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Looking Ahead

Daniel K. Appelquist

I've got a lot of nerve to sit here and think that you'd bother to read an editor's column; hell, I certainly don't in other magazines. But just in case you happen to be reading, I do have some news for y'inz (That's a Pittsburghism – more evidence of my inevitable mental decline.)

Topping the bill, it seems that as 'The Net' continues to expand, the number of net fiction magazines expands with it. A new magazine, *Core*, has sprung up, or is in the process of springing up. Core's editor is Rita Rouvalis (rita@eff.org), and while I don't know very much more about it, I wish her good luck. More info on *Core* is provided at the end of this issue, along with 'ad's' for other network magazines.

I was pleased to see that *InterText* came out with its second issue this month. Originally, we were going to plan it so that our magazines did not come out at the same time, but I'm afraid delays and erratic schedules on both sides have ruined this rather neat plan. Oh well, those of you subscribed to both magazines will just have more to read this month. . .

Magazines like *Intertext*, *Core*, and *Quanta* are important for a reason: creativity. The greatest gift of man is to be able to create, to come up with new ideas, new visions. This creativity is the stuff of life. That is one of the reasons why I edit and produce *Quanta* – I'd like to think that I am doing my part to engender this process of creativity. Of course, I say this knowing full well that I have none of my own, at least not for this column.

This is the tenth issue of *Quanta* yet produced, and it's a really good one. We have for you, something old, something new, some original viewpoints and some familiar voices. I think you'll find it interesting. Hopefully you'll find it as enjoyable to read as it was time-consuming to edit! I really enjoyed editing this issue. I think that, perhaps, after almost two years of this, I'm finally getting the hang of it.

On that topic, I'm still combing the Net for submissions. I urge any writers or potential writers out there to come forward with stories and/or articles. I'm not as desperate as I was this past April (not by a long-shot) but I can always use more submissions, especially from authors who are new to *Quanta*.

Also, I again want to thank all those people who sent in contributions – Slowly, but surely, the ability for *Quanta* to become self-sufficient is being facilitated. We still need more, however. If you haven't contributed yet, remember that you are the only chance that *Quanta* has to survive. If *Quanta* can't start to support its own production, then I soon won't be able to produce it any more. Sad, but true. I encourage you, if you have the money, to send in $5 to the address on the contents page of this issue. I'll get off my soap-box now. . .

Some items of note in this issue: Jesse Allen's *Earth as an Example*, a three part series, starts this issue. Unlike Jim Vassilakos's *The Harrison Chapters* which is also featured this issue, *Earth as an Example* is not an open-ended series. You're guaranteed to see its conclusion within this calendar year.

Also, Doug Helbling's article on the goings on at the Oregon Moonbase (page 3 inaugurates a *Quanta* first. Photography! Thanks to some rather zippy software, I was able to compress these pictures down enough so that shipping them with the PostScript version was possible.

I have been so busy recently that I hardly had time to produce this issue. And this is the summer! I'm supposed to be on vacation! Ah well, I'll soon be headed off to Aspen for a needed vacation from my vacation, so life isn't all bad. I'll see you all in two months (October) when Quanta will celebrate it's *second* birthday.

I want to leave off with a rather sad note. I recently learned of the untimely death of Gary Frank, one of the first contributors to *Quanta*. I never knew Gary, except as an email correspondent, but I have heard that he was an extrordinaty person. *Aware,* a story he wrote for the October 1989 issue, certainly shows that he had more than just a flair for the tragic, as well as a caustic sense of humor. This issue is dedicated to his memory.

Moving?

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Digging In at Oregon Moonbase:

Rockwell Robot Faces Moon Analog Test

Doug Helbling

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Rockwell Space Systems Division Engineer Steve Kent in Lavatube Cave at Oregon Moonbase

The winch cart robot prepared for testing. Funds for the project were provided by a special Rockwell "Intrapreneural" project fund that encourages the development of innovative concepts not funded by "mainstream" contracts and budgets.

What kind of event could bring together a Rockwell aerospace engineer, a Bureau of Land Management realty specialist, an engineering/marketing team from WARN Industries, a U.S. Forest Service geologist, and Oregon L-5's Lunar Base Research Team? The testing of a new lunar winch cart robot design!

The robot is the brainchild of Steve Kent, of Rockwell International Space Systems Division. A long-term advocate of cost-effective space application of existing technology, Kent proposed the idea of the winch cart in a paper entitled "Prime Mover for Extraterrestrial Construction and Mining". He describes in detail the use of this general purpose robotic winch cart design in a number of applications. On May 1st, Steve put his design to the test.

Warn industries marketing manager Scott Salmon and design engineer Jerry Dilks were on hand to observe the performance of the Warn winch used on the robot. They provided the winch as part of a Rockwell/Warn cooperative agreement. Phil Paterno, the Bureau of Land Management's realty specialist for the Prineville area, was there to monitor the use of the Oregon Moonbase site, common practice for activities performed on land leased from the BLM. Larry Chitwood, U.S. Forest Service geologist, just happened to be checking in at the Oregon Moonbase site on other matters when the testing began. The Lunar Base Research Team, a group of space researchers from the Oregon L-5 chapter of the National Space Society, manage and administer the Oregon Moonbase site.

Preparation for the test started with assembly of the robotic unit, which had been broken down into several subcomponents for transportation from its original assembly point. After the unit was fully assembled, basic subsystem operations were checked and the unit was positioned for its most crucial test, anchoring into the soil with it's pair of auger units. The winch cart robot, or WCR, is intended to serve as a tow vehicle for a large variety of comparatively low technology earth and materials moving.

The basic notion of the WCR is to dig into the lunar soil and pull unpowered implements, like scrapers and rock sleds, from point to point. Keeping the electronics and other more vulnerable (and expensive) subsystems concentrated in the WCR, the costs of the total solution to lunar construction tasks can be minimized while increasing reliability at the same time. The implement towing concept is one that saw widespread terrestrial use around the turn of the century in farming applications, but where the pulling capacity of earth tractors is limited to roughly 60% of their weight, the low cost automotive type winch used with the winch cart can pull in excess of 200% of its own weight. This goes up in multiples as block and tackle are added.

The key element in the design is the auger mechanism used to root the WCR into the lunar soil. The original design contained only one auger, but the prototype tested had been modified to include two auger units. Either design version provides a machine that is theoretically capable of operating relatively independent of gravity, and may well operate in near zero gravity conditions.

LBRT researcher Tom Billings manned the video unit while fellow team member Bryce Walden positioned the still camera. The anticipation mounted among the support crew and observers as they stood poised in readiness for the test to begin. The test started, and the whir of the auger clutches howled back in close competition with the wind blowing through the scrub of eastern Oregon desert. The whir continued, with no visible digging taking place. The auger clutches were complaining, protecting the auger mechanism from the strain and resistance of the soil. The clutch design would have to be modified.

Disappointed but undaunted, Steve Kent continued other aspects of testing. He applied torque wrenches to the auger mount points to measure the resistance of the "lunar analog" soil at the Oregon Moonbase site to rotation of the auger blades. Unfortunately, a defective weld prevented much more testing in this area. Another design modification would be required before the WCR would be ready for lunar deployment.

Without the winches to anchor the WCR into the soil, testing of the winch mechanism would prove challenging. Manual simulation of the WCR boreholes, with help from LBRT researcher Cheryl Lynn York, gave the robot as close an approximation to normal anchoring as was possible under the circumstances. The winch was connected to a WARN staff vehicle to see if the vehicle, with parking brake locked, could be moved. The manual anchoring was not enough, however. This test would also have to wait until the auger situation was resolved.

Faced with a short term setback, Steve reviewed the data of the day, determined to incorporate the information from the tests and the feedback from the observers (including geologist Larry Chitwood) into his modifications for the WCR. The tests were not all successful, but the testing process was. Such efforts, performed as a standard part of the design implementation cycle, should result in space hardware that is space-ready when it leaves earth.

Doug Helbling is a software engineer. After receiving an AA degree from Bismarck State College a dozen or so odd years ago, Doug migrated to Oregon, later graduating from OIT with a BSEE Technology degree. When he is not on the job, he can be found at home spending time with his wife and two daughters. His remaining idle moments, he says, are spent working with Oregon L-5, the local chapter of National Space Society, or in a dark room honing his SF skills.

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The Oregon Moonbase

The Oregon Moonbase is a project of The Oregon L-5 Society, Inc. . Oregon L-5 is a chapter of the National Space Society, an international group of over 25,000 people interesting in seeing "a spacefaring civilization" become a reality.

The Oregon Moonbase project is an effort by Oregon L-5's Lunar Base Research Team (LBRT) to establish a permanent lunar base research facility on the site of their 12-acre lavatube reserve in eastern Oregon. Leased from the city of Bend, Oregon (with supervision by the BLM), the site was used by long term members of the LBRT in their recent NASA study (NASW-4460) to characterize these caves as suitable analogs of lunar lavatube caves for more extensive lunar base research.

The Lunar Base Research Team has performed a number of research efforts at the site, in addition to their work conducting educational lunar mission simulations with the Young Astronauts program.

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THE SITUATION IS CRITICAL

by Elizabeth Dykstra

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The situation is critical. The situation is critical. Time wheels eternal on the outside, while on the inside the milliseconds clock furiously forward, directed, focussed, progressing one after another faster than those of us on the outside can imagine.

They put this box in here, this big one, Big Box, and a lot of little ones, and a mass of cables and cords that sometimes have little boxes on them, and they told us that this confusion is all really very orderly, very structured. It has an integrity of its own, we hear, this collection of machines. Computers. We are Friends. They're different, scores of them; some are quite large with big screens, like televiewers; some are like books, lapslabs to open up and unfold. They have keyboards, and scribe globes, drawing tablets, 'lectro pens, voxboxes and mouses; datagloves, eyephones, earphones, and sensewear, umbilically connected like satellites to their mother stations, jacked in to Big Box, snaked to each other in patterns that give away the secrets of their relationships.

The curious ones are the ones that are so complex they appear to be very simple: the smallest Friend, just a smooth little box with click membranes and the ubiquitous snaking cables that shake hands with the other members present of this species that helps man in its own creation. This little Friend is profound in that it is nothing itself; it projects its offerings into thin air, a shadow computer to gateway its Friends into virtual worlds.

The urgency of the situation does not permit the luxury of understanding. To think, to speak, to act, to create, our language creating itself, shaping us as we find new experience in this clutter of technology. We cannot help but wonder how we found our old methods so small and pitiful. We talk, after all, we jot and scribble and gesture as our race has almost always done. The world grows newer around us every day, and we learn newer and more clever tricks, us old dogs.

We parse our time into events that happen simultaneously, so that time finally presents its enigmatic sense to us as the convoluted web it is, where the myriad sequences of tiks, toks and units merrily clock on and on in wondrous arhythmic dance. How do we find ourselves here, and now? This mystery, this mesh of machines, extends us and surprises us with the images we make of ourselves. We feed it, we support its health and welfare; we direct it and manipulate it with abandon, with bemusement, with trepidation, and we use it to externalize and negotiate our independent structures, as Friends.

We used to think that we related to the little boxes, on our way to electronic conversion and direct inter-think with Big Box. Yet in our crisis it is ever more apparent that these tools are media, messengers as fluid as the air around us, quick as our tongues, so that we play with each other, we poison each other, we influence, infiltrate, experience each other, we conceive through our activities our image of ourselves and learn how to grow it, to chop it into bits, to clone it, to arrive at new configurations, new constructions of ourselves; we build ourselves anew with competencies our history would have proscribed without the help of our Friends.

Each of us has grown close to special Friends, the ones we find accommodating to our tastes, the ones who find us similarly constructed. We gravitate toward pleasing satellites, we choose the methods that fit our models of ourselves. Some of us have no fingers, and have no use for interfaces requiring digitation; some of us do not or will not speak, or be spoken to; some of us cannot relate to the weird dimension-shifting of virtual datascapes. Some of us enjoy the sense of identity and power in command-response structures, while some of us refuse to accept another's imposed order, no matter how trivial or elegant. We all started with that uneasy mix of sensation, urgency and adventure, the slight queasiness associated with excitement and the unknown, with critical resolutions and formulations long overdue. As the climate grows more pressured to deal with the situation, we extend ourselves to each other ever further, our exchanges become less and less mechanically individuated as we recognize parts of ourselves repeating throughout the network.

That smell again – the acrid warning smell of impending data loss – I'll have to set aside a moment to check on that, view the scenario and maybe do a little reconstruction. The tape on my forehead itches a little, just enough for me to remember that it's there, and that this smell is its personal warning reminder to me. I naturally dislike this smell; I chose it for that reason, because I tend to brush away these small annoyances until they become quite larger. Some of us are more physical, we generally like the contact stimulus of metal, plasteel, glass, the satisfaction of resistance to touch, the click of keys. Friends often suggest small comforts between themselves.

I survey this environment, all of us Friends, and I wonder where they will take us next, where we will take ourselves, and what wonders we shall experience in the evolution of this science, this art of contact. I must get back to work. After all, the situation is critical. Indeed, it is critical; but again, after all, we are all Friends; Friends and Friends alike, and the crisis is ours.

Elizabeth Dykstra is a cybernetician at Pacific Bell where she researches group phenomena and computer interfaces. She lives in San Francisco and works in the dreaded East Bay desert, giving her lots of commute time to doze at the wheel and dream up different ways to make things work.

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THE HARRISON CHAPTERS
Chapter 6

by Jim Vassilakos

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She awoke before sunrise. Thirty feet below, a small stag slipped quietly between the sparse nettles, foraging for his breakfast. The slimy mud which had coated her body the night before still masked her scent. Now it was dry and threatened to crackle and fall with her slightest movement, alerting him to the threat.

Slowly, the creature moved again, somewhere below and near. She peered around her supporting branch and studied the dim terrain through the icy predawn mist. The stag sniffed with his nose to the ground as his pitch black eyes scanned the horizon. Without hesitating another moment she cocked her arm back and let it come down with all her strength. For a heartbeat, the spear seemed to hang motionless, its course predicted by years of practice and an unerring instinct. Then, silently, it consumed the space between them, twirling with reckless abandon as it tore the skin just heartward of his neck, plunging hungrily into the flesh below.

The stag cried out as he bolted away, but already his legs had buckled as he tried to run, and the dark stain of blood flooded his coat and dripped to the ground beneath his hooves. The second spear burrowed deep into the middle of his back as he staggered deeper into the brush. She leaped to a lower branch and then to the ground.

The stag slowed at the frozen stream bed, turning suddenly to face her. He bravely held his ground, confused and bewildered in the thin morning mist, cautiously dipping his head to the smooth, polished stones as if to drink. His blood splattered carelessly over the rocks, forming crimson puddles in the white frost. The third spear sunk deep into the small hollow above his ribs.

She watched, out of spears, as the stag's black eyes seemed to roll upwards toward the sky. The sun's first rays cascaded between the tree branches, warming the cold earth below his hooves as he slowly settled down into the bed of stones to die.

Dawn's saffron rays spiked beneath the dark, shifting clouds like a flock of birds, slowly turning as they plunged toward earth, each gliding back and forth along the icy, lakeside shore. They sparkled across the water's surface as thousands of tiny droplets swooped from the sky, diving and splashing in an endless, majestic dance of laughter and tears.

Mike groggily opened his eyes, sniffing the clean, cold air as the coarse stubble on his head began to prickle and rise against the light drizzle. His booted feet sunk carelessly in the thin silt like two half-buried logs. Niki lay stretched out over a long smooth stone rising from the rippling water, her long black hair beaded with the wet, diamond icing.

"Good morning."

"Is it?" She finally sat upright, letting her hair fall along her slim shoulders as she pulled her legs inward, locking them into a crossed position. Mike bit his lip as she closed her eyes, ignoring him, the lake, the gentle shower; he watched her soft hair begin to shed its icy glaze, dripping with an almost determined precision.

For several minutes she remained motionless, like a statue sculpted from the white stone, searching, opening up into some hollow place inside him. He remembered her drugged, corpse-like body at the Solomon residence, a heartbeat as shallow and distant as some unknown wave rolling steadily for the forbidding shore, the ripples of raindrops mixing with its falling crest, snuffing out its existence as it merged into something greater.

She finally opened her eyes, unlocking her legs and letting them dip into the cold water, sloshing them through to the muddy bank, her head drooping low as she walked.

"Niki. . . "

She looked at him, then shifted her eyes to the rifle and axe at his side. He shook his head, not knowing what to say.

"Niki, I've seen this before, but never from you. What's the matter?"

She reached out and hugged him, her voice mutely whispering something he could barely hear, much less understand. As though by instinct, his arms tightened protectively around her, holding her for a long minute in the icy mist.

"C'mon Niki. We'd best be moving on."

She pushed his hand away as he reached for the rifle's stock, droplets of water streaming down her cheeks. Lifting it off the brown blanket, she leaned its barrel over her shoulder as she turned to face him.

"Dangerous weapon."

Mike nodded in acquiescence.

"Well, I guess it is your turn." He lifted the soaked blanket, wringing it out before rolling it into a tight bundle. Then he reached for the axe. She turned away as he strapped it to his belt.

"Any idea which direction?"

She glanced back over her shoulder, her staid expression making him wonder if he slipped into Calannic.

"Niki, any idea which way we should go?"

She nodded, "It won't matter."

Mike pondered her words, uncertain how to take their meaning. Something about her mood told him it'd be better if he didn't bother. He peered across the lake for a long moment, his

eyes half-expecting to see some dilapidated hydrofoil skirting over the surface water. He shook away the vision and followed her along the shoreline.

The black silt gave way to bright yellow sand and shiny beds of smoothed pebbles, the cold ground changing its features with sporadic abandon. Images of the Tizarian coast kept springing to mind, but he shoved the memories down into a place as distant as their origin. The forest lay to the left, trees straddling the lake shore, greedy for the water thus entitled. Long green stems and orange-purple vines hung from the leafy canopy, the pungent smell of apple resin hanging thick in the frosty air.

They walked for two hours more before the clouds grew white and parted. Niki's hair, drenched from the rain, seemed to stiffen as it dried. Dark feathered birds appeared from the treeline, their long supple frames gliding gently over the placid waters as they searched for prey. Niki watched them as they'd stop in mid-air and dive into the cold water, their wings flapping with panic as they emerged. Something about the way she carried the rifle told Mike to keep on going, as though she wanted to be alone.

The splash turned him around. A short metal-tipped javelin protruded from her belly as she staggered for the stony bank, her hands still knotted around the rifle. Mike raced toward her as a dark, mud-caked figure fell from the branches above, throwing sand into his face as it bolted for the rifle, wrenching it free from her arms as Mike staggered toward them, axe lifted. He hurtled it as the barrel pointed down in his direction, the explosion deafening his ears as a bullet ripped through his shoulder.

For the barest instant, all he could do was fall backward into the ground, his mind numbed by the shattered bone. He scampered to his feet, instinctively sprinting into the light thicket, his lungs clogged with terror. Legs tightened painfully as his limp arm swayed back and forth almost comically. His boots kicked furiously against the icy, damp earth, patches of dirty brown snow, and beds of hard stone. Above, in the treetops, the birds fell quiet, and the sparse woods seemed to close around him, silently stealing his breath as he ducked between large bushes and thick trunked trees.

The noise of gunfire surrounded his senses, its tangibility offered for the taking. Bits of bark snapped off nearby trees, the wild sputtering, popping sound taking hold of his mind, establishing rhythm in this legs as he stumbled, rolling end over end in the soft loamy earth. She was there before he realized what had happened, his chest heaving desperately, madly sucking in air before it finished pushing breath out. She leveled the barrel between his eyes sockets, cold black opals staring into his without reason or remorse.

"No... wait... Ambrose..." His tongue searched for something in the Calannic, sputtering gibberish from a host of other languages, all stained with worry and confusion. However, the corners of her eyes twitched with recognition, as if he touched a spark somewhere deep in her mind. Finally, he found the words.

"Ambrose sent me... to find Cole."

Dried patches of mud flaked off her skin as Mike gathered his breath, the hint of recognition blossoming in her eyes.

"Get up."

Mike complied with her wish, moving where she motioned him with the barrel.

"Ambrose doesn't talk to negrali."

"He talked to me."

"You have proof?"

"I think you're pointing it at me."

Mike wiped the sweat from his forehead as she examined the weapon, hoping against probability that she'd find something distinctive.

"Maybe, maybe not. What else?"

"The axe from his cabin. Maybe you've seen it before?"

She cocked a dark eyebrow, her memory of the hurtled weapon still distinct.

"Walk."

Mike walked. Tall trees loomed overhead as she pushed him forward with the sole of her boot, their wide branches and thick foliage rustling with a gentle breeze. The wide expanse of water remained still, its surface an icy, blue reflection of the morning sky. Niki's crumpled form lay at the water's edge, her legs settling below the silt as her hands gripped the stony bank. The laceration cut deep into her skull, blood dripping from the wound, falling into a crimson pool over the smooth, white stones as it mixed with the soft, black silt.

The woman dug the axe from the mud, washing it in the shallows and then lifting it so that the sun's rays glinted off the quick of its blade. She nodded with satisfaction, turning Niki over and searching her body.

"Niki..."

The woman looked up, her dark unfeeling eyes staring through him.

"Was that her name?"

"I killed her."

"Yes..."

Mike moved over to the body, stopping only when she leveled the barrel back in his direction. She glanced him over and unable to ascertain any threat backed away, letting him advance. He felt afraid to touch her, as if the dead body would leap up or cry out. Her flesh was still warm, and he searched half-hearted for a pulse. The girl watched his expression of hope dwindle into one of despair.

"C'mon negral."

"I'd like to bury her."

"I don't have time to watch you waste yours. Come now or I will leave and let you bleed to death, friend of Ambrose or no."

Mike touched his aching shoulder. The cold air bit into his wound, a trickle of blood dripping through the jacket sleeve, the hollow chill slowly gripping his mind. He considered sitting down to wait and imagined Niki waking after a day or two. It wouldn't take long, he figured. He'd keep bleeding, shock would eventually take over, and then...

"Negral!"

Her short, black hair and dirty, mud-caked body made him think of the salamen on Aiwelk. He remembered crouching in a pool of warm, muddy water, snapping images while two Yahhen hunters readied their gauss guns, cold, black eyes staring skyward, blinded and numbed by the tranq-crystal. They'd die later. Too bad. He'd forgot what they paid him.

She tugged him to his feet, pushing him forward with the stock of the rifle. His legs walked at her direction, his mind not bothering to imagine where. Birds, trees, rocks all blended into a single panorama, the separate parts intermixed and suddenly

coherent. Spindles of light broke through the forest canopy as they neared the shelter, its dull tin-colored doors marred by bright red paint. An old IMC ammunitions dump. She punched several buttons on the keybox, finally yanking the thick portal open with both arms.

She motioned him to an empty, polyceramic crate, watching him sit down and lean over before scrounging the shelves for a first aid kit. Mike felt the lathery foam harden on his bandages before he realized the bleeding had stopped. She's injected him with some wake-up.

"You're gonna be needing a doctor."

Mike watched her scratch a name on the smooth white surface, as it squeezed his shoulder.

"Something to remember me by," she added sarcastically.

"You're Cole?"

"I think you'll be interested in this."

She handed him a flimsi-leaf, the lower tech variety with lots of window space but short on memory. His face was reproduced in three-dimensional facsimilation, a standard mug with the hair electronically erased.

"I don't understand."

"Came off the relay three days ago, a chiphead and a psyche, very sorry sight indeed, unless, 'course, you're looking for the reward."

"Ambrose didn't call ahead?"

"Radio's out. Board's down. All I got left is public relay. Regional News."

"Then you heard about the drop."

"I saw it. Kinda hard to miss fireworks that high up."

"How much've they offered."

"A million a head, DOA."

Mike scowled. It had been several months since he'd been shot, and even longer since he'd lost a friend. He wondered what he was doing back on Calanna, as if one time wasn't enough, and imagined the chain of events that led him back, that led to this. Niki. It wasn't supposed to be like this. The local guard must of known of the drop before the Vista ever reached system, which meant a bug in security: someone very high up, someone who wanted them dead. And Bill had guessed it, hitching along for the sheer hell of it?

"The well is never that dry."

"Say again?"

Mike shook his head, pale implications fluttering carelessly from the shadows into a hue of light he couldn't accept.

"There were two others in the drop."

Cole shrugged her shoulders in response.

"Did they say there was anyone else they were looking for?"

"No. What's it matter? They probably didn't know who was coming down, anyway."

Mike rubbed the scarred side of his face. It was this sort of underestimation that kept getting him in trouble. Back on the Vista, he'd wondered what Bill was doing. "Lots of neutrinos," he'd said. That would mimic a fusion plant on almost any passive array, making Robin a target so bright the Calannans couldn't help but take her out. Mike wanted to dissect her, not blow her to pieces, though he had to admit the thought was somewhat appealing.

"Did I miss a joke or something?" Cole looked mildly annoyed. Mike remembered the hollow feeling as his gaze fell upon the axe. Its dull blade seemed to laugh wickedly from the shelter's dim corner.

"I've got to get to Xin. I'll have money once we're there."

"Just like that."

"Ambrose said you could take us… me." He turned his eyes away from it, unwilling to meet its laughter or to accept what had happened.

"In your condition…"

"In my condition, I could use a doctor. You said so yourself." He tried to smile, "Don't go denying it."

The smile wouldn't come. Niki was back there still, growing colder by the minute. His fault.

"Why are they after you?"

"It's a long story." He looked away from her as he answered, unable to make eye contact.

"The relay doesn't even give a name. What should I call you, negral."

"Mikael."

She nodded, strangely, as if considering its flavor. He wondered why she bothered; all she should want is the money. It made things much simpler. Money.

"Come."

His feet felt wobbly as he stood. She held his good arm with her free hand, gathering the axe and rifle as she led him outside and along a winding, dirt path. The glittering lake waters seemed to dance and rejoice as if in celebration. Mike watched for Niki's body on the stony beach, but it was as if she had disappeared, the hungry lake gobbling her up with gleeful abandon.

The hydroplane sat docked in a shallow inlet, its grey, metallic sheen casting a fuzzy shadow across the waters. They waded in. The water, more than waste deep, felt icy and numbing. Cole settled him into the passenger seat, buckling him down before producing another hypo.

"Is that really necessary?"

"Not at all." She stuck him in his good arm, retracting the needle with a satisfied smirk.

"You bitch." Mike watched her climb around to the pilot's controls, her long, sun-browned legs now shiny and clean as late morning rays filtered through the cockpit window. The whine of a chemical motor echoed somewhere along the distant coastline. Beneath its vibration, Mike heard her whispering, the rattling of vertical rods, grimy steel stained with sweat and a hollow explosion mixed within the shattered bone, a texture so familiar and soft, as though it were meant to be felt rather than understood. Shades of blue huddled together beneath folds of green and grey, his limbs tiring, nerves deadened, the dry cold parching his throat as the sweet scent of apple resin stung within the dark corners of his memory.

Their voices rose as hushed murmurs, traces of worries averted, clandestinely dropping out of key like some harmonic duet, each resurrecting the other, interchanging places, holding together for sheer lack of hope.

"We knew this would eventually happen." His tone sounded cold, unfeeling. She saw the door crack open, streams of moonlight licking around its edges.

"Michael. Is that you?"

They were afraid to touch him, afraid to even get too close. Dim fluorescent rays scattered sullenly along the glassy white

walls, barely penetrating the icy darkness as he slowly wakened from a dreamless sleep. A grey-haired stranger sat by his bedside staring down from behind a professional expression of stoic indifference.

The loneliness quietly crept in between the cracks of his senses, stealthily slipping beneath his skin, and hungrily gnawing on his bones. With cunning elegance it swept upwards, through his spine and into his mind, knotting itself around his soul and slowly squeezing until he could feel the suffocating, smothering, nothing.

The woman curiously smiled. She wore a white medical tunic without insignia or decoration. He concentrated on her face, on the stormy blue of her eyes and the furrow of her brows, but the features just blurred in and out of focus, shifting like waves on some forgotten shore. He felt his lungs try carefully to breath; short, unfamiliar, raspy sounds being the only response.

She turned away suddenly, something was beeping, another patient maybe, or perhaps someone died. She was talking to someone now through a commlink. Her voice flowed sweetly, like warm rain on summer days when he would walk through the barrens and nobody would follow.

A cold lump settled in his throat as he waited for her to return, the cool breeze lifting brown and yellow leaves from the broken asphalt, coiling sticky shapes, their edges fluttering and preparing to strike. And the awful beeping, rising from the air like some depraved siren, stung his ears, its intensity rising. He wished somebody would turn it off and found himself reaching out, his fingers touching it, the pulse tangible and real like a heartbeat, except stronger.

"Mike." From a deserted alleyway he heard the voice call him. He paused before moving forward, unable to see its source.

"Wake up Mike. Get the hell outta there, now!"

He felt his eyes snap open with the surge of electricity in his mind. Sweat coated his body as he laid face-up on a simple mattress in a small, dark room, cords of sunlight streaming from the only window through a pair of wooden shutters. Police sirens beeped loudly in the distance as a gentle rain pelted the open ledge. Cecil? He looked around for the voice, but the room was empty. He pulled himself upright with his good arm, shaking off the daze of noises and confusion as the metal disk tumbled from his pocket. The dim light played over its surface, tempting him to pick it up. He pressed it against his bad hand, clenching it with all his strength to force away the numbness and triggered the catch, revealing the black surface within. The green dot closed in toward the center, circular lines growing brighter, pressing outward, fifty meters, forty-five, forty.

Mike closed the disk, placing it back within his pocket. Beads of sweat formed on his scalp as he moved toward the window, lifting the shutters and crawling onto the ledge. He was four stories up. A good jump? Teeth ground together at the thought as drizzle mixed with the perspiration, forming a tiny rivulet down the crevice of his nose.

"Hey Mike? You in there?" It was Bill's voice. "Open up Mike, it's okay."

He crawled out further along the ledge, pulling his legs away from the window. Vehicles knotted together in the streets below, chemical combustion motors sputtering, whining, complaining to their drivers beneath the dying sirens. The door broke open. There was the sound of footsteps and an unfamiliar voice as dry as caster-sand.

"Shit!"

Galanglic. Mike considered crawling back inside, then stopped.

"I want his head you little weasel, you understand?! He knows to much about Erestyl."

Mike could almost see Bill nodding on the other side of the wall.

"I'll... I'll wait here until he comes back."

"What makes you think he'll return?"

"Where else can he go? He has no money."

Wooden shutters swept away from the window face, the crackling noise of metal and wood in violent separation resounding through the room. Mike waited, breathlessly, for a head to peek out as small black birds scattered along the ledges above and below.

"Harrison has friends on Calanna, or have you forgotten? He'll have ways of getting money."

"What do you want me to do?"

"First get that thing out of your kneecap."

"And then?"

"I trust you'll be able to figure the rest out yourself."

Mike waited another two minutes as vehicles carelessly zigzagged on the streets below. The small, black birds returned to their cement roosts, the outcroppings serving as poor protection from the rain. Like the wandering beggars, they seemed ready to take whatever handout fate should devise. Mike finally crept back inside and past the splintered door.

The rain smelled musty and noxious, exhaust fumes clogging his throat and stinging his eyes as he drifted along narrow walkways beside the ground traffic. Street urchins clothed in dapple-gray kirtles and drab brown coifs played amidst the traffic, climbing onto the slow, red cabs to ask for money and ganging together for some bashing to keep the stingy in line. Bums sat huddled along the gutters, some clenching bottles and others holding small, box batteries with thin, elastic cords connected to their head-jacks, their emaciated bodies slowly rotting in the gentle rain as thin smiles played across their lips, eyes glazed-over with the entertainment of some abstract fantasy.

"K'drin onuvalye?" One grabbed for Mike's boot as he passed by. "Daro!" The box was out of juice, and he wanted money to recharge it; just one chiphead asking another for a small, important favor. Mike kept walking, finally stopping in front of a large window facing the street. He did look like a chiphead, even worse perhaps. The stubble on his head did a poor job of concealing the jacks, and his left shoulder, still numb, sat firmly in its temporary cast beneath the coat. He pulled the disc from his pocket and glanced at the readings. Bill was on foot, less than half a kilometer and heading northeast, toward the city's heart, toward the underway probably.

Mike turned and picked up the pace. He'd have to cut through the rowens to catch up. Just his luck. The ground changed abruptly from wet, black asphalt to soggy, brown dirt as he skirted from the roadside and hopped the rusty gate. The fumes and noises of traffic seemed to fall away as he crossed over the damp earth, a peaceful, musty quiet replacing the garble of chaos. Long columns of raised earth, sparse trees, and an occasional thatch hut served as the only occupants. At

least it was still light out, he reminded himself. Stiff grey clouds loomed above, blocking the sun's gaze. He tried to make out where it rested, but it was no use. Morning, afternoon, or evening, it didn't matter anyway. It was day, and his chances of getting accosted were slim.

Even so, he breathed easier when the tall buildings of the uptown came into focus behind the curtains of falling rain. Mike hopped the outer gate with a sigh of relief and headed toward the underway, rechecking the disc's display with a nod of satisfaction. Bill was right on schedule. Now the problem of acquiring fare came into focus. Mike remembered the check Ambrose had given him and felt around in his pockets, the slow realization that he'd been robbed dawning on him for the first time. Her name still lay etched in his cast, an unpleasant reminder, but then he should have expected as much. That was fifty million drin washed down the drain with five to ten thousand being all he'd need for trans-fare. Mike cut through the back allies, memory tracing his steps into the pawnshop.

An old man with a thick, red beard and pot-belly knelt beside a wooden stool, spray coating its legs with a plastic adhesive. He ignored Mike as he continued working.

"Hi."

"Ain't got no juice."

"I'm looking to sell."

The man glanced up from the stool, seemingly unimpressed.

"This coat."

The man continued layering the legs, the nerves in his hand jittering the fingers as he sprayed.

"How much can I get for it?"

"That coat has a hole in the shoulder. And it's stained."

"I need ten thousand."

He put down the spray can and turned the stool upside-down, setting it on its seat.

"How about five then?"

"It's worthless."

"One."

He shook his head with annoyance as he unscrewed the nozzle head, replacing it with another.

"C'mon. Give me a break. I was shot today."

"Nice boots you got."

"They're offworld."

Mike kicked them off and let the man examine them.

"Contraband?"

"No. Its legal. Look, it adjusts for the size."

"That's pretty tricky. I'll give you twelve."

"Fifteen, and I'll throw in the coat."

He shrugged, taking the coat to examine.

"See? Pockets on the inside."

"What, do I look blind to you?"

"No, not at all." Mike shook his head trying hard to sound sincere.

"Fifteen."

Mike strode barefoot, avoiding the broken glass as he headed toward the underway. The disk showed Bill ahead of him but not by more than a hundred meters. Mike slowed his pace, taking the escalators down to the ticket dispensers as a computer synthesized voice droned above the background chatter.

"Welcome to Xin terminals. Please have exact fare ready. CME cards accepted."

Once in the ticket lobby, Mike leaned against a shaded wall as he consulted the disc. Hundreds of people lined up against the dispensers, a young couple swapping spittle to the self-sustained ignorance of those around them, a three-year old kicking his mother's knees as he swung from her brown satchel, a tall chiphead with spokes for jacks eating a quagga and manouri on rye, drinking something blue and bubbly from a leftover sluice tube. The green dot dipped off the display at it headed south, the concentric circles shifting first into ovals and then narrowing into thin slivers of their former shapes and the dot came back into view for a moment and then descended off the surface entirely. Mike pocketed the disc and stepped into line behind the spokes man.

"Where's the output, dude?"

Mike looked up, surprised. The chiphead took a swig from his sluice tube and offered the rest to Mike.

"You get fucked up?"

"Ummm... no thanks."

"Damn, EI receiver point. You even got a manipulator plug. Y'know, you can hook in an output jack there real easy. I know this guy who'll do it for pretty cheap."

His eyes roamed Mike's scalp with fascination.

"You interested?"

"I'm kind of in a hurry."

"Hey, no problem."

He turned around to buy his ticket, pausing at the entry gates before continuing.

"Just leave a message on the 'Doggie Blitz' if you change your mind."

Mike nodded as he fingered in his destination, the synthesized voice finally acknowledging his presence.

"Your fare is eight thousand five hundred drin."

He shuffled a ten into the machine.

"Do you accept credit for non-exact amount?"

"Yes."

"Thank you for traveling the Underway."

"As if I had a choice..." Mike grabbed his ticket and entered through the gates, another machine snapping up his slip of magnetic paper and returning it as he passed to the other side. "Credit: Drin 1500" was etched in red symbols at the upper right-hand corner of the stub.

The trams sat cushioned on gravitic fields, a recent innovation Mike recalled as he boarded. Most everything other than transportation and communication was despairingly backwater, even in the capital's suburbs. He found a seat at the back of the last car. Only two others entered with him, the young couple. Probably evening then, he figured, everybody's going the other way. They resumed their foreplay as the tram picked up speed, and Mike turned his head more out of embarrassment than courtesy.

"Feeling lonely?" Mike sat up, suddenly surprised. "Come to 'Temple of the Mermaid' where your whim is my command." The feminine voice continued babbling over the car's speakers as the girl started licking her boyfriend's face. The guy watched Mike out of the corner of his eye, a cocky smirk playing across his lips. "Satisfaction guaranteed, or your money back."

The tram finally stopped, Mike pulling the disc from his pocket and consulted its display as the doors slid open and

several dozen people entered. Bill was within half a kilometer and moving on the rollers. Mike pocketed the disc and slipped outside the car as its doors slapped shut behind him.

Several rollers coasted by on cermelecon rails, arched bridges making way for their passage. Mike hopped on one and inserted two thousand drin. The digital gauge clicked away as he stepped on the acceleration peddle and gripped the handrails. Soon he was in the city's midst, the canopy of stone several hundred meters high and around him thousands of sparkling lights, a latticework of railings, glowing exit pads, steel office complexes sitting atop large cylindrical stalks, one built atop the other, and a hive of cable connections hanging in the air like uncropped weeds taking over a forest. Suddenly he realized he was sitting still, the roller having shuffled off to the side so others could pass. A small red light blinked near the money slot and zero's glared out from the counter.

Mike inserted another thousand and parked the roller before the money clicked away. Two women in dapper, black frocks raced toward him in long, determined strides, pushing past to the free roller before anyone else could beat them to it. Meanwhile, large, circular, iris valves continued disgorging a steady stream of mainly government tight-necks, a few laughing but most sedate, languid, or exhausted. Glowbeads sparkled on the sides of the escalators like little droplets of sunshine, and as a line of rollers passed overhead, their bright rims cast a dizzying array of colors on the velvety black sheen of the thick, airy mist in the space beyond.

The disk showed Bill remarkably close, and Mike felt his head duck almost imperceptibly as he crossed, unhurried, into a deserted portal. The reading shifted slightly, circles bending again into ovals. Mike tapped the surface with his index finger and eyed the double doors of a maintenance lift. Suddenly the green dot flickered and died. He cupped the disc into his pocket and headed out the portal, finding a cool table beneath the shade of a low hanging ceiling. The table's surface displayed the menu, showing two-dimensional pictures of each of the meals. Mike settled for a glass of ice water, inserting a thousand drin into the slot and collecting his change. The crystal cubes were still making a faint sizzling sound as they clinked against the inside of the glass. Mike sipped the fluid, the fuzzy numbness slowly receding from his shoulder as he watched the portal.

He turned back to the table's smooth surface and brought up an area map of the city. Xaos, pronounced Za'-os by the natives, was the capital of the lesser continent. Excavated long before the civil war, it was utilized during the planetary revolt as a stronghold of last resort. Its location, several kilometers beneath the seabed, was virtually unassailable except by the thermonuclear warheads which the Archduke would never use. Afterwards, it grew, large suburbs like Xin and Xekhasmeno rising at the surface like the first seedlings of a dwearmurgrove. Mike examined the display. They'd done a good deal of construction over the past two years. He brought up a voice window on the display and pressed a few more keys on the interface, depositing his change back in the money slot. The channel clicked several times before there was any answer.

"This number had been disconnected... if you need directory assistance, please dial..."

Mike killed the window and searched through directory assistance for 'Cecil Dulin.' He then expanded it to the suburbs and ran a search of the local emigrations and obituaries, finally punching a few more keys in frustration. A red light flickered on the display. Insufficient funds for a planetwide directory search. He slammed his good fist against the table surface without effect. The display shimmered, seeming to laugh at him from behind its protective cover.

"Have it your way," he finally conceded, taking the disc once again from his pocket and consulting the reading. Somebody put money in a soundbox, and Mike found his bare toes involuntarily keeping time with the music as he rubbed his bad arm beneath the castfoam and patiently waited for the reading to stabilize. The green dot remained stationary, glowing steadily just beyond the fifteen meter mark and then suddenly disappeared.

"This isn't my day."

Mike plucked the surface with a wary finger as the empty ovals glared back at him.

"C'mon Bill, don't do this to me... "

Mike pocketed the disc and pulled himself up from the table. The portal beckoned from across the walkway, its keypad nestled against the maintenance lift doors. Stern, blue letters marched across the lock's indicator, "access code required." Gears began whining as Mike stepped to the side, clenching his good hand into a tight fist. The double doors opened, and Bill started out, his long, lanky arms dangling to his sides as his mouth opened in a wide, toothy grin. Mike caught him in the neck with his fist, taking him backwards with the blow. As Bill lay on the lift's floor, crumpled and choking, Mike kicked him once in the stomach and twice in the nards. Satisfied, the older gatherer twisted the lift's operating lever and quickly removed Bill's fiberglass pistol as the doors slowly shut.

For a moment, stormy grey eyes betrayed anger and fear. After that, there was only shame. Mike looked down, a course determination quietly roiling within his guts as Bill clutched his crotch with both hands.

"You bastard!"

"Niki's dead, Bill."

"So, ya gonna shoot me?"

"I'm thinking about it."

The lift stopped, its doors opening at Mike's back as he quickly spun to the side of the lift.

The room was cluttered with a variety of maintenance equipment and medical gear. Two semi-automatic carbines rested on the far wall, and a portable microframe lay at the floor's center along with a package of optical storage disks and a large, black dodecahedron. The room's furniture was sitting in the corner, a single, short, wooden stool.

"Nice place, Bill. You get good rent?"

"Real good."

Mike shook his head in concentrated disbelief.

"Go on."

Bill let himself be kicked forward into the chamber, the cool flow of ventilation cutting across his shoulder blades as he retreated into the dim light of an electric lantern.

Mike sat stiff in the corner rubbing his bandaged shoulder. Her name lay etched in the white surface.

"You get shot again or somethin'?"

"Here, why don't you come over and take a closer look," Mike invited with a sarcastic snarl.

"Mama gave it to ya?"

"That's close enou..."

A shin snapped into his forearm, and Mike found himself reeling off-balance, falling backwards as Bill's fist nailed him in the midsection. He never heard the stool splitting against the floor planks as he tumbled backwards. Instead, silence seemed to surround him entirely, and then there was only the deafening echo that followed the silence and Bill slipping quietly along the floor within the pool that was his own blood.

"You stupid fuck!"

"Sorry, Mike. . . "

A twinkle of amusement roamed through his eyes, the grey spheres seeming webbed within the clouds of a paternal haze.

"Bill!"

Jim's a grad-student at UC Riverside, hoping and praying like crazy that he'll get his MBA before the dean's axe gets him first. In between classes and term papers, he can be found editing The Guildsman*, the raunchiest gaming zine ever to be published.* The Harrison Chapters *were originally written as a setting description for his Traveller (SF-RPG) campaign. His story, he says, is what you get when you combine an overactive imagination with the foolish tendency to wing it. He says he writes exactly the same way he gamemasters: without any semblance of plan or preconception.*

What has been published here as Chapter Six *is actually chapters ten as written originally by Jim.* The Harrison Chapters *will be continued next issue.*

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THE LAST LAUGH

by Rob Chansky

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The Camp had grown from a lone trailer to a massive though temporary installation, only to shrink back. The trailer sat again by itself, soon to be moved to wherever it would be deemed more useful.

The second-to-last jeep was leaving, shaking off the dust of the site behind it. The military wanted nothing more to do with this elaborate joke.

The Arizona sun beat relentlessly on the trailer's white metal surface, daring the overworked air conditioner to maintain a comfortable room temperature. The old man inside cared little for the weather; he knew nothing but a life wasted, squandered on a useless task now completed. If he could only remember... if only...

Something he had started, thought about, in his past. The idea eluded him still.

Or perhaps not. Perhaps it had all been a hoax. But that letter– it had been so self-satisfied, so damnably smug.

He would kill that man, whoever had written that letter, if in all of creation there was way to get to him...

For him, it had started with a phone call.

To his colleagues, the scribbles on his office blackboard were incomprehensible; but Professor Bequay used a mathematical notation meaningful only to himself. He was sixty-five years old, and he had done things this way all his life. He would not change it for the University or for anyone.

He had been free-associating that morning, as he normally did, but today he felt he was onto something that could be important. But Bequay was never one who could ignore the anxious trilling of his telephone. The scribbles would have to wait for now, while he answered it.

"Professor Anderson Bequay?" The voice sounded very official and important; probably one worth a modicum of politeness.

"Yes, what can I do for you?"

"Professor, I have been in touch with certain research elements in the military." Ah, yes. He had done several government consultations here and there in the past, and the government had a way of remembering your name. "There is a problem for which your name happened to come up."

"Certainly. Could you come to my office to discuss it?"

"I'm afraid that in the interests of National Security..." The man went on to mention the code and section, and, amazingly, recited a paragraph taken verbatim from the book. Bequay was talking to a man who had actually memorized the paragraph, rather than merely one who enjoyed quoting it to him. He admired a stickler for details, it meant an ordered mind. "... you would have to agree to join the project before any details can be given. Do you understand?"

Of course he did. There were, he supposed, worse things he could do with his time than spend it sweating in the Arizona sun. For instance, staying here... and staying here meant the annual faculty awards banquet. He had always hated the awards dinners, much more so this year as the guest of honor. The other faculty didn't much care for him, and the feeling was mutual; leaving that unpleasantness for whatever awaited him in the desert sounded like a good way to avoid his impending social demands.

Professor Bequay, forgetting the attraction of his blackboard and the ideas on it, turned his attention to the terminal on his desk. He checked his electronic mail; apparently the government had already contacted the dean, and Bequay had been cleared for two weeks leave. He sent memos to a few of the faculty and students, being purposefully vague on where he was going and what he was doing. The datanalysis classes he was teaching would have to fend for themselves for the time being; it would reflect badly on his record, but so what. They certainly hadn't hired him for his teaching ability. His research had revolutionized the field of datanalysis, to the point where it was (nearly) its own discipline now.

Not much more to do here. Someone would come in and water his plants; he had found this out after his last extended absence, discovering that his kudzu hybrid had burst from its glass container and enrooted itself into some of his paper files and the wall nearby. Now he kept it stunted with mercury. He locked the computer up, and glanced at the blackboard. Something wrong.

There it was. He picked up the eraser and removed a "-" from the equation. There; everything was much clearer.

But clear or not, it would have to wait. He locked the door behind him.

The hall containing his office made a 90-degree right turn before it came to an exit. Entering the turn, Bequay collided with a bespectacled young man carrying reams of computer printouts. The printouts scattered like laundry in a storm. "Sorry, sorry" the grad student muttered as he tried to gather them back. Rules of politeness compelled Bequay to reluctantly stoop and help him. The student looked up.

"Prof – Professor Bequay, I was just trying to see you," the male student said, his astonishment quickly escalating to enthusiasm. "Here, I'm from the astrophys department – oh, it's just amazing, sir, we've picked up–"

"Not now, I'm very busy." Bequay proffered the three or four sheafs of printout at the grad student, but both his hands were busy trying to control his own bundle. Bequay, not seeing any point in forcing the man to accept the papers he'd picked up, let them drop on the floor with the rest.

"But– it's– will you, will you be in your office tomorrow?" The student looked despondently at the papers in a mess on the floor. He looked haggard and out of breath; it didn't seem as though he'd slept in several days.

But the professor had turned and was walking away. He waved his hand at the question, hoping the student would take it as a yes and leave him alone. Bequay had seen the heading on one of the sheets of paper the student had dropped: "Astrophys. SETI division, e-mag. anomaly IV. Time: 03:45:32 - 3:50:23". Bequay had no patience with the sort of people involved in the Search for Extraterrestrial Intelligence, in fact with the whole idealist mindset that would want to join such an organization. His pioneering work in datanalysis had benefited their program immensely, if only to keep them from crying "extraterrestrial" every time someone turned on a malfunctioning hair drier in the suburbs. They bothered him occasionally, trying to get him involved in some project of theirs. Bequay did not wish to be involved.

He was met at the Phoenix airport by two men in full officer uniform, complete with salute. They drove him to the site– an uncomfortable four hour trip.

The last few miles saw them through a winding absence of rocks and brush that might have been called a road. Bequay became even more irritable with every bump and jostle. Finally, though, Bequay and the two silent men came to a dust-covered white trailer in the middle of nowhere. Several jeeps and a troop carrier were in position next to it.

When the car pulled up next to the largest vehicle, Bequay could make out men at work everywhere– spreading camouflage nets over the trailer, setting up a fence perimeter, fastening together sheets of sand-colored plastic in a large circular area that would presumably become a landing pad for helicopters.

Bequay and the two men got out, an escort appearing immediately around all of them. They took his small suitcase. He was gently tugged along into a blessedly cool trailer. An overweight man in a colonel's uniform took Bequay's hand and pumped it jovially. "Professor Bequay, glad you could make it. Have you been briefed?"

The professor said no. The colonel dismissed the uniformed men and offered him coffee.

Bequay took black, no sugar. Motioning towards the window and the activities going on outside it, he said, "What's this all about?"

The colonel leaned comfortably back in his chair. "We have discovered something here, professor Bequay. Something extraordinary, if my assistants are to be believed." It sounded as though he believed it. "Are your security folders in order?"

"They rushed me through all that; yes, I am under oath to repeat nothing of what I see. Now get on with it."

"The official word for this," the colonel leaned close for emphasis, "is a 'chronological anomaly'."

"And how did you find this 'anomaly'?"

"There is a Russian submarine with a titanium hull," the colonel explained. "Some of our people have been trying to come up with a metal detector specifically tuned to titanium, such that this type of sub can be detected deep under the sea. We were testing this device with a hidden cache of titanium near here. . . "

"In the desert?"

"The principle is almost the same in sand as it is under the ocean; and here the search was less expensive. Regardless, we turned up this anomaly instead of the scrap of metal that had been hidden." The colonel – his name was Sutherland – led Bequay outside again, into the scorching afternoon. On the other side of the trailer was a hole in the ground, about ten meters in diameter. A stout wooden ladder led to the bottom. Sutherland went first, motioning for Bequay to follow.

"The helicopter crew was working for a three day pass. They tried to get the anomaly out of the rock, thinking the crew that had hidden the metal fragments had decided to make them work for their prize. At the time, it was fused into solid rock with one corner protruding. Eventually they realized that what they'd found was not what they'd been told to bring back."

They were both inside the dig now, a little deeper than the professor's height. It sloped upwards toward one corner, where a man crouched over something, making brushing motions with his arms. He turned around. Sutherland introduced Bequay to Lieutenant Gordon, who smiled and called him "sir" as he offered his hand. The professor shook it tersely, not even looking at the man.

"This is your anomaly?" he asked.

'This' was a small metallic box. It jutted straight out from the sandstone wall of the dig, about half a meter from rounded corner to rounded corner. Four of the corners were still buried in solid rock, but someone had dug all around it. Rust and corrosion seemed to have ignored it completely.

The lieutenant smiled. "This is what we found. Beautiful, isn't it?"

Bequay didn't like the lieutenant. "So," he said, "you've found a metal box."

The lieutenant struggled inwardly, trying to sort out all the things that he wanted to say. The professor said testily, "you must have called me here for something, some data to analyze. That's what I do, unless you got my name off the wrong list."

Sutherland, a hint of a grin on his lips, simply gestured towards the box. The professor bent closer to one particular face – nearly touching it. That one face, not completely excavated from the stone around it, was not featureless; in fact there was a square of glass inlaid there -like a small window, but opaque. There was writing there.

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And, under that

Important Data

"Important," said the lieutenant. "Damn right it's important. Important enough to be left in layers of sediment formed at least six million years ago. Important enough to last all that time– and God knows how much longer." The soldier inspected each face in turn, from Sutherland's gloating expression to Bequay's attitude of cynical fascination. "Pretty important, all right," he said.

The box was cut out of the rock, and a portable crane produced to lift it from its ancient home. Now it sat on a reinforced steel table beneath a large tent in the Camp, calmly guarding whatever secrets it contained, preparatory to its being moved

to an undisclosed location. The dig was being widened, deepened, in the hopes of another find. A helicopter performed tighter and tighter grid-searches of the area, and more of the metal detectors were on their way.

"Some sort of geological survey, maybe," the lieutenant offered. "They sent it back in time to record seismic data. Not much else it could record, stuck in the ground like that."

Bequay sipped his coffee and glowered at the lieutenant. His mild dislike had blossomed into continuing irritation. The lieutenant consistently reminded him of a personality he had never gotten along with.

He got up to walk around the box. Featureless gray metal greeted him from all sides– except for the almost invisible seam that encircled it. He turned to the two men. "How do we get it open?"

"I still don't know if we should." They both looked at the lieutenant. "Obviously it's not meant for us."

"Misgivings so soon, lieutenant?" Sutherland, previously silent, decided to join the conversation. "I'm afraid it's ours now. Whoever put it there didn't bother to check our schedule." He shrugged. "Their loss." He asked Bequay, "were you awake this morning when we tried the drill?"

"No. It woke me up." Pieces of the tent flapped loosely in the wind, marking the passage of fragments of the exploding drill bit. It had nearly cost two lives, and there wasn't a mark on the box.

Bequay ran his fingers over the lid– what was presumably the lid, anyway. The small glass square on the top seemed to be the only thing that even hinted at its great age; tiny scratches crisscrossed its surface. They hadn't wanted to drill here, even though it seemed the weakest part, for fear it might have broken some apparatus inside. Now it looked like they would have to...

As the tips of his fingers brushed the glass, something seemed to shift inside. A thump, from somewhere inside the impervious structure.

Professor Bequay backpedaled from the box, fearing whatever might happen. But it remained where it was, waiting.

"What's wrong?"

"Something happened. I felt something move inside." He peered more closely at the sides of the box; the seam that marked the border between box and lid should have been barely perceptible– now it seemed wider, possibly wide enough to admit a dime.

The colonel noticed it too. "Sergeant! Give me your tool belt." From it he produced a pair of flat screwdrivers, giving one to the lieutenant. Both worked at the thin seam, twisting and prying the screwdrivers to widen it. Bequay watched them work, arms folded.

There was the sucking sound of ancient air being exchanged, and the colonel and lieutenant were lifting the heavy lid, amazingly separate from its box. They dropped it to the side.

Smoke curled up from the inside; Bequay couldn't see what was in the box. Both box and lid were trembling slightly, vibrating as though some engine had started up inside. The vibrations increased in intensity, first producing a strange double-toned hum as the vibrations transferred to the steel table– then stronger, the sound filling the space around them as something physical– and then thudding into the steel table while the three men desperately clasped their ears against the sound.

The air was suddenly drenched with light – a light that burned his face and blinded his eyes. Bequay saw nothing more for a while.

Men filled the small tent, trying to help him up and chattering among themselves. They were frightened voices. "I can't see. I can't see," Bequay told them, blinking his eyes. His vision was nothing but a continual grayness occasionally streaked with blue.

There must have been a doctor at the Camp, for someone was swirling a penlight before his dimmed vision and trying to reassure him. "Here, it's only temporary. You'll have a hell of a sunburn, though. It's over. It's all over."

But it was not over.

Whatever else had been in the box was now slag puddled in the bottom of the small cavity; only a cube of quartz-like material had survived. Bequay knew there had been speculations about the development of crystalline recording media. Since this box was from the future, the crystal might be one of those speculations brought to life.

The cube shimmered in his hand, when he held it; rainbow patterns shifted and curled within the enigmatic crystal. All his life, he realized, he had looked for a challenge of this equal. His earlier experiences had taught him that looking for order in the chaotic randomness of the universe could drive one hopelessly pedantic – or else just as hopelessly eager to see intelligence behind every little pip and spike on a frequency graph. Here was something genuine – an encoding of information, completely man-made yet as alien as anything yet discovered – and he intended to deduce its purpose here. No device currently existed to read the data encoded in the smoke-like wisps of color. It would be necessary to invent one.

The lettering on the box suggested that, if there were textual data here – and there was no reason to assume there weren't – it would be in English. This was a break. If, as the lieutenant had suggested, it consisted only of a seismic readout, it still would not be difficult to decode; and the data uncovered would be very useful and profitable, whatever the crystal contained.

Bequay was certain of that.

The only question was how it was encoded. A person from the time that had built this object would no doubt have little trouble buying a machine to read the crystal, but no such machines existed now. Bequay would have to deduce what standards had been chosen for the construction of such a machine, and those for the encoding of the crystals it used.

Bequay gleefully allowed his project directors to exert political pressure on the dean of the university, to grant him indefinite leave to work on the project. He had never liked life in academia, anyway. The dean told him there were more communiques awaiting his attention, particularly from the SETI organization, which maintained that they needed his expertise to decode anomalous transmissions of non-terrestrial origin they had intercepted. Bequay disregarded the messages. He had a much bigger project already on hand.

To the rest of the world, Anderson Bequay had dropped out of sight.

A secret lab was prepared in Colorado; Bequay asked for, and received, assistants and equipment from all over the country. The cube was measured, mapped, weighed, chemically analyzed, micrographed, and magnetically tested. After a year

of more complex examinations, the team came to a conclusion: the information Bequay sought hid behind the molecular bonds of the crystal itself. The cube could not be "read" by currently available means. Bequay was upset. This would mean more delays, if indeed the technology ever became viable at all – though of course it was obvious that it would.

Analysis of the box that had brought this cube proved futile. If any machinery had been functional before the box was opened, it had melted itself down completely. Even the formerly impervious outer shell was now weak and crumbly after the booby trap, or whatever it was, had been tripped by its opening. No futuristic miracles of metallurgy would be learned from it.

There was still one avenue to take. They knew there *would*, someday, be an information storage/retrieval system that would use this crystal. If it did not come from too far in the future, there may be a corporation that has considered the system at some time. This meant reports and specifications would be available, reports that may give a direction on development of the way in which the crystal was (would be) encoded.

A large Japanese-based corporation took its time in responding to their inquiries. They had, in fact, considered a crystal medium for a recording device; however, it was far too impractical to produce. Bequay asked for the reports anyhow.

After two more years a prototype reader was ready. It took up the space of a high school gymnasium, had leached half a billion dollars from the Pentagon's budget, and used a sizable portion of the power output of a nearby plant. Three exquisitely miniaturized lasers aimed at three sides of the cube, turning it into a blaze of fiery red for all of the twenty minutes it took to read the cube. Bequay's task could finally begin.

Data is essentially one-dimensional, a binary function of time, but the crystal was a three-dimensional object. Was the data on it recorded from left to right, top to bottom, in some other order, or in a more complex pattern? The cube had no defined top or bottom, so Bequay had hundreds of distinct sets of data to decode, for just the simpler patterns.

Each set was analyzed in its turn. There existed rigorous standards for binary notation; each "bit" of 1 or 0 could be grouped together in established patterns; seven or eight to a character in the English alphabet, for instance. It was reasonable to assume that the makers of the cube would not change these standards, but nothing of meaning was found in any interpretation.

Bequay and his hand-picked team tried everything, every possible formula they could think of, but it stubbornly refused to be turned into sense. His own analysis formulae told him that every interpretation was random data.

The military wanted results, and were getting impatient. Five years had passed.

Bequay was now seventy years old. His eyes had failed him long ago and now his body and mind were beginning to follow suit. He resisted the aging process every step of the way. He remained at his workstation late at night, sometimes waking at his terminal the next morning with the computer's keyboard imprinted on his forehead.

His sleeping habits deteriorated his health further, and pneumonia put him in the hospital. As he lay dreaming of shimmering cubes, the team of graduates that had been working with him grew shiftless; personality conflicts previously suppressed by his strong leadership were brought into the open.

Bequay returned to health to find his team split up, his project about to be dissolved. Surprisingly, he did not care.

He had found it.

A vision had come to his confused mind again and again: bending over the etched words of that ancient box, reading the words there, printed so neatly and so obviously on the cover. Why bother writing those words at all? Who would need the identification? What if it had been discovered by someone else, before the United States had ever existed? Six million years was a long time. Not that Bequay swallowed those stories of Atlantean civilizations or ancient astronauts – that was for others to believe – but he could picture Indians spotting the dull corner of metal and trying to chip it out, or a group of early American settlers breaking a wagon wheel on it.

Important Data.... Why inform the casual observer of the artifact's contents? The people who had sent it had obviously meant to find it again, and they needed no memory jogging as to its purpose.

Was there something *in* those words? A message for him, perhaps. Why not? The engraving had mentioned data, and who else would the government contact if they wanted to analyze data?

Bequay found he liked that explanation.

His vision only pointed this out, but he had deciphered its true meaning. It was time to visit the desert site again.

It had not changed much in the years since he had been here last. The fences were still there, and the guards, though there were much fewer of both now. Excavation had been abandoned, after nothing more had been found. The heat was still the same. The younger Bequay had borne the oppressive heat fairly easily, but now he found it difficult to even move.

He carried his briefcase to the white trailer, still there, but much more uncomfortable than it had been. The briefcase was a portable terminal, and, hooked to the trailer's comm. system, allowed him to access the computers that had still not been taken away from his project.

The box was there, but he was not interested in that. It had crumbled under its own weight, a despondent heap in a nitrogen tank.

The lid was here, damaged as well. Bequay had brought with him a microscope.

The words were as he had recalled them, but changed slightly– instead of lettering sunken straight into the metal, parts of the sunken engravings had evaporated, leaving irregular ridges instead of smooth ones. The ridges went up and down like the surface of a key, in regular patterns: up, up, down, up, down, et cetera.

Bequay wrote these down in order, from the top stroke of the *P* to the bottom of the *a* in *Data*. He entered these into the computer as the Camp guards watched him. If they were mask bits, they were a key to Bequay's magic data. He told the project computer to run each set of data through his decoding program once more.

After ten minutes the first dataset produced nothing. The second gave the same results; likewise the third. Bequay went to take a nap.

After the thirty-seventh the computer gave a distinct chime, and one of the soldiers had to wake Bequay. When he re-

turned to the workstation he saw his program had produced a diagnostic– the only such it had ever made in the last five years:

English text corollary found @ byte 45024852

He told the computer to read to the end of the gigantic mass of data– to find a page of English text. His eyes grew wide.

My dear professor Bequay,

Obviously you have invented a machine to read this datacube, and discovered my simple coding scheme to interpret the data as it was meant to be read. Do not congratulate yourself just yet.

After having studied you, profiled you, and categorized you, I feel I know you as I might know myself; and as such, I could not let you die without ever knowing the true purpose of the artifact on which you have spent much of your remaining life. Even more importantly, I dislike you.

And so I thought I would include this brief note in the morass of random bits; without it you would have died never knowing the artifact's true purpose.

And what is this purpose, you ask? A simple one...

The old man was oblivious to everything around him, as the excited soldiers called someone on another base to tell the news, as men arrived from all over the country to examine the message and its implications.

What else could be done? Oh, they could bring someone to dissect his mind – try to bring back the thought, development, whatever it might have been, perhaps by hypnosis – but he was sure it was long gone by now. Decoding the box had taken all his energy, all his intelligence – as it had been designed to do.

The man who had written that message had done his job well; decoding the crystal's data had occupied his complete attention, and he would never have accomplished it were it not for the clue in the lettering. The writer had been so smug...

That blackboard. He remembered something – not what he had been working on, but a feeling about it, that it might have led to something big.

The University was thorough and meticulous, if anything – he had left them, but they would never have thrown away his things, should he return.

In a file in a box, in a dusty corner of a subbasement, was all his accumulated mail. He paged through it briefly. Much of it was more communications from SETI. They needed him to analyze their transmissions; without him the data could never be translated. They desperately, desperately needed him... Bequay shoved it all back into the box, disgusted. Perhaps the University would let him return – to pursue his own project, of course, but ostensibly to teach again. He hated teaching.

He must figure out what he had been working on, and develop it to the fullest. Though stuck deep in the past, he would have the last laugh.

Robert Chansky is a vaguely aspiring writer in Santa Cruz, CA. He enjoys computers and Peter Gabriel. This is the second story he has published in Quanta, the first one being "Litterature," which was published in the December '89 issue.

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FOOTPRINTS ON THE SANDS OF TIME

by Michael Burschik

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Nimbly as a six-and-a-half-foot Prussian ballet dancer, Mortimer Slagfire-Sartorius stepped into his laboratory and grazed his eager staff with eyes that would have cowed a raging bullfrog, for Mortimer Slagfire-Sartorius was a master of men, a giant of science and a mountain of a man.

"Well, my fiendish friends and fawning followers," he bellowed, "this will be a day of high adventure and low cunning, of great inventions and elusive immortality! Let us begin!"

Then they jumped him, beat him, bound him, stunned and paralyzed him with strange devices of his own invention.

"Stop that nonsense at once, you flea-ridden fools!" he roared. "What - in the name of the Eightfold Path, the Seven Sages, the Six Fingers of Time and the Five Wounds of Christ - is this supposed to mean?"

"This is the day of your eclipse," they told him as they bound him with chains of rusty iron, semiceramic cables and a monorganic mosquito net of his own invention, "and the dawn of our ascent."

"What? Do mere mortals dare to strive with titans?"

"For sixty years you have flooded the world with strange devices of your own invention. You have made and lost and regained fortunes few men would dare to dream about. You have ruled states and business empires. You have engraved your name in bold print upon the history of science and the world - and in letters sixty miles across upon the surface of Mars."

"I know!"

"And now you are eighty-six years old and seek immortality not merely in the memory of men, but in the flesh."

"Yes, yes!"

"Even now, you are larger than life and maybe larger than legend. Immortal, you would overshadow all the human race. And therefore we must kill you before you can uncover the weird ways of nature and make yourself a god."

"You cannot kill me!" he thundered. "I am stronger than your strongest fears and stranger than your strangest dreams. My voice alone, which rumbles like a mountain, will make your flesh creep and your hearts quake and tremble with envy, anguish and despair. And from my gaze you shrink like T-shirts boiled too hot. You cannot kill a mountain of a man, no more than snails could race a roaring lion."

"He's right," they said, "we cannot kill a man like him."

So they blinded him with white-hot glass and broke the fingers of his hands. And they cast him through the shimmering arc bridge and began to celebrate the morning of their fame. But he was washed up on a distant shore beyond the arc bridge, where he soon woke to the cackling of an old woman with a voice as dry as broken bones.

"By the Four Corners of the World, the Three Weird Sisters and the double-dealing, two-faced God of Doors - where am I?" he groaned.

"Beyond the arc bridge," cackled the old woman. "But who can tell where that may be? I call this place here Dawn. And who are you?"

"I am Mortimer Slagfire-Sartorius, the greatest scientist since Gregory Smirnov passed away."

"And I am Truant Moonblood, and I was a scientist before you were ever born!"

"What? If that is true – and I suppose it must be, since it is utterly implausible – then you must be one hundred and seven years old!"

"And so I am, you incredulous, fork-tongued fiend."

"And I, who was once an Eye Among the Blind, am now as sightless and unfingered as a worm, and bound and chained and netted like a loanshark's victim!" he groaned. "Would you be so kind as to unfetter me and my stumbling imagination by telling me where on Earth - or rather, where in the rumbling bowels of space - I am?"

And with fingers as dry as broken bones, Truant Moonblood, the ancient scientist, unchained, uncabled and unnetted bald-headed Mortimer Slagfire-Sartorius, the giant of science and blinded eye among the blind.

"As I told you once before, my youthful, blue-eyed friend," she crackled, "you are in a place called Dawn - or was it Thrawn? - somewhere in the deep gullet of space beyond the simmering bridge arc."

"Arc bridge."

"Bridge arc, arc bridge, what in the name of the double-faced God of Archways is the difference? Here we are, and here we stay!"

"Well, maybe," Mortimer Slagfire-Sartorius mused as he paced across the salty sands and listened to the breathing of the sea. He heard the lapping of small waves, the distant thunder of breakers and the whistling of the whispering wind. He tasted the salt and the bitterness of the air and the loneliness of the beach and of the ancient woman, whose hands were dry as broken bones. He felt alone and bitter and, being a mountain of a man, he felt the mountains far away.

"Why did they do this to me?" he asked himself.

"Are you not a giant of science and a mountain of a man?" the woman chuckled. "All your life you must have dwarfed mere mortals. And mortals do not care to live in the shadow of mountains."

"What of it?"

"Were there prophets among them?"

"There may have been," he said as Truant Moonblood put

splints on his fingers. "Some had a feverish look that lurked behind their eyes and made them sneeze whenever I stared at them. I thought they had hay fever, but maybe they were prophets."

"So they decided to cut your throat and rip out your guts and eat your heart and your liver."

"They did, those small-souled tinkers and thought-cobblers!"

"But they could not kill you, for they did not know where to seek the heart of a mountain. So they blinded you with white-hot glass and broke the fingers of your hands and hauled you through the glimmering arc bridge. For they did not want you to seek the hoary secret of immortality."

"How do you know?"

"After I had invented the plutonium-powered prayer wheel and transformed Svartvic's equations and built the quivering arc bridge, I, too, turned towards the half-hidden secret of immortality, though yet but forty-six."

"So they blinded you with white-hot glass and broke the fingers of your hands and sent you through the very arc you had invented to bridge the gulf of space!" he roared, as the two of them plodded across the bitter beach towards a ramshackle shanty made of driftwood and seaweed.

"No. When I was young the men and women of science were gentler and I was but a hill of a woman, not a mountain. So the men just raped me once or twice and the women broke my nose, which was never very becoming anyway."

"And have you uncovered the grey-haired secret of immortality? As yet I have merely glimpsed dark hints of hairy fairy tails."

"The giants of old were immortal, but they were giants of the body."

"And were slain with slings of reason by envious mortals, and are now extinct," Mortimer Slagfire-Sartorius replied, shivering. "And this must be the most unkindly, cold and dismal world that I have ever seen."

"The giants of today are mortal, but they are giants of the mind."

"And they strive to be immortal, not merely in the memory of men but in the flesh. Yet how, you ancient, cackling, bridge-building priest – for are not all priests bridge-builders who bridge the gulf between mere mortals and the gods as though it were no wider than that which severs pons from pontifex? – how is this immortality conceived?"

They reached the ramshackle shanty made of driftwood and seawind howling through its cracks and crevices, leaning like a drunken sailor against the cliff. They entered, and, while freezing Mortimer Slagfire-Sartorius sat down in a corner and shivered blindly, Truant Moonblood lit a flickering fire and began to cook a steaming stew made of evil-smelling odds and ends and things better left unnamed. And Mortimer Slagfire-Sartorius, who was a mountain of a man, although his teeth were chattering madly to themselves, mused whether the old woman might be mad.

"Nietzsche, that mad materialistic mystic," she chuckled, "who was as blind as any Homer and any far-sighted seer, knew that lovers sometimes seek to seem as gods – and not out of vanity."

"But what would a blind and bleary-eyed and walrus-bearded prophet know about love? I have loved a hundred women in my time, and I always seemed a god among mere mortals."

"He also knew," the rag-bag chattered, "that men with loud voices booming in their throats can hardly think subtle thoughts – and your voice is louder than a raging bullfrog's mating roar."

"That shows him to be a greater fool than I thought. For what would a dim-eyed, small-voiced prophet know of the mountain men he dreamed about, not even knowing the darkness he lived in to be their shadow? And what would such a temperamental, sentimental mystic know about the full-blooded love of giants? Love is only sex mis-spelled, a prejudice of evolution, no more."

As the flickering fire and the vile stew began to warm Mortimer Slagfire-Sartorius, and his thoughts and senses roamed and measured the ramshackle shanty made of drifting thoughts and seawater seeping in like fog, he became aware of a faint scent which tickled his back-brain, but would not tell him where it came from, nor what it meant.

"I could make a better hut than this within an hour," he thought. "I could build a good, solid house within a week, yet there is something strange about this place, and it smells of broken bones." But in as dismal a place as Dawn - or was it Thrawn? - a fishy smell might mean anything, or everything or nothing.

"The collar-bone," the old woman said, "is the key to the secrets of love and immortality."

"I thought as much," rumbled Mortimer Slagfire-Sartorius suspiciously. "No name is ever given without reason. But tell me more about this key-bone, key-stone, key-tone. How will you unlock the clavicle?"

"Every human is born with a splinter of immortality lodged within the collar-bone, but it is later lost in love."

"You must be madder than a March Hare, and as hare-brained, too! Your wits are whittled away by the whispering winds!"

"Do not speak slightingly of whispering winds," whispered Truant Moonblood. "Do you think it is purely coincidence that we speak of little death?"

"And what about love unfulfilled or unrequited? And what about those who never love? Are they immortal?"

"They may well be. But consider this: the secret of immortal love – if it was ever known – has been long lost in the murky mists of time and legend, but still it haunts humanity. And then, maybe, love in itself is immortality, but immortality does not imply invulnerability. And so immortal love may yet be murdered silently, or slowly starved to death by words not said and deeds not done and thoughts not thought."

"But what about those stone-hearted, never-loving, never-dying men? Where are they?"

"There are but few of them, for they, too, are vulnerable, yet they exist. They are the grey men and lonely spinsters that age and age and watch the world around them falter, fail and die. They are mere shadows, and mountain men like you would not see them, even if they were perched upon their knees. They may be immortal, but they are mortally dull."

"Then there is no hope of immortality for the rock giants and the mountain men of science?" Mortimer Slagfire-Sartorius pondered as the tickling in his back-brain crept down his spine towards his loins.

"No, and there never can be. Mere mortals could not live in the shadows of giants, and if giants were immortal, humanity would wither like a flower lacking light. And evolution must go on."

"Wait!" roared Mortimer Slagfire-Sartorius. "There is a tickling in my back-brain creeping down my spine towards my loins, and I smell something fishy!"

"It is the seawind and the seaweed."

"No! It is you! Your fingers may be dry as broken bones, but you are not as old as you would like to seem!"

"How true," said Truant Moonblood, and pierced his heart with a bone-headed spear, for she knew enough of mountains to know where to seek their heart.

She cut up his carcass and salted it with sea salt. She boiled his flesh and roasted it and smoked his flesh and hung it up in the ramshackle shanty made of drifting sighs and sea-foam. His bones she used to fill the cracks and crevices that the fog seeped through, but his collar-bone she broke apart and sucked out all the marrow, for Mortimer Slagfire-Sartorius had been a mountain of a man, and there was still some hint of immortality locked inside his clavicle.

And Truant Moonblood wandered once again across the lonely beach and smiled gently to herself. And she sat down to wait for the next giant of science, seeking the secret of immortality.

Michael Burschik was born in Britain in 1966 and had the ill fortune of being forced to spend most of his life in a miserable Bavarian town within spitting distance of both the former Zonengrenze *and the Czechoslovakian border. During one of his few bright moments he decided to leave for Bonn. At the moment, he is trying to get started with his doctoral dissertation. Michael Burschik is one of the six infamous editors of the German semipro 'zine,* Centauri *and claims that his German is rather better than his English.* Footprints *started out as a travesty of Lafferty, but somehow got out of control and began mutating.*

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TRAVELLING SIDEWAYS

by Ian Chai

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So. Professor Yáng is gone. And we are still here. The fact that I wrote this story and you are reading it proves that he was wasting his time, anyway. But I am getting ahead of myself.

"Professor Yáng," of course, was not his real title. One might call him "Yáng *Láo Tzë*," but his full title, roughly translated from Mandarin Chinese would have been "Honorable Old Master of Light and Dark Natures specializing in Sub-Unity Life-Forces." Of course, it does not sound that long in Chinese, since all words in Chinese are only one syllable long, unless you count compound words.

I was the personal aide of *Tun* Ismail bin Karim, professor of Anthropology at the Royal Academy of Natural Learning of Melaka, while he was on vacation in Tiong Utara. *Tun* Ismail told me he had wanted to visit the Great Wall of Cin Sih ever since he saw it from the viewport of the restaurant in the orbital station, Angkasa Tiga. Even today, it is the only man-made object visible on the Earth's surface from there.

So, although I was only a Chinese servant, he took me with him on his vacation because I could speak to the natives there. Not that he would have had any trouble finding Malay speakers, of course. Tiong Utara had been a Melakan colony for over three hundred years. So had half the world. But the anthropologist in him wanted to experience the culture to the fullest. In any case, I had been working for him for half my life, and we had become as close friends as a non-Malay can be with his Malay master.

We were walking down one of the old narrow streets of Peiping near our inn one morning, window shopping, when a middle-aged Chinese man was thrown out of one of the restaurants in front of us. "Can't you read the sign?" shouted the bouncer. "Malays only! Chinese scum! How did you get into the private dining hall, anyway?"

The man just sat in a daze on the street. After tossing a bag out after him, the bouncer went back inside. Sir gestured to me to help him up, and I did. That's one of the nice things about working for him: he has a concern for non-Malays one seldom sees.

As I was helping the man, I noticed that he was dressed in what resembled a white ancient Chinese scholar's skirt, black waist-coat and skull-cap, except that the material was very smooth and soft, and to my surprise, it was not soiled by his recent union with the street.

"Had a nasty bump, there, didn't you, eh?" said sir to the man. "I'm curious about what you're doing dressed in that odd looking outfit of yours, too. Is it for some kind of local cultural thing?" The man did look out of place in modern Peiping. Most of the locals had gone over to the *baju* and *sarong* of modern Asia Tengarra dress, as had most of the world, in order to fit with the styles of the Melaka Empire.

The man looked blankly at sir, and said nothing. Now, sir was a pretty liberal Malay, but one does not just stare when a Malay talks to you, so I shook him a bit, urging him to reply.

He mumbled something in Chinese.

"Come on, man, answer the sir!"

"I don't understand your language," he said, in Mandarin Chinese.

Now, by that time, I was pretty fed up with the guy. Sure, he might not have been able to speak the Sultan's Malay, but, surely he should have known enough to get along. I was all for dropping him right then, and let him thank his lucky stars sir was such a tolerant man, and I said as much to sir. However, sir was intrigued by the man's appearance, so he told me to ask the man in Chinese.

"Ok, so you claim not to know Malay, eh? Well, the sir here wants an explanation for your outlandish dress. It's not even Chinese New Year, so what's with the get-up, eh?"

"Uh, I. . . "

"Well, speak up, man!"

"I. . . that is to say, well. . . "

Sir interjected, "I think he's still pretty dazed, Yahya. Here, pick up that bag of his, and bring him back to the hotel, where we can question this guy further."

So I grabbed the bag and dragged/carried/walked the man back to our suite. He was mumbling something which sounded like "Miscalculation? Can't be. . . It worked, didn't it? Miscalculation?. . . "

"I created your world, you know?" he said, as we sat down in the outer room of our suite, where I slept. Sir's bedroom led in from there, so that anybody wanting to disturb him would have needed to go through me first.

"What?" I said, surprised.

"I said, I created your world. Or formed it, anyway."

"This guy's mad," I told sir, "he seems to be claiming to be Allah or something."

"Really? Quite a psychosis. . . you sure that's what he said?"

"Well, more or less. He says he formed our world." I turned to him and said, in Chinese, "You say you formed our world? What do you mean?"

"You'll think I'm mad, but I've got proof. I'm from another universe, really. . . a parallel one."

Sir interjected, "Translate everything he says for me, Yahya."

The man's name was Yáng Chïn Shìh. He claimed that he was some kind of professor of nature or some such. In his world, he claimed, Melaka was a vassal state of a Chinese empire, not the other way around. In fact, the Chinese empire, which had blossomed from the Sung dynasty a thousand

years ago, controlled the whole solar system, in a system-wide bureaucracy where the Chinese were the supreme people, guardian of Heaven and Earth. All other races, "barbarians", were subject to the great Chinese Emperor and the Brilliant Chinese People. No non-Chinese could own property; they had no rights, no claim to justice.

But he, Yáng Láo *Tzë*, saw the cruelty and injustice of their utopia. He felt that all races of humans should be given a fair chance, instead of being made slaves of the Chinese. He felt that this was in direct contradiction to the teachings of that great moralist and philosopher, Kûng Fü Tzê , which the Chinese claim to uphold.

It was also contradictory to the teachings of Buddha, whom most of the religious Chinese still upheld. Yet, the fact that the Buddha was Indian did not prevent the Chinese from mistreating the Indian race all through history.

Sir mentioned, at this point, that his own Malay race had also historically mistreated the Prophet's own race, the Arabs.

But because other Chinese in the past who had pointed out this contradiction between the actions and the principles of the Chinese people had mostly been ignored, and because he feared that if he spoke up against the injustice, he would be classed with the "barbarian lovers" and stripped of his position in the Imperial Institute, Yáng had kept quiet about his convictions.

"Hah! That's what some people have accused us anthropologists of doing," interjected sir, "but we know that although the cultures of the non-Malay are not as advanced to ours, they have value, still, in Allah's plan. And, after all, everyone has the potential of becoming one of Allah's followers."

He was, however, a learned man in the science of sub-unity life-forces, the microscopic building blocks of the universe itself, and he had discovered a method of harnessing the reverse-yin element. The reverse-yin element had been theorized by other sub-unity scientists as far back as a century ago, but although many findings of sub-unity had been capitalized for things like planet-ship propulsion, the reverse-yin element, which appears to be an analogue of the yin element, which orbits the yang element of the unities that make up compounds, but appears to travel *backwards* in time, had yet to be put to the service of China.

Until Yáng found one, that is. He discovered a way to capture the reverse-yin element, and that led to an antiquity viewer, which, to put it mildly, caused quite a stir among the Masters of Nature around the solar system. He, in fact, received an Imperial Commendation of Nature Studies from the Heaven-Mandated Emperor himself, in Châng-ä n. This was the greatest discovery in nature studies since Zhòu Mán Kuñg discovered that the unity could be dispersed, releasing an enormous force, which could be harnessed for, among other things, electriliquid power and interplanetary travel.

Having received an Imperial Seal Grant, he now had virtually unlimited funds to continue his research into the nature of the reverse-yin element. He obtained one of the most powerful liquid-brains to aid him in the manifold calculations. And this was how he came upon his plan to save the world from Chinese oppression.

For he had not revealed everything he had discovered to the Imperial Nature Commission. They thought that his device merely was capable of capturing reverse-yin elements and thus providing them with a window in which to *view* history. But what he did not tell them was that he had also discovered a way to send yin and yang elements *back* through the window, thereby *changing* the past. Changing history.

Not only that, but he had devised a way to project a chì-field that would expand into the new universe thus formed, bringing him into it along with it.

He began his experiments by changing small things in the near past, like moving a piece of paper on a desk, after having photographed it in its original position and bringing the picture with him in the chì-field. Then he tried more adventurous things, like changing the color of one of his colleague's vehicle.

Once, he prevented a traffic accident which had claimed the life of a friend's son. He projected a board into the past, pushing the boy out of the way of a runaway xi-cart, just before it hit him. When he emerged, everyone only remembered the near-miss, not the mangled child. Yet he had a newspaper article and photograph to prove to himself that history had indeed been changed.

Sir interrupted him at that point, objecting that his very act of appearing in the analogue universe would mean displacing something. But he explained that the chì-field starts as a geometric point in the new universe, pushing air and other matter out of the way to make way for his projection.

He had discovered a certain principle of history manipulation: having changed history, one can never go back to the old universe. It had ceased to exist, having been replaced by the new universe. If it were not for the chì-field, there would have been nothing to indicate that the other universe had ever existed.

Finally, he was ready for his greatest experiment. China had started its technological climb in the Sùng dynasty, about a thousand years ago, when philosophers and historians Cháng Tsäi and Ch'êng Yì realized that in order to understand the universe, they had to study the things in it. Their work was continued by the influential Chü Hsì, which set the scene for modern Chinese technology to grow from their alchemy. It was this technological edge that kept the Sùng dynasty in power for a record 1059 years, far surpassing the 300-odd years of Tang and 400-odd years of Han, and it seemed like it would go on for another thousand.

He reasoned that if he could retard Chinese technological growth, other races would not be so far behind, technologically, and so China would not have the chance to enslave the rest of the world.

And the crux were those three key philosophers: Cháng Tsäi, Ch'êng Yì, and Chü Hsì. If he could get them to divert their energies to another focus, the world would be saved.

With his viewer, he determined that the famous legend of how Cháng Tsäi was inspired to investigate empirical knowledge was true. He was on his way to his student Ch'êng Yì' s house, when he saw a little boy playing with marbles. Since he had a little time, he stopped and watched him. The little boy's marble had rolled into a hole under a rock, out of his reach. But the little boy proceeded to move the large rock off from over the hole with a stick he used as a lever, thus exposing his marble. This had led Cháng Tsäi to consider, if a little boy could, by studying his surroundings, move a rock he could never carry, what could grown men do by studying nature? Upon arriving at Ch'êng Yì's house, they discussed his new idea, and realized that their concentration upon history would not reveal new

ideas like this. That realization was the first step that led them to formulate their *Principle of Empirical Knowledge*, which later inspired Chü Hsì's studies and subsequent discoveries.

Yáng's plan was simple: he projected a razor blade into the past, cutting the strap of Cháng Tsäi's sandals. This caused him to have to hunt for a replacement strap, which caused him to be late, which caused him not to stop and observe the boy, which caused him to remain more concerned with studying human history. Thus when he arrived at Ch'ê ng Yì's house, they continued with their historical studies as they had originally planned, and the *Principle* was never written.

"So in the vacuum thus created, Melaka rose to power and grasped world domination?" I asked, incredulously. By then, it was evening, sir having ordered us a room service lunch.

"So it seems," replied Yáng.

"Well, he certainly has a rather thought-out and complex delusion," sir concluded, "even going to the extent of coming up with that peculiar outfit to back him up. Much of his scenario is recognizable as permutations of real-world situations. He reversed the roles of Chinese and Malay, and made them more severe, probably as a reaction against what he saw as an injustice done against him and his people by our superior culture. Similarly for his allusions to persecution of his prophet's race, the Indians, by his people. That is obviously borrowed from Malay subjugation of the race of our Prophet Muhammad (peace be upon him), the Arabs." He turned suddenly to Yáng: "Now admit it, you understand my language, don't you?"

Yáng was taken aback by the sudden accusation, but no trace of comprehension came upon his face.

"Hmm, it appears his delusion has even covered up involuntary acknowledgement of the language. This is a really interesting case... I'm sure Daud would like to examine him." Daud, being *Tuan* Dr. Daud bin Muhammad Zainal, psychology professor, close friend, and frequent partner of his in the game of *sepak takraw*.

Sir was given to acting on impulse when something intrigued him, and Yáng intrigued him deeply. He had shown us his reverse-yin device, but he claimed it must have been damaged when tossed by the bouncer, for it would not show us any past views on its screen. (Sir took this as more evidence of Yáng's delusion, but Yáng asserted that he could fix it, given enough time and equipment.)

The outfit he was wearing, too, was intriguing. The material appeared to have been made by the new Kassim-Assad process, invented only last year by that Javan duo, which has an outer molecular structure so inert and smooth that no dirt or grime can attach itself to it, which makes for an unsoilable garment. But the process was still prohibitively expensive, and the whole garment must have cost him a year's wages. He claimed, however, that where he came from, the process was invented by Wáng Chèn Xiáo a century and a half ago, and since then, improved techniques and mass manufacture had made it the standard material for clothes.

Anyway, as I said, sir was given to acting on impulse when intrigued, and since we were supposed to return to Melaka that week on Khamis, (it was then Selasa, so that was two days away) sir booked an extra seat in the non-Malay section on the *kapal terbang* and brought Yáng back with us to the academy!

During the intervening time, we told Yáng about Melakan history, because he was curious about it. We told him about how prince Parameswara of Palembang left his father's court and went to Temasik, and later on to Melaka, where he met some Arab traders who converted him to Islam. He then changed his name to Iskandar Shah, and, by the power of Allah, he proceeded to set up the most powerful empire in the world.

Of course, this did not happen at once. Melaka was only one state among many in a peninsula subjugated by the Siamese king.

But during the reign of Manzur Shah, a curious man appeared at the Melakan court with an interesting gift. Zulkifli bin Said Ahmad had fl ed from Arabia after being accused of heresy and consultation with Satan. He had harnessed a Chinese invention, gunpowder, and produced a weapon capable of killing an enemy from a distance: the *bedil*. Sultan Manzur Shah believed him when he asserted that he had discovered this by experimentation in natural phenomena, and logical reasoning, not by consultation with evil spirits as he had been accused.

Thus Zulkifli was appointed chief alchemist to the Sultan, and his disciple, a Malay prince and brother of the heir, *Tengku* Harun ibni Manzur Shah, eventually established the Royal Academy of Natural Learning, during the reign of his brother, Alaudin Riayat Shah.

It was from this distinguished institute that the golden age of Melaka blossomed. First came the fire-motor. Then the automatic *bedil*. The inventions multiplied faster and faster until no nation in the world could challenge Melaka' s superiority.

Thus the Empire of Melaka stretched over four continents and a hundred colonies. Even the Arabs and the Spanish in the end submitted, and with the exception of the Pikanas Federation on the Sunrise Continent, she had lost none of her colonies. But the Pika nas were Malays, anyway, having displaced the native *orang asli* tribals, who did not even have horses, or even wheels, but only domesticated dogs which dragged crosswood sleds.

At first, Yáng was horrified. He kept mumbling, "It only shifted, from Chinese to Malay. Nothing's solved." But later, he changed his mind. He confided with me that our world did seem less unfair: at least non-Malays were not slaves with no rights. They were merely second-class citizens, and native peoples, and, by and large, were left to govern themselves, with a Malay overseer, except in the several cases when exploitation on a large-scale basis was thought profitable by Melaka. Of course, Melaka exacted a tribute from every colony, and even most of the semi-independent native states of Africa, and the Southern Sunrise Continent. But it was nothing compared to what China did in his world, he reasoned.

Even then, however, the world was still not perfect. Oppression still existed. "Well, I must try again, then," he reasoned, "We have taken a step in the right direction. I must repair my machine and take the next step."

Since I did not believe his machine ever worked in the first place, I just shrugged and humored him.

When we got back to Melaka, sir took him to see Dr. Daud, and I tagged along as an interpreter.

"Quite a change from your regular work with the English hill tribes, eh, Ismail?" The doctor had just finished listening to Yáng (through me) tell his story again.

"Well, Daud, old chap, you know me..." replied sir, "So,

what do you make of him?"

"I'd say he has a pretty deep-rooted psychosis here. As you pointed out, he had reversed the roles of our race and his in history, and made up quite an elaborate fantasy with it, too. In his world, the Chinese are higher in technology than we are, and even more oppressive. This is probably due to a Wadinian excessiveness condition. He probably views Malay oppression in an exaggerated manner and postulates Chinese superiority by giving them a technological edge."

"Uh, sir doctor, pardon, may your servant say something?" I interrupted. At his assenting nod, I continued: "He did say to me on the *kapal terbang* that his scheme wasn't a complete failure because the current regime is less oppressive than the previous."

"Well," asserted the doctor, "that's merely a Zaini complex of rationalizing to himself to make his position more bearable! But of course, you're just an unlearned non-Malay; you won't know that."

"No, sir. Sorry, sir."

"Well, Ismail, I'd say you've found another way to waste your own money again. He's just another typical delusion case."

"Oh, I won't say the money's wasted, Daud. I did have a good time, and my life's not in any financial straits."

"Yeah, well, just be glad that his majesty Sultan Mahmud Idrin Shah likes your stuff about those British barbarians, and don't let him think you're wasting his money monkeying around with mad Chinamen instead of producing another of your cultural analyses on those heretical Anglicans. I never understood why he likes reading those boring papers of yours, anyway!"

Both men laughed. The two friends had been jestingly trivializing each other's work for as long as I had known them.

Sir gave Yáng a job at his mansion as an assistant houseboy, for he took pity on the poor madman. After a while, Yáng did learn enough Malay to understand simple commands, so things worked out pretty well.

The vacations were soon over, and his students came back and school started again, and we settled back into our regular routine.

Yáng expressed an interest in history and gadgets, so I got him some books for him to read in his spare time, and even a Malay-Chinese dictionary. Malay was a very regular language, so it was relatively easy to learn. Yáng was soon pretty proficient in interpreting the Arabic script that Malay was written in.

The next year, sir, several of his graduate students, and I went to Britain for three months to continue his fieldwork among the English hill tribesmen. Many of his students brought servants along, too, and we, along with the porters sir had hired in London, carried the equipment and followed them around. Because I had been with sir for so long, I had picked up quite a bit of the English language, and we had a fun summer hiking from village to village, talking to them, and recording their culture, religion and myth. I called myself "Ian" among them because it is the Scottish version of my name, "Yahya," and the English version, "John," was too common among them for my tastes.

One morning, a couple of days after we returned, Yáng met me excitedly.

"I've fixed it! I've managed to fix my machine!" He grasped the sleeve of my baju, dragging me to his room.

"What? What machine?"

"The reverse-yin machine! I managed to decipher the Malay symbols for scientific terms and correlate them to my knowledge, and I've managed to rig it up again!"

Half his table was taken up by a jumble of wires, circuits, and various pieces of plastic taped, soldered and glued together. I recognized the main segment as the control panel of the machine he had shown us on that first day, with the same screen above it.

He sat down and put his hand on the control panel. Streams of Chinese text started filling the screen, which then split into two windows, one of text, and another of picture. The picture, which looked like an ordinary three-dimensional laser projection, showed me, as a boy of ten, being led into the house by my father! It was the day I was hired by sir! Eleven years ago, I had joined sir's household as a houseboy, but there were no cameras to record the scene! Just another domestic being hired, that's all. No big occasion for anyone but me. But I remembered it, and that was exactly what the screen showed!

I just stood there for several minutes, mouth agape, immobile.

Meanwhile, Yáng was resetting the coordinates, and the scene changed. It now showed the Sultan's palace. Then the Jaffar dome installed fifty years ago around it disappeared. The scene changed rapidly, while maintaining the same view of the palace, while the surrounding background slipped back in time. The letricars disappeared, to be replaced by close-fired vehicles, then horse-drawn carriages. The entire New Wing of the palace disappeared. Finally, the palace itself was reduced to a relatively small wooden structure, raised on stilts. I recognized it as the original Manzur Shah palace of six centuries ago, which I had seen depicted in paintings and reconstructions before.

And there, in the courtyard, was the great Zulkifli, with his original *bedil*, about to demonstrate it to the Sultan and his advisers under the royal shelter behind him.

Suddenly, I realized to my horror what Yáng was about to do: "No! You're going to change history again!" In that horrifying moment, I realized that if he was not mad all along, then he was what he claimed. This meant that if he changed history, he would kill every one of us!

He turned around with a determined look on his face: "It will be for the best! Melaka must not have the technological edge. Nobody must be allowed to, then there will be no opportunity for oppression." He moved his finger, and the air around him started glowing.

That must be the chì-field! He's starting it. I lunged at him, but too late: he had projected an air pocket into the metal of the explosion chamber of the *bedil* and, as it ignited, the whole thing blew up in Zulkifli' s face! That would cause Manzur Shah to lose faith in his science, and...

The universe changed.

We were in a clearing in the jungle. Or at least it was a clearing cleared by the extruding chì-field. I had just made it into the chì-field before the change was made.

"You... you've murdered them! Everyone I ever knew, my whole world... gone..." I felt like I had no energy left. I just sat down on the undergrowth, empty.

"No, they are not dead," he said, standing above me.

"What do you mean, not dead? They're all gone! The house is gone! This is a jungle!" I screamed.

"Yes, they're gone, but not dead. They were never alive, so they could not die. They never existed, and there is no evidence that they ever existed, except in your memory and mine."

I felt numb all over. Yáng collected his machine together, from the table, which had come with us, and put it into his bag.

"Come! We have a whole new world to discover, out there. And I daresay it will be a better one than the one we came from."

Yáng was better prepared this time, and he had packed food, drink, clothes, survival equipment, and the gold which he had obtained by selling his unsoilable outfit. Most of this was packed in a knapsack which I slung over my shoulders.

We soon came to a road, which was paved with asphalt. Several vehicles passed us, engines roaring.

"I think those are close-fired vehicles," observed Yáng, "which means that their technology is about a hundred years behind yours."

I just trudged dully beside him.

Suddenly, I saw a sign up ahead. I was written in some alien tongue in *Roman* characters! And below that, were the words, in English, "Coke: it's the real thing!"

Now if that didn't beat it all! English! Of all things to find so near Melaka. And there was another sign: "Melaka: 10 kilometer," made of molded white plastic reflective letters on a green-painted metal background.

Presently, we came to the outskirts of the city. The city of Melaka was a great deal smaller in this world, but it existed. We overheard several people talking in a jumble of Malay and English, and I soon realized that the alien language was Malay written with the Roman alphabet! Had England become the super-state in *this* world? I had a sinking suspicion that we were back where we started, with the English replacing the Malays. But in my world, the Malays had not made the English change their alphabet. Was this world worse off?

Melaka was little more that what I knew of before as Old Melaka Town, the part of Melaka which surrounded the original port area.

Most of the men and even some of the women were dressed in various shirt/trouser combinations, although we did see a few in *sarongs*, and a couple of women in some variant of the *baju kurong*. Most of the women wore simple skirts and blouses.

Near the old city center was the remains of an old fort. I deciphered the sign near it, which said that it was the main gate of a Portuguese *kubu* fort called *A Formosa*, which was destroyed by the British. So, the British did come into power, here. But the Portuguese preceded them?

We found a museum in a small scale reconstruction of the original palace not far from the *kubu*. After being told to do so by the Malay guard in English (there was also a little sign on the steps to that effect), we took our shoes off before entering. (So, the custom of removing footwear before entering someone's residence had spread to public buildings? Not so, we found out later: only in certain Malay museums.)

Through the displays there, we found out that the Portuguese had conquered Melaka 1511 years after the birth of Christ. (Yes, they used the ancient European calendar system, but I remembered enough information to convert it to the Islamic calendar, so I got a bearing of when it was.) Wow! That was nearly 500 years ago! So, Zulkifli's invention had come barely in time to save Melaka, being only a century before that. Later on, the Dutch took over from the Portuguese, and later, the British, in building an empire almost as extensive as Melaka's, took over the whole peninsula, and half the island of Borneo, as well.

But, as we found out from an adjoining museum, (which, curiously enough, incidentally, did not insist on the footwear removal) the British no longer held this empire. After something called the Second World War, the whole empire disintegrated into independent countries. Of which, Melaka was now a state in a federation known as Malaysia.

Since England did not have monopoly on the empire-making scheme but had to share it with other European nations, this world was less dominated than either of ours, so the colonies had all managed to garner enough power to throw off its yoke.

Melaka seemed to have become quite a museum town, as it became of little economic importance. The port had silted up due to neglect, and its main industry seemed to be catering to the various history-conscious tourists. For even though its life as a major empire had been cut short, even in this world it had had the largest empire in Asia Tengarra, or as they call it in English, Southeast Asia, prior the the European expansion.

By the time we finished gleaning all this information from the various museums, it was late in the evening. We had to do something about surviving this world ourselves. For the moment, we were all right, for Yáng had brought enough microrized food for us to survive a month, and, what with the equatorial climate, it would not be too hard to survive without proper shelter, but it would not do for the long run. We walked out to the beach and set up the tent Yáng had packed there, although that brought us quite a few curious stares from the locals. I guess they did not have automatic-pitching tents yet.

Yáng was encouraged by the data we had gathered. Once more, his meddling had resulted in a more egalitarian world than the prior one. But it still had its colonizing empires, and although things appeared pretty benign then, it looked like things had not been so in the past.

"Just one more twiddle," he told me that night in the tent, "and we should be home free. I just need to find the crux for this British Empire."

"But if you negated the British Empire, won't someone else just take over again? You saw, the Portuguese and the Dutch beat them to Melaka," I argued.

"True... what I must do is to negate the whole European system. In any case..."

"Hey!" Someone outside shone a flashlight into the tent. "No camping is allowed here!" the voice said in Malay.

I got out, and there were a couple of policemen standing there. "I'm sorry; I didn't know..."

"All, right! Where's your I.C.?" one of them demanded.

"I.C.? What..."

"So, he doesn't have his identification card with him, eh?" He smiled a knowing smile at his partner. "Well, I guess we'll have to take him in, now, won't we?"

One of them approached me and started to take out his summons book. The other one continued, "Now, are you sure,

perhaps you should look in your wallet?" he hinted.

They wanted a bribe! But I had no money of their kind, and I doubted that my Royal Melaka banknotes would appease them.

"Uh... I..."

"What do you say, we talk this over a cup of coffee? Hey, old man!" he shouted into the tent, "Won't you join us?"

"Wait... I come soon, good?" came Yáng's voice. A pale glow came from the tent.

Suddenly, I realized what that was: the chì-field! The bastard! He's going to leave me here! I'm not ready for non-existence!

"Excuse me, I'll go get him..."

"Oh, no, you don't." The cop grabbed my arm. "Don't think you can get away so easily..."

The glow was brightening, and soon it would be too late! I punched the cop in the stomach with my other hand and lunged for the tent. The other cop grabbed my leg as his partner went down. I smashed to the ground halfway through the door of the tent, and I could see Yáng in front of the reverse-yin machine, half obscured by the chì-field already.

I kicked the cop with my other foot, but as he fell backwards, the other cop got to his feet and threw a punch at me, but I rolled over and his fist hit the sand. I lunged again at Yáng...

... And fell right through. Half the tent had disappeared, along with Yáng, and some of the sand below him. I found myself in the depression in the sand thus created, looking up at the two amazed cops staring the spot where Yáng was.

The knapsack lay just at the edge of the depression, and I grabbed it, took out the self-defense stunner Yáng had packed as part of his survival equipment, and stunned the two men before they could react. As they crumpled to the ground, I realized something: we still existed.

According to Yáng's theory, we should have ceased to exist as soon as he twiddled with the past, because we were not within the chì-field. We should have been replaced by the new world thus created, and it should have been as if we had never existed. Yet, there I was, standing over the two comatose corrupt cops. The sand felt real; the stunner in my hand felt real; and I felt real. My bruises even hurt, and I know *pain* is real.

In his haste, Yáng had left almost all the survival equipment behind, so I packed up everything and started hiking away. The two cops would regain consciousness in a couple of hours. I know their kind: they would never file a report on me, for fear of being thought mad. They would not have any explanation for what had happened that night, and they were not the kind of people who would stand up for truth merely on principle.

That was over twenty years ago. With my superior technology survival equipment, and a considerable amount of luck, I had created for myself a legal entity in the local bureaucracy. Having established a small reputation for myself with some "inventions," I managed to persuade an American firm to hire me as an R&D specialist. Since the Americans were an English nation, I used that name I had given myself during those field trips in England with *Tun* Ismail, "Ian." Who would have thought, I would have ended up in the North Sunrise Continent speaking English!

As for old professor Yáng, I suppose he shall continue along his merry way, travelling sideways through time, oblivious to the fact that he is in fact merely spawning off new branches, instead of creating a better universe of equality among races. The poor man would never know that each time he makes a better world, the uglier one he left would continue on without him, and thus his reform would, for them, be futile.

Ian Chai was introduced to SF at the tender age of 7, and to computers at the medium-rare age of 12. He was all set to make writing SF his career and programming his hobby, but his father wisely intervened and suggested he reverse them, so he is now a graduate student in Computer Science at the University of Kansas. Born in 1966 in Kuala Lumpur, Malaysia, he has lived in Johore, Sabah, Singapore, Kansas, and Germany and his old Mac Plus he writes on is almost as well-travelled as he is.

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JONNY NEUROTIC

by Robert Hurvitz

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Jonny stared intently at his reflection in the mirror, searching for a tell-tale glint of light on his forehead. There was none. Perfect, he thought, everything's working out perfect. He frowned and added as an afterthought, Too perfect. He glanced down at his workbench littered with drill bits, screwdrivers, random-sized pieces of wire, textbooks. Jonny smiled, reassured. In his right hand, he still clenched his Mitsubishi power drill. He looked back at the mirror.

He had been letting his hair grow unchecked for the last year, anxiously awaiting the day it would be long enough to completely cover his forehead. Jonny squinted at his reflection. Again, he could catch no sign of what lay covered beneath the wave of hair that flopped down past his eyebrows. He let out a short, sharp laugh.

They all said I was mad, Jonny thought. Said it right to my face. A combined major in electrical engineering, computer science, and neurobiology was insane, they exclaimed. Pure lunacy! And why such a major? All for an obsession with science fiction. I should be committed, they hollered.

Wait till they get their next phone bills, Jonny thought, then we'll see who's mad. He snickered at his pun.

He put down the drill and triumphantly swept his hair clear of his forehead, letting the sight of his newly-installed chrome modular jack dazzle him. The bleeding had stopped, and his skin bulged slightly and curled in against the cool metallic surface. It's beautiful, Jonny thought.

He picked up his well-worn copy of Neuromancer and headed to the kitchen, where he pulled a six-pack of Coke from the refrigerator. He went back to his bedroom, closing and locking the door behind him to assure his privacy from any jeering house-mates who might happen to barge in for a laugh.

He flopped onto his bed, pulled off a Coke, and chugged it down, impatiently waiting for the caffeine to hit his system. He threw the empty can across the room, watching the light reflect off the damp aluminum as it arced toward his recycling bin/laundry basket. The can landed, clattering loudly, and Jonny pulled off another Coke.

After the third can, he could feel nerves begin to twitch.

Jonny bounded out of bed, picked up his phone, and settled down in front of the wall. He turned the phone over and unplugged the jack; then he put the phone aside. He reached over to his bed and picked up his copy of Neuromancer, tucking it snugly under his shirt, next to his heart. He twisted his legs into the lotus position. Now he was ready. With a trembling hand, Jonny positioned the plug just inside his jack. His heart pounding out of control, he broke out in a cold sweat as he jacked in.

And he screamed as his senses seemed to explode. Blinding chaos surged around him, howling in his ears, digging into the pit of his stomach. His arms flailed about, and his head jerked back then snapped forward.

When Jonny opened his eyes, he was sprawled on the floor in his room, his clothes drenched with sweat. His head pounded as if an alien larva was trying to escape the confines of his skull. He tried to sit up, but the room spun crazily around him, and he ended up flat on his back again. He waited a minute, taking several deep breaths, and tried again, this time succeeding. He looked at the wall jack, the phone cord spilling out of it and ending several feet away. He gingerly touched his chrome jack. I must have hit the cord with my arm and pulled it out, Jonny thought.

Then he tried to remember what had happened when he'd jacked in. He shivered. What I need, he concluded as he got up and headed to his bed, is more caffeine. He pulled off another can and gulped the Coke resolutely. After finishing off another, Jonny went back to the phone jack, bringing the last can with him. He was really wired now. This time, he plugged himself in without a moment's hesitation.

There was no chaos. Instead, he found himself in the middle of what looked to be a computer-generated image of a forest. From a dark green, pulsating ground sprouted hundreds of brown cylinders, complete with clusters of light green leaves surrounding the tops. There was absolutely no sound, but when he closed his eyes, Jonny could imagine the loa whispering through the treetops on a cybernetic breeze. Man, Jonny thought, this is **so** cool. It's beautiful, just beautiful.

An idea dawned on him just then. William Gibson's phone number ought to be here, he thought. I've got to call him, tell him everything! He could feel himself clutch Neuromancer tightly to his chest. Yes, Jonny concluded, Gibson must know about this.

But, first things first. He'd have his revenge on his tormenters. He guessed that each tree handled a different function, that the leaves were data structures, and that the pulses flashing this way and that beneath his feet were messages being passed from tree to tree. So, keeping a lookout for any security programs, he moved cautiously towards the closest tree. When he reached it, he noticed a faint red tinge on the trunk. Probably security stuff, Jonny thought warily.

He carefully concentrated on the security system, and a few moments later Jonny had the program in mind. Scanning through the code, he deftly added a few lines to the program, thereby effecting it to ignore him. Jonny smirked. I rule here now, he thought.

He poked his head into the tree, and gasped. Billions of tiny bits of information skittered this way and that, like snow on a

Sony television set. Jonny blinked a few times, then began to think intently. Soon, the tree's purpose presented itself: call waiting. Incredible, he thought, but not what I'm after. Jonny left the tree, marking it for future reference, and went around to the others.

A half hour later, he found the tree that handled billing information. After a few moments, Jonny figured out how to manipulate the data. He concentrated on his friends' phone numbers, reached into the data with his mind, and went to work. He added hours to the time spent on long distance calls, increased their rates, and tacked on more surcharges. That would show them, he thought, giggling.

He noticed as he exited the tree that the red tinge on its bark was spreading, moving towards him. That's odd, Jonny thought, did the security program notice me? I thought I'd fixed it.

Then the red tinge jumped. Translucent red tendrils grabbed hold of him and reached into his mind. Violent, chaotic thoughts raced through Jonny's head. But one thought rose above all the frenzied nonsense, and that thought was to spread, reproduce itself, no matter what the cost.

Jonny gasped in horror and revulsion as he realized was being invaded by a computer virus. He instinctively slammed down mental walls and lashed out at any remaining traces of virus.

The red tinge retreated back to the tree.

I bet it wasn't expecting anything like **that**, thought Jonny. He then marked the tree and left for a clearing in the forest in order to think.

A virus? he pondered. Why would someone put a virus in the phone network? Then again, why **wouldn't** someone put a virus in the phone network? A bored student, a professional hacker–could be almost anybody. Normally I wouldn't really give a damn, Jonny thought, but this virus attacked **me**. He sighed, and then concluded, I can't let my cyberspace be overrun with these things.

Jonny smirked. From a cyberpunk to a cybercop.

Gibson just **had** to hear about this.

As he made his way back to that last tree, Jonny allocated himself a large chunk of RAM, wrote a search program keyed to the virus's code, and let it run. With the leftover memory, he made a box and fiddled with the access codes so that it could only be written into, not read from. Write-Only Memory. Jonny snickered.

The red tinge had been piling up on the ground next to him while he worked and showed no signs of stopping. He checked on the progress of his program and sighed. It would take many more minutes to finish.

Jonny sat down, and a wave of exhaustion swept over him. Damn, he thought, I can't afford to lose my mental edge; a mistake now could prove fatal. So he concentrated, felt his hand move to his forehead, and he jacked out.

Jonny opened his eyes, stared at the wall of his room, then slowly looked around. Everything–the unmade bed, the cluttered desk, the stained drapes–everything looked drab all of a sudden. Hmm, he thought. Then he shrugged, shotgunned the last Coke, and jacked back in.

He stood in the forest, next to his WOM box. The mound of red tinge reached his chest level. He checked on his program and found that it had ended successfully.

As Jonny reached forward to begin shoveling the virus into the box, the red tinge shifted, moved, sent out pseudopodia which coalesced into arms, legs, and a head, and became Richard Nixon.

Jonny screamed in terror and jumped back. This couldn't be happening, he thought frantically.

The Nixon figure crossed its arms and said, "Let's be reasonable, Jonny. I'm sure we can work something out."

Jonny cringed. "But– but– you're a virus!"

A shocked, insulted look came over Nixon's features. Nixon then lifted up his hands, his fingers in peace symbols, and said, shaking his head, "I am not a virus."

Jonny scratched his head.

And Nixon lunged, howling, arms outstretched, three-inch blades protruding from its fingertips. It grabbed hold of Jonny and squeezed hard, trying to rip his mind to shreds.

Jonny shrieked, backed away, and tried to slam down his mental walls. But this time he was too late, the virus had too strong of a grip. His mind was overcome with those destructive thoughts, and he struggled to keep a hold onto a part of himself in order to reach out, to do something against the virus.

He writhed in agony as he felt his brain being turned into cheese- whiz. He was vaguely aware of himself muttering, "I am not a virus. I am not a virus. Kill. Kill. Destroy."

Then that last dose of caffeine hit his system, and he managed to grasp the WOM box. With a dopamine and adrenaline surge, Jonny lifted up his box and slammed it down on the virus. It screamed, tried to climb out, tried to re-establish the grip on Jonny's mind that it had abruptly lost. He slammed down the lid, sealed it.

Then Jonny deleted the box, contents and all.

He sighed and leaned heavily against the nearby tree. As quickly as the caffeine jolt had hit him it faded away. I need another Coke, he thought wearily.

Jonny wandered about the forest in a daze. After what seemed days, he collapsed against the base of a tree. He peered inside instinctively and saw it was the main long-distance handling tree. At random, he picked a phone number, heard a ringing, and waited for someone to answer.

A minute later, there was a click, and then a voice that said, "Hello? William Gibson speaking."

Jonny's eyes shot open, and he could feel a second wind starting to blow strong within himself. He committed the number to memory and jacked out.

Robert Hurvitz is a student at UC Berkeley. His only other published story, The Big Joke, *appeared in the December '90 issue of Quanta. He wrote* Jonny Neurotic *2 to 3 years ago and was content to let it sit compressed in a deeply nested subdirectory, but, after Dan's heartfelt plea for submissions, Robert dusted it off and sent it along.*

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EARTH AS AN EXAMPLE
Chapter 1

by Jesse Allen

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The sun was setting behind the polished chrome building tops of the planet Museum. It was a dim, reddish ball that, even at noon, only feebly lit the surface. Setting, it seemed an ominous bloody colour. Clouds, chrome, and snow all caught the red hue and reflected it to the giant window, where the Procurator of Museum stood, staring at the horizon. *How appropriate,* she thought. *I am soaked in blood.*

The voice relay at her desk interrupted her morose thoughts.

"Admiral Perry is here, sir," it announced.

"Send him in."

A section of the wall turned transparent as the Admiral entered, then blended back into the brown décor once he stepped through. He strode angrily across the room, his face set with determination. He stopped at the desk that divided the room and saluted the Procurator sharply. She returned the gesture with slightly less vigor.

"I protest the highly irregular nature of this inquiry," snapped the Admiral. "This is a purely military matter and the introduction of another civilian into the matter, as well as sending myself, Dr. Drucker, and Captain Huston here, has delayed matters a full month. There will be a number of questions concerning classified knowledge — I will have to ask you and Dr. Drucker to leave for part of the proceedings."

"Please take a seat, Admiral," said the Procurator politely. "Would you care for a drink?"

"No, thank you," replied Admiral Perry gruffly.

She sighed. "Your objections to the setup of this inquiry are noted. The Secretary-General, however, felt that this would be the most appropriate way to handle the matter. I have full authority and both myself and Dr. Drucker will be present for the entire inquiry. We have been granted the necessary security clearances."

As she spoke, she pulled a circlet of silver off her finger and passed it to the Admiral. He picked it up and as he examined it, his eyes opened in surprise.

"My apologies, your. . ."

"Not needed," interrupted the Procurator as she accepted the ring back. "You are correct. Making this debriefing a full fledged inquiry and bringing everyone here has been time consuming. Were it not for the unique circumstances, this would all be inappropriate. But too much is at at stake here. . ."

"Doctor Drucker and Captain Huston are here, sir," announced the voice relay.

"Let them enter."

The wall disappeared again and two figures strode through. The taller of the two was a thin man with closely cropped steel gray hair that made him appear elderly. His reputation belied that, however — Dr. David Drucker was easily the most famous archaeologist in the Union and his work showed none of the signs of an aging mind.

Captain John Huston gave no such appearance of age. Although well into his thirties, he could have been mistaken for a full decade younger. He was solidly built though somewhat stockier. His posture gave the impression of great strength.

"Dr. Drucker, nice to see you again," began the Procurator, "and Captain Huston. Please be seated." She indicated the two chairs in front of her desk.

"Mr. Huston," corrected John Huston as he sat. "I've filed for a permanent release and prefer not to use the military title."

"Has your release been granted yet?" asked the Procurator.

"No, sir, not yet."

"You will be Captain Huston for the these proceedings, then." Before the Captain could utter an objection, the Procurator turned to the Admiral. In response, Admiral Perry pressed a button on a small device he had placed on the table.

"These are the proceedings of the debriefing of Captain John Huston, AJN 164," began Admiral Perry in a formal tone, "the current commander of the Federal Starship *Nikaljuk,* and Dr. David Drucker, the head of the archaeology team involved in the *Nikaljuk*'s most recent mission. Presiding are Admiral Nicholas Perry, BCQ 217, and," then the Admiral glanced towards the Procurator, who responded by placing an upright finger across her lips, "the current Procurator of the planet Museum, Dr. Drucker's employer on the mission under review. These proceedings have commenced on the 14th day of the year 1503 R.A."

"Thank you, Admiral," said the Procurator. "These proceedings can now progress in an informal manner, although they are being recorded. This is not a military inquiry. The Secretary-General has asked me to participate, so this will not be a normal debriefing either. This is simply an opportunity for you both to report fully on your mission before me."

• • •

"Archaeologists?" exploded Captain Huston. "A freight ship? I thought I was working for the Navy! Have we been bought out by Republic Transport? What am I doing shuttling mudhens around when there's a war being fought?"

Admiral Perry sighed. He had expected this — he and Captain Huston had been friends at the Herculean Naval Academy and John's enthusiasm to come to grips with the Kalganians had

been famous even then. Despite that enthusiasm, or perhaps even because of it, Captain Huston had never been assigned to duty on the front. Out on the eastern dust rifts, starships grappled while John Huston had been assigned escort duties deep in the heart of the Federal Union, guarding ships as they plied the star lanes. It was vital work, for without the munitions and supplies, the war would come to a grinding halt and all too few merchants made it to their ports of call unescorted. But no one who knew John Huston could believe he would be satisfied so far from the battle zone.

Unfortunately, his luck was not about to change. This new mission would take him nowhere near the upstart Empire.

"Captain... John, I realize you'd rather be elsewhere, but look at it this way. You'll be doing what you do best, running a ship. On the front, you'd be a fourth class officer or worse. And I know what you think about the glory of war and all, but it isn't all that it's made out to be. It's vicious out there. People die, friends as well as foes. Serving duty here, you'll still be around in two years. We frontliners can't count on that."

"Fourth class officer?" snapped Captain Huston. "Bullshit! You were in the same graduating class as me and look where you are now, all from serving in the war while I've rotted on the sidelines!"

"Oh, I've done well, have I?" roared Admiral Perry back, suddenly furious. "Do you know how I got this rank? I tried to save the life of my best junior officer and her crew, breaking half a dozen flight regulations in the attempt... and they *promoted* me for *failing!* Oh, I destroyed those cruisers when the blundered into the *Maelstrom*'s range. They were just too intent on killing my patrol ship. If they'd looked properly at their instruments, they'd have escaped, the patrollers would be alive, and I'd be court martialed for breaking course and violating acceleration safety limits! And quite frankly, I'd rather be in the brig with my friends alive than Admiral with them dead!"

Admiral Perry stopped and when he spoke again, his voice was much calmer.

"Sorry. But believe me: The battlefield is not the place for you. Or anyone. The glory and honour of war is false. It's kill or be killed out there. The Kalganians that murdered my soldiers were simply doing their duty — did they deserve to die for that? They had families, husbands and wives, children, friends... and their sorrow must be just as painful as the loss of my crew is to me. Think about that before you start sputtering about wanting to fight. There are times when I wonder if all sacrifices will be worth the victory...

"Besides," and now Admiral Perry was smiling, however artificially, "think what it would be like if these archaeologists find what they are looking for. It would be quite a discovery and you'd be among the very first to know. And remember, you were selected by Dr. Drucker from a list of highly competent commanders. He wants you."

Captain Huston was silent. He was still reeling from the verbal assault. Oh, he knew there was more to that incident with the *Maelstrom* than the news services had told, that both navies had been killers that day. But nothing had prepared him for the intensity of Admiral Perry's feelings. Perhaps there was more to frontline command that met the eye...

After a few moments of silence, Admiral Perry spoke again.

"You'll be working in the Betelgeuse sector. It's nicknamed 'Beetle Juice' after a supernova remnant near the sector's center. From the right places, the remnant looks just like a giant bug. I know a few of the better viewing angles. I'll give your navigator the co-ordinates before you leave. It should only be a minor deviation from your flight plans and it's worth the visit."

"Ah," said Captain Huston, his composure regained somewhat. "So I'll be playing the part of a civil captain to the hilt. Passengers and now even sight-seeing. What larks!"

"John," replied Admiral Perry sternly, "you are a military officer and you will obey orders. But the Navy will never order you to enjoy a job. *That* is up to you."

The Admiral strode out of the room, his footsteps echoing down the hall.

Three hundred years ago, Ian Nikaljuk had been a stellographer of some note. He was best known for his last mapping expedition, when he ventured beyond the great dust rift of Cygnus. There, behind the cold clouds of interstellar dust, he found a rich bounty of water/oxygen planets, circling G type primaries — ideal planets for human colonization, the most precious commodity in the Union. Of these gems, he choose the very best and named it after his wife, Kalgania, then, together with his family, led the first colony ships there.

His choice was wise. Within a century, Kalgania dominated the trade of the entire region to such an extent that the whole sector came to be known as Kalgan, and Kalgania was its capital.

Yes, thought Captain Huston. *Of all the ships they could have given me, they hand me one named after the founder of our enemy...* He came to the door he was looking for and pressed the annunciator.

"Who is it?" asked the grill on the wall.

"This is Captain John Huston of the *Nikaljuk.*"

The door snapped into nonexistence and Captain Huston walked through. He had entered a small office, occupied by a tall, thin man with short, steel gray hair. He had been sitting behind his cluttered desk, the floor around him in equal disarray, but as the Captain entered, he stood up and offered his hand.

"Welcome, Captain Huston," he said. "I'm David Drucker, the archaeology team leader. Pardon the mess — I'm still packing. What brings you here from the docks?"

"I have a few questions," said Captain Huston, starting to shift back towards the door, "but nothing that can't wait 'til later."

"Oh, that should be no problem," said Dr. Drucker. "I can spare you some time, though not much. What do you want to know?"

"Well," began Captain Huston, "why us?"

"Didn't they tell you?" asked Dr. Drucker. "Your crew came with the highest recommendations. I appreciate excellence."

"Well, thank you," said Captain Huston, nodding his head with the compliment. "But that's not what I meant. Why the Navy? Wouldn't a civil freight liner suit your needs better?"

"Ah, a complete answer would take some time," replied Dr. Drucker, settling back into his seat, his proclaimed busyness apparently forgotten. "Please take a chair. Just move the papers onto the floor." Captain Huston lifted a small pile of printed pages off the only other chair in the room and put them on the floor before sitting. *Printed paper?* he thought. *An*

anachronism, but then you might expect that from an archaeologist.

"In short," continued Dr. Drucker, "the reason is flexibility. Civilian ships depend on a network of subsidiary services: space stations, shuttles, and the like. The military does not rely on such sundry items as not all their destinations are serviced by those middlemen. The *Nikaljuk,* for instance, has landed right here on Museum for loading. It can take off directly, cruise through interplanetary space, then switch over to the hyperdrive once it reaches deep space. A civil freighter of similar dimension could hold almost twice the *Nikaljuk*'s capacity, but is not equipped with an interplanetary engine plant."

"But there are interplanetary shuttles serving every inhabited planet in the Union!" exclaimed Captain Huston.

"Yes, every *inhabited* planet," replied Dr. Drucker. "But not abandoned planets."

"Abandoned planets?" asked Captain Huston. "What is there of interest in a place even colonists gave up on?"

"Planets have been ill-chosen by colonizing parties since humanity first took to space," explained Dr. Drucker. "After being abandoned, virtually all of those planets have suffered no further disturbances from humans. Colonists tend not to make the same mistake twice. Since, of all the agents that destroy archaeological evidence, humans are the most potent, the likelihood of finding interesting remains is better on those planets, save where abandonment was due to violent weather or geology. By sifting the remains, we could find some of the clues we are looking for."

"I'm afraid my briefing was limited," said Captain Huston. "What is this 'First World' we'll be looking for?"

"It is current theory that there is one, or possibly two or three planets from which all humanity sprung," began Dr. Drucker. "It is based on some complex anthropological studies. Among other things, those studies show there once were three distinct classes of human skeletons. Time and intermarriage has blended most of the distinctions in modern humans, but sufficiently detailed genetic analysis can still trace contemporary skeletons to those three bone types. Some presume on that basis that there were three separate planets on which humanity evolved. Others, such as myself, find the interfertility of those three races suggestive of a single planetary origin. All humanity developed there and began to colonize soon after developing space travel. Our team is trying to find further evidence to support the single planetary origin hypothesis, and to find that planet."

"But why this mission?" asked Captain Huston. "Couldn't you simply examine the histories and find which one has records predating space travel?"

Dr. Drucker shifted in his seat. "A sensible suggestion. In fact, that is exactly what we have spent the last ten years doing. Do you have any idea how many planets claim to be the first?"

"A few dozen?" suggested Captain Huston.

"A few dozen per sector!" exclaimed Dr. Drucker. "There are thousands of planets that have histories extending from before the establishment of the Federal Union, and virtually all of those planets claim they have always been inhabited. Some claims were easy to eliminate, other were more difficult... and eventually, not a single one of them passed every test we could devise. Archaeological diggings found that, even at the most ancient sites, there was evidence of space age technology. Anything older predated human habitation."

Dr. Drucker sighed. "Our best guess now is that the planet in question is unaware of its special status."

"But how could a planet be the source of all civilization, yet think it was not?" inquired Captain Huston, finding himself suddenly intrigued. He had come to Dr. Drucker's office more to please Admiral Perry than in any genuine belief that the mission would prove interesting. He was glad now the Admiral had pressured him into getting more involved. *I guess I owe him an apology,* though the Captain.

"*That* is one of the mysteries that has made this project so complex," answered Dr. Drucker.

"Is there some special reason for choosing the Betelgeuse sector?" asked Captain Huston.

"Oh, a very special reason," replied Dr. Drucker. "We made a breakthrough a few months ago, one which made this mission feasible. Come with me and I'll show you."

Glittering in the bright lights that shone down on it lay a metallic box adorned with three long arms and a large bowl. A pair of technicians were carefully replacing a side panel when Dr. Drucker and the Captain entered the room onto the ramp that ran around the room's length, ten feet off the floor.

"This is it," said Dr. Drucker waving at the object on the floor. "A military convoy crossing the sector stumbled across it drifting in deep space. It appears to be a probe of some sort. Unmistakably a human creation — there's a pair of human figures, male and female, on one of the external panels, along with some other etched marks that we haven't been able to decipher.

"Notice the big dish? It's parabolic, with an electromagnetic sender at its focus. Because of the time lags inherent in electromagnetic communication over astronomical distances, we're fairly confident that the probe was designed with an interplanetary mission in mind. The size of the power supply backs that conclusion up. Even with a fresh fuel sources, it could only send a very weak signal."

"So what makes this a breakthrough?" ask Captain Huston.

"Why send a probe for an interplanetary mission? It has no drive system save for some low power maneuvering jets, and there's no evidence of one ever having been attached to it. A ballistic probe in an age of powered flight between the stars? Senseless!

"Besides, the instruments are rather primitive looking as such things go. The people who built them could teach us some things about miniaturization, but the technology is simplistic.

"The real clincher, though, was radioactively dating a sample from one of the fuel cells. The probe was powered by a simple nuclear electric generator, so by assuming the fuel was reasonably pure when it was launched, we can determine its age by measuring the radioactivity of the cell now. Other tests, like measuring the interstellar dust coating, confirm the result. This probe is over ten thousand years old: The oldest man-made find ever.

"We're very lucky to have this. Something like this on a planet would have weathered beyond recognition. But deep space is a rather good preservative. There's been some scoring and organic molecules from the interstellar medium have done some damage, but otherwise, it's practically in the same condition as when its makers first tossed in into space."

Captain Huston look at the probe below him with new respect. Ten thousand years old, yet still recognizable, just drifting through space...

"If this was a ballistic probe," said Captain Huston, "then you could backtrack its course from where it was picked up."

Dr. Drucker sighed. "Indeed you could, and this mission would be very simple. Alas, the ship that picked up the probe suffered a partial power failure. All their navigation log data was lost. We know the probe could not have been traveling past light speed — it's doesn't have the Hollings field generator necessary to defeat relativistic destruction. Nor was it traveling near light speed: if it had been, the damage from colliding with interstellar dust would have been much more extensive.

"But that is all we know. It could have been traveling at mere metres per second, or hundreds of kilometres. Over ten thousand years, that adds up to a lot of uncertainty... and the region that uncertainty spans is our search volume. Right in the heart of the Betelgeuse sector."

"Are there any inhabited planets there?" asked Captain Huston.

"Yes," replied Dr. Drucker, "Turkenstan. We've already been there. It was one of the planets that claimed to be the original and one whose claim could not be dismissed immediately. But Turkenstan was not it. It must have been one of the first colonies, since one team found remains from an ancient starship shuttle which were over nine thousand years old. But there's no trace of human habitation earlier than that find."

Captain Huston scratched his head. "Anything near this region? Perhaps the error margins were underestimated when guessing the probe's trajectory at its pickup."

Dr. Drucker smiled. "Ever thought of becoming an archaeologist? You're asking all the right questions... But to answer your question: yes. There are two inhabited planets nearby. Both have clear records of their colonization. The older, a place called Janella, is a pre-imperial planet. Its settlers arrived there about four and a half thousand years ago. They had to terraform it to make life outside enclosed cities possible, but they eventually did make the surface livable after a fashion. A very cold place most of its year, but still better than here."

You can say that again, thought Captain Huston. *The surface of Museum is so miserable that the population all burrowed beneath the crust. What a way to live!*

Museum had been overlooked by colonists precisely because of its inhospitable climate. Even the starship captains who regularly visited the system after the orbital refueling station had been built two hundred years ago knew it only as a zipcode in the sky. The planet didn't even have a name until the Republic Historian's Guild had applied to turn the planet into a public library specializing in the Union's history. Terraforming the planet's climate was too expensive, so the historians had contented themselves with honeycombing the crust with underground tunnels and rooms. A few building tops poked above the surface, but by and large, the bulk of Muesum's habitation was deep in the planetary crust.

"The other planet, Srosa," continued Dr. Drucker, "was subsequently settled by Janella. We'll be dropping off teams at both planets to see if there's any more elderly records to be found. But that does seem a long shot."

"And if those teams don't find anything?"

"Then we'll look for abandoned planets. Since the original home is somewhere in there, it seems reasonable that there would be planets settled early on, planets that might well have been abandoned as wider ranging surveys found better places. Of course, there's no record of any such planets, but then again, you wouldn't expect to find much after so long."

"So how will you find them? There must be a lot of stars in the search region and over 30% of all stars have planets."

"The region the probe came from has been surveyed, so we've already narrowed the field down somewhat. There are a few planets that are marginally habitable which might have been settled early on. In particular, there are two G type and three F type stars with oxygen/water planets orbiting within the acceptable orbital parameters. The Fs would be long shots — the only populated planets with F primaries have very heavy radiation trapping zones and even so, they can be pretty grim places to live. But the very first colonists may not have been so picky... or aware of the consequences of living on a planet with such a high flux of energetic nuclear particles."

Captain Huston frowned slightly. Something was still out of place, a fact being overlooked... *Ah, yes.*

"That will find you early settlements. But that's not ultimately what you're looking for. What about this First World? If there's only one currently inhabited planet around where this probe came from and it's definitely not First World, then where's the missing planet?"

"Well, I can think of only two possibilities. First World may have been abandoned, which seems bloody unlikely. Why abandon a planet that must have been so well suited to life? It makes no sense..."

"And the other possibility?" asked Captain Huston.

"First World is still out there in the Betelgeuse sector... and the Federal Union doesn't know about it."

Captain Huston knocked on the wall paneling lightly. He had come down to the spare cargo bay where the archaeologists were housed on the doctor's request. It was the first time he had been in this part of the ship since the engineers had installed the temporary quarters. They had done a good job in the short time available, but there was no mistaking the partition walls for anything permanent. If he had knocked a little harder, the Captain was sure, the whole wall would have shook. The door to Dr. Drucker's room was nothing more than a curtain.

"Come in."

Captain Huston expected the interior of the archaeologist's room to look as temporary as its exterior, but he was surprised. This was not a room — it was somebody's home. The hammock was neatly rolled out of the way and the walls were covered with framed trimenographs, posters, and news clippings. The most striking of these was a large trimenograph facing the door. It was a picture of a nebula, apparently floating in the wall. It had a striking sense of depth even though the image plate was flat. The cloud had twisted arcs of glowing gases stretching out into space, so realistic that Captain Huston had a momentary vision of the arms reaching out and grabbing him. Swirls of bluish oxygen mixed with the yellow-orange of hydrogen, all spread across the inky blackness in the shape of...

"Looks rather like a bug, doesn't it?" remarked Dr. Drucker. He was accustomed to the startled look the image drew from visitors. Trimenographs were nothing new, but few were quite

as startling as this one. The sense of depth was so strong that it appeared there was a hole in the wall in which the plasma cloud hung. One friend had even tried touching the nebular formation, not fully comprehending the true nature of the image until his hand had struck the plate on the wall.

"The 'Beetle Juice' supernova remnant?" asked the Captain.

"Yes," answered Dr. Drucker. "My daughter had a rather strong love of space travel. She made a number of trimenographs of astronomical objects to share her enthusiasm for space... and she succeeded. Not only has she captured the three dimensional sense of the remnant extraordinarily well, but the view is also taken from an unusual viewing angle which she calculated for herself. Her line of sight makes the remnant less bright overall but accents the outer regions. The higher oxygen content from this angle strengthens the blue, enhancing the appearance... But pardon me, Captain. As I said, this is one of Marguerite's greater successes and I am prone to play the part of the proud father."

"Oh, that's quite all right," said Captain Huston, breaking his eyes from the trimenograph. "Your daughter is to be complimented. It is one of the best trimenographs I've seen taken from space. One of the best I've seen at all, in fact. In a few days, we can even compare it to the real thing."

"We'll be visiting the remnant?" asked Dr. Drucker, a hint of hopefulness in his voice.

"Yes," confirmed Captain Huston. "Admiral Perry ordered me to stop there while we were in the sector." Then the Captain paused for a moment. "Actually, it wasn't so much an order as a strongly worded suggestion, but he did give me the coordinates for the best viewing angle. One of his junior officers apparently had computed a better perspective than the standard angle tourists see."

"Admiral *Nicholas* Perry?" asked Dr. Drucker.

"Yes. Do you know him?"

"You're right about comparing this," and the Doctor indicated the trimenograph with a sweep of his hand, "to the real thing. That junior officer probably was my daughter!"

"Your daughter serves under Admiral Perry? Small Universe!"

"The Admiral was a Commander when she was in his service, but yes. Margie was one of his junior lieutenants."

"Was? Has she moved on to her own command now?"

Dr. Drucker breathed in deeply.

"No. She was killed a couple of years ago on a patrol mission."

"I'm sorry," said Captain Huston, suddenly feeling very awkward. *You've really put your foot in it this time, John,* he thought. There was a long silence, then Dr. Drucker broke the quiet.

"The war has not been kind to me. But that is in the past now. And though I would much rather have my daughter alive, it has made all this possible."

"Oh?" said Captain Huston, failing to see the connection and befuddled by the sudden awkwardness of his position.

"Yes. Admiral Perry and Margie were good friends and he blamed himself for her death. Not justly, I should add: There was nothing anyone have done to save her and she realized the risks when she signed up. However, he has not forgiven himself for his supposed failure yet and thus feels he owes me a debt as her father. He heard of my interest in this mission and pulled a few strings on my behalf."

Captain Huston remembered the Admiral's explosion, simultaneously noticing a medallion hung above Dr. Drucker's desk. The certificate read "For bravery in the service of the Federal Union, Lieutenant Marguerite Drucker is awarded the Silver Swords," beneath which was the seal of the Secretary-General. *Silver Swords,* thought Captain Huston. *The same medal Commander Perry was given for the incident with the Maelstrom...* Then all the pieces fell into place.

What do I say now? "Your daughter served her nation well?" The Silver Swords already says that better than I ever could. "I'm sorry?" I've already said that. Damn it! War is supposed to be simple. There's an enemy to be defeated. Not without cost, but everyone dies eventually and what better way to go than in the service of the people? But how do I say that to the face of the father of a fallen soldier?

And if I can't say it to his face, is it really true? Like many wartime military college graduates, he had not really ever been forced to consider the human side of war. *What do I do now? Change the subject?*

Dr. Drucker solved the Captain's dilemma for him.

"I've had the trimenograph for almost ten years now, but I've never seen the real thing. That will be something to look forward to. I wonder if it will look any different?"

"Not much," answered the Captain with some awkwardness. "In ten years, the remnant will have expanded several million kilometres and radiated away more energy than an entire planet consumes in the same time. But compared to its total size and power, those changes are miniscule. They would take a trained eye or professional equipment to notice.

"I've never been out this way before, but I've heard about the nebula. Judging by your trimen, it will be every bit as spectacular a sight as I've heard.

"But I presume you didn't call for me to discuss supernovae," continued Captain Huston steering the conversation further from its morose turn. "What's up?"

"Have you ever played Knights & Castles, Captain?"

"Yes, it was all the rage when I was in school. I managed to get reasonably good, though I've not had much time for it since. Do I detect a challenge?"

"You catch on fast," said Dr. Drucker with pleasure, both from the change in conversation and his own scheming. He did not need to be told that Captain Huston played the game. Admiral Perry had mentioned Huston's nickname 'The Dark Master' which he had earned ten years ago for his prowess at the game. Ever since Dr. Drucker had heard, he had been looking forward to this challenge. He had tried to play against others on Museum, but few showed much interest and only the Procurator had proven a worthy opponent... and she was too busy to play frequently.

"But," continued Dr. Drucker, "I'm not exactly challenging you to a game of Knights & Castles. Our archaeology team on Turkenstan discovered a manual to a similar game that the original colonists played. I've not had a chance to really study it carefully yet, but it's more complex than Knights & Castles, demanding more thought and patience to play properly. Janella spaceport is many days away, however, and I thought a military strategist such as yourself might be interested. A battlefield for you, of sorts. Admiral Perry hinted that you were rather

the fighting type and our mission otherwise is most peaceful. Interested?"

"With an introduction like that," replied Captain Huston almost jocularly, "how can I refuse? Kind of living history. How does it work?"

"As I said, it's similar to Knights & Castles, but it's played on a two dimensional grid instead of a cube. The pieces move in more complex fashions. The Turkenstan colonists called it 'Chess'…"

The *F.S. Nikaljuk* hung a mere parsec from the supernova remnant. As Captain Huston had predicted, it looked just like the trimenograph, though it was even more impressive, filling a full quarter of the sky. Even from this close, the nebula's expansion rate of over a thousand kilometres per second was invisible. Seven hundred years ago, this had been a red giant star. The hydrogen in its core had all long since been fused to helium, and thence to carbon, then oxygen, and so on to iron. There, everything stopped. Beyond iron, fusion consumed more energy than it produced and so the star stopped burning. No longer supported by the tremendous radiation pressure from fusion at its core, the outer layers of the star collapsed inward, releasing their gravitational energy as they fell.

The resultant explosion defied imagination. The name 'supernova' hardly gave a hint of the incredible blast of energy that was released in the mighty detonation of truly astronomical proportions. As the stellar surface fell in, the gases heated and fused. The star's iron core was crushed to the density of an atomic nucleus while the outer layers were flung back out into space with such violence that even now, they outstripped the fastest interplanetary yachts. And the interstellar hyperdrive, the only man-made engine that could rival that fantastic speed, would not operate in the plasma of the explosion. The *Nikaljuk* was as close as any ship could safely get.

The resemblance to a terrestrial insect was remarkable. There were legs made of glowing filaments of excited gases. Captain Huston would not have been surprised had the antennae-like loops of hydrogen started wavering around, exploring, poking. What if it took to life and started crawling across the inky void, a monstrous interstellar bug? Captain Huston suddenly chuckled.

"Something humorous?" asked Dr. Drucker dryly from the Captain's side, looking out the window from the observation deck.

"I was just imagining what it would take to kill a bug of this size. An enormous foot, perhaps?"

The Doctor made no response.

"Okay," admitted the Captain, "so it's a little strange. Who said I didn't have a twisted mind?"

The Doctor smiled slightly, but maintained his silence.

"You said there were only two explanations for the absences of any records of the original planet," said Captain Huston, trying to break the silence of his companion. "Have you considered this possibility?" and Captain Huston waved his hand at the sight out the window.

"Sorry?" said Dr. Drucker, startled from his silence. "I don't follow you."

"Well," said Captain Huston. "We are well within the Betelgeuse sector. Consider for a moment that First World orbited this star. During the supernova explosion, the planet would have been vapourized completely. Of course, the inhabitants would have known about the impending explosion and would have been long gone. Long enough that records of their exodus were not front page news. No more planet, hence no planet with records extending before star travel, and also no records of having existed prior to the Federal Union."

Dr. Drucker frowned for a moment. "You know, I never thought of that. But the nebula is well outside our search volume. The probe could not have come from here and we are all agreed that the probe came from First World."

"We are deep within the Betelgeuse sector," said Captain Huston, "and not that far from the nearest edge of the search volume. Perhaps the error margins on the probe's direction and speed were underestimated?"

"Ha!" snorted Dr. Drucker. "If anything, they have been overestimated. We were quite generous in applying uncertainties. And I question calling ten parsecs 'not that far.' It would take a light beam over thirty two years to get from here to the nearest edge of the search region."

"A systematic error? Perhaps an undiscovered black hole that the probe passed close by?"

"I said the error margins were generous!" replied Dr. Drucker. "It was precisely because of such factors that they are so large! If you can come up with something plausible to throw our calculations that much off, I'd like to hear about it." Then his eyes narrowed. "You seem unusually keen on this idea. What are you up to?"

"You caught on fast," said Captain Huston, smiling as he aped the archaeologist's earlier words. "Let's just say there's a sum of money involved."

Then Dr. Drucker suddenly grinned. "Of course! How stupid of me. Habitable planets only have a certain narrow range of stellar type primaries. Supernova progenitors are not among those. They are more massive stars, red giants and the like. Stars that eventually go bang like this," and Dr. Drucker indicated the remnant, "are known for hundreds of thousands of years of distinctly anti-social stellar activity. Violent flares, mass loss, intense microwave laser emission from surrounding gas and dust, you name it. You wouldn't want to get near one of these stars even ten thousand years before the bang.

"A sum of money, you say? Have you been making bets on me?"

"Yes," said the Captain, "and I just won. My navigator suggested the supernova destroyed the planet we're searching for. I suspect Georgia was just teasing me, seeing if I knew why it wasn't a possibility. After failing to trip me up, she put a hundred rials on you not seeing it."

"Does she do this sort of thing regularly?" asked the somewhat astonished archaeologist.

"Oh, quite regularly," replied the Captain, "as does the rest of the crew. This is a small ship and that makes for a lot of frustrated energy with no space to vent it. I can either have friendly competitions or much more serious bickering. As long as the games don't interfere with the bridge, I tolerate it — sometimes, even encourage it.

"Besides, it gives me an intellectual battlefield of sorts. The crew sets me up with some sort of idea with a plausible appearance yet with a built-in flaw… like the properties of a supernova progenitor. I try to find the flaw. For my part, I occasionally set them some task that's supposed to be impossible

and see if they can find what I've pulled on them... or if they can fool me into believing it's possible anyway.

"Right now, one of the junior engineers is working on constructing a stealth device for the *Nikaljuk.* Some time soon, he's going to realize that a conventional device takes about twenty times the capacity of our onboard power, not to mention the sheer physical size of the thing. I wouldn't be surprised if he knew that before I even set the task. So he's going to come up with something a little nonconventional. I suspect it will fake a cloaking device from the bridge's perspective, but will have no actual effect on another ship's scanners. Thus he turns it on its head for me to work out what he's really done.

"It's wonderful when you really think about it. I hardly have to work to keep them busy and I get constant feedback on my skills. If someone catches me unawares, then I learn something new. And I have to teach myself a lot just to make sure that doesn't happen. Like stellar evolution."

"Ugh!" said Dr. Drucker. "There's more to commanding a ship than I would ever have guessed. I'm glad I'm not doing it, stuck on this tiny can for months on end."

"Tiny?" asked Captain Huston. "I admit this is no giant lumbering tanker, but tiny does seem to overstate it a little. We've got two dozen on board — there are pleasure yachts that seem crammed with just one."

"Tiny in comparison," replied Dr. Drucker, warming to his line of attack. "I'm used to thinking of ships carrying tens of thousands rather than the smattering aboard the *Nikaljuk.*"

"Tens of thousands!" said Captain Huston. "I think you mean tens of thousands cubic displacement, not tens of thousands of people. Even the largest deep space carrier, the *Haiphong,* holds fifteen hundred and it's the biggest starship ever!"

"The *Haiphong* is *not* the largest starship ever built," answered Dr. Drucker happily. "The shuttle we found at Turkenstan clearly predates translight travel. Therefore, the first colonists had to practically make an entire world to live in while they traveled between the stars. Farming, industry, government, the lot. Their journeys took hundreds of years. The original flight crew would have had grandchildren by the time they reached their destination. The smallest number of people capable of making such a fully self-sufficient world is fifteen thousand. And that's just a minimum. Ships ten, twenty, maybe even fifty times the *Haiphong*'s capacity plied the star lanes for at least a thousand years. Compared to one of those ships, the *Nikaljuk* is nothing more than a gnat.

"Perhaps you should follow your lesson in stellar evolution with a history of space travel," and with that, the archaeologist left.

Captain Huston stood in apparent silence, looking at the supernova remnant out the window. But someone standing close might have noticed a slight chuckling.

So Chess is not the only game this man will play with me, he thought to himself.

Jesse Allen is an overworked, underloved graduate student at the University of Iowa. In his copious free time, he pretends to teach, do research, keep in touch with the few friends he has left, write science fiction, weave, and have a social life. He is currently working on a thesis on Radio Emission From X-ray Binary Stars (Read as "How to get to Australia at the U.I.'s expense" – a preliminary feasibility study made it to New Mexico.) He can be reached at jsa@vesta.physics.uiowa.edu during those rare times Vesta actually is working.

Earth as an Example *will be continued next issue.*

FOR THE SNARK *Was* A BOOJUM, YOU SEE

by Roy Stead

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Slithering and sliding, it came out of the darkness. Relaxing for a moment, its tentacular form took on the appearance of a dark, malignant cat; a cat with too many legs and unusual suckers at its extremities. The eyes, though. The eyes were bright, sharp and definitively cat-like. The only remaining question was: What did it *want*?

Oozing its way towards him was the creature he had seen so many times before. In nightmares and on cinema screens, it had haunted him relentlessly, the stuff from which nightmares are made. Harold thought back to that morning...

The paper was delivered, miracle of miracles, earlier than usual, and Harold was finishing the Environment section when a classified ad caught his eye:

Make Your Dreams Come True

For only $40 we

GUARANTEE

to realise your wildest dreams.

Tel. 071 495 1265

Harold was surprised, and perplexed. Although he had been a quantity surveyor for over a decade, in his heart he still yearned to realise his youthful dream of emigrating to the long-developed Lunar colony. Besides, he supposed, even on the Moon they must *surely* have some quantities which he could make a living by surveying? Forty pounds, though...

Ten agonising minutes later, Harold had decided that he could lose nothing by simply phoning the company.

"Hello? I'm ringing about your advert in today's *Guardian*."

"You mean the Dreams, Inc. Special Offer advertisement, Sir?"

"Yes, that's the one. 'Make your dreams come true.' I suppose *ha ha* that it's some sort of elaborate practical joke, yes?"

The voice sounded wounded, " 'Practical joke,' Sir. I assure you that our methods are..."

"You mean this is for real? Hmmm. What does 'realise your wildest dreams' mean, anyway?"

"If I could just take your name, Sir, perhaps you would be free to attend a session this afternoon?"

"Well, I'm not too sure. The money. Forty pounds. Well..."

"I assure you that all monies are payable only on satisfactory completion of the contract, Sir."

"You mean, that if my dreams don't come true, I pay nothing?"

In the manner of a superior maître d', the voice relaxed as it effortlessly replied, "Sir has grasped it precisely, Sir."

Two hours afterwards, Harold was sitting in the offices of Dreams, Inc., waiting to meet the company director. There was nothing dream-like about the reception area. On the contrary, the room was almost dentist's-waiting-room-like in its drabness, providing even aged copies of *Punch* to complete the effect. After a while, Harold was ushered through a small, painted-wood door into a short corridor. Ahead was another door, oaken in appearance, which bore a traditional, brass nameplate:

Directore, Dreames, Yncorpyratted

The darkness crouched against one wall, almost a living thing in its intensity. Harold nervously appraised it, then dismissed childhood nightmares from his mind as he walked to the door. Nonetheless, he edged past the inky patch as he approached the door, never once turning away from its blackness lest some Lovecraftian horror break its surface. As he sidled by, it happened.

Slithering and sliding, it came out of the darkness. Relaxing for a moment, its tentacular form took on the appearance of a dark, malignant cat. A cat with too many legs and unusual suckers at its extremities. The eyes, though. The eyes were bright, sharp and definitively cat-like.

Oozing its way towards him was the creature he had seen so many times before. In nightmares and on cinema screens, it had haunted him relentlessly. The Stuff from which dreams are made. The thought jolted Harold back to his senses. Perhaps this malformed horror was the manifestation of his dreams promised by the advert.

Harold, hand reeking trepidation, stretched out an arm toward the octopoid abomination in automaton fascination. What *was* it? His hand brushed the surface, but he felt nothing as it passed that Serling-inspired boundary which confronted him. A sharp yelp of pain restored his deadened faculties to conscious control and, in an abrupt movement, Harold almost teleported to the now-open oaken door. He stepped through into...

Lewis Carroll oft warned of the dangers of a meeting with a Boojum, leaving the nameless Baker's fate as ample warning to all those tempted, by curiosity or perverse predilection, to search for Snarks in the wildernesses of the world. He did not, however, proffer much advice on how to deal with such an unexpected encounter.

The courtroom was unique in its grotesqueness. It *had* to be. Such a distorted jury box only could have been devised by a mind whose owner had spent much of his life dabbling in illegal and proscribed substances, a practise much frowned upon in Society. The lines of the benches seemed ill at ease in the

current dimensions, and were visibly attempting to escape into some forgotten corner of space-time. Harold hoped, fervently, that they would be successful, and that the jurymen – the word is applied loosely – would follow rapidly.

The collection of. . . beings in the box is best left undescribed. But, if you must, picture a messy accident involving a duck-billed platypus and a bicycle pump. Now picture the result gesticulating wildly for you to take the stand before a judge whose sole qualification for the task seems to be his shape: that of a huge, white, curly wig. With eyes.

Harold took the stand, only to have a large Bible placed in his right hand. The Bible gripped his arm before turning to him, and rasping, "Recite The Oath, dummy!" Glancing down, Harold noticed that the book had. . . protruberances. Not arms, as such. Nor, if Harold was honest with himself, could he say that it possessed any facial features. Nevertheless, it continued to stare at him, after the manner of a basset hound on acid. An *annoyed* basset hound. "The Oath, idiot. Say it!"

"Er. I swear to tell the Truth, the Whole Truth, and nothing but the Truth, So help me. . . "

"What's that?" interjected the book, "Read the *Oath* from the card in front of you, fool." Harold looked around briefly before seeing a card which positively had *not* been there before. He read, disbelievingly:

"I swear to tell the truth. Or part of it. Or something I believe to be the truth. Or not. As I may decide. So help me, God."

The scene faded. An office presented itself. The scene faded. A white rabbit bounded past, clutching a pocket watch and loudly exclaimed. The scene faded. "I'm late! I'm late!" the aardvark screamed. Scene fade. A huge ball of string rolled past. The string was knotted in several places, and one of those knots hurtled towards Harold, or possibly the other way round. The scene faded.

The dentist's waiting room returned, and Harold looked up into the eyes of a young man, dressed in a doctor's white coat. The man looked about thirty, had shoulder-length blond hair and wore a stethoscope around his neck. Leaning over Harold's prone body, he whispered seven words which engraved themselves on his memory:

"Harold, Man. You have some *weird* dreams!"

Roy Stead is a research assistant in quantum astrophysics at the English University of Sussex. His hobbies include water skiing, Zen Buddhism and searching for cats. His collection of cats is reputed to be amongst the largest in the Western world, though none have ever been seen by reliable witnesses. "Iggy," a grey-green Persian once did not appear on BBC Television's "Tomorrow's World."

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If you like *Quanta*, you may want to check out these other magazines, also produced and distributed electronically:

Inter*Text*

An Electronic Fiction Digest Contact: *jsnell@ucsd.edu*

InterText, like its predecessor, *Athene*, is devoted to publishing amateur writing in all genres of fiction. It will be published on a bi-monthly basis, hopefully alternating with *Quanta* (so subscribers to both will get one netmagazine every month). The magazine's editor is Jason Snell, and associate editors are Geoff Duncan and Phil Nolte, all of whom have been seen in the pages of *Athene* or *Quanta* (or both).

InterText is published in both ASCII and PostScript formats (though the PostScript laser-printer version is the version of choice). Its first issue will appear next month. For a subscription (specify ASCII or PostScript), information, or submissions of stories to be published in InterText, contact Jason Snell at *jsnell@ucsd.edu*. InterText is available via anonymous FTP from network.ucsd.edu.

Core

Call for Submissions and Subscriptions Contact: Rita Rouvalis *rita@eff.org*

Core is a new electronic literary journal dedicated to the publication of the best of what the net has to offer (or what I can get my hands on) in terms of fiction, non-fiction, poetry, essays, etc. If a piece is well written, creative, different, and/or interesting, then I want to publish it in Core.

The first issue of Core will appear the first week of August. It will be published monthly thereafter. If you would like to contribute your work or receive Core, please send e-mail to *rita@eff.org*. Core will also be available from eff.org (192.88.144.3) via anonymous ftp. (It will live in the */journals* directory).

DargonZine

The Magazine of the *Dargon* Project Contact: Dafydd *white@duvm.BITNET*

DargonZine is an electronic magazine printing stories written for the Dargon Project, a shared-world anthology similar to (and inspired by) Robert Asprin's Thieves' World anthologies, created by David "Orny" Liscomb in his now retired magazine, FSFNet. The Dargon Project centers around a medieval-style duchy called Dargon in the far reaches of the Kingdom of Baranur on the world named Makdiar, and as such contains stories with a fantasy fiction/sword and sorcery flavor.

DargonZine is (at this time) only available in flat-file, text-only format. For a subscription, please send a request via MAIL to the editor, Dafydd, at the userid *white@duvm.BITNET*. This request should contain your full userid (logonid and node, or a valid internet address) as well as your full name. InterNet (all non-BITNET sites) subscribers will receive their issues in Mail format. BitNet users have the option of specifying the file transfer format you prefer (either DISK DUMP, PUNCH/MAIL, or SENDFILE/NETDATA). Note: all electronic subscriptions are Free!

The Guildsman

The Journal of the Gamers' Guild of UCR Contact: *jimv@ucrmath.ucr.edu*
ucsd!ucrmath!jimv (uucp)

The Guildsman is an electronic magazine devoted to role-playing games and amateur fantasy/SF fiction. At this time, the Guildsman is available in LaTeX (.tex) source and PostScript formats via both email and anonymous ftp without charge to the reader. Printed copies are also available for a nominal charge which covers printing and postal costs. For more information, email *jimv@ucrmath.ucr.edu* (internet) *ucsd!ucrmath!jimv* (uucp)

Thank you, thank you very much