

HORMIGA CANYON

by Rudy Rucker and Bruce Sterling

“Hormiga Canyon,” Rudy Rucker and Bruce Sterling’s exciting new tale of giant ants and woolly mammoths residing in Southern California is the authors’ third collaboration for Asimov’s. Each has had numerous solo appearances in the magazine as well. Two sections of Rudy Rucker’s new cyberpunk novel, Postsingular (out from Tor this fall), first appeared in Asimov’s, as “Chu and the Nants” (June 2006) and “Postsingular” (Sep-tember 2006). Rudy is working on a sequel (currently titled Hylozoic) and plans to extend the series to a trilogy. Other recent publications are a story anthology, Mad Professor, and a second edition of The Hollow Earth, a historical SF novel starring Edgar Allan Poe. Rucker spends an inordinate amount of time writing and photographing for his blog, www.rudyrucker.com/blog. Bruce Sterling, who gives blogs ten years to live, has won Hugo Awards for two novelettes, “Bicycle Repairman” (October/November 1996) and “Taklamakan” (October/November 1998), that were first published in Asimov’s. Eight of his stories from Asimov’s will soon appear in Ascendancies: The Best of Bruce Sterling. His latest book, Shaping Things, is a manifesto on post-industrial design coming out from MIT Press.

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Part 1

Stefan Oertel pulled a long strand of salami rind from his teeth. He stared deep into wonderland.

Look at that program go! Flexible vectors swarming in ten-dimensional hyperspace! String theory simulation! Under those colored gouts of special effects, this, at last, was real science!

Stefan munched more of his sandwich and plucked up an old cell phone, one of the ten thousand such units that he’d assembled into a home supercomputer. “Twine dimension seven!” he mumbled around the lunchmeat. “Loop dimension eight!”

The screen continued its eye-warping pastel shapes. Stefan’s ultracluster of hacked cell phones was searching Calabi-Yau string theory geometries. The tangling cosmic strings wove gorgeous, abrupt Necker-cube reversals and inversions. His program’s output was visually brilliant. And, thus far, useless to anybody. But maybe his latest settings

were precisely the right ones and the One True String Theory was about to be unveiled—

“Loop dimension eight,” he repeated.

Unfortunately his system seemed to be ignoring his orders. There might be something wrong with the particular phone he was holding—these phones were, after all, junkers that Stefan’s pal Jayson Rubio had skimmed from the vast garbage dumps of Los Angeles. Jayson was a junk-hound of the first order.

Ten thousand networked cell phones had given Stefan serious, number-crunching heavy muscle. He needed them to search the staggeringly large state space of all possible string theories. The powerful Unix and RAM chips inside the phones were in constant wireless communication with each other. He kept their ten thousand batteries charged with induction magnets. The whole sprawling shebang was nested in sets of brightly colored plastic laundry baskets. Stefan dug the eco-fresh beauty of this abracadabra: he’d transformed a waste-disposal mess into a post-Einsteinian theory-incubator.

Stefan had earned his programming skills the hard way: years of labor in the machine-buzzing dungeons of Hollywood. And he’d paid a price: alienated parents in distant Topeka, no wife, no kids, and his best coder pals were just email addresses. Furthermore, typing all that computer graphics code had afflicted him with a burning case of carpal tunnel syndrome, which was why he preferred yelling his line-commands into phones. Cell phones had kick-ass voice-recognition capabilities.

Stefan dipped into a brimming pink laundry basket and snagged a fresher phone, an early-nineties model with a flapping, half-broken jaw.

“Greetings, wizard!” the phone chirped, showing that it was good to go.

“Twine dimension seven, dammit! Loop dimension eight.”

The system was still ignoring him. Now Stefan was worried. Was the TV’s wireless chip down? That shouldn’t happen. The giant digital flat-screen was new. And, yes, the phones were old junk, but with so many of them in his ultracluster it didn’t matter if a few dozen went dead.

He tried another phone and another. Crisis was at hand.

The monster screen flickered and skewed. To his deep horror, the speakers emitted a poisoned death-rattle, prolonged and sizzling and terrible, like the hissing of the Wicked Witch of the West as she dissolved in a puddle of stage-magic.

The flat screen went black. Worse yet, the TV began to smell, a pricey, burnt-meat, molten-plastic odor that any programmer knew as bad juju. Stefan bolted from his armchair and knelt to peer through the ventilation slots.

And there he saw—oh please no—the ants. Ants had always infested Stefan's rental house. Whenever the local droughts got bad, the ants arrived in hordes, trooping out of the thick Mulholland brush, waving their feelers for water. Stefan's decaying cottage had leaky old plumbing. His home was an ant oasis.

He'd never seen the ants in such numbers. Perhaps the frenzied wireless signals from his massive mounds of cell phones had upset them somehow? There were thousands of ants inside his TV, a dark stream of them wending through the overheated circuit cards like the winding Los Angeles River in its man-made canyons of graffiti-bombed cement. The ants were eating the resin off the cards; they were gorging themselves on his TV's guts like six-legged Cub Scouts eating molten s'mores.

Stefan groaned and collapsed back into his overstuffed leather armchair. The gorgeous TV was a write-off, but all was not yet lost. The latest state of his system was still stored in his network of cell phones.

He reached for his sandwich, wincing at a stab of pain in his wrist.

The sandwich was boiling with ants. And then he felt insectile tickling at his neck. He jumped to his feet, banged open the door of his leaky bathroom, and hastily fetched up an abandoned comb. He managed to tease three jolly ants from his strawy hair, which was dyed in a fading splendor of day-glo orange and traffic-cone red.

Before he'd moved into this old house, Stefan hadn't realized that most everybody in L.A. had an ant story to tell. Stefan had the ants pretty badly, but nobody sympathized with him. Whenever he reached out to others with his private burden of tales, they would snidely one-up him with amazing ant-gripes all their own: ants that ate dog food, ants that ate dogs, ants that carried off children.

Compared to the heroic ant woes of other Angelenos, Stefan's ant

problems seemed mild and low-key. His ants were waxy, rubbery-looking little critters, conspicuously multi-ethnic in fine L.A. style, of every shape and every shade of black, brown, red, and yellow. Stefan had them figured for a multi-caste sugar-ant species. They emerged from the tiniest possible cracks, and they adored sweet, sticky stuff.

Stefan bent over the rusty sink and splashed cold water on his unshaven face. He'd done FX for fantasy movies that had won Oscars and enchanted millions of people on six continents. But now, here he stood: wrists wrecked, vermin-infested, no job, no girlfriend, neck-deep in code for a ten-dimensional string-theory simulation with no commercial potential.

Kind of punk and cool, in a way. It sure beat commuting on the hellish L.A. freeways. He was free of servitude. And he definitely had a strong feeling that the very last tweak he'd suggested for his Calabi-Yau search program was the big winner.

Just three months ago, he'd been ignoring his growing wrist pains while writing commercial FX code for Square Root of Not. The outfit was a cutting-edge Venice Beach graphics shop that crafted custom virtual-physics algorithms for movies and the gaming trade.

Of course, Stefan's true interest, dating way back to college, had always been physics, in particular the Holy Grail of finding the correct version of string theory. Pursuing the awesome fantasy of supersymmetric quantum string manifolds felt vastly finer and nobler than crassly tweaking toy worlds. The Hollywood FX work paid a lot, yes, but it made Stefan a beautician for robots, laboring to give animated characters better hair, shinier teeth, and bouncier boobs. String theorists, on the other hand, were the masters of a conceptual universe.

Though the pace of work had nearly killed him, Stefan had had a good run at Square Root of Not. Their four-person shop had the best fire-and-algebra in Los Angeles, seriously freaky tech chops that lay far beyond the ken of Disney-Pixar and Time-Warner. The Square Rooters' primary client, the anchor-store in the mall of their dreams, had been Eyes Only, a big post-production lab on the Strip.

But Eyes Only had blundered into a legal tar pit. All too typical: the suits always imagined it was cheaper to litigate than to innovate. Disney's Giant Mouse was crushing the copyrighted landscape with the tread of a mastodon.

Stefan hadn't followed the sorry details; the darkside hacking

conducted in Hollywood courtrooms wasn't his idea of entertainment. Bottom line: rather than watching their lives tick away in court, the Square Rooters had taken the offered settlement, and had divvied up cash that would otherwise go to lawyers.

Their pay-off had been less than expected, but all four Square Rooters had been worn down by the grueling crunch cycles anyway. Liberated and well-heeled, each Square Root partner had some special spiritual bliss to follow. Lead programmer Marc Geary was puffing soufflés at a chef school in Santa Monica. Speaker-to-lawyers Emily Yu was about to sail to Tahiti on an old yacht she'd bought off Craig's List. Handyman Jayson Rubio was roaring around the endless loops of L.A.'s freeways on a vintage red Indian Chief motorcycle. As for Stefan—Stefan was sinking his cash into his living expenses and his home-made ultracluster supercomputer. Finally, freedom and joy. Elite string-theory instead of phony Hollywood rubber physics.

Some days the physics work got Stefan so excited that he could think of nothing else. Just yesterday, when he'd been feeling especially manic about his code, doll-faced Emily Yu had phoned him with a shy offer to come along on her South Seas adventure. Idiotically, Stefan had blown her off. He'd overlooked a golden chance at romance. Instead of hooking up, he'd geeked out.

Today he was nagged by the sense that he should call Emily back. Emily was smart and decent, just his type. But—the thing was—he couldn't possibly think about Emily without also thinking about work. Those years of servitude were something he wanted to forget. In any case, right this minute he was for sure too busy to call Emily, what with all these friggin' ants.

Stefan glared at his unshaven clown-haired visage in the mirror. He knew in his heart that he was being stupid. How many more women were likely to ask for face-time with him? He'd never get another such offer from kind-hearted Emily Yu. There were a million pretty women in L.A., but never a lot of Emilys. Call her now, Stefan, call her. Do it. You have ten thousand phones in here. Call.

All right, in a minute, but first he'd call his landlord about the ants.

Back in his living room, long tendrils of ants were spreading out from the TV. Amazingly tiny ants: they looked no bigger than pixels, and their jagged ant-trails were as thin as hairline cracks. They were heading for the laundry baskets.

“Not my cell phones, you little bastards,” cried Stefan, hauling his baskets outside to the dilapidated porch.

He found a phone that seemed to hold a charge.

“Call Mr. Noor,” Stefan instructed. He’d cloned a single phone account across all ten thousand of his phones.

He heard ringing, and then his landlord’s dry, emotionless voice.

“This is Stefan Oertel, Mr. Noor. From the cottage in the back of your estate? I’m being invaded by ants. I need an exterminator right now.”

“Hyperio,” said Mr. Noor. “You tell Hyperio, he fixes that.” This was Mr. Noor’s usual response. Unfortunately Mr. Noor’s handyman Hyperio was some kind of illegal, who appeared maybe once a month. Stefan had seen Hyperio just the other day, trimming the bushes and hand-rolling cigarettes. This meant that the ants would rampage unchallenged for weeks.

“Does Hyperio have a telephone?” asked Stefan. “Does he even have a last name?”

“Use poison spray,” said Mr. Noor shortly. “I’m very busy now.” Mr. Noor was always on the phone to rich friends in the distant Middle East. End of call.

Stefan snorted and squared his shoulders. The ant-war was up to him.

He found his cyber-tool kit and extracted the coil of a flexible flashlight. He poked his instrument through the slots in the back of his TV. The ants had settled right in there, ambitious and adaptable, like childless lawyers lofting-out a downtown high-rise. In the sharp-edged shadows lurked a sugar ant as big as a cockroach. The huge ant was tugging at something. A curly bit of wire, maybe. For a crazy, impossible instant the ant looked as big as a hamster.

Stefan rocked back on his heels. These ants were blowing his mind; they were dancing on the surface of his brain. He was losing it. It was very bad for him to be deprived of a computer. He needed some help right away.

“Call Jayson,” he told his phone.

Although Jayson Rubio sometimes worked Stefan's nerves, the two of them had a true and lasting bond. During each year they'd spent at Square Root of Not, they'd ventured to Burning Man together, displaying their special-FX wizardry to the festival crowds in the desert.

Both of them had all-devouring hobbies: Stefan's was string theory; Jayson's was memorabilia. Since leaving the FX company, Jayson had started his own little online business, marketing Renaissance-Faire-type costume gear that he made. Stefan maintained Jayson's website.

Jayson was old-school, very analog. At Square Root of Not, he'd been the go-to guy for everything physical: stringing power cables, putting up drywall, sanding the floors, fixing the plumbing. As a fix-it wizard, Jayson was a human tornado. He always carried a sheathed multitool on his belt: knives, pliers, wrench, saw, scissors, cutters, strippers, punchers, pokers, rippers, pounders, and more. Jayson never lacked for options.

The phone was successfully ringing. Now that Stefan was in a jam, a jam full of sugar-ants, good old Jayson would pitch in.

"Stefan!" shouted Jayson, answering. "Call me back later."

"No no no, listen to me," Stefan babbled. "Ants are eating my hardware!"

Someone else was angrily yelling at Jayson in the background. Jayson had a fetish about holding his cell phone at arm's length, so that the powerful microwave phone-rays wouldn't foment a brain tumor. Whenever you called Jayson Rubio, you weren't calling an individual, you were calling an environment.

Jayson's current environment featured an echoing garage roar of biker engines and snarling heavy-metal music. "What? Not one more dime!" Jayson was barking. "Your ad said 'runs great,' it didn't say 'skips gears!' Are you waving that tire-iron at me, you friggin' grease monkey? What? Sure, go ahead, call the cops, Lester! I love the L.A. cops!"

Stefan heard more angry demands, and finally the roaring of a motorcycle. The engine noise rose to a crescendo, then it smoothed down. "Stefan, dog," said Jayson at last, wind whipping past his phone. "You still there?"

Stefan explained about the ants.

“Ant-man on the way!” Jayson soothed over the ragged pounding of his motorbike. “Don’t even think about poison bug bombs! Bad chemical karma is never the path.”

Stefan hung up. His mood had brightened. What the hell, he would fix his system somehow. He’d buy a new TV. The basic program was still in the cell-phone memory chips, also his very last tweak: twine dimension seven, loop dimension eight. For sure that had been the key to the One True String Theory. The One True String Theory was worth every sacrifice he had ever made. Cosmic strings were the key to an endless free source of non-polluting energy. His noble work would be a boon to all mankind.

Stefan wandered outside. It was another ruthlessly sunny June day, the sky blank and blue. The dry hills around Mr. Noor’s estate were yellow, with scrubby olive-green oak and laurel trees. Stefan felt glad to be out of the house and away from his crippled hardware. Why did he labor indoors when he lived in California? That was crazy. Comprehending nature was, after all, the end goal of physics. Why not skip the middleman? Why not go out in nature and comprehend it in the raw?

Maybe the ants were grateful to him for discovering the One True String Theory. In return, the ants had come to teach him a finer way of life. The ants were prodding him to recast his research goals. Maybe, in particular, he could search for a woman to live with? That search was well-known to be solvable in linear time.

He would phone Emily Yu before tonight. Of course he would. How hard could that be? His friend Jayson always seemed to have a partner on his arm, often boozy and tattooed, but undeniably female. All Stefan needed to do was to reach out at a human level. Here he was, unemployed yet still feverishly programming, like the cartoon coyote who skids off a cliff, spinning his legs in mid-air, until finally realizing that, *sigh*, it’s time for that long tumble into the canyon.

Overhead the leaves on a eucalyptus tree shimmered in the hot breeze. Universal computation was everywhere. Behind the façades of everyday life were deep, knotted tangles of meaning. Yes, yes....

Jayson’s sturdy red Indian motorcycle putted up the hill and into view, all 1950s curves and streamlining, with a low-skirted rear fender. A beautiful old machine, with Jayson happy on it.

Jayson shed his dusty carapace of helmet and jacket. He wore ragged denim cargo shorts, black engineer’s boots, and a black T-shirt

bearing a garish cartoon image of a carnivorous Mayan god. Jayson's brawny arms had sleeve-like tribal tattoos under intricate chain mail wristbands. Jayson wove the chain-mail in his idle moments, frenetically knitting away with pliers. Jayson's freaky metal wristbands were the best-selling items on his website. They were beloved by fantasy gamers and Society for Creative Anachronism types.

Stefan offered a cheery wave and hello, but Jayson raised a hand and hauled his phone from his shorts pocket. He listened at arm's length to the tinny bleating of the speaker, lost his temper and began to rage. "Huh? You reported it stolen? So try and find me, Lester! I got no fixed address! You've got a what? Back off, man, or you're never gonna get your money!" Angrily Jayson snapped shut his phone.

"A little trouble with your hog?" said Stefan delicately.

"Aw, that Lester," said Jayson, staring uneasily at his precious red bike. "Nasty old biker, long gray ponytail down his back ... Lester's a crook! He sold me a sick Indian, what it is. A beauty, a rare antique, a New York cop bike with all the original paint ... but it shifts rough. On paper I still owe him ... but if he won't fix my bike our contract is void. No way he's calling the cops."

Reassured by his own bravado, Jayson grinned and drew a crumpled paper sack from his pants pocket. "Next topic. Your ants are history. I brought ant aromatherapy."

"Didn't you used to have a big tow-trailer for your bike?" said Stefan, studying his friend. "That had all your stuff in it, didn't it?"

A pained scowl furrowed Jayson's bearded face. "Lupe says she's throwing me out. My trailer's locked in her garage in Pasadena until I pay back rent. It's always money, money, money with her. Man, I hate gated communities. Like, why put yourself into a jail?"

"You were pretty serious about Lupe. You told me she was the best woman you ever dated. You said you loved her."

Jayson winced. "Forget Lupe. Forget my stuff. The world's full of stuff. What's the difference who has what?"

"I like where your head's at," said Stefan, feeling empathy for his companion. "Material possessions are mere illusions. Everything we see here, everything we think we own, it all emerges from the knotting and

unknotting of a hexadecillion loops of cosmic string.”

It was Jayson’s turn to offer a pitying look. “Still at that, huh?”

“Jayse, I’m just a few ticks of the clock away from the One True String Theory. In fact I think maybe ... I think maybe I already found it. I found the truth exactly when those ants showed up to eat my system. So if I can just publish my science findings in a reputable journal—who knows! It could lead to golf-ball-sized personal suns!”

“Yeah, bro, it’s all about the universal Celtic weave,” said Jayson. He brandished the chain-mail of his hand-made wristlets, beautifully patterned, with loops in four or five different sizes. Then his indulgent smile faded; he twisted his head uneasily. “Do you, um, just hear a helicopter over the valley? Let’s hide my bike in your garage. Just in case Lester really did file a report. Those ghetto-birds are hell on stolen vehicles.”

“Why don’t you just pay the man?” asked Stefan as they wheeled the fine old machine into his tiny, cluttered garage. “This is a beautiful bike. Heavily macho.”

Jayson grunted. “Thing is, I spent my Square Root of Not money on primo collectibles. Sci-fi costumes that I picked right off the studio set. They’re in my trailer, locked up in Lupe’s damn garage. But really, that’s okay, because all I need to do is flip those costumes for a profit on my website. Then I can make good on Lupe’s rent, and get at the costumes, and also pay off the motorcycle. See, it goes round and round. Loop-like.” Another cloud crossed Jayson’s face. “My website’s still okay, right? Inside your big computer?”

“Your site is down. Like I’ve been telling you—the ants ate a crucial part of my system. Your website still exists.” Stefan waved his hands. “It’s distributed across the memory chips of ten thousand cell phones. In terms of customer service, though, your website’s a lost world.”

“I hate computers.”

“They love you.”

“I hate ants.”

“That’s what I want to hear,” said Stefan. “Let’s go get ‘em, big guy.” He led his friend inside.

They knelt and peered inside the TV, using the flexible light-wand.

“Hey, I’ve seen lots worse,” grunted Jayson in typical L.A. style. “Your ants are practically too small to see!”

“They come in all sizes, man. I saw one as big as, I dunno, as big as a miniature dachshund.”

“Get a grip,” advised Jayson, and the irony of this insult, coming from him, cheered Stefan no end. Yes, he was having a bad ants-in-your-hair day, but compared to Jayson, he was the picture of bourgeois respectability. He had money in the bank, a roof, and a bed. For all his swagger, Jayson was practically living in a dumpster. But—Jayson didn’t even care. Jayson wasn’t daunted, not a bit. Stefan could learn from him.

Jayson was staring at Stefan’s cracked leather armchair. “You gonna finish that sandwich? Is that baloney organic?”

“It’s salami,” said Stefan. “I’ll get you a bottle of beer.”

Jayson wolfed down the ant-teeming sandwich in three bites. “Tastes like dill pickles.”

“That would be the formic acid.”

Jayson chugged the whole bottle of Mexican beer and fetched himself another. He then focused his professional attention on the four little glass phials he’d brought, deftly unlimbering his multitool and twisting off the screw-tops. Jayson loved using his pliers.

“Eucalyptus, peppermint, cinnamon, and verbena,” intoned Jayson. He dribbled reeking herbal essences on the floor around the television. “Organic, non-toxic, all-natural, ants hate it. This potion never fails.”

The ants tasted of the droplets—and found them good. The trails on the floor thickened as ants seethed out of the TV, so many ants that the trails looked like glittering syrup.

Not wanting to admit defeat, Jayson began stomping the ants. “My essences drew ‘em out of hiding. This way we can wipe them out!” One of the old pine floorboards gave a loud crack and split along its length.

“Jayson!”

“Dog, you got so many ants that they gotta be living under your house. You got some serious Los Angeles ants here, man, you got atomic mutant ants like those giant ants in *Them*. We rip up these crappy old floorboards, napalm those little suckers with flaming moth-balls, then float in some plywood and throw down a cheap carpet. Presto, problem solved.”

“Save the pyro stunts for Burning Man, Jayson. You’re not wrecking my vintage floor.”

Jayson knelt and peered through the broken board, getting the ant’s-eye view. “That’s a great movie, *Them*, it’s got those classic rubber-model bug effects. None of your digital crap.”

“Digital is not crap,” said Stefan with dignity. “Digital is everything. The world is made of ten-dimensional loops of digital cosmic string.”

“Sure, sure, but *Bug’s Life* and *Antz* were totally lame compared to *Them*.”

“That’s because they didn’t use *giant* ants,” said Stefan. “Certain intellectual lightweights have this wimpy notion that giant ants are physically impossible! Merely because the weight-to-strength ratio scales nonlinearly. But there’s so many loopholes. Like negatively curved space, man, or higher dimensions. Lots of elbow room in hyperspace! String theory says there are six extra dimensions of spacetime too small for humans to see. The Calabi-Yau vermin dimensions.”

“You really know some wack stuff, dog,” said Jayson, vindictively mashing ants with his thumb. “If these ants have got their own goddamn dimensions, all the more reason to rip up this floor and pour gallons of burning gasoline into their hive.”

“Their nest is *not* under my house,” insisted Stefan. “There’s got to be some modern cyber-method to track ants to their true lair. Like if I could laser-scan them, or Google-map them. That would rock.”

“Stefan, why did you even call me if you want to talk that kind of crap? It’s not like ants have anti-theft labels.”

“Hey, that’s it!” exclaimed Stefan. “I’ve got smart dust, man. I’ve got a whole bag of smart dust in my bedroom.”

Jayson grinned loonily and made snorting noises. “Smart dust?”

Throw down some lines, dog!”

“I do not speak of mere drugs,” said Stefan loftily, “I’m talking RFID! Radio frequency ID chips. My smart dust comes out of a lab in Berkeley. You can ping these teensy ID tags with radio, and they give off an ID number. They’re computer chips, but they’re so much smaller than ants that they’re like ant cell phones. Smaller than that, even. Smart dust is like ant pretzel nuggets.”

Stefan fetched Jayson a promotional sheet from a heap of tech-conference swag. The glossy ad showed one single ant towering over one single chip of smart dust. The chip was a knitted trackwork of logic circuits, pretty much like any normal computer chip, but the ant standing over it was an armored Godzilla with eyes like hubcaps and feelers big as sewer pipes.

“Whoah,” said Jayson. “I’d love to see an ant that big.” He drew out his multitool and kinked at a shiny length of his hobby wire.

Stefan rooted through his tangled electronic gear. “Here it is: just what we need. We’ll mix this bag of smart dust with your super-attractive ant repellents, and all the ants will swallow that stuff whole. Luring ants with high-tech bait—that’s just like when we did our art installations at Burning Man, back in the day!”

“Yep, those naked hippies were drawn to our tech wizardry like ants to sugar,” Jayson concurred. “I’d always get laid right away, but you were obsessed with keeping the demo running.”

“I need to change,” admitted Stefan.

The ants gathered rapidly around the bait, climbing on top of each other in their eagerness to feed. Stefan squatted to stare. “Wow, we’re drawing a matinee crowd!”

“Yeah, we got a big pop hit,” observed Jayson. The diverse crowd of ants included little foragers, big-jawed soldiers, curvaceous nurses, boxy undertakers...

Stefan pointed. “That one’s big as a rubber beetle! She must be a queen or something!”

“Squash her first,” said Jayson, plucking a rumpled pack of cigarettes from his pants pocket.

“I’m gonna capture her! A specimen like this belongs in a science museum.” Stefan hopped up and fetched nonconductive plastic tweezers from his electronics toolbox.

But when he leaned in to clutch the biggest ant with the tools of science—whoa, the ant shrank to a pencil-dot and disappeared into the floor boards.

“Feeling very strange!” exclaimed Stefan. “Did you see?”

“These ants are shifty mofos; I don’t like ‘em,” said Jayson, lighting his cigarette. He dialed up his lighter’s flame to make a small blowtorch. “These website-eaters must have swallowed some chips by now. Tea party’s over, girls.”

Scorched by Jayson’s lighter flame, the ants milled, panicked, and dispersed.

Stefan’s smart-dust scanner was the size of a pen, with a wireless connection to his laptop. Most of the dust was still half-glued on the floor, so it was hard to find a clear signal. Stefan tapped eagerly at his laptop’s keyboard, tweaking the scanner. Enthralled by discovery, he’d forgotten all about the pain in his wrists.

The smart-dust signals were vanishing through the walls of his apartment. With some bloodhound-style electronic tracking, Stefan found that the signals converged onto a winding ant highway running through his sun-baked yard.

“See, Jayson, those ants don’t live anywhere near my house.”

“I’ll bring the gasoline,” said Jayson, opening the last Mexican beer. “I saw a five gallon can in your garage by the leaf-blower.”

They followed the signals up Mr. Noor’s long driveway, the gas sloshing in Jayson’s rusty can. The ants were moving with astounding speed, as if they’d mounted tiny broomsticks.

“I don’t like leaving my bike,” said Jayson. “There’s no way those ants could have run this far.”

“Smart dust don’t lie, *compadre*.”

They arrived at an overgrown pull-off near the gate; Stefan passed it every day. He'd never thought to stop there before, for the spot was bristling with angry yucca and prickly pear. The cybernetic ant trail led under a forbidding tangle of dusty cactus, disappearing into a crooked little groove, a mini-arroyo where the fault-tortured dirt of L.A. had cracked wide open.

A wind blown newspaper dangled from the spine of an ancient yucca.

Jayson plucked the paper loose. "This might be handy for tinder.... Hey, whoa! Look how old this thing is!"

The newspaper dated from 1942; the lead story was about the "zoot suit riots" pitting Latino teens against US sailors on liberty.

"Duck-tail haircuts," murmured Jayson, skimming the article. "I could make a historical zoot suit. This paper is great. I can sell this as memorabilia. There might be a whole trove of old paper under that cactus. Let's hold off on the flaming gasoline attack."

Stefan stared at his laptop. His smart-dusted ant signals were vanishing as fast as movie popcorn. "They're running straight into that crack in the ground. And then their signals just vanish."

"Must be some kinda sinkhole," said Jayson. He hunkered down and accurately pitched his empty beer bottle under the cactus.

The brown Mexican glass bloated like a soap bubble, shrank to the size of a pinhead and disappeared.

"Okay," said Jayson slowly. "That's pretty well torn it."

"It's ... that's ... wow, it's a localized domain of scale recalibration," said Stefan. "You get that kind of Calabi-Yau effect from a warping of the seventh dimension. You wait here, Jayson. I'm gonna walk right in there. I know how to handle these things."

Clutching his laptop, Stefan ventured forward. He took a step, two, three. Enormous mammoth-ear blobs of prickly pear cast a weird shade over his computer screen.

Suddenly five enormous fleshy sausages seized his chest with crushing force. He gasped and dropped his laptop. He was yanked backward with blinding speed, then somehow found himself tumbling into

Jayson, sending the two of them sprawling on the dry, cracked dirt.

“You shrank, man,” Jayson complained, rising and dusting his cargo shorts. “You shrank right to the size of a hobbit. You were the size of Hello friggin’ Kitty.”

“Where’s my computer?”

“You see that little gray matchbook down there? That’s your Dell, dude.”

“I’m getting it.” Stefan darted in, shrinking as he went. He grabbed his laptop and hurried back out.

“Brave man,” said Jayson, patting Stefan’s shoulder. “How about this for an idea. Instead of walking into that crack, we get my Indian and *ride* into it.”

Stefan considered this. “You really want to risk your precious bike? At this point, it’s all you’ve got left.”

Jayson mulled this perhaps unkind remark, and decided to come clean. “Look, I didn’t want to tell you this before, because I’d knew you’d get all uptight, but Lester hid one of those satellite locator gizmos inside my Indian’s engine block. That’s what he told me on the phone. So if he really filed a stolen vehicle report...”

A police helicopter was laboring heavily over the valley. In L.A., the cop choppers were always up there. At four AM, above a howl of sirens, you could see them scorching the dark alleys of Hollywood with massive beams of light, like premieres in reverse.

“So I say we ride my bike into this crack in the ground,” continued Jayson. “And then we ride off the radio spectrum, just like the ants did. The vehicle disappears. Plus, then we’ve got some wheels. It’s win-win.”

“Brilliant,” said Stefan, nodding his head. “Let’s hurry.”

They left the gas can where it was and ran back to the garage. Jayson kicked his reluctant hog into function. There was room to spare for Stefan behind Jayson on the Indian’s enormous seat, which had been built for the generous cop-butts of a simpler era.

They roared up the driveway to the pullout and paused to top up the

motorcycle's tank from the can of gas, Jayson recklessly smoking a cigarette all the while.

"I'm, uh, having a moment of hesitation," Stefan confessed when they were back on the seat. "Can two men on a motorcycle possibly fit under a cactus?" He fumbled at his laptop. "I'm thinking maybe some calculations or some Google research would be—"

The rest of his words were lost in the roar of a police helicopter sweeping low over the ridge.

Jayson torqued the throttle and did a wheelie straight toward the bristling wall of chaparral.

* * * *

Part 2

With the sinister ease of fishline unsnarling, the prickly pear grew to enormous size overhead. The groove in the ground rose up on both sides like a frozen tsunami, then segued into a commodious canyon—a peaceful, timeless place with steep reddish sides and a sweet, grassy floor.

Jayson eased back on the throttle. The canyon cliffs had a certain swoony quality, like a paint-by-numbers canvas done by someone short of oils. The canyon's air was luminous, glowing from within.

Little houses dotted the bucolic valley floor, in rows and clusters. There were fields of corn, chickens in the yards, oranges, and, here and there, thriving patches of marijuana.

A dry river snaked along the valley. Livestock grazed the uncertain terrain of the higher slopes, which featured particularly vertiginous, eye-hurting angles. The grazing animals might have been cows and horses—maybe even antelopes and bison.

Up above the slopes the sun was scudding across the sky like a windblown balloon. Jayson braked the bike and cut the engine. "Okay. Okay. What the hell is that up there?"

"That's the sun, Jayson."

"It's falling out of the sky?"

“No, man. Any space warp is a time warp as well. I’d say one minute here in this valley of the ants is about the same as an hour in the workadaddy outer world.” Stefan cocked his head, staring at the racing sun, his eyes as bright as an excited bird’s. “The deeper we go in, the faster the outer world’s time rushes by. We’ll be like a couple of Rip van Winkles.”

Jayson threw back his head and laughed. “So by now those cops have given up and flown home!” He whooped again, as if recklessly trying to project his voice from the tiny ant crack beneath the cactuses off Mr. Noor’s drive. “Kiss my ass, Lester!”

“I have to analyze this situation scientifically,” said Stefan, growing fretful. “It’s counterintuitive for time to run *slower* here than in the world outside. That’s unexpected. Because usually small things are *faster* than large ones. Twitchy mice, sluggish elephants. But, oh, I see now, if the component strings of spacetime are *left-handed* seven-dimensional helices, then—”

“Then we’re free men,” said Jayson, kick-starting his bike with a roar. “Let’s see if I can find us the local Fatburger. That baloney of yours left a bad taste in my mouth.”

But there were no fast-food shacks to be seen in this idyllic landscape. The roads were mere dirt tracks. No electrical pylons, no power cables. No big L.A. streetlights. No gutters, no concrete, no plumbing. Even the air smelled different; it had a viscous, sleepy, lotus-land quality, as if it were hard to suck the molecules through one’s nose-holes.

In this bucolic stillness, the pop-popping of the old Indian was as loud as fireworks. An over-friendly yellow dog came snuffling up behind the slow-moving bike. Stefan turned to confront the stray mutt, and noted its extra, scuttling legs. It wasn’t a dog; it was, rather, a yellow ant the size of a dog.

The ant’s hooked feet skimmed across the valley floor, leaving neat little ant hoofprints. Intent on Jayson’s motorcycle, she moved like a Hong Kong martial artist on wireworks and trampoline.

Jayson hastily pulled his chopper into the gorgeous flowers of a local yard. He killed the engine and the boys leapt from the bike. The ant tapped the bike all over with her baton-sized feelers—trying to initiate a conversation. The motorcycle was, after all, remarkably ant-like in appearance, with its red skin, handlebar feelers, bulging headlight eye, and the gas tank like a thorax. Receiving no response, the yellow ant studied the

boys with her compound eyes, then bent her rear end around to smear a drop of sticky ant-goo across the bike's fat rear fender. She bent a bit awkwardly; judging from her lumpy abdomen, she'd recently had a big meal. And now, task done, she scuttled right along.

A weathered man in a white shirt, straw hat and chinos came out of the house and sat down on an old-style dinette chair. The vintage aluminum and vinyl chair was in much better condition than its age would suggest.

"Nice bike," said the old man, beginning to roll a cigarette. "What's it doing in my flowers?"

"Hyperio!" exclaimed Stefan. "I know you—I rent the cottage from Mr. Noor? I'm Stefan Oertel."

"Okay," said Hyperio peaceably. "I used to live in that cottage. Me and my first wife Maria. The gardener's cottage, the owner called it."

"Mr. Noor never told me that."

"Not him. Mr. Hal Roach, fella helped make those fat-man thin-man movies."

"Laurel and Hardy's producer!" said Stefan. "Wow. Serious time dilation. It's a real coincidence to find you here, Hyperio. I was looking for you because I have ant problems."

Hyperio seemed to think this was funny. He laughed so hard that he spilled the tobacco out of his cigarette. It was an odd, desperate kind of laughter, though, and by the end it almost looked like he was in tears.

"I'm sorry, boys," said Hyperio finally. "I'm not myself these days. My wife Lola is sick." He jerked his head toward his door. "My Lola—she's from way up Hormiga Canyon."

"Canyon of the Ants," translated Jayson. "What a great neighborhood. Can I live here? You got an extra room I can rent?"

"You'd pay me?" said Hyperio, looking maybe a little annoyed at Jayson's seeming lack of concern over his sick wife.

"Um, I'm low on funds right now," said Jayson, slapping his pockets. He looked around, sniffing the air for collectibles. "That Deco moderne dinette chair you're sitting on—if I took that over to Silver Lake, I could get

you two, three hundred bucks.”

“I brought this from the gardener’s cottage when I built this place for Lola,” said Hyperio. “And I’m keeping it. I like it.”

“Hey—do I see a wind-up Victrola through your window? You’ve got some old 78 records, right? You like that big band accordion sound?”

“You like *conjunto*, too?” Hyperio said, finally smiling. There was nothing for it but to step inside his house, where he proceeded to treat the boys to a leisurely wind-up rendition of “Muy Sabroso Blues” by Lalo Guerrero and His Five Wolves.

Grown hospitable, Hyperio produced a ceramic jug of room-temperature pulque. He gestured at a rounded lump under a striped Indian blanket on a cot. “My old lady,” he said. “My Lola. She’s got the *real* ant problems. Ants living inside her.”

“But—” began Stefan.

“They make themselves small,” said Hyperio, narrowing his eyes.

“Sure, sure, that figures,” nodded Jayson, tapping his booted foot to the music. “How did you end up in Hormiga Canyon, Hyperio?”

“Okay, before Lola, I was living with my first wife Maria in the gardener’s cottage,” said Hyperio. “One day I found the way in. Yeah, hombre, I had good legs then. I walked the canyon very deep.” Hyperio held out his fingers, branching in ten directions, with his cigarette still clamped between two of them. “Hormiga Canyon, it don’t go just one way. The rivers run in, the rivers run out. But I didn’t stop till I found my Lola. She’s a real L.A. woman. The original.” He sat on the creaking cot beside Lola and patted her damp brow.

“So you found Lola and—?” coaxed Stefan, eager to hear more.

“I was crazy in love with her at first sight,” said Hyperio. “She was living with this *indio*, Angon was his name. From the Tongva tribe. Lola was too good for them. The Tongva people, they pray to the ants. They got some big old giant ants back there with legs like redwood trees.”

“Wow,” said Jayson. “I’d pay plenty to see those ants.”

Hyperio got up and changed the record on his Victrola. “This is Lola’s

favorite song,” he said. “‘Mambo del Pachuco’ by Don Tosti and his band. She could really mambo, my Lola. Back in the day.”

The syncopated strains of music poured over the woman on the cot, and she stirred. Hyperio helped her sit up. Lola was stick-thin, and her brown face was slack. She’d been sleeping in a kind of leather shift, hand-beaded with little snail shells. When Lola saw that guests had arrived, however, she rallied a bit. Swaying to the music from the Victrola, she threw firewood into the stove. She stirred a kettle of soup. She drank water from a big striped pot.

Then she doubled over with a racking cough. She spat up a mass of ants. The ants swarmed all over her hands.

Stefan and Jayson exchanged an alarmed look. But Hyperio wasn’t surprised. He herded Lola back into bed, patted her, wrapped her up.

“She’s working the Tongvan ant cure,” said Hyperio, shaking his head. “They eat ants to get well, the Tongvans. Lola eats the ants, lots of them, but she’s still no good inside, not yet. That’s why she wants me to take her back up canyon.”

“Home to her people, eh,” said Jayson. “I’ve heard about that tribe. The Tongvans. They were Californians, but like, before Columbus, basically?”

“The first, yes,” said Hyperio. He reached behind a string of dried peppers near the ceiling and produced a leafy sheaf of cured tobacco. With the edge of an abalone shell, he chopped up the brown leaf, then twisted it in a scrap of newspaper. “You boys want a good smoke? Have a smoke.”

Jayson snatched up Hyperio’s hand-rolled cig. “These ants. Is redwood-tree-legs the max size they go?”

“They go bigger,” said Hyperio. “The biggest ones live in a monster nest beyond the Tongvans. They say something is wrong with the ground there, like a tar pit. Lola still prays to those tar pit ants. Good cooking, praying to ants, that’s my Lola. But pretty soon she likes it better here. She likes the music.”

“How did your first wife Maria take it when you showed up with a prehistoric girlfriend?” asked Stefan. It was his fate forever to wonder how romance worked.

“All the way home I worry about that,” said Hyperio, nodding sagely. “It only felt like I left Maria a couple of days, maybe a week, but when I get back, Maria is dead! It’s twenty years later. I ask around—nobody remembers me. Not a soul. So I moved into Hormiga Canyon and built this little house for Lola and me. She gave me four kids.”

“Where are they now?” said Stefan.

“Busy with grandkids,” Hyperio shrugged. A metal pot danced and rattled on his iron stove. “Now we eat soup, eh? You want me to warm some tortillas?”

Raw wonder at the way of man and woman had relaxed Stefan’s fixation on science for one moment, but now his string-mania came vibrating back at him. “I know why this canyon exists!” he intoned. “There’s a fault in the weave of the cosmic strings that make up Los Angeles. And, yeah, that fault is this very canyon. The local Hormiga Canyon ants have co-evolved with the cosmic strings. That’s why L.A. ants are so sneaky! The ants of Los Angeles have a secret nest in that tar pit of cosmic strings.”

Jayson looked on him kindly. “Eat something, Stefan.”

They had a little of Hyperio’s squirrel soup—at least, the soup had some ratlike parts that were probably squirrel—and though the flavors of native Angeleno herbs like yarrow, sage, and deer grass were far from subtle, they did seem to brace one internally.

Buoyed by his scientific insight, Stefan was feeling expansive. “You’re a fine host, Hyperio! Anything we can do to pay you back?”

Hyperio regarded the boys. “That motorcycle in my flowers—you got some gas in it? Lola wants to go back up canyon to her people. But I don’t feel so good about this big trip.”

“We can carry Lola in for you,” said Jayson grandly.

“Dude,” said Stefan to his friend in a low tone. “If we go deep into this canyon, we’ll never see our own era again.”

“So what?” said Jayson. “When we go up that canyon, we’re going to a simpler, cleaner time. No smog. No pesticides. No politicians.”

“I can give you boys an old map,” said Hyperio, rising from his dinette

chair.

Suddenly the room seemed to warp and twist. The walls creaked loudly.

“Earthquake!” yelled Jayson. He bolted from his dinette chair and banged his way through the door.

“Antquake,” corrected Hyperio, unperturbed.

Stefan rose and peered through the door, clutching his laptop in both hands. Jayson was hastily rolling his bike away from Hyperio’s house. Certain Angelenos were unnerved by ground tremors, but the pitching earth beneath his feet had never much bothered Stefan. In a hyperinflating cosmos made of humming strings, it was crass to expect stability.

As Stefan stepped outside, it occurred to him to wonder how much time had already passed in Los Angeles, that city of fast fads, that pen of frantic chickens with their heads cut off. Although the Hormiga Canyon air was as luminous as ever, when Stefan peered upward he saw the night sky canopy, with a full moon bob-bob-bobbing along, rather like the bouncy ball in a sing-a-long forties cartoon.

If Stefan and Jayson went deeper, the spacetime warp would be even stronger. They’d be visiting a real-world laboratory of dimensional wonders. Yes, Stefan wanted to go. There was no choice about that, really.

Up near the dark, blurry lip of the canyon, a black ant the size of a 1950’s prop-job airliner was hard at work. With an ant’s busy clumsiness, her six legs grappled at the fibrous dirt, setting off little slides. She was groping around in the fabric of reality with her monster feelers, tugging at the substance of the canyon wall, pulling stuff loose: it looked like ropes or pipes. Cosmic strings. This ant was causing the tremors.

As she worked the fabric of the cosmos, distant houses shrank and grew as if seen through a shimmer of hot air. The black ant trundled down the valley wall, carrying a string in her jaws. The tangled bights of string glowed and shimmered; the lucid air hummed with a kind of music. The ant was unsteadily shrinking, first to the size of a house, then to the size of a car, and then to the size of a cow—and now Stefan realized that those “livestock” upon the hillsides of Hormiga Canyon were all ants, too.

A herd of them gathered around the big black ant in a companionable fashion, fiddling with her string, helping with some dim nest-building

agenda. They worked off instinct and smell.

Lola appeared in the door of Hyperio's shack. She had a hand-woven string bag over her shoulder. She still looked peaked, but with the promise of a journey home, hope had returned to her haggard face. She and old Hyperio engaged in a tender, rapid-fire farewell in Spanish. She kissed him, and Hyperio picked a red ant from his mustache. With a scowl, he flicked it from his fingertip.

The ant hit the ground scrambling, bounded up and was the size of a panther. It sniffed the fender of Jayson's motorcycle, where the other ant had left its tag of sticky dew. Jayson doubled his fists.

"It's harmless!" Stefan called.

But Stefan was wrong. With an abrupt lunge and a twitch of her big head, the rangy red ant snatched Stefan's laptop from his unsuspecting grasp. She smashed the computer with the clashing machineries of her mouth; the pieces disappeared down her gullet. And then she trotted on her way.

Livid with rage, Stefan took a step or two in pursuit—but then, surprising even himself, he halted. This cosmic-string ant was paying him a compliment by eating his laptop. Somehow she'd sensed the seeds of the One True String Theory within Stefan's flat gray box. Why else had they invaded Stefan's home in the first place? They were there to celebrate the fact that he was King of String!

Weak-kneed with his turbulent flow of emotions, Stefan leaned against the bike.

Jayson began messing with the motorcycle, hiking up the saddlebags to make a platform that could support Lola. "You'll be happier on the open road," he told Stefan. "Without that idiot box leeching your psychic energy."

"Is this bike gonna be big enough?" said Stefan.

"Down in Mexico a family of *six* would ride," said Hyperio. He laid a board and a folded blanket across the saddlebags, and Lola curled up on it, making herself small. She showed her teeth in pain, then gave the boys a brave smile.

"I bet she used to be beautiful," said Jayson. "I bet she used to look a lot like Lupe."

“You mentioned a map?” Stefan asked Hyperio.

Hyperio handed over a heavy yellow roll of dense, spotted leather. It had a few strands of coarse fur on the edges. It was buffalo hide.

“The Seven Cities of Gold,” said Jayson, eagerly unfurling the scroll. “Quivira and Cíbola.” Jayson’s chain mail wristlets glinted in the light like the armor of a conquistador. “The Spanish never found those ‘lost cities.’ I bet anything they’re in this canyon.”

“Los Angeles is the true lost city,” said Stefan, peering over Jayson’s shoulder. Hyperio’s map left a lot to be desired. It had been drawn in blood and berry-juice by some guy who didn’t get it about longitude.

The three travelers bid Hyperio a last goodbye.

The road running up the canyon was a much trampled ant-track. The little wooden shacks gave way to simpler dug-out huts and lean-tos. It seemed that the locals had never seen—or heard—a motorcycle before; at the machine’s approach, they ran around in circles with their hands over their ears.

Pools of water stood here and there in Hormiga Canyon’s dry river, more pools all the time. In certain dank and sticky patches—mud, maybe—huge bison had mired-in hip deep and been butchered by the locals. The boys had to dismount and coax the roaring cycle around these dicey spots, with unsteady Lola grimacing at the jolts.

The beach-ball sun and bouncing moon picked up the pace. The travelers reached a cross-marked spot on Hyperio’s map. It was a settlement of low, adobe houses, with a big stone church. The central square smelled of corn tortillas and roasted pumpkin seeds. The locals, in dented straw hats and serapes, looked like extras from the set of the Fairbanks silent production of *Zorro*, except that they were in color, they lacked histrionic gestures, and they were audibly talking.

Eager to mooch some chow, the boys approached the stony well before the church. At the banging sound of their engine, the padre appeared at the church door. Shouting in Latin, he brandished a crucifix and a horse-whip. Jayson cranked up the gas and they rolled on.

They then entered what appeared to be a nature reserve, or, to put it more accurately, a no-kidding primeval wilderness. The human population,

what little there was of it, vanished into the trees and scrub. The paths bore bear tracks, cougar tracks, deer tracks, and enormous Jersey-Devil style ant hoofprints. And the river had water in it now.

“One thing bothers me,” said Jayson as a ground sloth lumbered by, leaving tufts of reddish hair in the blackberry brambles. “Seems like the ants should get tiny when they come around us humans. Everything else matches our size: the chairs, the tables, the trees. But the ants—the ants are all kinds of sizes.”

“The ants can scale themselves to any size they need,” said Stefan. “It’s because they’re in control of the subdimensional cosmic strings.”

“Well, how come we can’t do that?” said Jayson. “We’re special-effects wizards, and ants are just a bunch of insects.”

“Twine dimension seven, loop dimension eight,” said Stefan thoughtfully. “If we could get hold of some of those strings, we just might find a way.”

The glowing air of Hormiga Canyon never quite dimmed, so it was up to the travelers to decide when to bivouac. They gallantly let Lola set their pace, since she was frail and weary. To judge by the way she kept spitting off the side of her little platform, the ants were churning within her.

They made camp atop a little hill above the much-trampled edge of a river pool. To judge by the fang-marked pigs’ knuckles buried in the mud, the pool was an excellent hunting spot.

Stefan gathered dry twigs and Lola expertly stacked a campfire. Jayson had somehow misplaced his cigarette lighter, but thanks to his multitool, he was able to conjure up a bowstring and a drill. Amazingly, a sharp stick spun fast in half-decayed wood really did smolder and ignite.

There were trout in the burbling river, fat and gullible. Stefan was able to harpoon the naïve fish with the simplest kind of barbed stick. The boys ate two fire-roasted fish apiece, and when Lola only nibbled at her tasty fish, Jayson ate that one too.

An orgy of ferocious grunts and squeals drifted up from the river pool. Nobody felt quite ready to sleep. Lola lay on her side watching the fire, now and then brushing an ant from her lips. Jayson kept obsessively adjusting the screws on the carburetor.

"I'll stretch out our fuel for as long as possible," he explained. "Us city boys will be in trouble if we run out of gas."

"Did you ever see *Mysterious Island*?" said Stefan, staring dreamily into the flames.

"Of course. If you mean *Jules Verne's Mysterious Island* from 1961, with the giant bird, the giant crab and the giant bees. That's a Ray Harryhausen flick. Harryhausen is the FX god!"

"Precisely. So, you know, the heroes are stranded on a wilderness island with monsters and pirates. They have to, like, totally scrounge for basic food and shelter, and also craft some really hot homemade leather clothes for the female lead...."

"That tight leather dress she had was bitchin'."

"It sure was. So, maybe we run out of gasoline, but I don't see how we have any big problem. I mean, we're FX guys—basically, we *are* Harryhausen."

"Huh. Maybe *I'm* like Ray Harryhausen," said Jayson. "But you're all digital."

"Don't sell my conceptual skills short, Jayson. We've spent our careers creating lavish fantasies on a limited budget. Working together, we're fully capable of scaring up tools, shelter, food, and clothing in a trackless wilderness."

Jayson narrowed his eyes. "What kinda fantasy-adventure costume you need? Nylon, spandex?"

"Antskin would suit our parameters."

"I could do antskin clothes," mused Jayson. "I could craft flexible antskin armor."

"You see?" said Stefan loftily. "I gave you that concept. We're a team. No wonder we feel so much at home here. This place, Hormiga Canyon, with, like, the monsters and colorful natives—this is the soul of Los Angeles. That stuff we left behind, that's nothing but Tinseltown! There today, gone tomorrow."

Jayson looked up thoughtfully at the whizzing sky. Days and weeks were rushing by.

“Why would we want to return to that life of cheap illusion?” added Stefan, sounding braver than he felt.

“Lupe wasn’t a cheap illusion,” said Jayson. “Other people aren’t illusions. Lupe was so real. She was too real for me. I never knew enough real people, Stefan. I was always way too busy feeding the baloney machine.” Jayson turned his face away from the fire and scrunched down into the comfortless pillow of his jacket.

Stefan sat in silence, giving his stricken friend some privacy. Soon Jayson’s shoulders began twitching. He was crying? No, he was rooting in the dirt with his multitool.

“Look what I just found,” said Jayson, studying the scuffed dirt beside the blanket. “This is one of those ant strings. It glows.” He gripped the cosmic string with the strong metal jaws of his pliers. Flexing his tattooed arms, he gave it a muscular tug. The string twanged like a badly tuned harp. A slight shudder went through the fabric of the real.

“Those spoiled academic physicists would trade in their tenure to see this!” crowed Stefan, lying down on his side to observe the phenomenon. “You’ve got hold of a naked cosmic string! And listen to it! It’s humming a natural fourth with three overtones. That proves the existence of the Higgs particle!”

Jayson deftly popped the cosmic string loose from the fabric of spacetime. Torn from its context, the string coiled and rippled like a ruined Slinky. Jayson’s fingers shrank and grew like ripples in a mirrored pool. “Awesome visual effect, huh?”

The space around them shivered a bit; which seemed to have some effect on the ants in Lola’s belly. Abruptly she sat up, yowling in wordless pain. She clutched at her midriff and fled into the woods.

“At least she’s on her feet,” Jayson noted. “Maybe these space-shudders are doing the old girl some good.”

“I’m not sure you ought to pluck those strings right out of reality like that. You could set off a major antquake.”

“Hey, I’m getting away with it,” Jayson shrugged. He clacked the

pliers. “I can kink this stuff. I can even cut it. Let’s see if it’ll make chain-mail.”

“Twine dimension seven, loop dimension eight,” intoned Stefan.

The air gave tiny, tortured shudders as Jayson obsessed with his craft: “Okay, you coil it into a long spring first, then you cut it into open rings. And, yeah dog, I can kind of see the higher dimensions. Twine ‘em, loop ‘em, squeeze ‘em—and the loose ends stick together like soldering wire. Chain-mail.”

“I’d never have the patience for all that,” said Stefan, shaking his head.

“I’m like a cosmic ant,” said Jayson, calmly knitting away.

Stefan left to search for Lola. His tracking skills were none of the best, but when he came across a steady stream of ants, Lola wasn’t far. She was leaning against a tree. She’d retched a great bolus of ants from her innards—and her sickness had left with them. She looked much healthier.

They dozed for a few hours, rose and pushed on. Hyperio’s map got them past another tricky branching—but then they got hung up at a gnarly crossroads of five arroyos. There was a natural fountain gushing up in the river junction, a subterranean geyser of clear water, with the rivers cheerily running out from it in all five directions. Hormiga Canyon was an Escher ant-maze.

Stefan turned the precious leather map from side to side, like a monkey pretending to read a book. “I wonder if this troglodyte map-maker even knew about North and South.”

Jayson was poking in the wet black mud at the river’s edge. “Bonanza, dude! This river muck is full of loose strings!”

An orange ant the size of a miniature submarine came churning up out of the river water. Like an implacable homing missile, she ran for Stefan, seized the map and gobbled it down. And then, obeying the dictates of some distant scent signal, she scuttled away.

Stefan’s confidence cracked. “Why did you get me into this hopeless mess?” he yelled at Jayson.

“I think this was one of your grand concepts, wasn’t it?” said Jayson, not looking up. He was knitting cosmic strings into a wristband.

Lola had never given one glance at the map, so the loss of it did not concern her. She was feeling perkier today, and more than ready to give directions. Perched atop the rear fender, she offered Sacagawea-style pointed hints, and the boys followed her intuitions.

The familiar oak and laurel trees gave way to thirty-foot-tall tree-ferns: palm-like trunks with great punky frizz-bops of fronds. Bright, toxic-looking speckled mushrooms grew from the rich, damp soil. The tops of the cliffs had grown too high to see. And the narrow band of visible sky was flickering from light to dark to light every few seconds.

This crooked branch of Hormiga Canyon was densely cluttered with dun-colored, outsized, primitive herbivores. These prehistoric American megafauna showed little fear of humans. Small ancestral horses were striped like zebras. Long-necked camel-like creatures stank and slobbered. Carnivorous ur-pigs with flesh-rending tusks ran like the wind. The rather small and dainty Californian mastodons were merely twice the size of large elk.

It became clear that Lola was a proud, resourceful woman. Plucking dry reeds from the river’s edge, she deftly wove herself a gathering-basket. She imperiously stopped the bike to gather chow, stashing high-fiber Pleistocene bounty in the saddlebags. Cat-tail roots. Freshwater clams. Amaranth grain cut off the tops of pigweeds. When they finally bivouacked, the energized Lola bagged them a fatally innocent antelope by the simple expedient of clubbing it to death with a rock.

Jayson built them a fire, then set to work kinking his cosmic strings.

“You’ve got to become one with your craft, man,” babbled Jayson as a sweating Stefan methodically barbecued an antelope haunch. “My cosmic wristband is talking to me right now. Really. It’s saying, like, ‘Hi, I’m here.’ And, uh, ‘Thank you for making me.’ I’m fully in tune with its cosmic inner vibrations. I’m on the same cosmic wavelength. Soon I’ll be able to focus its cosmic energies.” Jayson glared up, daring Stefan to dismiss his claims.

Steadily Stefan spun the dripping, spitted meat. “Jayson, your theory is entirely plausible. These strings are quantum-mechanical. By working with the strings, you, as Man the Toolmaker, entangle yourself in their quantum state. You and your wristband form a coherent system with a unitary wave function.”

Jayson nodded, crimping away with his hard steel pliers. “And when this wristband is done and I’m wearing it, I’ll be a master of the scale dimension! Like the Hormiga Canyon ants!”

As if on cue, an ant the size of a Volkswagen appeared beside the fire, sniffed a bit at the baking amaranth bread, then edged close to Jayson, watching his nimble fingers at work. Seemingly fascinated, the ant went so far as to run one of her feelers over the little swatch of chain-mail.

“Shoo,” said Jayson mildly, and the ant pattered off.

“Food’s ready,” said Stefan.

As the three travelers feasted, the luminous canyon air was split with lurid, gurgling screams as monster bears and howling dire wolves culled the herds. Jayson heaped armloads of wood on their bonfire, but they didn’t sleep well at all.

When they arose, Stefan took the controls of the motorcycle so that Jayson could focus on finishing his wristlet. Lola, with her basket, sat on the rear fender, bright-eyed and chipper.

They discovered a path that bore heart-cheering human footprints. A river was nearby, running in the same direction they were traveling.

“Dig this,” said Jayson over Stefan’s shoulder. He shoved his hand forward to show off his completed wristband. It was beautiful; the light that fell upon it shattered into sparks of primary colors.

“Tongva,” murmured Lola, sniffing the air.

* * * *

Part 3

A colossal ant burst from a thicket of manzanita, bearing three fierce-looking natives. The riders were clutching the ant’s insectile bristles like Mongols holding a horse’s mane. They were deeply tanned men with filed teeth, floppy hair, and bizarre patterns painted on their faces. Original Californians.

The Tongvans sprang at Jayson and Stefan; seconds later the boys were swathed in woven nets, wrapped up like pupas side by side.

The largest Tongvan leaned over Stefan. He was a wiry, dignified gentleman just over five feet tall. He'd painted an intricate pattern of fern-like scrolls around his eyes and mouth. He had a deeply skeptical, highly judgmental look, very much like an overworked immigration officer at LAX.

Lola sashayed forward and tapped the man on the shoulder. She straightened her time-worn leather shift, preened at her gray hair, and began talking in Tongvan, addressing him as "Angon."

"Her husband!" Stefan hissed to Jayson.

It seemed Lola was telling Angon at length about what had happened to her in the impossibly complicated meantime since they'd last been together.

Angon tried to maintain his hard-guy expression, but as the facts sank in, his face began to quiver. Relative to Angon's experience of time, it had only been a few days since Hyperio had kidnapped his young wife Lola. And now Lola was back—decades older, a sickly crone. Angon cracked and lost his composure. He rubbed his nose against Lola's weathered cheek; the tears flowed.

"Aw," said Jayson.

Angon glared down at the boys. He hollered in Tongvan and raised his flint tomahawk.

"Stick with me," said Jayson, worming himself close to Stefan. "Abracadabra."

Suddenly Jayson and Stefan were the size of rodents. They scampered through the nets and fled into the underbrush. The angry Tongvans crashed about while their ant mowed down ferns with her mandibles—but the boys had deftly taken shelter beneath the red parasol of a toadstool.

The giant ant lumbered off and the Tongvans abandoned their search. From their hiding place the boys watched the Tongvans wheeling Jayson's motorcycle away, with Lola still talking.

"We're not gonna fit in with these people at all," said Stefan. "Hyperio was jiving us. We should head back to town right now. As it is, we're gonna

lose thirty years.”

“I say we push in further,” said Jayson. “I want to see that giant tar pit.” He studied his wristband. “What if I make us into giants and we just go grab my bike?” With a sudden popping sound, they grew back up to normal size—but no further. Jayson popped them a couple more times, trying to break through the barrier of normal scale.

“Stop it!” said Stefan, feeling dizzy and whiplashed. He steadied himself by grabbing Jayson’s arm. “Look at your wristband, dude, that link-pattern is asymmetric. You’re gonna need to weave a mirror image wristband if you want to make us grow.”

Jayson dropped them back to small size and cheesed his teeth at Stefan. “Okay, then for now we’ll be rats. Let’s skulk over and spy on the Tongvans. I want my bike back.”

The Tongvans were sitting in a semicircle before a chiseled stone altar. Perched atop the altar was the red Indian Chief motorcycle. Skinny old Lola was entertaining the tribe by showing them the mambo. Angon looked deeply disheartened.

The boys heard a twitter, a subsonic roar. High above them, huge mandibles stood starkly outlined against the endless, towering cliffs. A monster hooked ant-foot, as thick and red and barky as any sequoia, pounded straight into the ragged fabric of space-time. The great jaws swooped down and snatched up the Indian motorcycle.

The whole canyon shivered as the titanic ant stalked away.

In the stunned excitement, Stefan and Jayson restored themselves to normal size and brazenly stole one of the Tongvans’ dugout canoes. They sped down the river with no sign of Tongvan pursuit.

Deprived of his bike and sullen about it, Jayson worked steadily on another wristband, while Stefan sat in the prow. He used a pointed Tongvan paddle to guide them past the rocks, logs, and silent alligators that adorned the stream.

The time dilation was accelerating. The visible sky was but a bright wriggle, and the days and nights pulsed so fast that the worm of sky was a steady dim glow. The high squiggle reminded Stefan of the tentative smile Emily Yu had worn when she talked of her hopes and dreams—all long gone by now. Decades were flying past, centuries.

Calamitous sounds came from the stream ahead: a roar, a trumpeting, and some sweet, pure music, a primitive universal sound like Peruvian pan pipes or Moroccan flute. And then rapids hove into view. This was the roar. Standing amid the rapids was a herd of twenty-foot-tall mammoths with immense curved tusks. This was the trumpeting.

“The wristband’s done! Let me fasten it on you, dog.”

“Beautiful.”

Upon donning his wristband, Stefan understood all. It took but the slightest effort of his will to grow them both to a height of fifty feet.

Gingerly they sloshed through the minor puddle of the rapids, scattering the little mammoths like poodles. The toy canoe bobbed ahead of them emptily—and suddenly disappeared. The river ended in an immense, scale-free cataract, tumbling into fog. Something vast and gleaming lay beyond.

Stefan shrank them back to a scale that felt more or less normal. They stood on a boulder by the falls, leaning on each other and panting for breath, taking in the staggering view.

It was an immense glistening lake, many miles across, with endless flocks of birds slowly wheeling above it. Ants scampered about on the lake’s mirrored surface, elegant as ballet dancers, some as big as ships, others like winged dust motes. Inconceivably vast ant-feelers projected like misty towers from the pit’s distant center. In some spots the ants tessellated together to make flowing tiled carpets. Eerie cosmic string music filled the air, the sound almost unbearably haunting and sweet.

“The canyon’s core,” breathed Jayson.

But here came one last meddling ant, ineluctable as a tax collector, an officious pinkish critter the size of a school bus. Before the boys could manage to shrink or grow, she’d seized them both in her jaws. She carried them through the mist, squirming and howling—and dropped them like trash by the mouth of a cave near the base of the falls. She hurried off on other errands.

“What the hell?” said Stefan, rubbing his bruised shoulder.

Lying in the cave was Jayson’s motorcycle—a bit chewed and bent,

but still functional. Next to it were the half-digested pieces of Stefan's laptop, a few scraps of Hyperio's map, and even the debris of that Tongvan canoe they'd just been riding.

"So the goddamned ants know all about us, huh?" said Jayson, rubbing his sore ribcage. "God, I hate them."

"A single ant doesn't know squat," said Stefan. "Ants are like individual neurons. But, yeah, there's some kind of emergent hive mind happening. Like a brain. Like an ultracenter computer. The hive sensed the cosmic harmony emanating from my house. Ants are natural-born collectors; once they got interested in us, they had to gather all the Stefan and Jayson artifacts into one spot."

"They ruined the paint on my motorcycle, man," fumed Jayson, not really listening.

A dog-sized yellow ant trotted up and regurgitated—a few hundred elderly cell phones.

"What is *that*?" cried Stefan, not wanting to believe what he saw.

"Your homemade supercomputer," said Jayson, shaking his head. "My website."

"My baskets of cell phones?" cried Stefan.. "They're lugging all my phones here?" Stefan picked up a phone and opened it. The phone's components were quite dead; munged by ant jaws and eaten away by stomach acids. Another yellow ant approached and burped up more phones. Perhaps a hundred more yellow ants were following in her wake.

A bit disconsolately, the boys wandered the shore of the giant lake. The edges were treacherous. Thin sheens of water glistened atop a viscous, sticky, string-based equivalent of tar. The string tar had claimed some victims, unfortunate beasts who couldn't take the irregular transitions of scale, their bodies warping like balloon animals, their overloaded tiny hearts bursting from the effort of pumping blood to heads swollen to the size of refrigerators. Tigers and wolves had feasted upon the dying creatures, and had fallen captive to the string-tar themselves. Flies and condors darted and zoomed above the deadly tar pools, their proportions changing in mid-flight. The pools stank of carrion.

It was sickening to even try and imagine how fast the world's time was flowing relative to this forgotten place.

“My Calabi-Yau search program is lost to mankind,” mourned Stefan. “How will they ever learn the One True String Theory?”

“Maybe you whiffed on mankind,” said Jayson. “But I’d say you went over very big with the ants.”

“That’s true,” said Stefan, brightening just a bit. “And you know what—I bet the ants are in fact using my discovery to weave the world. Our discovery. They learned from touching your chain mail, too, Jayson. Twine dimension seven. Loop dimension eight.” Stefan was talking louder, puffing himself up. “The ants built our universe, yes, but we showed them how! It’s a closed causal loop. We’re the lords of creation.”

“If you’re God, how come we’re so screwed?” said Jayson. “We’ve gotta get out of here.”

Huge, tanker-like ants were skittering across the mirrored lake in a regular rhythm. The big ants were regurgitating food near the pit’s wheeling, starry center, then scurrying across the great gleaming lake to mount the inconceivably tall canyon walls, presumably to forage for food in the outer world.

“You thinking what I’m thinking?” said Stefan.

“Yeah,” said Jayson. “We hop a tanker ant and we ride it up those cliffs. We end up outside Hormiga Canyon.”

“The fast track to far-future L.A.,” said Stefan. “Let’s do it.”

“Help me with the bike.” said Jayson, turning back toward the cave.

“The *what?*”

“Come on, it’ll start. They built bikes to last, back then. We’ll do a stunt-man number. We’ll speed up, ride up that stone ramp over there, and we land on the back of a giant ant. That’ll be a bitchin’ effect.”

Stefan was doubtful, but of course Jayson’s plan worked. They landed like ant-lice on the hide of a tanker ant the size of a ship. The behemoth took no notice of them. The boys wedged themselves, and Jayson’s machine, among the giant ant’s weird organic landscape of chitinous pores and uncanny bristles. Then they held tight.

The tanker ant surged upward, ever upward, and—emerged onto a sunlit, dusty California hilltop. She hesitated, tasting the air with her feelers. The boys rolled themselves and the bike off the ant's back, sliding onto the familiar yellow grass. For her part, the ant headed into a nearby apricot orchard and began harvesting the fruit-laden trees whole.

Here outside the Canyon, the sun no longer moved in that frenetic fashion. This California sun was setting gently and respectably, in the west, the way a sun ought to set. The sun looked rather too weary, too large and too red. But sunsets were always like that.

Down the hillside was a long, dusty highway, a black, paved, four-lane strip with white stripes down the middle. From the distance came a shining, metallic truck. As it passed them by, with a doppler whoosh, it resolved into a long-haul *ant*, a rolling monster with a big-eyed head like a truck-cab, a fully-rounded cargo belly, and six stout red leg-axles, adorned with six big whirring black wheels.

Shielding their eyes, the boys followed the departing ant-truck with their gaze. There were sunlit towers scraping the horizon, gleaming and crystalline.

More vehicles passed then, in deft, high-speed cluster-groups of traffic. The whizzing cars and trucks were all segmented, six-wheeled, and scarily fast. Low-slung, gleamy speedsters. Burly station wagons.

The boys wheeled the motorcycle downhill to the dusty edge of the busy freeway. Their hair was tossed by the backwash of passing ants.

One of the vehicles, a black and white one with large red eyes, slowed to give them a once-over. Luckily it didn't stop.

Jayson sniffed the highway air. It smelled like burning booze poured over a fruitcake. "Well, they've got fuel," he diagnosed.

"I wonder how ants managed to evolve internal combustion engines."

"Heck, dog, I'm wondering how ants managed to evolve *wheels*."

"In their own diffuse, distributed way, these ants have got some kind of mandible-grip on the laws of nature," said Stefan. Gently he cleared his throat. "That's largely thanks to me, I suppose."

"Gotta be a filling station up this road somewhere," said Jayson,

ignoring him. "We're down to our last quart." He kicked his Indian into life. Stefan hopped on.

As they motored into the sprawling heart of Los Angeles, it was clear as the fruit-scented air that they were eons into the future. Stefan had always known his town as a jammed, overloaded, makeshift, somewhat threatening city, with large patches of violent poverty and film-noir urban decline. This Los Angeles was as neat as a Le Corbusier sketch: spacey radiant towers, picturesque ragged palms, abundant fruit trees.

Sure enough, they came across a nearly spherical cask-ant dispensing distilled fruit alcohol from her rear end. When prodded by the handlebars of Jayson's bike, she dribbled a handy fill-up into his tank.

Twilight fell, and little ball-shaped lights blinked on. They had no visible source of power.

"String theory on parade," said Stefan, pointing them out to Jayson. "Zero-point energy. I was planning to invent all that some day."

"Sure, dog, sure."

Every ant within this city was a wheeled giant. The ants were clearly the dominant species in town. Most of the city was devoted to their cloverleaves, off ramps and parking lots.

Then there were the people: gleaming, healthy Californians with amazing skin-tones. There were steady little streams of them, going about their own business, often with bundles on their heads: water-jars and fruit-baskets, mostly. It seemed that humans as a species had been much harder to kill off than one might have expected. These far-future humans were not making much of a fuss about themselves any more, but given how many were deftly creeping in and out of cracks in the shining towers, they probably had the giant ants outnumbered.

"They're all walking," Stefan noted.

"Nobody walks in L.A! We're the only cats in this town with our own wheels?" Jayson lifted one hand from the throttle. "Hey look! My cosmic string wristband is gone."

"Everything except the ants is the right size here, dude," said Stefan, examining his own bare wrist. "That means our bracelets are smaller than protons now."

Jayson waved his wrist as if this news stung him a little. Then he suddenly veered to the side of the road. "Hey dog, check her out! This rich chick is flagging us down!"

The woman in question was wearing a fetching little antskin cuirass. Her glossy hair was high-piled on her head and she wore a necklace, a belt, and neat platform sandals. She had an unknown flower in her hair and a very nice tan.

"Pleased to meet you," said Jayson gallantly. "Do you speak Eloi?"

The woman thoughtfully caressed the glassy headlight of Jayson's bike. The two boys were dirty, unshaven, and stinking of camp-fires. They also spoke no known language and were riding a mechanical ant, but their new friend seemed willing to overlook all that. She might even think such things were cute and dashing.

She smiled at Jayson in a sunny, mystical fashion, opened her beaded shoulder-bag, and offered him a fresh orange.

Jayson ripped into it, grinning.

"She's not your normal type, Jayson."

"Yeah, she's a cool, classy dame straight outta Beverly Hills! I think my luck is finally changing!"

A small crowd of men, women, even children clustered around the bike. These sidewalk gawkers definitely liked a show. They chatted pleasantly, tapping each other reassuringly on the heads and shoulders.

"We're drawing a big crowd," Stefan said. "Should we split?"

"Are you kidding? This is the public! We'll entertain them!"

Jayson fashioned a bit of his orange peel into a set of jack-o-lantern snaggle teeth and wore them in his mouth. The woman in the antskin cuirass laughed with pleasure.

Stefan picked up a smooth pebble on the ground, showed it off to the gawkers, palmed it, and pretended to swallow it. The onlookers were stunned. When he "burped it back up," they applauded him wildly.

Stefan gazed across their pleased, eager faces. “This is a very soft audience, Jayson. I think they’re truly starved for techno-wizardry.”

A shy girl stood at the back of the crowd. She looked sober and thoughtful. She knew he had done a trick. She wondered why. She was like Emily Yu: smarter than the rest, but too tenderhearted.

Stefan waved at her and offered his best smile. She stood up straighter, startled. She looked from one side of herself to the other, amazed that he was paying attention just to her.

He beckoned at her. He pointed. He waved both his arms. Yes, you. She was so excited by this that he could see her heart beating softly in the side of her throat.

He was instantly in love.