vigorously, sending high pressure, volatile fluids into a jet that sprayed those fluids into a chamber where the decompression dropped their temperature. The chamber was shaped like gills where valves fluttered continuously to pass atmosphere over the gills. The cooled atmosphere now passed around the inside of the shell, lowering his body temperature while another set of fluttering membranes blew the heat away from the pressurising heart into the gas around him through small slits in the base of the shell.

Reuben knew nothing of his physiology. He concentrated on moving. Feel, hook, feel, hook, eighteen times, sway forward. Check the surroundings for predators. Unlikely during high temperature periods but always possible. His mouth parts grazed on the rocky surface. Hard and chitinous, they were impervious to the heat in the substrate. At the front of his mouth were two hardened wedges of silicate that met when he closed his mouth. The mandibles closed

around the pieces of the correct size and the wedges squeezed them gently. If they cracked, he would suck out the soft, juicy interior, eject the half shells and move on to the next.

"How far? How far have I come? How long? How long to the dusk?" The eternal calculation that coursed constantly through his mind. His feet made a conscious effort to move further one side than the other so that he would be always heading back to the shoreline. Not too soon. Must eat. Must stock up the energy to keep alive for another night. He thought, inconsequentially, 'be meaty enough for a predator's meal'.

Reuben thought he had detected a predator once. It had moved so fast that he was unsure if he had received the echo correctly. In the middle of the night he was unable to move to where it had impacted, but he had definitely seen small shards erupt from the surface, small shards that he associated with carapace. Silicon carapace. He had no concept of silicon but he knew what the return echo of it looked like because of contact with others of his kind.

Panic. Momentary feeling of despair. One foot had not found safe attachment in the bed rock. The whole slab that he had secured himself into had come loose. Underneath was smooth, shiny. He sent a few short beeps down into it. Thin, like a shell. Like a carapace. He wondered, for a few moments, if he was living on a huge Reubens. 'Perhaps that is

what we are'. He thought 'Reubens on Reubens on Reubens. I wonder if I am near the top or the bottom. Small or big?' He shook himself mentally. No time for this, must eat. Must eat quickly.

At last he detected a thin line of fractionalised hydrocarbons. The edge of the lake. Above this 'tideline' he was safe. The thin metallic thread peered out from under the shell and told him that the temperature was dropping. Soon the tiny sun would set and the carbon dioxide would condense back into the lake bed. Sometimes he felt rivers of it rushing past him. His feet would grip a little harder to prevent himself being washed away but he enjoyed the warmth of it over his leg joints. His stomach was full. It had been a good day. No predators and a full belly. A small jolt when he had felt the ground give way but otherwise entirely satisfactory.

Feel, hook, feel hook, eighteen times. Do this twice and remember the direction to the lake in readiness for the morrow. A thick, moist mist swirled around his feet as the carbon dioxide condensed out of the air. Filters in his body sucked greedily at the hydrocarbons as they grew thicker, gaining as much as possible before they, too, condensed and sank into the lake to be devoured by the small food creatures. Minus one hundred and eighty and sinking. Degrees centigrade, had he been aware. Reuben only knew it was time to close the

tiny pores in his carapace to prevent heat loss.

Under his shell were thick blocks of high density material that had soaked up heat all day through the pores. Now, with the pores shut, they would seep heat into his body for the, nearly, two hundred hours of night. Reubens concentrated on shutting down all unnecessary systems, only keeping his mind alert for predators.

Night-time was a time when the air was thicker. Droplets of nitrogen and wisps of ethane and methane passing in and out of liquid state. Now Reubens relied on mass sensors around the periphery of his shell to detect changes of gravity and magnetism to warn him of danger. There was little he could do to protect himself. If a predator came, all he was able to do was hook himself as strongly into the ground and pull hard so that the predator could not lever him up and get at his soft underbelly.

The sun had set. The light had gone entirely from the sky. Soon, there would not even be a glow from the gas giant as his planetoid swept around behind the mother planet, to the dark side. He would be entirely eclipsed from the sun. Not total darkness. Had he known, had he been able to see, he would have observed a night sky of endless beauty and wonder. The night made the day seem a dreary monotone as the stars and galaxies came out and spread a colourful display of fantasy across the inky blackness of space. Even with this

atmosphere, he would have had a view of such wonderment as would have taken his breath away. If he had breath.

He contemplated his life. He was apt to do this each night. Now that he was full of food and most of his systems were closed down there was nothing to do before sleep but consider. 'Am I living on another Reubens?' He thought, recalling the image that had crossed his mind earlier. 'Why do I feel the need to insert a tendril in another Reubens and receive their tendril on occasion? I dislike the discomfort that I feel after each of these occasions until I manage to discard those odd, rounded lumps that certainly are not the same as the waste products I release each night - like those' He grunted. Twice. 'Perhaps I shall not accept another tendril and I shall keep mine to myself.' He 'humphed' mentally and, had he arms, would have crossed them.

When was the last time he had received a tendril from another Reubens? Five? Six feeding cycles ago? He had no desire to do it again and so, perhaps, and happily, there would be no more incursions on his time during feeding. These occasions always left him feeling weak and dissatisfied. His belly was always less than full at the end of the day. A bad thing with these cold nights. Cold nights that were getting colder. Reubens knew nothing of perihelion and aphelion, only that it was getting colder at night.

He thought some more of the tendrils approaching

him. He shuddered with distaste. He sometimes tried to avoid them but they would move around until they were positioned correctly next to him for insertion. Of course, he realised that insertion was inevitable and that he was merely wasting time and delaying the inexorable approach of the other Reubens, but still he tried to dance away in a parody of ballet played out in slow motion. He and the other Reubens weren't to know that they moved so slowly. They believed that they were outfoxing each other at lightning speed, displaying such mental prowess as would stun the other into disbelief and awe.

Part of his brain came alert. Something. Something moving. Fast. A predator? Maybe. Location? Direction? Velocity? Too fast to accurately determine. 'It is on me! A predator!'

Reuben locked down with his feet and pulled himself into the ground as hard as he could. It was so close he could not help but to utter a small squeak of fear. His receptors found no response. The small asteroid had ionised the atmosphere as it streaked through. Reuben failed to have any effect on its velocity at all. Perhaps a piece of the gas giant's ring system, it shattered Reuben into small pieces as it ploughed into the planetoid's crust at speeds that would be incomprehensible to him.

The asteroid broke the silicon shell under the

surface of the planetoid and scattered it as almost
simultaneously it melted the substrate into lava that boiled
up and sealed the hole.

Near Reuben, another of his kind cringed and knew
that the pieces of scattered, smooth silicon meant that one of
them had been taken by a predator.

On Earth there was a strange, binary message from
the Huygens probe.

"Help."

And then, silence.

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