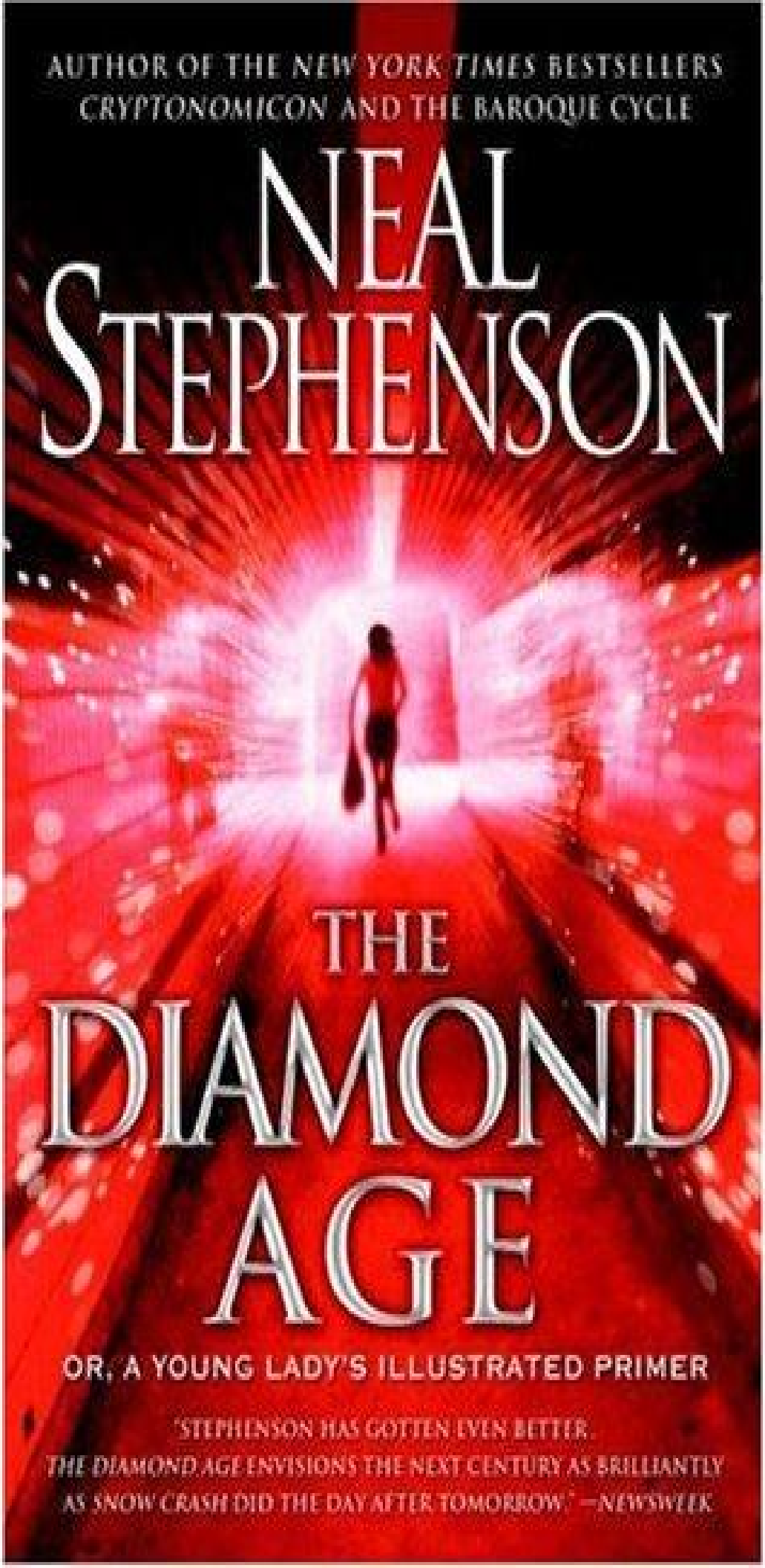
AUTHOR OF THE *NEW YORK TIMES* BESTSELLERS
CRYPTONOMICON AND THE BAROQUE CYCLE

NEAL STEPHENSON



THE DIAMOND AGE

OR, A YOUNG LADY'S ILLUSTRATED PRIMER

"STEPHENSON HAS GOTTEN EVEN BETTER.
THE DIAMOND AGE ENVISIONS THE NEXT CENTURY AS BRILLIANTLY
AS *SNOW CRASH* DID THE DAY AFTER TOMORROW." —*NEWSWEEK*

Diamond Age or A Young Lady's Illustrated Primer

Neil Stephenson

Bred and born in the Foreign regions beyond, there is much in the administration of the Celestial Dynasty that is not perfectly comprehensible to the Barbarians, and they are continually putting forced constructions on things of which it is difficult to explain to them the real nature. -Qiying

PART THE SECOND

Hackworth has a singular experience; the rite of the Drummers.

In a cavernous dark space lit by many small fires, a young woman, probably not much more than a girl, stands on a pedestal naked except for an elaborate paint job, or maybe it is a total-body mediatronic tattoo. A crown of leafy branches is twined around her head, and she has thick voluminous hair spreading to her knees. She is clutching a bouquet of roses to her breast, the thorns indenting her flesh. Many people, perhaps thousands, surround her, drumming madly, sometimes chanting and singing. Into the space between the girl and the watchers, a couple of dozen men are introduced. Some come running out of their own accord, some look as if they've been pushed, some wander in as if they've been walking down the street (stark naked) and gone in the wrong door. Some are Asian, some European, some African. Some have to be prodded by frenzied celebrants who charge out of the crowd and shove them here and there. Eventually they form a circle around the girl, and then the drumming builds to a deafening crescendo, speeds up until it devolves into a rhythmless hailstorm, and then suddenly, instantly, stops. Someone wails something in a high, purposeful, ululating voice. Hackworth can't understand what this person is saying. Then there is a single massive drumbeat. More wailing. Another drumbeat. Again. The third drumbeat establishes a ponderous rhythm. This goes on for a while, the beat slowly speeding up. After a certain point the wailer no longer stops between beats, he begins to weave his rap through the bars in a sort of counterpoint. The ring of men standing around the girl begin to dance in a very simple shuffling motion, one way and then the other way around the girl. Hackworth notes that all of them have erections, sheathed in brightly colored mediatronic condoms-rubbers that actually make their own light so that the bobbing boners look like so many cyalume wands dancing through the air. The drumbeats and the dancing speed up very slowly. The erections tell Hackworth why this is taking so long: He's watching foreplay here. After half an hour or so, the excitement, phallic and otherwise, is unbearable. The beat is now a notch faster than your basic pulse rate, lots of other beats and counterrhythms woven through it, and the chanting of the individual singer has become a wild semi-organized choral phenomenon. At some point, after

seemingly nothing has happened for half an hour, everything happens at once: The drumming and chanting explode to a new, impossible level of intensity. The dancers reach down, grip the flaccid reservoir tips of their radioactive condoms, stretch them out. Someone runs out with a knife and cuts off the tips of the condoms in a freakish parody of circumcision, exposing the glans of each man's penis. The girl moves for the first time, tossing her bouquet up in the air like a bride making her move toward the limo; the roses fountain, spinning end over end, and come down individually among the dancers, who snatch them out of the air, scrabble for them on the floor, whatever. The girl faints, or something, falling backward, arms out, and is caught by several of the dancers, who hoist her body up over their heads and parade her around the circle for a while, like a crucified body just crowbarred off the tree. She ends up flat on her back on the ground, and one of the dancers is between her legs, and in a very few thrusts he has finished. A couple of others grab his arms and yank him out of there before he's even had a chance to tell her he'll still love her in the morning, and another one is in there, and he doesn't take very long either-all this foreplay has got these guys in hair-trigger mode. The dancers manage to rotate through in a few minutes. Hackworth can't see the girl, who's completely hidden, but she's not struggling, as far as he can tell, and they don't seem to be holding her down. Toward the end, smoke or steam or something begins to spiral up from the middle of the orgy. The last participant grimaces even more than the average person who's having an orgasm, and yanks himself back from the woman, grabbing his dick and hopping up and down and hollering in what looks like pain. That's the signal for all of the dancers to jump back away from the woman, who is now kind of hard to make out, just a fuzzy motionless package wrapped in steam. Flames erupt from several locations, all over her body, at once, seams of lava splitting open along her veins and the heart itself erupting from her chest like ball lightning. Her body becomes a burning cross spread out on the floor, the bright apex of an inverted cone of turbulent steam and smoke. Hackworth notices that the drumming and chanting have completely stopped. The crowd observes a long moment of silence while the body burns. Then, when the last of the flames have died out, an honor guard of sorts descends from the crowd: four men in black body paint with white skeletons painted on top of that. He notes that the woman was lying on a square sheet of some kind when she burned. Each of the guys grabs a corner of the sheet. Her remains tumble into the center, powdery ash flies, flecks of red-hot coals spark. The skeleton men carry the remains over to a fifty-five-gallon steel drum and dump it in. There is a burst of steam and lots of sizzling noises as the hot coals contact some kind of liquid that was in the drum. One of the skeleton men picks up a long spoon and gives the mix a stir, then dips a cracked and spalled University of Michigan coffee mug into it and takes a long drink. The other three skeleton men each drink in their turn. By now, the spectators have formed a long queue. One by one they step forward. The leader of the skeleton men holds the mug for them, gives each one a sip. Then they all wander off, individually or in small, conversing groups. Show's over.

Nell's life at Dovetail; developments in the Primer; a trip to the New Atlantis Clave; she is presented to Miss Matheson; new lodgings with an "old" acquaintance. Nell lived in the Millhouse for several days. They gave her a little bed under the eaves on the top floor, in a cozy place only she was tiny enough to reach. She had her meals with Rita or Brad or one of the other nice people she knew there. During the days she would wander in the meadow or dangle her feet in the river or explore the woods, sometimes going as far as the dog pod grid. She always took the Primer with her. Lately, it had been filled with the doings of Princess Nell and her friends in the city of King Magpie. It kept getting more like a ractive and less like a story, and by the end of each chapter she was exhausted from all the cleverness she had expended just to get herself and her friends through another day without falling into the clutches of pirates or of King Magpie himself. In time, she and Peter came up with a very tricky plan to sneak into the castle, create a diversion, and seize the magic books that were the source of King Magpie's power. This plan failed the first time, but the next day, Nell turned the page back and tried it again, this time with a few changes. It failed again, but not before Princess Nell and her friends had gotten a little farther into the castle. The sixth or seventh time, the plan worked perfectly-while King Magpie was locked in a battle of riddles with Peter Rabbit (which Peter won), Purple used a magic spell to smash open the door to his secret library, which was filled with books even more magical than the Young Lady's Illustrated Primer. Hidden inside one of those books was a jeweled key. Princess Nell took the key, and Purple made off with several of King Magpie's magic books while she was at it. They made a breathtaking escape across a river into the next country, where King Magpie could not chase them, and camped in a nice meadow for a few days, resting. During the daytime, when the others were just stuffed animals, Princess Nell would peruse some of the new magic books that Purple had stolen. When she did, its image in the illustration would zoom toward her until it filled the page, and then the Primer itself would become that magical book until she decided to put it away. Nell's favorite book was a magical Atlas which she could use to explore any land, real or imaginary. During the nighttime, Purple spent most of her time reading a very large, crusty, worn, stained, burnt tome entitled PANTECHNICON. This book had a built-in hasp with a padlock. Whenever Purple wasn't using it, she locked it shut. Nell asked to see it a few times, but Purple told her she was too young to know such things as were written in this Book. During this time, Duck as usual made herself busy around the camp, tidying up and fixing their meals, doing laundry on the rocks by the river, and mending their clothes that had become ragged during their wanderings. Peter became restless. He was quick with words, but he had not learned the trick of reading, and so the books from King Magpie's library were of no use to him save as nest-lining material. He got into the habit of exploring the surrounding forests, particularly the ones to the north. At first he would be gone for a few hours at a time, but once he stayed away all night and did not come back until the following noon. Then he began to go on trips for several days at a time. Peter vanished into the north woods one day, staggering

under a heavy pack, and didn't come back at all. . . . Nell was in the meadow one day, gathering flowers, when a fine lady- a Vicky- came riding toward her on a horse. When she drew closer, Nell was surprised to see that the horse was Eggshell and the lady was Rita, all dressed up in a long dress like the Vicky ladies wore, with a riding hat on her head, and riding sidesaddle of all things. "You look pretty," Nell said. "Thank you, Nell," Rita said. "Would you like to look like this too, for a little while? I have a surprise for you." One of the ladies who lived in the Millhouse was a milliner, and she had made Nell a dress, sewing it all together by hand. Rita had brought this dress with her, and she helped Nell change into it, right there in the middle of the meadow. Then she braided Nell's hair and even tucked some tiny wildflowers into it. Finally she helped Nell climb up on top of Eggshell with her and began riding back toward the Millhouse. "You will have to leave your book here today," Rita said. "Why?" "I'm taking you through the grid, into New Atlantis Clave," Rita said. "Constable Moore told me that I should not on any account allow you to carry your book through the grid. He said it would only stir things up. I know you're about to ask me why, Nell, but I don't have an answer." Nell ran upstairs, tripping over her long skirts a couple of times, and left the Primer in her little nook. Then she climbed back on Eggshell with Rita. They rode over a little stone bridge above the water-wheel and through the woods, until Nell could hear the faint afflatus of the security aerostats. Eggshell slowed to a walk and pushed gingerly through the field of shiny hovering teardrops. Nell even reached out and touched one, then snapped her hand back, even though it hadn't done anything except push back. The reflection of her face slithered backward across the surface of this pod as they went by. They rode across the territory of New Atlantis for some time without seeing anything other than trees, wildflowers, brooks, the occasional squirrel, or deer. "Why do the Vickys have such a big clave?" Nell asked. "Don't ever call them Vickys," Rita said. "Why?" "It's a word that people who don't like them use to describe them in kind of a bad, unfriendly way," Rita said. "Like a pejorative term?" Nell said. Rita laughed, more nervous than amused. "Exactly." "Why do the Atlantans have such a big clave?" "Well, each phyle has a different way, and some ways are better suited to making money than others, so some have a lot of territory and others don't." "What do you mean, a different way?" "To make money you have to work hard-to live your life in a certain way. The Atlantans all live that way, it's part of their culture. The Nipponese too. So the Nipponese and the Atlantans have as much money as all the other phyles put together." "Why aren't you an Atlantan?" "Because I don't want to live that way. All the people in Dovetail like to make beautiful things. To us, the things that the Atlantans do-dressing up in these kinds of clothes, spending years and years in school-are irrelevant. Those pursuits wouldn't help us make beautiful things, you see. I'd rather just wear my blue jeans and make paper." "But the M.C. can make paper," Nell said. "Not the kind that the Atlantans like." "But you make money from your paper only because the Atlantans make money from working hard," Nell said. Rita's face turned red and she said nothing for a little while. Then, in a tight voice, she said, "Nell, you should ask

your book the meaning of the word discretion." They came across a riding-trail dotted with great mounds of horse manure, and began following it uphill. Soon the trail was hemmed in between dry stone walls, which Rita said that one of her friends in Dovetail had made. Forest gave way to pastures, then lawns like jade glaciers, and great houses on hilltops, surrounded by geometric hedges and ramparts of flowers. The trail became a cobblestone road that adopted new lanes from time to time as they rode into town. The mountain kept rising up above them for some distance, and on its green summit, half veiled behind a thin cloud layer, Nell could see Source Victoria. From down in the Leased Territories, the New Atlantis Clave had always looked clean and beautiful, and it was certainly those things. But Nell was surprised at how cool the weather was here compared to the L.T. Rita explained that the Atlantans came from northern countries and didn't care for hot weather, so they put their city high up in the air to make it cooler. Rita turned down a boulevard with a great flowery park running down the middle. It was lined with red stone row-houses with turrets and gargoyles and beveled glass everywhere. Men in top hats and women in long dresses strolled, pushed perambulators, rode horses or chevalines. Shiny dark green robots, like refrigerators tipped over on their sides, hummed down the streets at a toddler's walking pace, squatting over piles of manure and inhaling them. From place to place there was a messenger on a bicycle or an especially fancy personage in a black, full-lane car. Rita stopped Eggshell in front of a house and paid a little boy to hold the reins. From the saddlebags she took a sheaf of new paper, all wrapped up in special wrapping-paper that she'd also made. She carried it up the steps and rang the bell. The house had a round tower on the front, lined with bow windows with stained-glass inserts above them, and through the windows and the lace curtains Nell could see, on different stories, crystal chandeliers and fine plates and dark brown wooden bookcases lined with thousands and thousands of books. A parlormaid let Rita in the door. Through the window, Nell could see Rita putting a calling-card on a silver tray held out by the maid-a salver, they called it. The maid carried it back, then emerged a couple of minutes later and directed Rita into the back of the house. Rita didn't come back for half an hour. Nell wished she had the Primer to keep her company. She talked to the little boy for a bit; his name was Sam, he lived in the Leased Territories, and he put on a suit and took the bus here every morning so that he could hang around on the street holding people's horses and doing other small errands. Nell wondered whether Tequila worked in any of these houses, and whether they might run into her by accident. Her chest always got a tight feeling when she thought of her mother. Rita came out of the house. "Sorry," she said, "I got out as fast as I could, but I had to stay and socialize. Protocol, you know." "Explain protocol," Nell said. This was how she always talked to the Primer. "At the place we're going, you need to watch your manners. Don't say 'explain this' or 'explain that.' "Would it impose on your time unduly to provide me with a concise explanation of the term protocol?" Nell said. Again Rita made that nervous laugh and looked at Nell with an expression that looked like poorly concealed alarm. As they rode down the street, Rita talked about

protocol for a little bit, but Nell wasn't really listening because she was trying to figure out why it was that, all of a sudden, she was capable of scaring grownups like Rita. They rode through the most built-up part of town, where the buildings and gardens and statues were all magnificent, and none of the streets were the same: Some were crescents, some were courts, or circles or ovals, or squares surrounding patches of greenery, and even the long streets turned this way and that. They passed from there into a less built-up area with many parks and playing fields and finally pulled up in front of a fancy building with ornate towers, surrounded by a wrought-iron fence and a hedge. Over the door it said MISS MATHESON'S ACADEMY OF THE THREE GRACES. Miss Matheson received them in a cozy little room. She was between eight hundred and nine hundred years of age, Nell estimated, and drank tea from fancy thimble-size cups with pictures painted on them. Nell tried to sit up straight and be attentive, emulating certain proper young girls she had read about in the Primer, but her eye kept wandering to the contents of the bookshelves, the pictures painted on the tea service and the painting on the wall above Miss Matheson's head, which depicted three ladies prancing about in a grove in diaphanous attire. "Our rolls are filled, the term has already begun, and you have none of the prerequisites. But you come with compelling recommendations," Miss Matheson said after she had peered lengthily at her small visitor. "Pardon me, madam, but I do not understand," Nell said. Miss Matheson smiled, her face blooming into a sunburst of radiating wrinkles. "It is not important. Let us only say that we have made room for you. This institution makes it a practice to accept a small number of students who are not New Atlantan subjects. The propagation of Atlantan memes is central to our mission, as a school and as a society. Unlike some phyles, which propagate through conversion or through indiscriminate exploitation of the natural biological capacity that is shared, for better or worse, by all persons, we appeal to the rational faculties. All children are born with rational faculties, which want only development. Our academy has recently welcomed several young ladies of extra-Atlantan extraction, and it is our expectation that all will go on to take the Oath in due time." "Pardon me, madam, but which one is Aglaia?" Nell said, looking over Miss Matheson's shoulder at the painting. "I beg your pardon?" Miss Matheson said, and initiated the procedure of turning her head around to look, which at her age was a civil-engineering challenge of daunting complexity and duration. "As the name of your school is the Three Graces, I have ventured to assume that yonder painting depicts the same subject," Nell said, "since they look more like Graces than Furies or Fates. I wonder if you would be so kind as to inform me which of the ladies represents Aglaia, or brilliance." "And the other two are?" Miss Matheson said, speaking out of the side of her mouth as she had almost got herself turned around by this point. "Euphrosyne, or joy, and Thalia, or bloom," Nell said. "Would you care to venture an opinion?" Miss Matheson said. "The one on the right is carrying flowers, so perhaps she is Thalia." "I would call that a sound assumption." "The one in the middle looks so happy that she must be Euphrosyne, and the one on the left is lit up with rays of sunlight, so perhaps she

is Aglaia." "Well, as you can see, none of them is wearing a nametag, and so we must satisfy ourselves with conjecture," Miss Matheson said. "But I fail to see any gaps in your reasoning. And no, I don't suppose they are Fates or Furies." . . . "It's a boarding school, which means many of the pupils live there. But you won't live there," Rita said, "because it isn't proper." They were riding Eggshell home through the woods. "Why isn't it proper?" "Because you ran away from home, which raises legal problems." "Was it illegal for me to run away?" "In some tribes, children are regarded as an economic asset of their parents. So if one phyle shelters runaways from another phyle, it has a possible economic impact which is covered under the CEP." Rita looked back at Nell, appraising her coolly. "You have a sponsor of sorts in New Atlantis. I don't know who. I don't know why. But it seems that this person cannot take the risk of being the target of CEP legal action. Hence arrangements have been made for you to stay in Dovetail for now. "Now, we know that some of your mother's boyfriends treated you badly, and so there is sentiment in Dovetail to take you in. But we can't keep you at the Millstone community, because if we got into a fracas with Protocol, it could sour our relations with our New Atlantis clients. So it's been decided that you will stay with the one person in Dovetail who doesn't have any clients here." "Who's that?" "You've met him," Rita said. Constable Moore's house was dimly lit and so full of old stuff that even Nell had to walk sideways in some places. Long strips of yellowed rice paper, splashed with large Chinese characters and pimpled with red chop marks, hung from a molding that ran around the living room a foot or two beneath the ceiling. Nell followed Rita around a corner into an even smaller, darker, and more crowded room, whose main decoration was a large painting of a furious chap with a Fu Manchu mustache, goatee, and tufts of whiskers sprouting in front of his ears and trailing down below his armpits, wearing elaborate armor and chain mail decorated with lion's faces. Nell stepped away from this fierce picture despite herself, tripped over the drone of a large bagpipe splayed across the floor, and crashed into a large beaten-copper bucket of sorts, which made tremendous smashing noises. Blood welled quietly from a smooth cut on the ball of her thumb, and she realized that the bucket was being used as a repository for a collection of old rusty swords of various descriptions. "You all right?" Rita said. She was backlit with blue light coming in through a pair of glass doors. Nell put her thumb in her mouth and picked herself up. The glass doors looked out on Constable Moore's garden, a riot of geraniums, foxtails, wisteria, and corgi droppings. On the other side of a small khaki-colored pool rose a small garden house. Like this one, it was built from blocks of reddish-brown stone and roofed with rough-edged slabs of green-gray slate. Constable Moore himself could be descried behind a screen of somewhat leggy rhododendrons, hard at work with a shovel, continually harassed by the ankle-biting corgis. He was not wearing a shirt, but he was wearing a skirt: a red plaid number. Nell hardly noticed this incongruity because the corgis heard Rita turning the latch on the glass doors and rushed toward them yapping, and this drew out the Constable himself, who approached them squinting through the dark glass, and once he was out from behind the rhodies, Nell

could see that there was something amiss with the flesh of his body. Overall he was well proportioned, muscular, rather thick around the middle, and evidently in decent health. But his skin came in two colors, which gave him something of a marbled look. It was as though worms had eaten through his torso, carving out a network of internal passageways that had later been backfilled with something that didn't quite match. Before she could get a better look, he plucked a shirt from the back of a lawn chair and shrugged it on. Then he subjected the corgis to a minute or so of close-order drill, using a patch of moss-covered flagstones as parade ground, and stringently criticizing their performance in tones loud enough to penetrate through the glass doors. The corgis pretended to listen attentively. At the end of the performance, Constable Moore burst in through the glass doors. "I shall be with you momentarily," he said, and disappeared into a back room for a quarter of an hour. When he returned, he was dressed in a tweed suit and a rough-hewn sweater over a very fine-looking white shirt. The last article looked too thin to prevent the others from being intolerably scratchy, but Constable Moore had reached the age when men can subject their bodies to the worst irritations-whiskey, cigars, woolen clothes, bagpipes-without feeling a thing or, at least, without letting on. "Sorry to have burst in on you," Rita said, "but there was no answer when we rang the bell." "I don't care," said Constable Moore, not entirely convincingly. "There's a reason why I don't live up there." He pointed upward, vaguely in the direction of the New Atlantis Clave. "Just trying to trace the root system of some infernal vine back to its source. I'm afraid it might be kudzu." The Constable narrowed his eyes as he spoke this word, and Nell, not knowing what kudzu was, supposed that if kudzu were something that could be attacked with a sword, burned, throttled, bludgeoned, or blown up, it would not stand a chance for long in Constable Moore's garden-once, that is, he got round to it. "Can I interest you in tea? Or"-this was directed to Nell- "some hot chocolate?" "Sounds lovely, but I can't stay," Rita said. "Then let me see you to the door," Constable Moore said, standing up. Rita looked a little startled by this abruptness, but in another moment she was gone, riding Eggshell back toward the Millhouse. "Nice lady," Constable Moore muttered out in the kitchen. "Fine of her to do what she did for you. Really a very decent lady. Perhaps not the sort who deals very well with children. Especially peculiar children." "Am I to live here now, sir?" Nell said. "Out in the garden house," he said, coming into the room with a steaming tray and nodding through the glass windows and across the garden. "Vacant for some time. Cramped for an adult, perfect for a child. The decor of this house," he said, glancing around the room, "is not really suitable for a young one." "Who is the scary man?" Nell said, pointing to the big painting. "Guan Di. Emperor Guan. Formerly a soldier named Guan Yu. He was never really an emperor, but later on he became the Chinese god of war, and they gave him the title just to be respectful. Terribly respectful, the Chinese-it's their best and worst feature." "How could a man become a god?" Nell asked. "By living in an extremely pragmatic society," said Constable Moore after some thought, and provided no further explanation. "Do you have the book, by the way?" "Yes, sir." "You

didn't take it through the border?" "No, sir, as per your instructions." "That's good. The ability to follow orders is a useful thing, especially if you're living with a chap who's used to giving them." Seeing that Nell had gotten a terribly serious look on her face, the Constable huffed and looked exasperated. "It doesn't really matter, mind you! You have friends in high places. It's just that we are trying to be discreet." Constable Moore brought Nell her cup of cocoa. She needed one hand for the saucer and another for the cup, so she took her hand out of her mouth. "What did you do to your hand?" "Cut it, sir." "Let me see that." The Constable took her hand in his and peeled the thumb away from the palm. "Quite a nice little slash. Looks recent." "I got it from your swords." "Ah, yes. Swords are that way," the Constable said absently, then screwed up his brow and turned back to Nell. "You did not cry," he said, "and you did not complain." "Did you take all of those swords away from burglars?" Nell said. "No-that would have been relatively easy," Constable Moore said. He looked at her for a while, pondering. "Nell, you and I will do just fine together," he said. "Let me get my first-aid kit."

Carl Hollywood's activities at the Parnasse; conversation over a milk shake; explanation of the media system; Miranda perceives the futility of her quest. Miranda found Carl Hollywood sitting fifth row center in the Parnasse, holding a big sheet of smart foolscap on which he had scrawled blocking diagrams for their next live production. He apparently had it crosslinked to a copy of the script, because as she sidestepped her way down the narrow aisle, she could hear voices rather mechanically reading lines, and as she came closer she could see the little X's and 0's representing the actors moving around on the diagram of the stage that Carl had sketched out. The diagram also included some little arrows along the periphery, all aimed inward. Miranda realized that the arrows must be the little spotlights mounted to the fronts of the balconies, and that Carl Hollywood was programming them. She rolled her head back and forth, trying to loosen up her neck, and looked up at the ceiling. The angels or Muses or whatever they were, were all parading around up there, accompanied by a few cherubs. Miranda thought of Nell. She always thought of Nell. The script came to the end of its scene, and Carl paused it. "You had a question?" he asked, a bit absently. "I've been watching you work from my box." "Naughty girl. Should be making money for us." "Where'd you learn to do that stuff?" "What-directing plays?" "No. The technical stuff-programming the lights and so on." Carl turned around to look at her. "This may be at odds with your notion of how people learn things," he said, "but I had to teach myself everything. Hardly anyone does live theatre ar;Tmore, so we have to develop our own technology. I invented all of the software I was just using." "Did you invent the little spotlights?" "No. I'm not as good at the nanostuff. A friend of mine in London came up with those. We swap stuff all the time-my mediaware for his matterware." "Well, I want to buy you dinner somewhere," Miranda said, "and I want you to explain to me how it all works." "That's a rather tall order," Carl said calmly, "but I accept the invitation. . . . "Okay, do you want a complete grounding in the whole thing, starting with Turing

machines, or what?" Carl said pleasantly- humoring her. Miranda decided not to become indignant. They were in a red vinyl booth at a restaurant near the Bund that supposedly simulated an American diner on the eve of the Kennedy assassination. Chinese hipsters-classic Coastal Republic types in their expensive haircuts and sharp suits-were lined up on the rotating stools along the lunch counter, sucking on their root beer floats and flashing wicked grins at any young women who came in. "I guess so," Miranda said. Carl Hollywood laughed and shook his head. "I was being facetious. You need to tell me exactly what you want to know. Why are you suddenly taking up an interest in this stuff? Aren't you happy just making a good living from it?" Miranda sat very still for a moment, hypnotized by the colorful flashing lights on a vintage jukebox. "This is related to Princess Nell, isn't it?" Carl said. "Is it that obvious?" "Yeah. Now, what do you want?" "I want to know who she is," Miranda said. This was the most guarded way she could put it. She didn't suppose that it would help matters to drag Carl down through the full depth of her emotions. "You want to backtrace a payer," Carl said. It sounded terrible when he translated it into that kind of language. Carl sucked powerfully on his milk shake for a bit, his eyes looking over Miranda's shoulder to the traffic on the Bund. "Princess Nell's a little kid, right?" "Yes. I would estimate five to seven years old." His eyes swiveled to lock on hers. "You can tell that?" "Yes," she said, in tones that warned him not to question it. "So she's probably not paying the bill anyway. The payer is someone else. You need to backtrace the payer and then, from there, track down Nell." Carl broke eye contact again, shook his head, and tried unsuccessfully to whistle through frozen lips. "Even the first step is impossible." Miranda was startled. "That seems pretty unequivocal. I expected to hear 'difficult' or 'expensive.' But-" "Nope. It's impossible. Or maybe"-Carl thought about it for a while-"maybe 'astronomically improbable' is a better way of putting it." Then he looked mildly alarmed as he watched Miranda's expression change. "You can't just trace the connection backward. That's not how media works." "How does media work, then?" "Look out the window. Not toward the Bund-check out Yan'an Road." Miranda swiveled her head around to look out the big window, which was partly painted over with colorful Coke ads and descriptions of blue plate specials. Yan'an Road, like all of the major thoroughfares in Shanghai, was filled, from the shop windows on one side to the shop windows on the other, with people on bicycles and powerskates. In many places the traffic was so dense that greater speed could be attained on foot. A few half-lane vehicles sat motionless, polished boulders in a sluggish brown stream. It was so familiar that Miranda didn't really see anything. "What am I looking for?" "Notice how no one's empty-handed? They're all carrying something." Carl was right. At a minimum, everyone had a small plastic bag with something in it. Many people, such as the bicyclists, carried heavier loads. "Now just hold that image in your head for a moment, and think about how to set up a global telecommunications network." Miranda laughed. "I don't have any basis for thinking about something like that." "Sure you do. Until now, you've been thinking in terms of the telephone system in the old passives. In that system,

each transaction had two participants-the two people having the conversation. And they were connected by a wire that ran through a central switchboard. So what are the key features of this system?" "I don't know-I'm asking you," said Miranda. "Number one, only two people, or entities, can interact. Number two, it uses a dedicated connection that is made and then broken for the purposes of that one conversation. Number three, it is inherently centralized-it can't work unless there is a central switchboard." "Okay, I think I'm following you so far." "Our media system today-the one that you and I make our livings from-is a descendant of the phone system only insofar as we use it for essentially the same purposes, plus many, many more. But the key point to remember is that it is totally different from the old phone system. The old phone system-and its technological cousin, the cable TV system- tanked. It crashed and burned decades ago, and we started virtually from scratch." "Why? It worked, didn't it?" "First of all, we needed to enable interactions between more than one entity. What do I mean by entity? Well, think about the ractives. Think about First Class to Geneva. You're on this train-so are a couple of dozen other people. Some of those people are being racted, so in that case the entities happen to be human beings. But others-like the waiters and porters-are just software robots. Furthermore, the train is full of props: jewelry, money, guns, bottles of wine. Each one of those is also a separate piece of software-a separate entity. In the lingo, we call them objects. The train itself is another object, and so is the countryside through which it travels. "The countryside is a good example. It happens to be a digital map of France. Where did this map come from? Did the makers of First Class to Geneva send out their own team of surveyors to make a new map of France? No, of course they didn't. They used existing data-a digital map of the world that is available to any maker of ractives who needs it, for a price of course. That digital map is a separate object. It resides in the memory of a computer somewhere. Where exactly? I don't know. Neither does the ractive itself. It doesn't matter. The data might be in California, it might be in Paris, it might be down at the corner-or it might be distributed among all of those places and many more. It doesn't matter. Because our media system no longer works like the old system- dedicated wires passing through a central switchboard. It works like that." Carl pointed to the traffic on the street again. "So each person on the street is like an object?" "Possibly. But a better analogy is that the objects are people like us, sitting in various buildings that front on the street. Suppose that we want to send a message to someone over in Pudong. We write the message down on a piece of paper, and we go to the door and hand it to the first person who goes by and say, 'Take this to Mr. Gu in Pudong.' And he skates down the street for a while and runs into someone on a bicycle who looks like he might be headed for Pudong, and says, 'Take this to Mr. Gu.' A minute later, that person gets stuck in traffic and hands it off to a pedestrian who can negotiate the snarl a little better, and so on and so on, until eventually it reaches Mr. Gu. When Mr. Gu wants to respond, he sends us a message in the same way." "So there's no way to trace the path taken by a message." "Right. And the real situation is even more complicated. The media net was designed from the ground

up to provide privacy and security, so that people could use it to transfer money. That's one reason the nationstates collapsed-as soon as the media grid was up and running, financial transactions could no longer be monitored by governments, and the tax collection systems got fubared. So if the old IRS, for example, wasn't able to trace these messages, then there's no way that you'll be able to track down Princess Nell." "Okay, I guess that answers my question," Miranda said. "Good!" Carl said brightly. He was obviously pleased that he'd been able to help Miranda, and so she didn't tell him how his words had really made her feel. She treated it as an acting challenge: Could she fool Carl Hollywood, who was sharper about acting than just about anyone, into thinking that she was fine? Apparently she did. He escorted her back to her flat, in a hundred story high-rise just across the river in Pudong, and she held it together long enough to bid him good-bye, get out of her clothes, and run a bath. Then she climbed into the hot water and dissolved in awful, wretched, blubbery, self-pitying tears. Eventually she got it under control. She had to keep this in perspective. She could still interact with Nell and still did, every day. And if she paid attention, sooner or later she would find some way to penetrate the curtain. Barring that, she was beginning to understand that Nell, whoever she was, had been marked out in some way, and that in time she would become a very important person. Within a few years, Miranda expected to be reading about her in the newspaper. Feeling better, she got out of the bath and climbed into bed, getting a good night's sleep so she'd be ready for her next day of taking care of Nell.

General description of life with the Constable; his avocations and other peculiarities; a disturbing sight; Nell learns about his past; a conversation over dinner. The garden house had two rooms, one for sleeping and one for playing. The playing room had a set of double doors, made of many small windows, that opened onto Constable Moore's garden. Nell had been told to be careful with the little windows, because they were made of real glass. The glass was bubbly and uneven, like the surface of a pot of water just before it breaks into a boil, and Nell liked to look at things through it because, even though she knew it was not as strong as a common window, it made her feel safer, as though she were hiding behind something. The garden itself was forever trying to draw the little house into it; many vast-growing vines of ivy, wisteria, and briar rose were deeply engaged in the important project of climbing the walls, using the turtleshell-colored copper drainpipes, and the rough surfaces of the brick and mortar, as fingerholds. The slate roof of the cottage was phosphorescent with moss. From time to time, Constable Moore would charge into the breach with a pair of trimmers and cut away some of the vines that so prettily framed the view through Nell's glass doors, lest they imprison her. During Nell's second year living in the cottage, she asked the Constable if she might have a bit of garden space of her own, and after an early phase of profound shock and misgivings, the Constable eventually pulled up a few flagstones, exposing a small plot, and caused one of the Dovetail artisans to manufacture some copper window boxes and attach them to the cottage walls. In the plot, Nell planted

some carrots, thinking about her friend Peter who had vanished so long ago, and in the window boxes she planted some geraniums. The Primer taught her how to do it and also reminded her to dig up a carrot sprout every few days and examine it so that she could learn how they grew. Nell learned that if she held the Primer above the carrot and stared at a certain page, it would turn into a magic illustration that would grow larger and larger until she could see the tiny little fibers that grew out of the roots, and the one-celled organisms clinging to the fibers, and the mitochondria inside them. The same trick worked on anything, and she spent many days examining flies' eyes, bread mold, and blood cells that she got out of her own body by pricking her finger. She could also go up on hilltops during cold clear nights and use the Primer to see the rings of Saturn and the moons of Jupiter. Constable Moore continued to work his daily shift at the gatehouse. When he came home in the evening, he and Nell would often dine together inside his house. At first they got food straight from the M.C., or else the Constable would fry up something simple, like sausage and eggs. During this period, Princess Nell and the other characters in the Primer found themselves eating a lot of sausage and eggs too, until Duck lodged a protest and taught the Princess how to cook healthier food. Nell then got in the habit of cooking a healthy meal with salad and vegetables, several afternoons a week after she got home from school. There was some grumbling from the Constable, but he always cleaned up his plate and sometimes washed the dishes. The Constable spent a lot of time reading books. Nell was welcome to be in his house when he was doing this, as long as she was quiet. Frequently he would shoo her out, and then he would get in touch with some old friend of his over the big mediatron on the wall of his library. Usually Nell would just go back to her little cottage during these times, but sometimes, especially if the moon was full, she would wander around in the garden. This seemed larger than it really was by virtue of being divided into many small compartments. On late full-moon nights, her favorite place was a grove of tall green bamboo with some pretty rocks strewn around. She would sit with her back against a rock, read her Primer, and occasionally hear sound emanating from the inside of Constable Moore's house as he talked on the mediatron: mostly deep bellowing laughter and explosions of good-natured profanity. For quite some time she assumed that it was not the Constable who was making these sounds, but rather whomever he was talking to; because in her presence the Constable was always very polite and reserved, albeit somewhat eccentric. But one night she heard loud moaning noises coming from his house, and crept down out of the bamboo grove to see what was happening. From her vantage point through the glass doors, she couldn't see the mediatron, which was facing away from her. Its light illuminated the whole room, painting the normally warm and cozy space with lurid flashing colors, and throwing long jagged shadows. Constable Moore had shoved all the furniture and other obstructions to the walls and rolled up the Chinese carpet to expose the floor, which Nell had always assumed was made of oak, like the floor in her cottage; but the floor was, in fact, a large mediatron itself, glowing rather dimly compared to the one on the wall, and displaying a lot of rather high-

resolution material: text documents and detailed graphics with the occasional dine feed. The Constable was down on his hands and knees amidst this, bawling like a child, the tears collecting in the shallow saucers of his half-glasses and spattering onto the mediatron, which illuminated them weirdly from below. Nell wanted badly to go in and comfort him, but she was too scared. She stood and watched, frozen in indecision, and realized as she did so that the flashes of light coming from the mediatrons reminded her of explosions-or rather pictures of explosions. She backed away and went back into her little house. Half an hour later, she heard the unearthly noise of Constable Moore's bagpipes emanating from the bamboo grove. In the past he had occasionally picked them up and made a few squealing noises, but this was the first time she'd heard a formal recital. She was not an expert on the pipes, but she thought he sounded not bad. He was playing a slow number, a coronach, and it was so sad that it almost tore Nell's heart asunder; the sight of the Constable weeping helplessly on his hands and knees was not half so sad as the music he was playing now. In time he moved on to a faster and happier pibroch. Nell emerged from her cottage into the garden. The Constable was just a silhouette slashed into a hundred ribbons by the vertical shafts of the bamboo, but when she moved back and forth, some trick of her eye reassembled the image. He was standing in a pool of moonlight. He had changed clothes: now he was wearing his kilt, and a shirt and beret that seemed to belong to some sort of a uniform. When his lungs were empty, he would draw in a great breath, his chest would heave, and an array of silvery pins and insignia would glimmer in the moonlight. He had left the doors open. She walked into the house, not bothering to be stealthy because she knew that she could not possibly be heard over the sound of the bagpipe. The wall and the floor were both giant mediatrons, and both had been covered with a profusion of media windows, hundreds and hundreds of separate panes, like a wall on a busy city street where posters and bills have been pasted up in such abundance that they have completely covered the substrate. Some of the panes were only as big as the palm of Nell's hand, and some of them were the size of wall posters. Most of the ones on the floor were windows into written documents, grids of numbers, schematic diagrams (lots of organizational trees), or wonderful maps, drawn with breathtaking precision and clarity, with rivers, mountains, and villages labeled in Chinese characters. As Nell surveyed this panorama, she flinched once or twice from the impression that something small was creeping along the floor; but there were no bugs in the room, it was just an illusion created by small fluctuations in the maps and in the rows and columns of numbers. These things were ractive, just like the words in the Primer; but unlike the Primer, they were responding not to what Nell did but, she supposed, to events far away. When she finally raised her gaze from the floor to view the mediatrons lining the walls, she saw that most of the panes there were much larger, and most of them carried dine feeds, and most of these had been frozen. The images were very sharp and clear. Some of them were landscapes: a stretch of rural road, a bridge across a dried-up river, a dusty village with flames bubbling from some of the houses. Some of them were pictures of people: talking-head

shots of Chinese men wearing dirty uniforms with dark mountains, clouds of dust, or drab green vehicles as backdrops. In one of the dine feeds, a man was lying on the ground, his dusty uniform almost the same color as the dirt. Suddenly this image moved; the feed had not been frozen like the others. Someone was walking past the camera: a Chinese man in indigo pajamas, decorated with scarlet ribbons tied round his head and his waist, though these had gone brown with grime. When he had passed out of the frame, Nell focused on the other man, the one who was lying in the dust, and she realized for the first time that he did not have a head. Constable Moore must have heard Nell's screaming over the sound of his bagpipes, for he was in the room within a few moments, shouting commands to the mediatrons, which all went black and became mere walls and a floor. The only image remaining in the room now was the big painting of Guan Di, the god of war, who glowered down upon them as always. Constable Moore was extremely ill at ease whenever Nell showed any kind of emotion, but he seemed more comfortable with hysteria than he was with, say, an invitation to play house or an attack of the giggles. He picked Nell up, carried her across the room at arm's length, and set her down in a deep leather chair. He left the room for a moment and came back with a large glass of water, then carefully molded her hands around it. "You must breathe deeply and drink water," he was saying, almost sotto voce; he seemed to have been saying it for a long time. She was a little surprised to find that she did not cry forever, though a few aftershocks came along and had to be managed in the same way. She kept trying to say, "I can't stop crying," stabbing the syllables one at a time. The tenth or eleventh time she said this, Constable Moore said, "You can't stop drying because you're all fucked up psychologically." He said it in a kind of bored professional tone that might have sounded cruel; but to Nell it was, for some reason, most reassuring. "What do you mean?" she said finally, when she ld speak without her throat going all funny. "I mean you're a veteran, girl, just like me, and you've got scars"-he suddenly ripped his shirt open, buttons flying and bouncing all over the room, to reveal his particolored torso-"like I do. The difference is, I know I'm a veteran. You persist in thinking you're just a little girl, like those bloody Vickys you go to school with." . . . From time to time, perhaps once a year, he would turn down the offer of dinner, put that uniform on, climb onto a horse, and ride off in the direction of the New Atlantis Clave. The horse would bring him back in the wee hours of the morning, so drunk he could barely remain in the saddle. Sometimes Nell would help get him into bed, and after he had lapsed into unconsciousness, she could examine his pins and medals and ribbons by candlelight. The ribbons in particular used a fairly elaborate color-coding system. But the Primer had some pages in the back that were called the Encyclop a, and by consulting these, Nell was able to establish that Constable Moore was, or at least had used to be, a brigadier general in the Second Brigade of the Third Division of the First Protocol Enforcement Expeditionary Force. One ribbon implied that he had spent some time as an exchange officer in a Nipponese division, but his home division was

apparently the Third. According to the Encyclop?a, the Third was often known as the Junkyard Dogs or, simply, the Mongrels, because it tended to draw its members from the White Diaspora: Uitlanders, Ulster Loyalists, whites from Hong Kong, and rootless sorts from all of the Anglo-American parts of the world. One of the pins on the Constable's uniform said that he had graduate-level training in nanotechnological engineering. This was consistent with his belonging to the Second Brigade, which specialized in nanotech warfare. The Encyclop?a said that it had been formed some thirty years ago to tackle some nasty fighting in Eastern Europe where primitive nanotech weapons were being employed. A couple of years later, the division had been sent off to South China in a panic. Trouble had been brewing there since Zhang Han Hua had gone on his Long Ride and forced the merchants to kowtow. Zhang had personally liberated several lao gai damps, where slave laborers were hard at work making trinkets for export to the West, smashing computer display screens with the massive dragon's-head grip of his cane, beating the overseers into bloody heaps on the ground. Zhang's "investigations" of various thriving businesses, mostly in the south, had thrown millions of people out of work. They had gone into the streets and raised hell and been joined by sympathetic units of the People's Liberation Army. The rebellion was eventually put down by PLA units from the north, but the leaders had vanished into the "concrete countryside" of the Pearl Delta, and so Zhang had been forced to set up a permanent garrison state in the south. The northern troops had kept order crudely but effectively for a few years, until, one night, an entire division of them, some 15,000 men, was wiped out by an infestation of nanosites. The leaders of the rebellion emerged from their hiding places, proclaimed the Coastal Republic, and called for Protocol Enforcement troops to come in and protect them. Colonel Arthur Hornsby Moore, a veteran of the fighting in Eastern Europe, was brought in to command. He had been born in Hong Kong, left as a small child when the Chinese took it over, spent much of his youth wandering around Asia with his parents, and eventually settled in the British Isles. He was picked for the job because he was fluent in Cantonese and not half bad in Mandarin. Looking at the old cine clips in the Encyclop?a, Nell could see a younger Constable Moore, the same man with more hair and fewer doubts. The Chinese Civil War began in earnest three years later, when the Northerns, who didn't have access to nanotech, started lobbing nukes. Not long afterward, the Muslim nations had finally gotten their act together and overrun much of Xinjiang Province, killing some of the Han Chinese population and driving the rest eastward into the maw of the civil war. Colonel Moore suffered an extremely dire infestation of primitive nanosites and was removed from the action and put on extended convalescent leave. By that time, the truce line between the Celestial Kingdom and the Coastal Republic had been established. Since then, as Nell knew from her studies at the Academy, Lau Ge had succeeded Zhang as the northern leader-the leader of the Celestial Kingdom. After a decent interval had passed, he had thoroughly purged all remaining traces of Communist ideology, denouncing it as

a Western imperialist plot, and proclaimed himself Chamberlain to the Throneless King. The Throneless King was Confucius, and Lau Ge was now the highest-ranking of all the mandarins. The Encyclop□a did not say much more about Colonel Arthur Hornsby Moore, except that he'd resurfaced as an adviser a few years later during some outbreaks of nanotech terrorism in Germany, and later retired and became a security consultant. In this latter capacity he had helped to promulgate the concept of defense in depth, around which all modern cities, including Atlantis/Shanghai, were built. . . . Nell cooked the Constable an especially nice dinner one Saturday, and when they were finished with dessert, she began to tell him about Harv and Tequila, and Harv's tales of the incomparable Bud, their dear departed father. Suddenly it was about three hours later, and Nell was still telling the Constable stories about Mom's boyfriends, and the Constable was continuing to listen, reaching up occasionally to fiddle with his white beard but otherwise displaying an extremely grave and thoughtful countenance. Finally she got to the part about Burt, and how Nell had tried to kill him with the screwdriver, and how he had chased them down the stairs and apparently met his demise at the hands of the mysterious round-headed Chinese gentleman. The Constable found this extremely interesting and asked many questions, first about the detailed tactical development of the screwdriver assault and then about the style of dancing used by the Chinese gentleman, and what he was wearing. "I have been angry at my Primer ever since that night," Nell said. "Why?" said the Constable, looking surprised, though he was hardly more surprised than Nell herself. Nell had said a remarkable number of things this evening without having ever, to her memory, thought them first; or at least she didn't believe she had ever thought them before. "I cannot help but feel that it misled me. It made me suppose that killing Burt would be a simple matter, and that it would improve my life; but when I tried to put these ideas into practice . . ." She could not think of what to say next. ". . . the rest of your life happened," the Constable said. "Girl, you must admit that your life with Burt dead has been an improvement on your life with Burt alive." "Yes." "So the Primer was correct on that point. Now, as to the fact that killing people is a more complicated business in practice than in theory, I will certainly concede your point. But I think it is not likely to be the only instance in which real life turns out to be more complicated than what you have seen in the book. This is the Lesson of the Screwdriver, and you would do well to remember it. All it amounts to is that you must be ready to learn from sources other than your magic book." "But of what use is the book then?" "I suspect it is very useful. You want only the knack of translating its lessons into the real world. For example," the Constable said, plucking his napkin from his lap and crushing it into the tabletop, "let us take something very concrete, such as beating the bejesus out of people." He stood up and tromped out into the garden. Nell ran after him. "I have seen you doing your martial-arts exercises," he said, switching to a peremptory outdoor voice, an addressing-the-troops voice. "Martial arts means beating the bejesus out of people. Now, let us see you try your luck with me." Negotiations ensued as Nell endeavored to establish whether the Constable was

serious. This being accomplished, she sat down on the flagstones and began getting her shoes off. The Constable watched her with raised eyebrows. "Oh, that's very formidable," he said. "All evildoers had best be on the lookout for little Nell-unless she happens to be wearing her bloody shoes." Nell did a couple of stretching exercises, ignoring more derisive commentary from the Constable. She bowed to him, and he waved his hand at her dismissively. She got set into the stance that Dojo had taught her. In response, the Constable moved his feet about an inch farther apart than they had been, and pooched his belly out, which was apparently the chosen stance of some mysterious Scottish fighting technique. Nothing happened for a long time except for a lot of dancing around. Nell danced, that is, and the Constable blundered around desultorily. "What's this?" he said. "All you know is defense?" "Mostly, sir," Nell said. "I do not suppose it was the Primer's intention to teach me how to assault people." "Oh, what good is that?" the Constable sneered, and suddenly he reached out and grabbed Nell by the hair- not hard enough to hurt. He held her for a few moments, and then let her go. "Thus endeth the first lesson," he said. "You think that I should cut my hair off?" The Constable looked terribly disappointed. "Oh, no," he said, "never, ever, ever cut your hair off. If I grabbed you by your wrist"- and he did- "would you cut your arm off?" "No, sir." "Did the Primer teach you that people would pull your hair?" "No, sir." "Did it teach you that your mother's boyfriends would beat you up, and your mother not protect you?" "No, sir, except insofar as it told me stories about people who did evil." "People doing evil is a good lesson. What you saw in there a few weeks ago"-and by this Nell knew he was referring to the headless soldier on the mediatron-"is one application of that lesson, but it's too obvious to be of any good. Ah, but your mother not protecting you from boyfriends-that has some subtlety, doesn't it? "Nell," the Constable continued, indicating through his tone of voice that the lesson was concluding, "the difference between ignorant and educated people is that the latter know more facts. But that has nothing to do with whether they are stupid or intelligent. The difference between stupid and intelligent people-and this is true whether or not they are well-educated-is that intelligent people can handle subtlety. They are not baffled by ambiguous or even contradictory situations-in fact, they expect them and are apt to become suspicious when things seem overly straightforward. "In your Primer you have a resource that will make you highly educated, but it will never make you intelligent. That comes from life. Your life up to this point has given you all of the experience you need to be intelligent, but you have to think about those experiences. If you don't think about them, you'll be psychologically unwell. If you do think about them, you will become not merely educated but intelligent, and then, a few years down the road, you will probably give me cause to wish I were several decades younger." The Constable turned and walked back into his house, leaving Nell alone in the garden, pondering the meaning of that last statement. She supposed it was the sort of thing she might understand later, when she had become intelligent.

Carl Hollywood returns from abroad; he and Miranda discuss the status and future of her racting career. Carl Hollywood came back from a month-long trip to London, where he'd been visiting old friends, catching some live theatre, and making face-to-face contacts with some of the big ractive developers, hoping to swing some contracts in their direction. When he got back, the whole company threw a party for him in the theatre's little bar. Miranda thought she handled it pretty well. But the next day he cornered her backstage. "What's up?" he said. "And I don't mean that in the usual offhanded way. I want to know what's going on with you. Why have you switched to the evening shift during my absence? And why were you acting so weird at the party?" "Well, Nell and I have had an interesting few months." Carl looked startled, stepped back half a pace, then sighed and rolled his eyes. "Of course, her altercation with Burt was traumatic, but she seems to have dealt with it well." "Who's Burt?" "I have no idea. Someone who was physically abusing her. Apparently she managed to find some kind of new living situation in short order, probably with the assistance of her brother Harv, who has, however, not stayed with her-he's stuck in the same old bad situation, while Nell has moved on to something better." "She has? That's good news," said Carl, only half sarcastically. Miranda smiled at him. "See? That's exactly the kind of feedback I need. I don't talk about this stuff to anyone because I'm afraid they'll think I'm mad. Thank you. Keep it up." "What is Nell's new situation?" Carl Hollywood asked contritely. "I think she's in school somewhere. She appears to be learning new material that isn't explicitly covered in the Primer, and she's developing more sophisticated forms of social interaction, suggesting that she's spending more time around a higher class of people." "Excellent." "She's not as concerned with immediate issues of physical self-defense, so I gather that she's in a safe living situation. However, her new guardian must be an emotionally distant sort, because she frequently seeks solace under the wings of Duck." Carl looked funny. "Duck?" "One of four personages who accompanies and advises Princess Nell. Duck embodies domestic, maternal virtues. Actually, Peter and Dinosaur are now gone- both male figures who embodied survival skills." "Who's the fourth one?" "Purple. I think she'll become a lot more relevant to Nell's life around puberty." "Puberty? You said Nell was between five and seven." "So?" "You think you'll still be doing this-" Carl's voice wound down to a stop as he worked out the implications. "-for at least six or eight years. Oh yes, I should certainly think so. It's a very serious commitment, raising a child." "Oh, god!" Carl Hollywood said, and collapsed into a big, tatty, overstuffed chair they kept backstage for such purposes. "That's why I've switched to the evening shift. Ever since Nell started going to school, she's started using the Primer exclusively in the evening. Apparently she's in a time zone within one or two hours of this one." "Good," Carl muttered, "that narrows it down to about half of the world's population." "What's the problem here?" Miranda said. "It's not like I'm not getting paid for this." Carl gave her a good, dispassionate, searching look. "Yes. It brings in adequate revenue."

Three girls go exploring; a conversation between Lord Finkle-McGraw and Mrs. Hackworth; afternoon at the estate. Three girls moved across the billiard-table lawn of a great manor house, circling and swarming about a common center of gravity like gamboling sparrows. Sometimes they would stop, turn inward to face one another, and engage in animated discussion. Then they would suddenly take off running, seemingly free from the constraints of inertia, like petals struck by a gust of spring wind. They wore long heavy wool coats over their dresses to protect them from the cool damp air of New Chusan's high central plateau. They seemed to be making their way toward an expanse of broken ground some half-mile distant, separated from the great house's formal gardens by a gray stone wall splashed with bits of lime green and lavender where moss and lichen had taken hold. The terrain beyond the wall was a muted hazel color, like a bolt of Harris tweed that has tumbled from the back of a wagon and come undone, though the incipient blooming of the heather had flung a pale violet mist across it, nearly transparent but startlingly vivid in those places where the observer's line of sight grazed the natural slope of the terrain-if the word natural could properly be applied to any feature of this island. Otherwise as light and free as birds, the girls were each weighed down by a small burden that seemed incongruous in the present setting, for the efforts of the adults to persuade them to leave their books behind had, as ever, been unavailing. One of the observers had eyes only for the little girl with long flamecolored hair. Her connexion to that child was suggested by her auburn hair and eyebrows. She was dressed in a hand-sewn frock of woven cotton, whose crispness betrayed its recent provenance in a milliner's atelier in Dovetail. If the gathering had included more veterans of that elongated state of low-intensity warfare known as Society, this observation would have been keenly made by those soi-disant sentries who stood upon the battlements, keeping vigil against bounders who would struggle their way up the vast glacis separating wage slaves from Equity Participants. It would have been duly noted and set forth in the oral tradition that Gwendolyn Hackworth, though attractive, hard-waisted, and poised, lacked the confidence to visit Lord Finkle-McGraw's house in anything other than a new dress made for the occasion. The gray light suffusing the drawing room through its high windows was as gentle as mist. As Mrs. Hackworth stood enveloped in that light, sipping beige tea from a cup of translucent bone china, her face let down its guard and betrayed some evidence of her true state of mind. Her host, Lord Finkle-McGraw, thought that she looked drawn and troubled, though her vivacious comportment during the first hour of their interview had led him to suppose otherwise. Sensing that his gaze had lingered on her face for longer than was strictly proper, he looked to the three little girls ambling across the garden. One of the girls had raven hair that betrayed her partly Korean heritage; but having established her whereabouts as a sort of reference point, he shifted his attention to the third girl, whose hair was about halfway through a natural and gradual transition from blond to brown. This girl was the tallest of the three, though all were of about the same age; and though she participated freely in all of their lighthearted games, she rarely

initiated them and, when left to her own devices, tended toward a grave mien that made her seem years older than her playmates. As the Equity Lord watched the trio's progress, he sensed that even the style of her movement was different from the others'; she was lithe and carefully balanced, while they bounded unpredictably like rubber balls on rough-hewn stone. The difference was (as he realized, watching them more keenly) that Nell always knew where she was going. Elizabeth and Fiona never did. This was a question not of native intelligence (Miss Matheson's tests and observations proved that much) but of emotional stance. Something in the girl's past had taught her, most forcefully, the importance of thinking things through. "I ask you for a prediction, Mrs. Hackworth. Which one shall reach the moor first?" At the sound of his voice, Mrs. Hackworth recomposed her face. "This sounds like a letter to the etiquette columnist of the Times. If I try to flatter you by guessing that it will be your granddaughter, am I implicitly accusing her of impulsiveness?" The Equity Lord smiled tolerantly. "Let us set aside etiquette- a social convention not relevant to this enquiry-and be scientific." "Ah. If only my John were here." He is here, Lord Finkle-McGraw thought, in each one of those books. But he didn't say it. "Very well, I will expose myself to the risk of humiliation by predicting that Elizabeth reaches the wall first; that Nell finds the secret way through; but that your daughter is the first one to venture through it." "I'm sure you could never be humiliated in my presence, Your Grace," Mrs. Hackworth said. It was something she had to say, and he did not really hear it. They turned back to the windows. When the girls had reached to within a stone's throw of the wall, they began to move toward it more purposefully. Elizabeth broke free from the group, ran forward, and was the first to touch the cool stones, followed a few paces later by Fiona. Nell was far behind, not having altered her steady stride. "Elizabeth is a Duke's granddaughter, accustomed to having her way, and has no natural reticence; she surges to the fore and claims the goal as her birthright," Finkle-McGraw explained. "But she has not really thought about what she is doing." Elizabeth and Fiona both had their hands on the wall now, as if it were Home in a game of tag. But Nell had stopped and was turning her head from side to side, surveying the length of the wall as it clambered and tumbled over the increasingly rough shape of the land. After some time she held out one hand, pointing at a section of the wall a short distance away, and began to move toward it. "Nell stands above the fray and thinks," Finkle-McGraw said. "To the other girls, the wall is a decorative feature, no? A pretty thing to run to and explore. But not to Nell. Nell knows what a wall is. It is a knowledge that went into her early, knowledge she doesn't have to think about. Nell is more interested in gates than in walls. Secret hidden gates are particularly interesting." Fiona and Elizabeth moved uncertainly, trailing their tiny pink hands across the damp stone, unable to see where Nell was leading them. Nell strode across the grass until she had reached a small declivity. She almost disappeared into it as she clambered down toward the foundation of the wall. "An opening for drainage," Finkle-McGraw explained. "Please do not be concerned. I happened to ride that way this morning. The current is only ankle-deep, and the diameter of the culvert

just right for eight-yearold girls. The passage is several meters long-more promising than threatening, I should hope." Fiona and Elizabeth moved cautiously, startled by Nell's discovery. All three of the girls disappeared into the cleft. A few moments later, a blaze of fiery red could be descried bouncing rapidly across the moor beyond the wall. Fiona clambered up a small outcropping of rocks that marked the beginning of the moor, and beckoned excitedly to her companions. "The secret passage is found by Nell, but she is cautious and patient. Elizabeth is taken aback by her early impulsiveness-she feels foolish and perhaps even a bit sullen. Fiona-" "Fiona sees a magical gateway to an enchanted kingdom, no doubt," Mrs. Hackworth said, "and even now is crestfallen to find that you have not stocked the premises with unicorns and dragons. She would not hesitate for a moment to fly down that tunnel. This world is not where my Fiona wants to live, Your Grace. She wants another world, where magic is everywhere, and stories come to life, and ..." Her voice trailed away, and she cleared her throat uncomfortably. Lord Finkle-McGraw glanced at her and saw pain in her face, quickly masked. He understood the rest of her sentence without hearing it: . . . and my husband is here with us. A pair of riders, a man and a woman, trotted up a gravel path that ran along the edge of the gardens, through a pair of wrought-iron gates in the stone wall, which opened for them. The man was Lord Finkle-McGraw's son Colin, the woman was his wife, and they had ridden out onto the moor to keep an eye on their daughter and her two little friends. Seeing that their supervision was no longer required, Lord Finkle-McGraw and Mrs. Hackworth turned away from the window and drew instinctively closer to a fire burning in a stone fireplace the size of a garage. Mrs. Hackworth sat down in a small rocker, and the Equity Lord chose an old and incongruously battered leather wing chair. A servant poured more tea. Mrs. Hackworth set the saucer and cup in her lap, guarding it with her hands, and collected herself. "I have been desirous of making certain enquiries regarding my husband's whereabouts and activities, which have been a mystery to me almost since the moment he departed," she said, "and yet I was led to believe, from the very general and guarded statements he made to me, that the nature of those activities is secret, and that, if Your Grace has any knowledge of them-and that you do, is of course merely a convenient supposition on my part-you must treat that knowledge with flawless discretion. It goes without saying, I trust, that I would not use even my feeble powers of persuasion to induce you to violate the trust reposed in you by a higher power." "Let us take it as a given that both of us will do what is honourable," Finkle-McGraw said with a reassuringly casual smile. "Thank you. My husband continues to write me letters, every week or so, but they are extremely general, nonspecific, and perfunctory. But in recent months, these letters have become full of strange images and emotions. They are-bizarre. I have begun to fear for my husband's mental stability, and for the prospects of any undertaking that relies upon his good judgment. And while I would not hesitate to tolerate his absence for as long as is necessary for him to carry out his duties, the uncertainty has become most trying for me." "I am not wholly ignorant of the matter, and I do not think I am violating any trust

when I say that you are not the only person who has been surprised by the duration of his absence," Lord Finkle-McGraw said. "Unless I am very much mistaken, those who conceived of his mission never imagined that it would last for so long. It may ease your suffering in some small degree to know that he is not thought to be in danger." Mrs. Hackworth smiled dutifully, and not for very long. "Little Fiona seems to handle her father's absence well." "Oh, but to Fiona, he has never been gone," Mrs. Hackworth said. "It is the book, you see, that ractive book. When John gave it to her, just before he departed, he said that it was magic, and that he would talk to her through it. I know it's nonsense, of course, but she really believes that whenever she opens that book, her father reads her a story and even plays with her in an imaginary world, so that she hasn't really missed him at all. I haven't the heart to tell her that it's nothing more than a computerized media programme." "I am inclined to believe that, in this case, keeping her in ignorance is a very wise policy," Finkle-McGraw said. "It has served her well thus far. But as time goes on, she is more and more flighty and less disposed to concentrate on her schoolwork. She lives in a fantasy and is happy there. But when she learns that the fantasy is just that, I fear it will not go well for her." "She is hardly the first young lady to display signs of a vivid imagination," the Equity Lord said. "Sooner or later they seem to turn out all right." The three little explorers, and their two adult outriders, returned to the great house shortly. Lord Finkle-McGraw's desolate private moor was as alienated from the tastes of little girls as single malt whiskey, Gothic architecture, muted colors, and Bruckner symphonies. Once they had reached it and found that it was not equipped with pink unicorns, cotton candy vendors, teen idol bands, or fluorescent green water slides, they lost interest and began to gravitate toward the house-which in and of itself was far from Disneyland, but in which a practiced and assertive user like Elizabeth could find a few consolatory nuggets, such as a full-time kitchen staff, trained in (among many other, completely useless skills) the preparation of hot chocolate. Having come as close to the subject of John Percival Hackworth's disappearance as they dared, and careened past it with no damage except some hot faces and watery eyes, Lord Finkle-McGraw and Mrs. Hackworth had withdrawn, by mutual consent, to cooler subjects. The girls would come inside to drink some hot chocolate, and then it would be time for the guests to repair to the quarters assigned them for the day, where they could freshen up and dress for the main event: dinner. "I should be pleased to look after the other little girl-Nell-- until the dinner hour," Mrs. Hackworth said. "I noticed that the gentleman who brought her round this morning has not returned from the hunt." The Equity Lord chuckled as he imagined General Moore trying to help a little girl dress for dinner. He was graceful enough to know his limits, and so he was spending the day shooting on the remoter stretches of the estate. "Little Nell has a talent for looking after herself and may not need or wish to accept your most generous offer. But she might enjoy spending the interim with Fiona." "Forgive me, Your Grace, but I am startled that you would consider leaving a child of her age unattended for most of the afternoon." "She would not view it in that way, I assure you, for the same

reason that little Fiona does not think of her father as ever having left your house." The expression that passed over Mrs. Hackworth's face as she heard this statement suggested less than perfect comprehension. But before she could explain to her host the error of his ways, they were interrupted by the sound of a shrill and bitter conflict making its way down the hall toward them. The door swung open halfway, and Colin Finkle-McGraw appeared. His face was still ruddy from the wind on the moor, and it bore a forced grin that was not terribly distant from a smirk; though his brow knit up periodically as Elizabeth emitted an especially piercing shriek of anger. In one hand he held a copy of the Young Lady's Illustrated Primer. Behind him, Mrs. Finkle-McGraw could be seen holding Elizabeth by the wrist in a grip that recalled the blacksmith's tongs holding a dangerously hot ingot ready for smiting; and the radiant glow of the little girl's face perfected that analogy. She had bent down so that her face was level with Elizabeth's and was hissing something to her in a low and reproaching tone. "Sorry, Father," the younger Finkle-McGraw said in a voice slathered with not very convincing synthetic good humor. "Nap time, obviously." He nodded to the other. "Mrs. Hackworth." Then his eyes returned to his father's face and followed the Equity Lord's gaze downward to the book. "She was rude to the servants, Father, and so we have confiscated the book for the rest of the afternoon. It's the only punishment that seems to sink in-we employ it with some frequency." "Then perhaps it is not sinking in as well as you suppose," Lord Finkle-McGraw said, looking sad and sounding bemused. Colin Finkle-McGraw chose to interpret this remark as a witticism targeted primarily at Elizabeth-but then, parents of small children must perforce have an entirely different sense of irony than unimpaired humankind. "We can't let her spend her life between the covers of your magical book, Father, It is like a little interactive empire, with Elizabeth the empress, issuing all sorts of perfectly bloodcurdling decrees to her obedient subjects. It's important to bring her back to reality from time to time, so that she can get some perspective." "Perspective. Very well, I shall look forward to seeing you and Elizabeth, with her new perspective, at dinner." "Good afternoon, Father. Mrs. Hackworth," the younger man said, and closed the door, a heavy masterpiece of the woodcarver's art and a fairly effective decibel absorbant. Gwendolyn Hackworth now saw something in Lord Finkle-McGraw's face that made her want to leave the room. After speeding through the obligatory pleasantries, she did. She collected Fiona from the chimneycorner where she was cherishing the dregs of her hot chocolate. Nell was there too, reading her copy of the Primer, and Gwendolyn was startled to see that she had not touched her drink at all. "What is this?" she exclaimed in what she took to be an appropriately sugary voice. "A little girl who doesn't like hot chocolate?" Nell was deeply absorbed in her book, and for a moment Gwendolyn thought that her words had gone unheard. But a few beats later it became evident that the child was merely postponing her response until she reached the end of a chapter. Then she raised her eyes slowly from the page of the book. Nell was a reasonably attractive girl in the way that almost all girls are before immoderate tides of hormones start to make different parts of

their faces grow out of proportion to others; she had light brown eyes, glowing orange in the light of the fire, with a kind of feral slant to them. Gwendolyn found it difficult to break her gaze; she felt like a captured butterfly staring up through a magnifying lens into the calm, keen eye of the naturalist. "Chocolate is fine," Nell said. "The question is, do I need it." There was a rather long pause in the conversation as Gwendolyn groped for something to say. Nell did not seem to be awaiting a response; she had delivered her opinion and was done with it. "Well," Gwendolyn finally said, "if you should decide that there is anything you do need, please know that I would be happy to assist you." "Your offer is most kind. I am in your debt, Mrs. Hackworth," Nell said. She said it perfectly, like a princess in a book. "Very well. Good afternoon," Gwendolyn said. She took Fiona's hand and led her upstairs. Fiona dawdled in a way that was almost perfectly calculated to annoy, and responded to her mother's questions only with nods and shakes of the head, because, as always, her mind was elsewhere. Once they had reached their temporary quarters in the guest wing, Gwendolyn got Fiona settled into bed for a nap, then sat down at an escritoire to work her way through some pending correspondence. But now Mrs. Hackworth found that her own mind was elsewhere, as she pondered these three very strange girls-the three smartest little girls in Miss Matheson's Academy-each with her very strange relationship with her Primer. Her gaze drifted away from the sheets of mediatronic paper scattered about the escritoire, out the window, and across the moor, where a gentle shower had begun to fall. She devoted the better part of an hour to worrying about girls and Primers. Then she remembered an assertion that her host had made that afternoon, which she had not fully appreciated at the time: These girls weren't any stranger than any other girls, and to blame their behavior on the Primers was to miss the point entirely. Greatly reassured, she took out her silver pen and began to write a letter to her missing husband, who had never seemed so far away.

Miranda receives an unusual ractive message; a drive through the streets of Shanghai; the Cathay Hotel; a sophisticated soir&#xfffd; Carl Hollywood introduces her to two unusual characters. It was a few minutes before midnight, and Miranda was about to sign off from the evening shift and clear out of her body stage. This was a Friday night. Nell had apparently decided not to pull an all-nighter this time. On school nights, Nell reliably went to bed between ten-thirty and eleven, but Friday was her night to immerse herself in the Primer the way she had as a small child, six or seven years ago, when all of this had started. Right now, Nell was stuck in a part of the story that must have been frustrating for her, namely, trying to puzzle out the social rituals of a rather bizarre cult of faeries that had thrown her into an underground labyrinth. She'd figure it out eventually-she always did-but not tonight. Miranda stayed onstage for an extra hour and a half, playing a role in a samurai ractive fairly popular in Japan, in which she was a platinum blond missionary's daughter abducted from Nagasaki by ronin. All she had to do was squeal a lot and eventually be rescued by a good samurai. It was a pity she

didn't speak Nipponese and (beyond that) wasn't familiar with the theatrical style of that nation, because supposedly they were doing some radical and interesting things with karamaku-"empty screen" or "empty act." Eight years ago, she would have taken the onehour airship ride to Nippon and learned the language. Four years ago, she at least would have been disgusted with herself for playing this stupid role. But tonight she spoke her lines on cue, squealed and wriggled at the right times, and took her money, along with a hefty tip and the inevitable mash note from the payer-a middle-management type in Osaka who wanted to get to know her better. Of course, the same technology that made it impossible for Miranda to find Nell, made it impossible for this creep to find Miranda. An urgent job offer flashed over her screen just as she was putting her stuff together. She checked the ENQUIRY screen; the job didn't pay that much, but it was of very short duration. So she accepted it. She wondered who was sending her urgent job offers; six years ago it had happened frequently, but since she'd gone into her habit of working the evening shift she had, in general, become just another interchangeable Western bimbo with an unpronounceable name. It looked like some kind of weird bohemian art piece, some ractors'workshop project from her distant past: a surreal landscape of abstract colored geometric forms with faces occasionally rising out of flat surfaces to speak lines. The faces were texture-mapped, as if wearing elaborately painted makeup, or were sculpted to the texture of orange peels, alligator hide, or durian fruit. "We miss her," said one of the faces, the voice a little familiar, but disped into a weird ghostly echoing moan. "Where is she?" said another face, rather familiar in its shape. "Why has she abandoned us?" said a third face, and even through the texture-mapping and the voice disping, Miranda recognized Carl Hollywood. "If only she would come to our party!" cried another one, whom Miranda recognized as a member of the Parnasse Company named Christine something-or-other. The prompter gave her a line: Sorry, guys, but I'm working late again tonight. "Okay, okay," Miranda said, "I'm going to ad lib. Where are you?" "The cast party, dummy!" said Carl. "There's a cab waiting for you outside-we sprung for a half-laner!" Miranda pulled out of the ractive, finished tidying up the body stage, and left it open so that some other member of the company could come in a few hours later and work the gold shift. She ran down the helical gauntlet of plaster cherubs, muses, and Trojans, across the lobby where a couple of bleary-eyed apprentice ractors were cleaning up the debris from this evening's live performance, and out the front doors. There in the street, illuminated by the queasy pink-and-purple neon of the marquee, was a half-lane cab with its lights on. She was dully surprised when the driver headed toward the Bund, not toward the midrise districts in Pudong, where tribeless, lower-income Westerners typically had their flats. Cast parties usually happened in someone's living room. Then she reminded herself that the Parnasse was a successful theatre company nowadays, that they had a whole building somewhere full of developers coming up with new ractives, that the current production of Macbeth had cost a lot of money. Carl had flown to Tokyo and Shenzhen and San Francisco seeking investors and had not come back emptyhanded. The first month of performances

was sold out. But tonight, there had been a lot of empty seats in the house, because most of the opening-night crowd was non-Chinese, and non-Chinese were nervous about going out on the streets because of rumors about the Fists of Righteous Harmony. Miranda was nervous too, though she wouldn't admit it. The taxi turned a corner, and its headlights swept across a knot of young Chinese men gathered in a doorway, and as one of them lifted a cigarette to his mouth, she caught a glimpse of a scarlet ribbon knotted around his wrist. Her chest clenched up, her heart fluttered, and she had to swallow hard a few times. But the young men could not see into the silvered windows of the cab. They did not converge on her, brandishing weapons and crying "Sha! Sha!" The Cathay Hotel stood in the middle of the Bund, at the intersection with Nanjing Road, the Rodeo Drive of the Far East. As far as Miranda could see-all the way to Nanjing, maybe-it was lined with Western and Nipponese boutiques and department stores, and the airspace above the street was besprent with almond-size aerostats, each with its own cine camera and pattern-recognition ware to watch for suspicious-looking congregations of young men who might be Fist cells. Like all of the other big Western buildings on the waterfront, the Cathay was outlined in white light, which was probably a good thing because otherwise it wouldn't have looked like much. The exterior was bleak and dingy in the daytime. She played a little game of chicken with the doorman. She strode toward the entrance, confident that he'd haul the door open for her, but he stood there with his hands clasped behind his back, staring back at her sullenly. Finally he gave way and hauled the door open, though she had to break her stride so as not to smash into it. George Bernard Shaw had stayed here; Noel Coward had written a play here. The lobby was high and narrow, Beaux Arts marble, glorious ironwork chandeliers, white light from the Bund buildings filtering in through stained-glass arches. An ancient jazz band was playing in the bar, slap bass over trashcan drums. Miranda stood on tiptoe in the entrance, looking for the party, and saw nothing except middle-aged Caucasian airship tourists slow-dancing and the usual lineup of sharp young Chinese men along the bar, hoping she'd come in. Eventually she found her way up to the eighth floor, where all the fancy restaurants were. The big banquet room had been rented out by some kind of garishly wealthy organization and was full of men wearing intimidatingly sophisticated suits, women wearing even more intimidating dresses, and the odd sprinkling of Victorians wearing far more conservative-but still dapper and expensive- stuff. The music was fairly restrained, just one tuxedoed Chinese man playing jazz on a grand piano, but on a stage at one end of the room, a larger band was setting up its equipment. She was just cringing away, wondering in what back room the scruffy actors' bash might be found, when she heard someone calling her name from inside. Carl Hollywood was approaching, striding across the middle of the banquet hall like he owned the place, resplendent in hand-tooled cowboy boots made of many supple and exotic bird and reptile skins, wearing a vast raiment, sort of a cross between a cape and a Western duster, that nearly brushed the floor, and that made him look seven feet tall rather than a mere six and a half. His long blond hair was brushed back away from

his forehead, his King Tut beard was sharp and straight as a hoe. He was gorgeous and he knew it, and his blue eyes were piercing right through Miranda, holding her there in front of the open elevator doors, through which she'd almost escaped. He gave her a big hug and whirled her around. She shrank against him, shielded from the crowd in the banquet hall by his enveloping cloak. "I look like shit," she said. "Why didn't you tell me it was going to be this kind of a party?" "Why didn't you know?" Carl said. As a director, one of his talents was to ask the most difficult imaginable questions. "I would have worn something different. I look like-" "You look like a young bohemian artiste," Carl said, stepping back to examine her typically form-fitting black bodysuit, "who doesn't give a shit about pretentious clothes, who makes everyone else in the room feel overdressed, and who can get away with it because she's got that special something." "You silver-tongued dog," she said, "you know that's bullshit." "A few years ago you would have sailed into that room with that lovely chin of yours held up like a battering ram, and everyone would have stepped back to look at you. Why not now?" "I don't know," Miranda said. "I think with this Nell thing, I've incurred all the disadvantages of parenthood without actually getting to have a child." Carl relaxed and softened, and Miranda knew she'd spoken the words he was looking for. "C'mere," he said. "I want you to meet someone." "If you're going to try to fix me up with some wealthy son of a bitch-" "Wouldn't dream of it." "I'm not going to become a housewife who acts in her spare time." "I realize that," Carl said. "Now calm yourself for a minute." Miranda was forcibly ignoring the fact that they were walking through the middle of the room now. Carl Hollywood was drawing all of the attention, which suited her. She exchanged smiles with a couple of ractors who had appeared in the interactive invitation that had summoned her here; both of them were having what looked like very enjoyable conversations with fine-looking people, probably investors. "Who are you taking me to meet?" "A guy named Beck. An old acquaintance of mine." "But not a friend?" Carl adopted an uncomfortable grin and shrugged. "We've been friends sometimes. We've also been collaborators. Business partners. This is how life works, Miranda: After a while, you build up a network of people. You pass them bits of data they might be interested in and vice versa. To me, he's one of those guys." "I can't help wondering why you want me to meet him." "I believe," Carl said very quietly, but using some actor's trick so that she could hear every word, "that this gentleman can help you find Nell. And that you can help him find something he wants." And he stepped aside with a swirl of cloak, pulling out a chair for her. They were in the corner of the banquet hall. Sitting on the opposite side of the table, his back to a large marble-silled window, the illuminated Bund and the mediatronic cacophony of Pudong spilling bloody light across the glossy shoulder-pads of his suit, was a young African man in dreadlocks, wearing dark glasses with minuscule circular lenses held in some kind of ostentatiously complex metallic space grid. Sitting next to him, but hardly noticed by Miranda, was a Nipponese businessman wearing a dark formal kimono and smoking what smelled like an old-fashioned, fully carcinogenic cigar. "Miranda, this is Mr. Beck and Mr. Oda, both

privateers. Gentlemen, Ms. Miranda Redpath." Both men nodded in a pathetic vestige of a bow, but neither made a move to shake hands, which was just as well- nowadays some amazing things could be transferred through skin-to-skin contact. Miranda didn't even nod back to them; she just sat down and let Carl scoot her in. She didn't like people who described themselves as privateers. It was just a pretentious word for a thete- someone who didn't have a tribe. Either that, or they really did belong to tribes- from the looks of them, probably some weird synthetic phyle she'd never heard of-and, for some reason, were pretending not to. Carl said, "I have explained to the gentlemen, without getting into any details, that you would like to do the impossible. Can I get you something to drink, Miranda?" After Carl Hollywood left, there was a rather long silence during which Mr. Beck presumably stared at Miranda, though she could not tell because of the dark glasses. Mr. Oda's primary function appeared to be that of nervous spectator, as if he had wagered half of his net worth on whether Miranda or Mr. Beck would speak first. A stratagem occurred to Mr. Oda. He pointed in the direction of the bandstand and nodded significantly. "You like this band?" Miranda looked over at the band, half a dozen men and women in an assortment of races. Mr. Oda's question was difficult to answer because they had not yet made any music. She looked back at Mr. Oda, who pointed significantly at himself. "Oh. You're the backer?" Miranda said. Mr. Oda withdrew a small glittering object from his pocket and slid it across the table toward Miranda. It was a cloisonn�in shaped like a dragonfly. She had noticed similar ones adorning several partygoers. She picked it up cautiously. Mr. Oda tapped himself on the lapel and nodded, encouraging her to put it on. She left it sitting there on the table for the time being. "I'm not seeing anything," Mr. Beck finally said, apparently for Mr. Oda's benefit. "To a first approximation, she is clean." Miranda realized that Mr. Beck had been checking her out using some kind of display in his phenomenoscopic glasses. Miranda was still trying to work out some kind of unpleasant response when Mr. Oda leaned forward into his own cloud of cigar smoke. "It is our understanding," he said, "that you wish to make a connection. Your wish is very strong." Privateers. The word also implied that these gentlemen, at least in their own minds, had some kind of an angle, some way of making money off of their own lack of tribal affiliation. "I've been told that such things are impossible." "It's more correct to speak in probabilistic terms," said Mr. Beck. His accent was more Oxford than anything else, with a Jamaican lilt, and a crispness that owed something to India. "Astronomically improbable, then," Miranda said. "There you go," said Mr. Beck. Now, somehow, the ball had found its way into Miranda's court. "If you guys think you've found a way to beat probability, why don't you go into the Vegas ractives and make a fortune?" Misters Beck and Oda were actually more amused by that crack than she had expected them to be. They were capable of irony. That was one good sign in the almost overwhelming barrage of negative signals she'd been getting from them so far. The band started up, playing dance music with a good beat. The lights came down, and the party began to glitter as light flashed from the dragonfly pins. "It wouldn't work," Mr. Beck said, "because Vegas is a

game of pure numbers with no human meaning to it. The mind doesn't interface to pure numbers." "But probability is probability," Miranda said. "What if you have a dream one night that your sister is in a crash, and you contact her the next day and learn that she broke up with her boyfriend?" "It could be a coincidence." "Yes. But not a very probable one. You see, maybe it's possible to beat probability, when the heart as well as the mind is involved." Miranda supposed that neither Mr. Beck nor Mr. Oda understood the essential cruelty of what they were saying. It was much better not to have any hope at all. "Are you guys involved in some kind of religious thing?" she said. Misters Beck and Oda looked at each other significantly. Mr. Oda went into some peculiar routine of tooth-sucking and throat-clearing that would probably convey a torrent of information to another Nipponese person but meant nothing to Miranda, other than giving her a general hint that the situation was rather complicated. Mr. Beck produced an antique silver snufibox, or a replica of one, took out a pinch of nanosite dust, and hoovered it up into one of his great circular nostrils, then nervously scratched the underside of his nose. He slid his glasses way down, exposing his big brown eyes, and stared distractedly over Miranda's shoulder into the thick of the party, watching the band and the dancers' reaction to it. He was wearing a dragonfly pin, which had begun to glow and to flash gorgeous colored lights, like a fleet of police cars and firetrucks gathered round a burning house. The band segued into a peculiar, tuneless, beatless miasma of noise, spawning lazy convection currents in the crowd. "How do you guys know Carl?" Miranda said, hoping to break the ice a bit. Mr. Oda shook his head apologetically. "I have not had the pleasure of making his acquaintance until recently." "Used to do thyuh-tuh with him in London." "You're a ractor?" Mr. Beck snorted ironically. A variegated silk hankie flourished in his hand, and he blew his nose quickly and cleanly like a practiced snufftaker. "I am a technical boy," he said. "You program ractives?" "That is a subset of my activities." "You do lights and sets? Or digital stuff? Or nanotech?" "Invidious distinctions do not interest me. I am interested in one thing," said Mr. Beck, holding up his index finger, topped with a very large but perfectly manicured claw of a fingernail, "and that is use of tech to convey meaning." "That covers a lot of areas nowadays." "Yes, but it shouldn't. That is to say that the distinctions between those areas are bogus." "What's wrong with just programming ractives?" "Nothing at all," said Mr. Beck, "just as nothing is wrong with traditional live theatre, or for that matter, sitting round a campfire telling stories, like I used to enjoy on the beach when I was a lad. But as long as there are new ways to be found, it is my job, as a technical boy, to find them. Your art, lady, is racting. Searching for the new tech is mine." The noise coming from the band had begun to pulse irregularly. As they talked, the pulses gathered themselves into beats and became steadier. Miranda turned around to look at the people on the dance floor. They were all standing around with faraway looks on their faces, concentrating on something. Their dragonfly pins were flashing wildly now, joining in a coherent pulse of pure white on each beat. Miranda realized that the pins were somehow patched into the wearers' nervous systems

and that they were talking to each other, creating the music collectively. A guitarist began to weave an improvised melodic line through the gradually coalescing pattern of sound, and the sound condensed around it as all of the dancers heard the tune. They had a feedback loop going. A young woman began to chant out some kind of tuneless rap that sounded improvised. As she went on, she broke into melody. The music was still weird and formless, but it was beginning to approach something you might hear on a professional recording. Miranda turned back to face Mr. Beck. "You think you've invented a new way to convey meaning with technology-" "Medium." "A new medium, and that it can help me get what I want. Because when meaning is involved, the laws of probability can be broken." "There are two misconceptions in your statement. One: I did not invent the medium. Others did, perhaps for different purposes, and I have stumbled across it, or actually just heard intimations. "As far as the laws of probability, my lady, these cannot be broken, any more than any other mathematical principle. But laws of physics and mathematics are like a coordinate system that runs in only one dimension. Perhaps there is another dimension perpendicular to it, invisible to those laws of physics, describing the same things with different rules, and those rules are written in our hearts, in a deep place where we cannot go and read them except in our dreams." Miranda looked to Mr. Oda, hoping he'd wink or something, but he was staring into the dance floor with a terribly serious expression, as though enfolded in deep thoughts himself, nodding slightly. Miranda drew a deep breath and sighed. When she looked up at Mr. Beck again, he was watching her, noting her curiosity about Mr. Oda. He turned one hand palm up and rubbed the ball of his thumb over his fingertips. So Beck was the hacker and Oda was the backer. The oldest and most troublesome relationship in the technological world. "We require a third participant," Mr. Beck said, dovetailing into her thoughts. "To do what?" Miranda said, evasive and defensive at the same time. "All technomedia ventures have the same structure," said Mr. Oda, bestirring himself for the first time in a while. By now a nice synergy had developed between band and crowd, and a lot of dancing was going on-some intimidatingly sophisticated stuff, and also some primal moshing. "Three-legged tripod." Oda held up a fist and began to extend fingers as he enumerated the same. Miranda noted that his fingers were gnarly and bent, as if they'd all been broken frequently. Mr. Oda was, perhaps, a veteran practitioner of certain martial arts now disdained by most Nipponese because of their lower-class provenance. "Leg number one: new technological idea. Mr. Beck. Leg number two: adequate financial backing. Mr. Oda. Leg number three: the artist." Misters Beck and Oda looked significantly at Miranda. She threw back her head and managed a nice solid laugh, hitting that sweet spot down in her diaphragm. It felt good. She shook her head, letting her hair swing back and forth across her shoulders. Then she leaned forward across the table, shouting to be heard above the band. "You guys must be desperate. I'm old hat, guys. There's half a dozen ractors in this room with better prospects than me. Didn't Carl fill you in? I've been holed up in a body stage for six years doing kid stuff. I'm not a star." "Star means a master of conventional ractives, which are precisely the

technology we are trying to move beyond," said Mr. Beck, a bit scornful that she wasn't getting it. Mr. Oda pointed to the band. "None of these people were professional musicians-some not even amateurs. Musician skills are not relevant for this-these people were new kinds of artists born too early." "Almost too early," Mr. Beck said. "Oh, my god," Miranda said, starting to get it. For the first time, she believed that what Beck and Oda were talking about- whatever the hell it was-was a real possibility. Which meant that she was ninety percent convinced-though only Beck and Oda understood that. It was too loud to talk. A mosher backed into Miranda's chair and nearly fell over her. Beck stood up, came round the table, and extended one hand, asking her to dance. Miranda looked into the Dionysian revel filling the floor and understood that the only way to be safe was to join it. She plucked her dragonfly pin from the tabletop and followed Beck into the midst of the dance. As she pinned it on, it began to flash, and she thought she heard a new strain woven into the song.

From the Primer, Princess Nell enters into the lands of King Coyote. All that hot afternoon Nell toiled up the numberless switchbacks, occasionally reaching into the bag that dangled at her waist, drawing out a handful of Purple's ashes and scattering them behind her like seeds. Whenever she stopped to rest, she could look out across the burnt desert she had just crossed: a tawny plain scabbed with reddish-brown volcanic rock, patches of aromatic greenish-gray shrubs clinging like bread mold to any parts that were sheltered from the eternal wind. She had hoped that when she climbed the face of this mountain, she would rise up above the dust, but it had followed her, coating her lips and her toes. When she drew a breath through her nose, it only stung her parched nostrils, and so she had given up trying to smell anything. But late in the afternoon a cool moist draft spilled down the mountain and over her face. She drew in a breath of it, hoping to catch some of the cold air before it trickled down into the desert. It smelled of evergreens. As she climbed the switchbacks, she forded those delightful currents of air over and over, so that as she rounded each hairpin turn in the trail, she had an incentive to climb toward the next one. The little shrubs that clutched rocks and cowered in cracks became bigger and more numerous, and flowers began to appear, first tiny little white ones like handfuls of salt strewn over the rocks, then larger blossoms, blue and magenta and brilliant orange, brimming with scented nectar that attracted bees all fuzzy and yellow with stolen pollen. Gnarled oaks and short dense evergreens cast tiny shadows across the path. The skyline grew closer, and the turns in the path became wider as the mountain became less steep. Nell rejoiced when the switchbacks ended and the trail took off straight across an undulating mountaintop meadow thick with purple-flowered heather and marked with occasional stands of tall firs. For a moment she was afraid that this meadow was nothing more than a ledge, and that she had more mountains to ascend; but then the path turned downhill, and treading heavily as new muscles caught her descending weight, she half-ran across a vast boulder, pocked with tiny pools of clear water and occasional lozenges of wet snow, until she reached a point

where it fell away from under her and she skidded to a precarious stop, looking down like a peregrine falcon over an immense country of blue lakes and green mountains, shrouded in a whirling storm of silver mist. Nell turned the page and saw it, just as the book said. This was a twopage illustration-a color painting, she reckoned. Any one part of it looked just as real as a cine feed. But the geometry of the thing was funny, borrowing some suprarealistic tricks from classical Chinese landscape painting; the mountains were too steep, and they marched away forever into the distance, and if Nell stared, she could see tall castles clinging to their impossibly precipitous slopes, colorful banners waving from their flagpoles bearing heraldic devices that were dynamic: The gryphons crouched, the lions roared, and she could see all of these details, even though the castles should have been miles away; whenever she looked at something it got bigger and turned into a different picture, and when her attention wavered-when she blinked and shook her head-it snapped back to the first view again. She spent a long time doing that, because there were dozens of castles at the very least, and she got the feeling that if she kept looking and counting she might look forever. But it wasn't all castles: there were mountains, cities, rivers, lakes, birds and beasts, caravans, and travelers of all kinds. She spent a while staring at a group of travelers who had drawn their wagons into a roadside meadow and set up a camp, clapping hands round a bonfire while one of them played a reel on some small bellowspowered bagpipes, barely audible these many miles away. Then she realized that the book hadn't said anything for a long time. "What happened then?" she said. The Young Lady's Illustrated Primer said nothing. "Nell looked for a safe way down," Nell essayed. Her vantage point began to move. A patch of snow swung into view. "No, wait!" she said, "Nell stuffed some clean snow into her water bottles." In the painting, Nell could see her bare pink hands scooping up snow and packing it bit by bit into the neck of her bottle. When it was full, she put the cork back in (Nell didn't have to specifr that) and began moving around on the rock, looking for a place that wasn't so steep. Nell didn't have to explain that in detail either; in the ractive, she searched the rock in a fairly rational way and in a few minutes found a stairway chiseled into the rock, winding down the mountain endlessly until it pierced a cloud layer far below. Princess Nell began descending the steps, one at a time. After a while, Nell tried an experiment: "Princess Nell descended the stairs for many hours." This triggered a series of dissolves like she'd seen on old passives: Her current view dissolved into a closeup of her feet, trudging down a couple of steps, which dissolved into a view from considerably farther down the mountain, followed by a closeup of Princess Nell unscrewing her water bottle and drinking melted snow; another view from farther down; Nell sitting down for a rest; a soaring eagle; the approaching cloud layer; big trees; descending through the mist; and finally, Nell tramping wearily down the last ten steps, which left her in a clearing in a dark coniferous forest, carpeted with rust-colored pine needles. It was twilight, and the wolves were beginning to howl. Nell made the usual arrangements for the night, lit a fire, and curled up to sleep. Having reached a good

stopping-place, Nell started to close the book. She'd have to continue this later. She had just entered the land of the oldest and most powerful of all the Faery Kings. The many castles on the mountains belonged to all of his Dukes and Earls, and she suspected she would have to visit them all before she had gotten what she'd come for. It was not a quick adventure for an early Saturday morning. But just as she was clasping the book together, new words and an illustration appeared on the page she'd been reading, and something about the illustration made her open the book back up. It showed a crow perched on a tree branch above Princess Nell, holding a necklace in its beak. It was eleven jeweled keys strung on a golden chain. Princess Nell had been wearing it around her neck; apparently the next event in the story was that this bird stole it while she was sleeping. Beneath the picture was a poem, spoken by the crow from his perch: Castles, gardens, gold, and jewels Contentment signify, for fools Like Princess Nell; but those Who cultivate their wit Like King Coyote and his crows Compile their power bit by bit And hide it places no one knows. Nell closed up the book This was too upsetting to think about just now. She had been collecting those keys for most of her life. The first she'd taken from King Magpie just after she and Harv had arrived at Dovetail. She had picked up the other ten one at a time during the years since then. She had done this by traveling to the lands of the Faery Kings and Queens who owned those keys and using the tricks she had learned from her Night Friends. Each key had come to her in a different way. One of the hardest keys to get had belonged to an old Faery Queen who had seen through every trick that Nell could think up and fought off every assault. Finally, in desperation, Princess Nell had thrown herself on the mercy of that Queen and told her the sad story of Harv locked up in the Dark Castle. The Queen had fed Nell a nice bowl of chicken soup and handed over the key with a smile. Not much later, Duck had encountered a nice young mallard on the road and flown away with him to start a family. Purple and Princess Nell then traveled together for several years, and on many a dark night, sitting around the campfire under a full moon, Purple had taught Nell secret things from her magic books and from the ancient lore she kept in her head. Recently they had traveled for a thousand miles on camelback across a great desert full of djinns, demons, sultans, and caliphs and finally reached the great onion-domed palace of the local Faery King- himself a djinn of great power-who ruled over all the desert lands. Princess Nell had devised a complicated plan to trick their way into the djinn's treasury. To carry it out, she and Purple had to live in the city around the palace for a couple of years and make many treks into the desert in search of magic lanterns, rings, secret caverns, and the like. Finally, Princess Nell and Purple had penetrated to the djinn king's treasury and found the eleventh key. But they had been surprised by the djinn himself, who attacked them in the guise of a fire-breathing serpent. Purple had transformed herself into a giant eagle with metallic wings and talons that could not be burned- much to the surprise of Princess Nell, who had never imagined that her companion possessed such power. The battle between Purple and the djinn raged for a day and a night, both combatants transforming themselves into any number of fantastical

creatures and hurling all manner of devastating spells at each other, until finally the mighty castle lay in ruins, the desert was scorched and blasted for many miles around, and Purple and the djinn king both lay dead on the floor of what had been the treasury. Nell had picked up the eleventh key from the floor, put it on her chain, cremated Purple's body, and scattered her ashes across the desert as she walked, for many days, toward the mountains and the green land, where the eleven keys had now been stolen away from her.

Nell's experiences at school; a confrontation with Miss Stricken; the rigors of Supplementary Curriculum; Miss Matheson's philosophy of education; three friends go separate ways. AGLAIA BRILLIANCE EUPHROSYNE JOY THALIA BLOOM The names of the three graces, and diverse artists' conceptions of the ladies themselves, were chiseled, painted, and sculpted freely about the interior and exterior of Miss Matheson's Academy. Nell could hardly look anywhere without seeing one of them prancing across a field of wildflowers, distributing laurel wreaths to the worthy, jointly thrusting a torch toward heaven, or shedding lambent effulgence upon the receptive pupils. Nell's favorite part of the curriculum was Thalia, which was scheduled for an hour in the morning and an hour in the afternoon. When Miss Matheson hauled once on the old bellrope dangling down from the belfry, belting a single dolorous clang across the campus, Nell and the other girls in her section would arise, curtsy to their teacher, walk in single file down the corridor to the courtyard-then break into a chaotic run until they reached the Hall of Physical Culture, where they would strip out of their heavy, scratchy complicated uniforms and climb into lighter, looser, scratchy complicated uniforms with more freedom of movement. The Bloom curriculum was taught by Miss Ramanujan or one of her assistants. Usually they did something vigorous in the morning, like field hockey, and something graceful in the afternoon, like ballroom dance, or peculiar, giggle-inducing exercises in how to walk, stand, and sit like a Lady. Brilliance was Miss Matheson's department, though she mostly left it to her assistants, occasionally wheeling in and out of various classrooms in an old wood-and-wicker wheelchair. During the Aglaia period, the girls would get together in groups of half a dozen or so to answer questions or solve problems put to them by the teachers: For example, they counted how many species of plants and animals could be found in one square foot of the forest behind the school. They put on a scene from a play in Greek. They used a ractive simulation to model the domestic economy of a Lakota band before and after the introduction of horses. They designed simple machines with a nanopresence rig and tried to compile them in the M.C. and make them work They wove brocades and made porcelain as Chinese ladies used to do. And there was an ocean of history to be learned: first biblical, Greek, and Roman, and then the history of many other peoples around the world that essentially served as backdrop for History of the English-Speaking Peoples. The latter subject was, curiously, not part of the Brilliance curriculum; it was left firmly in the hands of Miss Stricken, who was mistress of Joy. In

addition to two one-hour periods each day, Miss Stricken had the attention of the entire assembled student body once in the morning, once at noon, and once in the evening. During these times her basic function was to call the students to order; publicly upbraid those sheep who had prominently strayed since the last such assembly; disgorge any random meditations that had been occupying her mind of late; and finally, in reverential tones, introduce Father Cox, the local vicar, who would lead the students in prayer. Miss Stricken also had the students all to herself for two hours on Sunday morning and could optionally command their attention for up to eight hours on Saturdays if she came round to the opinion that they wanted supplementary guidance. The first time Nell sat down in one of Miss Stricken's classrooms, she found that her desk had perversely been left directly behind another girl's, so that she was unable to see anything except for the bow in that girl's hair. She got up, tried to skooch the desk, and found that it was fixed to the floor. All the desks, in fact, were arranged in a perfectly regular grid, facing in the same direction- which is to say, toward Miss Stricken or one of her two assistants, Miss Bowlware and Mrs. Disher. Miss Bowlware taught them History of the English-Speaking Peoples, starting with the Romans at Londinium and careening through the Norman Conquest, Magna Carta, Wars of the Roses, Renaissance, and Civil War; but she didn't really hit her stride until she got to the Georgian period, at which point she worked herself up into a froth explaining the shortcomings of that syphilitic monarch, which had inspired the rightthinking Americans to break away in disgust. They studied the most ghastly parts of Dickens, which Miss Bowlware carefully explained was called Victorian literature because it was written during the reign of Victoria I, but was actually about pre-Victorian times, and that the mores of the original Victorians-the ones who built the old British Empire- were actually a reaction against the sort of bad behavior engaged in by their parents and grandparents and so convincingly detailed by Dickens, their most popular novelist. The girls actually got to sit at their desks and play a few ractives showing what it was like to live during this time: generally not very nice, even if you selected the option that turned off all the diseases. At this point, Mrs. Disher stepped in to say, if you thought that was scary, look at how poor people lived in the late twentieth century. Indeed, after ractives told them about the life of an inner-city Washington, D.C., child during the 1990s, most students had to agree they'd take a workhouse in pre-Victorian England over that any day. All of the foregoing set the stage for a three-pronged, parallel examination of the British Empire; pre-Vietnam America; and the modern and ongoing history of New Atlantis. In general, Mrs. Disher handled the more modern stuff and anything pertaining to America. Miss Stricken handled the big payoff at the end of each period and at the end of each unit. She stormed in to explain what conclusion they were being led to and to make sure that all of them got it. She also had a way of lunging predatorily into the classroom and rapping the knuckles of any girl who had been whispering, making faces at the teachers, passing notes, doodling, woolgathering, fidgeting, scratching, nose-picking, sighing, or slumping. Clearly, she was sitting in her closetlike office next door watching them with cine monitors. Once,

Nell was sitting in Joy diligently absorbing a lecture about the Lend-Lease Program. When she heard the squeaky door from Miss Stricken's office swing open behind her, like all the other girls she suppressed the panicky urge to look around. She heard Miss Stricken's heels popping up her aisle, heard the whir of the ruler, and then suddenly felt her knuckles explode. "Hairdressing is a private, not a public activity, Nell," Miss Stricken said. "The other girls know this; now you do too." Nell's face burned, and she wrapped her good hand around her damaged one like a bandage. She did not understand anything until one of the other girls caught her eye and made a corkscrewing motion with her index finger up near one temple: Apparently Nell had been twisting her hair around her finger, which she often did when she was reading the Primer or thinking hard about any one thing. The ruler was such a pissant form of discipline, compared to a real beating, that she could not take it seriously at first and actually found it funny the first few times. As the months went by, though, it seemed to get more painful. Either Nell was becoming soft, or- more likely-the full dimensions of the punishment were beginning to sink in. She had been such an outsider at first that nothing mattered. But as she began to excel in the other classes and to gain the respect of teachers and students alike, she found herself with pride to lose. Part of her wanted to rebel, to throw everything away so that it could not be used against her. But she enjoyed the other classes so much that she couldn't bear to think further of the possibility. One day Miss Stricken decided to concentrate all her attentions on Nell. There was nothing unusual about that-it was standard to randomly single out particular scholars for intensive enforcement. With twenty minutes left in the hour, Miss Stricken had already gotten Nell on the right hand for hair-twisting and on the left for nail-biting, when, to her horror, Nell realized that she was scratching her nose and that Miss Stricken was standing in the aisle glaring at her like a falcon. Both of Nell's hands shot into her lap, beneath the desk. Miss Stricken walked up to her deliberately, pop pop pop. "Your right hand, Nell," she said, "just about here." And she indicated with the end of the ruler an altitude that would be a convenient place for the assault- rather high above the desk, so that everyone in the room could see it. Nell hesitated for a moment, then held her hand up. "A bit higher, Nell," Miss Stricken said. Nell moved her hand a bit higher. "Another inch should do it, I think," Miss Stricken said, appraising the hand as if it were carved in marble and recently excavated from a Greek temple. Nell could not bring herself to raise the hand any higher. "Raise it one more inch, Nell," Miss Stricken said, "so that the other girls can observe and learn along with you." Nell raised her hand just a bit. "That was rather less than an inch, I should think," Miss Stricken said. Other girls in the class began to titter-their faces were all turned back toward Nell, and she could see their exultation, and somehow Miss Stricken and the ruler became irrelevant compared to the other girls. Nell raised her hand a whole inch, saw the windup out of the corner of her eye, heard the whir. At the last moment, on an impulse, she flipped her hand over, caught the ruler on her palm, grabbed it, and twisted in a way that Dojo had taught her, bending it against the grain of Miss Stricken's fingers so that she was forced to let go.

Now Nell had the ruler, and Miss Stricken was disarmed. Her opponent was a bulging sort of woman, taller than average, rather topheavy on those heels, the sort of teacher whose very fleshiness becomes the object of morbid awe among her gamine pupils, whose personal toilet practices-the penchant for dandruff, the habitually worn-out lipstick, the little wad of congealed saliva at the corner of the mouth-loom larger in her students' minds than the Great Pyramids or the Lewis and Clark Expedition. Like all other women, Miss Stricken benefited from a lack of external genitalia that would make it more difficult for Nell to incapacitate her, but nevertheless, Nell could think of half a dozen ways to leave her a bloody knot on the floor and not waste more than a quarter of a minute in the process. During her time with Constable Moore, noting her benefactor's interest in war and weapons, she had taken up a renewed interest in martial arts, had paged back in the Primer to the Dinosaur's Tale and been pleased but hardly surprised to discover that Dojo was still holding lessons there, picking up just where he and Belle the Monkey had left off. Thinking of her friend Dinosaur and her sensei, Dojo the Mouse, she suddenly felt shame far deeper than anything Miss Stricken or her sniggering classmates could inflict. Miss Stricken was a stupid hag, and her classmates were snot-nosed clowns, but Dojo was her friend and her teacher, he had always respected her and given her his full attention, and he had carefully taught her the ways of humility and self-discipline. Now she had perverted his teachings by using her skill to take Miss Stricken's ruler. She could not have been more ashamed. She handed the ruler back, raised her hand high in the air, and heard but did not feel the impacts of the ruler, some ten in all. "I shall expect you in my office after evening prayers, Nell," Miss Stricken said when she was finished. "Yes, Miss Stricken," Nell said. "What are you girls looking at?" blurted Mrs. Disher, who was running the class today. "Turn around and pay attention!" And with that it was all over. Nell sat in her desk for the rest of the hour as if carved from a solid block of gypsum. Her interview with Miss Stricken at the end of the day was short and businesslike, no violence or even histrionics. Nell was informed that her performance in the Joy phase of the curriculum was so deficient that it placed her in danger of failing and being expelled from the school altogether, and that her only hope was to come in each Saturday for eight hours of supplementary study. Nell wished more than anything that she could refuse. Saturday was the only day of the week when she did not have to attend school at all. She always spent the day reading the Primer, exploring the fields and forests around Dovetail, or visiting Harv down in the Leased Territories. She felt that, through her own mistakes, she had ruined her life at Miss Matheson's Academy. Until recently, Miss Stricken's classes had been nothing more than a routine annoyance-an ordeal that she had to sit through in order to experience the fun parts of the curriculum. She could look back on a time only a couple of months ago when she would come home with her mind aglow from all the things she had learned in Brilliance, and when the Joy part was just an indistinct smudge around the edge. But in recent weeks, Miss Stricken had, for some reason, loomed larger and larger in her view of the place. And somehow, Miss Stricken had read Nell's mind and

had chosen just the right moment to step up her campaign of harassment. She had timed today's events perfectly. She had brought Nell's most deeply hidden feelings out into the open, like a master butcher exposing the innards with one or two deft strokes of the knife. And now everything was ruined. Now Miss Matheson's Academy had vanished and become Miss Stricken's House of Pain, and there was no way for Nell to escape from that house without giving up, which her friends in the Primer had taught her she must never do. Nell's name went up on a board at the front of the classroom labeled, in heavy brass letters, SUPPLEMENTARY CURRICULUM STUDENTS. Within a few days, her name had been joined by two others: Fiona Hackworth and Elizabeth Finkle-McGraw. Nell's disarming of the fearsome Miss Stricken had already become the stuff of oral legend, and her two friends had been so inspired by the act of defiance that they had gone to elaborate lengths to get themselves in trouble too. Now, the three best students of Miss Matheson's Academy were all doomed to Supplementary Curriculum. Each Saturday, Nell, Fiona, and Elizabeth would arrive at the school at seven o'clock, enter the room, and sit down in the front row in adjacent desks. This was part of Miss Stricken's fiendish plan. A less subtle tormentor would have placed the girls as far apart as possible to prevent them from talking to each other, but Miss Stricken wanted them right next to each other so that they would be more tempted to visit and pass notes. There was no teacher in the room at any time. They assumed that they were being monitored, but they never really knew. When they entered, each one of them had a pile of books on her desk-old books bound in chafed leather. Their job was to copy the books out by hand and leave the pages neatly stacked on Miss Stricken's desk before they went home. Usually, the books were transcripts of debates from the House of Lords, from the nineteenth century. During their seventh Saturday in Supplementary Curriculum, Elizabeth Finkle-McGraw suddenly dropped her pen, slammed her book shut, and threw it against the wall. Nell and Fiona could not keep themselves from laughing. But Elizabeth did not convey the impression of being in a very lighthearted mood. The old book had scarcely come to rest on the floor before Elizabeth had run over to it and begun kicking at it. With each blow a furious grunt escaped from her gorge. The book absorbed this violence impassively, driving Elizabeth into a higher rage; she dropped to her knees, flung the cover open, and began to rip out pages by the fistful. Nell and Fiona looked at each other, suddenly serious. The kicking had been funny, but something about the tearing of pages disturbed them both. "Elizabeth! Stop it!" Nell said, but Elizabeth gave no signs of having heard her. Nell ran up to Elizabeth and hugged her from behind. Fiona scurried in a moment later and picked up the book. "God damn it!" Elizabeth bellowed, "I don't care about any of the goddamn books, and I don't care about the Primer either!" The door banged open. Miss Stricken stomped in, dislodged Nell with a simple body check, got both arms around Elizabeth's shoulders, and manhandled her out the door. A few days later, Elizabeth left on a lengthy vacation with her parents, jumping from one New Atlantis clave to another in the family's private airship, working their way across the Pacific and North America and finally to London

itself, where they settled in for several months. In the first few days, Nell received one letter from her, and Fiona received two. After that they received no response to their letters and eventually stopped trying. Elizabeth's name was removed from the Supplementary Curriculum plaque. Nell and Fiona soldiered on. Nell had reached the point where she could transcribe the old books all day long without actually absorbing a single word. During her first weeks in Supplementary Curriculum she had been frightened; in fact, she had been surprised at the level of her own fear and had come to realize that Authority, even when it refrained from violence, could be as disturbing a specter as anything she had seen in her earlier years. After the incident with Elizabeth, she became bored for many months, then furious for quite a while until she realized, in conversations with Duck and Purple, that her anger was eating her up inside. So with a conscious effort, she went back to being bored again. The reason she'd been furious was that copying out those books was such an unforgivably stupid waste of time. There was no end to what she could have learned reading the Primer for those eight hours. For that matter, the normal curriculum at Miss Matheson's Academy would have been perfectly fine as well. She was tormented by the irrationality of this place. One day, when she returned from a trip to the washroom, she was startled to notice that Fiona had hardly copied out a single page, though they had been there for hours. After this, Nell made it a practice to look at Fiona from time to time. She noticed that Fiona never stopped writing, but she was not paying attention to the old books. As she finished each page, she folded it up and placed it in her reticule. From time to time, she would stop and stare dreamily out the window for a few minutes, and then resume; or she might place both hands over her face and rock back and forth silently in her chair for a while before giving herself over to a long burst of ardent writing that might cover several pages in as many minutes. Miss Stricken cruised into the room late one afternoon, took the stack of completed pages from Nell's desk, flipped through them, and allowed her chin to decline by a few minutes of arc. This nearly imperceptible vestige of a nod was her way of saying that Nell was dismissed for the day. Nell had come to understand that one way for Miss Stricken to emphasize her power over the girls was for her to make her wishes known through the subtlest possible signs, so that her charges were forced to watch her anxiously at all times. Nell took her leave; but after proceeding a few steps down the corri dor, she turned and stole back to the door and peeked through the window into the classroom. Miss Stricken had gotten the folded-up pages out of Fiona's bag and was perusing them, strolling back and forth across the front of the room like the slow swing of a pendulum, a devastatingly ponderous motion. Fiona sat in her chair, her head bowed and her shoulders drawn together protectively. After reading the papers for an eternity or two, Miss Stricken dropped them on her desk and made some kind of brief statement, shaking her head in hopeless disbelief. Then she turned and walked out of the room. When Nell reached her, Fiona's shoulders were still shaking silently. Nell put her arms around Fiona, who finally began to draw in sobbing breaths. During the next few minutes she gradually moved on to that stage of crying where the body seems to swell

up and poach in its own fluids. Nell suppressed the urge to be impatient. She well knew, as did all of the other girls, that Fiona's father had disappeared several years ago and never come back. He was rumored to be on an honorable and official mission; but as years went by this belief was gradually supplanted by the suspicion that something disgraceful had taken place. It would be easy enough for Nell to make the point that she had been through much worse. But seeing the depth of Fiona's unhappiness, she had to consider the possibility that Fiona was in a worse situation now. When Fiona's mother came by in a little half-lane car to pick her up, and saw her daughter's red and ruinous face, an expression of black rage came over her own visage and she drove Fiona away without so much as a glance at Nell. Fiona showed up for church the next day as if nothing had happened and said nothing of it to Nell during the next week at school. In fact, Fiona hardly said a word to anyone, as she spent all of her time now daydreaming. When Nell and Fiona showed up at seven o'clock the next Saturday morning, they were astonished to find Miss Matheson waiting for them at the front of the classroom, sitting in her wood-and- wicker wheelchair, wrapped up in a thermogenic comforter. The stacks of books, paper, and fountain pens were not there, and their names had been removed from the plaque at the front of the room. "It's a lovely spring day," Miss Matheson said. "Let's gather some foxgloves." They went across the playing fields to the meadow where the wildflowers grew, the two girls walking and Miss Matheson's wheelchair carrying her along on its many-spoked smart wheels. "Chiselled Spam," Miss Matheson said, sort of mumbling it to herself. "Pardon me, Miss Matheson?" Nell said. "I was just watching the smart wheels and remembering an advertisement from my youth," Miss Matheson said. "I used to be a thrasher, you know. I used to ride skateboards through the streets. Now I'm still on wheels, but a different kind. Got a few too many bumps and bruises during my earlier career, I'm afraid." . . . "It's a wonderful thing to be clever, and you should never think otherwise, and you should never stop being that way. But what you learn, as you get older, is that there are a few billion other people in the world all trying to be clever at the same time, and whatever you do with your life will certainly be lost-swallowed up in the ocean-unless you are doing it along with like-minded people who will remember your contributions and carry them forward. That is why the world is divided into tribes. There are many Lesser phyles and three Great ones. "What are the Great ones?" "New Atlantis," Nell began. "Nippon," said Fiona. "Han," they concluded together. "That is correct," Miss Matheson said. "We traditionally include Han in the list because of its immense size and age-even though it has lately been crippled by intestine discord. And some would include Hindustan, while others would view it as a riotously diverse collection of microtribes sintered together according to some formula we don't get. "Now, there was a time when we believed that what a human mind could accomplish was determined by genetic factors. Piffle, of course, but it looked convincing for many years, because distinctions between tribes were so evident. Now we understand that it's all cultural. That, after all, is what a culture is-a group of people who share in common certain acquired traits. "Information

technology has freed cultures from the necessity of owning particular bits of land in order to propagate; now we can live anywhere. The Common Economic Protocol specifies how this is to be arranged. "Some cultures are prosperous; some are not. Some value rational discourse and the scientific method; some do not. Some encourage freedom of expression, and some discourage it. The only thing they have in common is that if they do not propagate, they will be swallowed up by others. All they have built up will be torn down; all they have accomplished will be forgotten; all they have learned and written will be scattered to the wind. In the old days it was easy to remember this because of the constant necessity of border defence. Nowadays, it is all too easily forgotten. "New Atlantis, like many tribes, propagates itself largely through education. That is the raison d'�e of this Academy. Here you develop your bodies through exercise and dance, and your minds by doing projects. And then you go to Miss Stricken's class. 'What is the point of Miss Stricken's class? Anyone? Please speak up. You can't get in trouble, no matter what you say." Nell said, after some dithering, "I'm not sure that it has any point." Fiona just watched her saying it and smiled sadly. Miss Matheson smiled. "You are not far off the mark. Miss Stricken's phase of the curriculum comes perilously close to being without any real substance. Why do we bother with it, then?" "I can't imagine," Nell said. "When I was a child, I took a karate class," Miss Matheson said, astonishingly. "Dropped out after a few weeks. Couldn't stand it. I thought that the sensei would teach me how to defend myself when I was out on my skateboard. But the first thing he did was have me sweep the floor. Then he told me that if I wanted to defend myself, I should buy a gun. I came back the next week and he had me sweep the floor again. All I ever did was sweep. Now, what was the point of that?" "To teach you humility and self-discipline," Nell said. She had learned this from Dojo long ago. "Precisely. Which are moral qualities. It is upon moral qualities that a society is ultimately founded. All the prosperity and technological sophistication in the world is of no use without that foundation-we learned this in the late twentieth century, when it became unfashionable to teach these things." "But how can you say it's moral?" said Fiona. "Miss Stricken isn't moral. She's so cruel." "Miss Stricken is not someone I would invite to dinner at my house. I would not hire her as a governess for my children. Her methods are not my methods. But people like her are indispensable. "It is the hardest thing in the world to make educated Westerners pull together," Miss Matheson went on. "That is the job of people like Miss Stricken. We must forgive them their imperfections. She is like an avatar-do you children know about avatars? She is the physical embodiment of a principle. That principle is that outside the comfortable and welldefended borders of our phyle is a hard world that will come and hurt us if we are not careful. It is not an easy job to have. We must all feel sorry for Miss Stricken." They brought sheaves of foxgloves, violet and magenta, back to the school and set them in vases in each classroom, leaving an especially large bouquet in Miss Stricken's office. Then they took tea with Miss Matheson, and then they each went home. Nell could not bring herself to agree with what Miss Matheson had said; but she found that, after this

conversation, everything became easy. She had the neo-Victorians all figured out now. The society had miraculously transmutated into an orderly system, like the simple computers they programmed in the school. Now that Nell knew all of the rules, she could make it do anything she wanted. "Joy" returned to its former position as a minor annoyance on the fringes of a wonderful schoolday. Miss Stricken got her with the ruler from time to time, but not nearly so often, even when she was, in fact, scratching or slumping. Fiona Hackworth had a harder time of it, and within a couple of months she was back on the Supplementary Curriculum list. A few months after that, she stopped coming to school entirely. It was announced that she and her mother had moved to Atlantis/Seattle, and her address was posted in the hall for those who wished to write her letters. But Nell heard rumors about Fiona from the other girls, who had picked up snatches from their parents. After Fiona had been gone for a year or so, word got out that Fiona's mother had obtained a divorce- which, in their tribe, only happened in cases of adultery or abuse. Nell wrote Fiona a long letter saying she was terribly sorry if her father had been abusive, and offering her support in that case. A few days later she got back a curt note in which Fiona defended her father from all charges. Nell wrote back a letter of apology but didn't hear from Fiona Hackworth again. It was about two years later that the news feeds filled up with astonishing tales of the young heiress Elizabeth Finkle-McGraw, who had vanished from her family's estate outside of London and was rumored to have been sighted in London, Los Angeles, Hong Kong, Miami, and many other places, in the presence of people suspected of being highranking members of CryptNet.

Hackworth awakes from a dream; retreat from the world of the Drummers; chronological discrepancies. Hackworth woke from a dream of unsustainable pleasure and realized it wasn't a dream; his penis was inside someone else, and he was steaming like a runaway locomotive toward ejaculation. He had no idea what was going on; but couldn't he be forgiven for doing the wrong thing? With a wiggle here and a thrust there, he finally nudged himself over the threshold, the smooth muscles of the tract in question executing their spinal algorithm. Just a few deep breaths into the refractory period, and he had already disengaged, yelping a little from the electric spark of withdrawal, and levered himself up on one arm to see whom he'd just violated. The firelight was enough to tell him what he already knew: Whoever this woman was, it wasn't Gwen. Hackworth had violated the most important promise he'd ever made, and he didn't even know the other party. But he knew it wasn't the first time. Far from it. He'd had sex with a lot of people in the past few years- he'd even been buggered. There was, for example, the woman- Never mind, there was the man who- Strange to say, he could not think of any specific examples. But he knew he was guilty. It was precisely like waking up from a dream and having a clear train of thought in your mind, something you were working on just a few seconds ago, but being unable to remember it, consciousness peeled away from cognition. Like a three-year-old who has a talent for vanishing into crowds

whenever you turn your back, Hackworth's memories had fled to the same place as words that are on the tip of your tongue, precedents for d vu, last night's dreams. He knew he was in big trouble with Gwen, but that Fiona still loved him- Fiona, taller than Gwen now, so self-conscious about her still linear figure, still devoid of the second derivatives that add spice to life. Taller than Gwen? How's that? Better get out of this place before he had sex with someone else he didn't know. He wasn't in the central chamber anymore, rather in one of the tunnel's aneurysms with some twenty other people, all just as naked as he was. He knew which tunnel led to the exit (why?) and began to crawl down it, rather stiffly as it seemed that he was stiff and laden with cricks and cramps. Must not have been very athletic sex- more in the Tantric mode. Sometimes they had sex for days. How did he know that? The hallucinations were gone, which was fine with him. He crawled through the tunnels for a long time. If he tried to think about where he was going, he got lost and eventually circled back to where he started. Only when his mind began to wander did he make his way on some kind of autopilot to a long chamber filled with silvery light, sloping upward. This was beginning to look familiar, he had seen this when he was still a young man. He followed it upward until he reached the end, where something unusually stony was under his feet. A hatch opened above him, and several tons of cold seawater landed on his head. He staggered up onto dry land and found himself in Stanley Park again, gray floor aft, green wall fore. The ferns rustled, and out stepped Kidnapper, who looked fuzzy and green. He also looked unusually dapper for a robotic horse, as Hackworth's bowler hat was perched on top of his head. Hackworth reached up to feel himself and was astounded to feel his face covered with hair. Several months' growth of beard was there. But even stranger, his chest was much hairier than it had been before. Some of the chest hair was gray, the only gray hairs he had ever seen coming out of his own follicles. Kidnapper was fuzzy and green because moss had been growing on him. The bowler looked terrible and had moss on it too. Hackworth reached out instinctively and put it on his head. His arm was thicker and hairier than it used to be, a not altogether unpleasing change, and even the hat felt a little tight.

From the Primer, Princess Nell crosses the trail of the enigmatic Mouse Army; a visit to an invalid. The clearing dimly visible through the trees ahead was a welcome sight, for the forests of King Coyote were surpassingly deep and forever shrouded in cool mists. Fingers of sunlight had begun to thrust between the clouds, and so Princess Nell decided to rest in the open space and, with any luck, bask in the sunlight. But when she reached the clearing, she found that it was not the flowerstrewn greensward she had expected; it was rather a swath that had been carved through the forest by the passage of some titanic force, which had flattened trees and churned up the soil as it progressed. When Princess Nell had recovered from her astonishment and mastered her fear, she resolved to make use of the tracking skills she had learned during her many adventures, so as to learn something about the nature of this unknown creature. As she soon discovered, the

skills of an advanced tracker were not necessary in this case. The merest glance at the trampled soil revealed not (as she had anticipated) a few enormous footprints, but millions of tiny ones, superimposed upon one another in such numbers that no scrap of ground was unmarked by the impressions of tiny claws and footpads. A torrent of cats had passed this way; even had Princess Nell not recognized the footprints, the balls of loose hair and tiny scats, strewn everywhere, would have told the story. Cats moving in a herd! It was most unfeline behavior. Nell followed their track for some time, hoping to divine the cause of this prodigy. After a few miles the road widened into an abandoned camp freckled with the remains of innumerable small campfires. Nell combed this area for more clues, not without success: she found many mouse droppings here, and mouse footprints around the fires. The pattern of footprints made it clear that the cats had been concentrated in a few small areas, while the mice had apparently had the run of the place. The final piece of the puzzle was a tiny scrap of twisted rawhide that Nell found abandoned near one of the little campfires. Turning it around in her fingers, Nell realized that it was much like a horse's bridle- except sized to fit around the head of a cat. She was standing on the trail of a vast army of mice, who rode on the backs of cats in the way that knights ride on horses. She had heard tales of the Mouse Army in other parts of the Land Beyond and dismissed them as ancient superstitions. But once, several years ago, in an inn high in the mountains, where Princess Nell had stayed for the night, she had been awakened early in the morning by the sound of a mouse rooting through her pack. . Princess Nell uttered a light-making spell that Purple had taught her, kindling a ball of luminance that hung in the air in the center of the room. The words of the spell had been concealed in the howl of the mountain winds through the rickety structure of the old inn, and so the mouse was caught entirely by surprise, blinded by the sudden light. Nell was startled to see that the mouse was not gnawing its way into her supply of food, as any mouse should have done, but rather was going through some of her papers. And this was not the usual destructive search for nesting material-this mouse knew how to read and was looking for information. Princess Nell trapped the mouse spy under her hands. "What are you looking for? Tell me, and I shall let you escape!" she said. Her adventures had taught her to be on the lookout for tricks of all kinds, and it was important that she learn who had dispatched this tiny, but effective, spy. "I am but a harmless mouse!" the spy squealed. "I do not even desire your food- information only!" "I will give you a big piece of cheese, all to yourself, if you give me some information," Princess Nell said. She caught the mouse's tail and lifted him up into the air so that they could talk face-to-face. Meanwhile, with her other hand, she loosened the drawstring of her bag and drew out a nice piece of blue-veined Stilton. "We are seeking our lost Queen," the mouse said. "I can assure you that none of my papers have any information about a missing mouse monarch," Princess Nell said. "What is your name?" the mouse said. "That is none of your business, spy!" Princess Nell said. "I will ask the questions." "But it is very important that I know your name," the mouse said. "Why? I am not a mouse. I have not seen any little mice with crowns on their heads." The mouse spy said

nothing. He was staring carefully at Princess Nell with his little beady eyes. "Did you, by any chance, come from an enchanted island?" "You have been listening to too many fairy tales," Princess Nell said, barely concealing her astonishment. "You have been most uncooperative and so do not deserve any cheese- but I admire your pluck and so will give you some anyway. Enjoy yourself!" She set the mouse down on the floor and took out her knife to cut off a bit of the cheese; but by the time she was finished, the mouse had disappeared. She just caught sight of his pink tail disappearing under the door. The next morning, she found him dead on the hallway floor. The innkeeper's cat had caught him. . So the Mouse Army did exist! Princess Nell wondered whether they had ever located their lost Queen. She followed their trail for another day or two, as it went in approximately the right direction and was almost as convenient as a road. She passed through a few more campsites. At one of them, she even found a little gravesite, marked with a tiny headstone carved from a chip of soapstone. The carvings on this tiny monument were much too small to see. But Princess Nell carried with her a magnifying glass that she had pilfered from the treasury of one of the Faery Kings, and so now she removed it from its padded box and its velvet bag and used it to examine the inscription. At the top of the stone was a little bas-relief of a mouse knight, dressed in armor, with a sword in one hand, bowing before an empty throne. The inscription read, Here lies Clover, tail and all Her virtues far outweighed her flaws She from the saddle took a fall And perished 'neath her charger's paws. We know not if her final ride Hath led her into Heaven or Hell Wherever she doth now abide She's loyal yet to Princess Nell. Princess Nell examined the remains of the fires, and the surfaces of the wood that the Mouse Army had cut, and the state of their droppings, and estimated that they had passed by here many weeks previously. One day she would rendezvous with them and find out why they had formed such an attachment to her; but for now, she had more pressing considerations. . . . She'd have to see about the Mouse Army later. Today was Saturday, and on Saturday morning she always went down to the Leased Territories to visit her brother. She opened up the wardrobe in the corner of her sleeping room and took out her traveling dress. Sensing her intentions, the chaperone flew out of its niche in the back and whined over to the door. Even at her still-tender age, just a few years past the threshold of womanhood, Nell had already had cause to be grateful for the presence of the droning chaperone pod that followed her everywhere when she ventured from home alone. Maturity had given her any number of features that would draw the attention of the opposite sex, and of women so inclined. Commentators rarely failed to mention her eyes, which were said to have a vaguely exotic appearance. There was nothing particularly unusual about their shape or size, and their color-a tweedy blend of green and light brown flecked with gold-did not make them stand out in a predominantly Anglo-Saxon culture. But Nell's eyes had an appearance of feral alertness that seized the attention of anyone who met her. Neo-Victorian society produced many young women who, though highly educated and well-read, were still blank slates at Nell's age. But Nell's eyes told a different story. When she had been presented to society a few

months ago, along with several other External Propagation girls at Miss Matheson's Academy, she had not been the prettiest girl at the dance, and certainly not the best dressed or most socially prominent. She had attracted a crowd of young men anyway. They did not do anything so obvious as mill around her; instead they tried to keep the distance between themselves and Nell below a certain maximum, so that wherever she went in the ballroom, the local density of young men in her area became unusually high. In particular she had excited the interest of a boy who was the nephew of an Equity Lord in Atlantis/Toronto. He had written her several ardent letters. She had responded saying that she did not wish to continue the relationship, and he had, perhaps with the help of a hidden monitor, encountered her and her chaperone pod one morning as she had been riding to Miss Matheson's Academy. She had reminded him of the recent termination of their relationship by declining to recognize him, but he had persisted anyway, and by the time she had reached the gates of the Academy, the chaperone pod had gathered enough evidence to support a formal sexual harassment accusation should Nell have wished to bring one. Of course she did not, because this would have created a cloud of opprobrium that would have blighted the young man's career. Instead, she excerpted one five-second piece of the cine record from the chaperone pod: the one in which, approached by the young man, Nell said, "I'm sorry, but I'm afraid you have me at a disadvantage," and the young man, failing to appreciate the ramifications, pressed on as if he had not heard. Nell placed this information into a smart visiting card and arranged to have it dropped by the young man's family home. A formal apology was not long in coming, and she did not hear again from the young man. Now that she had been introduced to society, her preparations for a visit to the Leased Territories were just as elaborate as for any New Atlantis lady. Outside of New Atlantis, she and her chevaline were surrounded everywhere by a shell of hovering security pods serving as a first line of personal defense. A modern lady's chevaline was designed with a sort of Y-shaped body that made it unnecessary to ride sidesaddle, so Nell was able to wear a fairly normal-looking sort of dress: a bodice that took advantage of her fashionably narrow waist, so carefully honed on the Academy's exercise machines that it might have been turned on a lathe from walnut. Beyond that, her skirts, sleeves, collar, and hat saw to it that none of the young ruffians of the Leased Territories would have the opportunity to invade her body space with their eyes, and lest her distinctive face prove too much of a temptation, she wore a veil too. The veil was a field of microscopic, umbrellalike aerostats programmed to fly in a sheet formation a few inches in front of Nell's face. The umbrellas were all pointed away from her. Normally they were furled, which made them nearly invisible; they looked like the merest shadow before her face, though viewed sideways they created a subtle wall of shimmer in the air. At a command from Nell they would open to some degree. When fully open, they nearly touched each other. The outside-facing surfaces were reflective, the inner ones matte black, so Nell could see out as if she were looking through a piece of smoked glass. But others saw only the shimmering veil. The umbrellas could be programmed to dangle in different ways-

always maintaining the same collective shape, like a fencing mask, or rippling like a sheet of fine silk, depending on the current mode. The veil offered Nell protection from unwanted scrutiny. Many New Atlantis career women also used the veil as a way of meeting the world on their own terms, ensuring that they were judged on their own merits and not on their appearance. It served a protective function as well, bouncing back the harmful rays of the sun and intercepting many deleterious nanosites that might otherwise slip unhindered into the nose and mouth. The latter function was of particular concern to Constable Moore on this morning. "It's been nasty of late," he said. "The fighting has been very bad." Nell had already inferred this from certain peculiarities of the Constable's behavior: he had been staying up late at night recently, managing some complicated enterprise spread out across his mediatronic floor, and she suspected that it was something along the lines of a battle or even a war. As she rode her chevaline across Dovetail, she came to a height-of-land that afforded a fine view across the Leased Territories, Pudong, and Shanghai on a clear day. But the humidity had congealed into drifts of clouds forming a seamless layer about a thousand feet below their level, so that this high territory at the top of New Chusan seemed to be an island, the only land in all the world except for the snowcapped cone of the Nippon Clave a few miles up the coast. She departed through the main gate and rode down the hill. She kept approaching the cloud layer but never quite reached it; the lower she went, the softer the light became, and after a few minutes she could no longer see the rambling settlements of Dovetail when she turned around, nor the spires of St. Mark's and Source Victoria above it. After another few minutes' descent the fog became so thick that she could not see more than a few meters, and she smelled the elemental reek of the ocean. She passed the former site of the Sendero Clave. The Senderos had been bloodily uprooted when Protocol Enforcement figured out that they were working in concert with the New Taiping Rebels, a fanatical cult opposed to both the Fists and the Coastal Republic. This patch of real estate had since passed into the hands of the Dong, an ethnic minority tribe from southwestern China, driven out of their homeland by the civil war. They had torn down the high wall and thrown up one of their distinctive many-layered pagodas. Other than that, the L.T. didn't look all that different. The operators of the big wall-size mediatrons that had so terrified Nell on her first night in the Leased Territories had turned the brightness all the way up, trying to compensate for the fog. Down by the waterfront, not far from the Aerodrome, the compilers of New Chusan had, as a charitable gesture, made some space available to the Vatican. In the early years it had contained nothing more than a twostory mission for thetes who had followed their lifestyle to its logical conclusion and found themselves homeless, addicted, hounded by debtors, or on the run from the law or abusive members of their own families. More recently those had become secondary functions, and the Vatican had programmed the building's foundation to extrude many more stories. The Vatican had a number of serious ethical concerns about nanotech but had eventually decided that it was okay as long as it didn't mess about with DNA or create direct interfaces with the human brain. Using

nanotech to extrude buildings was fine, and that was fortunate, because Vatican/Shanghai needed to add a couple of floors to the Free Phthisis Sanatorium every year. Now it loomed high above any of the other waterfront buildings. As with any other extruded building, the design was drab in the extreme, each floor exactly alike. The walls were of an unexceptional beige material that had been used to construct many of the buildings in the L.T., which was unfortunate, because it had an almost magnetic attraction for the cineritious corpses of airborne mites. Like all the other buildings so constituted, the Free Phthisis Sanatorium had, over the years, turned black, and not evenly but in vertical rain-streaks. It was a clich&#65533;o joke that the outside of the Sanatorium looked much like the inside of its tenants' lungs. The Fists of Righteous Harmony had, however, done their best to pretty it up by slapping red posters over it in the dead of night. Harv was lying on the top of a three-layer bunkbed on the twentieth floor, sharing a small room and a supply of purified air with a dozen other chronic asthma sufferers. His face was goggled into a phantascope, and his lips were wrapped around a thick tube plugged into a nebulizer socket on the wall. Vaporized drugs, straight from the matter compiler, were flowing down that tube and into his lungs, working to keep his bronchi from spasming shut. Nell stopped for a moment before breaking him out of his ractive. Some weeks he looked better than others; this week he did not look good. His body was bloated, his face round and heavy, his fingers swollen to puffy cylinders; they had been giving him heavy steroid treatments. But she would have known he'd had a bad week anyway, because usually Harv didn't go in for immersive ractives. He liked the kind you held in your lap on a sheet of smart paper. Nell tried to send Harv a letter every day, simply written in mediaglyphics, and for a while he had tried to respond in kind. Last year he had even given up on this, though she wrote him faithfully anyway. "Nell!" he said when he had peeled the goggles away from his eyes. "Sorry, I was chasing some rich Vickys." "You were?" "Yeah. Or Burly Scudd was, I mean. In the ractive. See, Burly's bitch gets pregnant, and she's got to buy herself a Freedom Machine to get rid of it, so she gets a job as a maid-of-all-work for some snotty Vickys and rips off some of their nice old stuff, figuring that's a faster way to get the money. So the bitch is running away and they're chasing her on their chevs, and then Burly Scudd shows up in his big truck and turns the tables and starts chasing them. If you do it right, you can get the Vickys to fall into a big pit of manure! It's great! You should try it," Harv said, then, exhausted by this effort, grabbed his oxygen tube and pulled on it for a while. "It sounds entertaining," Nell said. Harv, temporarily gagged by the oxygen tube, watched her face carefully and was not convinced. "Sorry," he blurted between breaths, "forgot you don't care for my kind of ractive. Don't they have Burly Scudd in that Primer of yours?" Nell made herself smile at the joke, which Harv had been making every week. She handed him the basket of cookies and fresh fruit that she had brought down from Dovetail and sat with him for an hour, talking about the things he enjoyed talking about, until she could see his attention wandering back toward the goggles. Then she said good-bye until next week and kissed him good-bye. She turned

her veil to its highest level of opacity and made her way toward the door. Harv impulsively grabbed his oxygen tube and sucked on it mightily a few times, then called her name just as she was about to leave. "Yes?" she said, turning toward him. "Nell, I want to tell you how fine you look," he said, "just like the finest Vicky lady in all of Atlantis. I can't believe you're my same Nell that I used to bring things to in the old flat- remember those days? I know that you and I have gone different ways, ever since that morning in Dovetail, and I know it's got a iot to do with that Primer. I just want to tell you, sister, that even though I say bad stuff about Vickys sometimes, I'm as proud of you as I could be, and I hope when you read that Primer-so full of stuff I could never understand or even read-you'll think back on your brother Harv, who saw it lying in the gutter years ago and took it into -his mind to bring it to his kid sister. Will you remember that, Nell?" With that he plugged the oxygen tube back into his mouth, and his ribs began to heave. "Of course I will, Harv," Nell said, her eyes filling with tears, and blundered her way back across the room until she could sweep Harv's bloated body up in her strong arms. The veil swirled like a sheet of water thrown into Harv's face, all the little umbrellas drawing themselves out of the way as she brought his face up to hers and planted a kiss on his cheek. The veil congealed again as he sank back down onto the foam mattress- just like the mattresses he had taught her to get from the M.C., long ago- and she turned and ran out of the room sobbing.

Hackworth is brought up-to-date by the great Napier. "Have you had the opportunity to speak with your family?" Colonel Napier said, speaking out of a mediatronic sabletop from his office in Atlantis/Shanghai. Hackworth was sitting in a pub in Atlantis/Vancouver. Napier looked good now that he was deeper into middle age- somewhat more imposing. He'd been working on his bearing. Hackworth had been temporarily impressed when Napier's image had first materialized on the mediatron, then he remembered his own image in the mirror. Once he'd gotten himself cleaned up and trimmed his beard, which he'd decided to keep, he realized that he had a new bearing of his own. Even if he was desperately confused about how he got it. "Thought I'd find out what the hell happened first. Besides-" He stopped talking for a while. He was having trouble getting his conversational rhythm back. "Yes?" Napier said in a labored display of patience. "I just spoke to Fiona this morning." "After you left the tunnels?" "No. Before. Before I-woke up, or whatever." Napier was slightly taken aback and only popped his jaw muscles a couple of times, reached for his tea, looked irrelevantly out the window at whatever view he had out his office window in New Chusan. Hackworth, on the other side of the Pacific, contented himself with staring into the inky depths of a pint of stout. A dream-image surfaced in Hackworth's mind, like a piece of debris rising to the surface after a shipwreck, inexorably muscling tons of green murk out of its path. He saw a glistening blue projectile shoot into the Doctor's beige-gloved hands, trailing a thick cord, watched it unfold, nay bloom into a baby. "Why did I think of that?" he said. Napier seemed puzzled by this remark. "Fiona and Gwendolyn are in Atlantis/Seattle now-half an hour from your present location by tube," he said. "Of course! They live- we live- in Seattle now. I knew that." He was remembering Fiona hiking around in the caldera of some snow-covered volcano. "If you are under the impression that you've been in contact with her recently-which is quite out of the question, I'm afraid- then it must have been mediated through the Primer. We were not able to break the encryption on the signals passing out of the Drummers' cave, but traffic analysis suggests that you've spent a lot of time racting in the last ten years." "Ten years!?" "Yes. But surely you must have suspected that, from evidence." "It feels like ten years. I sense that ten years of things have happened to me. But the engineer hemisphere has a bit of trouble coming to grips." "We are at a loss to understand why Dr. X would choose to have you serve out your sentence among the Drummers," Napier said. "It would seem to us that your engineer hemisphere, as you put it, is your most desirable feature as far as he is concerned-you know that the Celestials are still terribly short of engineers." "I've been working on something," Hackworth said. Images of a nanotechnological system, something admirably compact and elegant, were flashing over his mind's eye. It seemed to be very nice work, the kind of thing he could produce only when he was concentrating very hard for a long time. As, for example, a prisoner might do. "What sort of thing exactly?" Napier asked, suddenly sounding rather tense. "Can't get a grip on it," Hackworth finally said, shaking his head helplessly. The

detailed images of atoms and bonds had been replaced, in his mind's eye, by a fat brown seed hanging in space, like something in a Magritte painting. A lush bifurcated curve on one end, like buttocks, converging to a nipplelike point on the other. "What the hell happened?" "Before you left Shanghai, Dr. X hooked you up to a matter compiler, no?" "Yes." "Did he tell you what he was putting into your system?" "I guessed it was h□cules of some description." "We took blood samples before you left Shanghai." "You did?" "We have ways," Colonel Napier said. "We also did a full workup on one of your friends from the cave and found several million nanosites in her brain." "Several million?" "Very small ones," Napier said reassuringly. "They are introduced through the blood, of course-the h□cules circulate through the bloodstream until they find themselves passing through capillaries in the brain, at which point they cut through the blood/brain barrier and fasten themselves to a nearby axon. They can monitor activity in the axon or trigger it. These 'sites all talk to each other with visible light." "So when I was on my own, my 'sites just talked to themselves," Hackworth said, "but when I came into close proximity with other people who had these things in their brains-" "It didn't matter which brain a 'site was in. They all talked to one another indiscriminately, forming a network. Get some Drummers together in a dark room, and they become a gestalt society." "But the interface between these nanosites and the brain itself-" "Yes, I admit that a few million of these things piggybacking on randomly chosen neurons is only a feeble interface to something as complicated as the human brain," Napier said. "We're not claiming that you shared one brain with these people." "So what did I share with them exactly?" Hackworth said. "Food. Air. Companionship. Body fluids. Perhaps emotions or general emotional states. Probably more." "That's all I did for ten years?" "You did a iot of things," Napier said, "but you did them in a sort of unconscious, dreamlike state. You were sleepwalking. When we figured that out-after doing the biopsy on your fellow-troglodyte- we realised that in some sense you were no longer acting of your own free will, and we engineered a hunter-killer that would seek out and destroy the nanosites in your brain. We introduced it, in a dormant mode, into this female Drummer's system, then reintroduced her to your colony. When you had sex with her-well, you can work out the rest for yourself." "You have given me information, Colonel Napier, and I am grateful, but it has only made me more confused. What do you suppose the Celestial Kingdom wanted with me?" "Did Dr. X ask anything of you?" "To seek the Alchemist." Colonel Napier looked startled. "He asked that of you ten years ago?" "Yes. In as many words." "That is very singular," Napier said, after a prolonged interlude of mustache-twiddling. "We have only been aware of this shadowy figure for some five years and know virtually nothing about him- other than that he is a wizardly artifex who is conspiring with Dr. X." "Is there any other information-" "Nothing that I can reveal," Napier said brusquely, perhaps having revealed too much already. "Do let us know if you find him, though. Er, Hackworth, there is no tactful way to broach this subject. Are you aware that your wife has divorced you?" "Oh, yes," Hackworth said

quietly. "I suppose I did know that." But he hadn't been conscious of it until now. "She was remarkably understanding about your long absence," Napier said, "but at some point it became evident that, like all the Drummers, you had become sexually promiscuous in the extreme." "How did she know?" "We warned her." "Pardon me?" "I mentioned earlier that we found things in your blood. These h□cules were designed specifically to be spread through exchange of bodily fluids." "How do you know that?" Napier seemed impatient for the first time. "For god's sake, man, we know what we are doing. These particles had two functions: spread through exchange of bodily fluids, and interact with each other. Once we saw that, we had no ethical choice but to inform your wife." "Of course. That's only right. As a matter of fact, I thank you for it," Hackworth said. "And it's not hard to understand Gwen's feelings about sharing bodily fluids with thousands of Drummers." "You shouldn't beat yourself up," Napier said. "We've sent explorers down there." "Really?" "Yes. The Drummers don't mind. The explorers relate that the Drummers behave much the way people do in dreams. 'Poorly defined ego boundaries' was the phrase, as I recall. In any event, your behaviour down there wasn't necessarily a moral transgression as such-your mind wasn't your own." "You said that these particles interact with each other?" "Each one is a container for some rod logic and some memory," Napier said. "When one particle encounters another either in vivo or in vitro, they dock and seem to exchange data for a few moments. Most of the time they disengage and drift apart. Sometimes they stay docked for a while, and computation takes place-we can tell because the rod logic throws off heat. Then they disconnect. Sometimes both particles go their separate ways, sometimes one of them goes dead. But one of them always keeps going." The implications of that last sentence were not lost on Hackworth. "Do the Drummers only have sex with one another, or-" "That was our first question too," Napier said. "The answer is no. They have a very good deal of sex with many, many other people. They actually run bordellos in Vancouver. They cater especially to the Aerodrome-and-tube-station crowd. A few years ago they came into conflict with the established bordellos because they were hardly charging any money at all for their services. They raised their prices just to be diplomatic. But they don't want the money- what on earth would they do with it?" From the Primer, a visit to Castle Turing; a final chat with Miss Matheson; speculation as to Nell's destiny; farewell; conversation with a grizzled hoplite; Nell goes forth to seek her fortune. The new territory into which Princess Nell had crossed was by far the largest and most complex of all the Faery Kingdoms in the Primer. Paging back to the first panoramic illustration, she counted seven major castles perched on the mountaintops, and she knew perfectly well that she would have to visit all of them, and do something difficult in each one, in order to retrieve the eleven keys that had been stolen from her and the one key that remained. She made herself some tea and sandwiches and carried them in a basket to a meadow, where she liked to sit among the wildflowers and read. Constable Moore's house was a melancholy place without the Constable in it, and it had been several weeks since she had seen him. During the last two years he had been called away on

business with increasing 3 frequency, vanishing (as she supposed) into the interior of China for days, then weeks at a time, coming back depressed and exhausted to find solace in whiskey, which he consumed in surprisingly moderate quantities but with fierce concentration, and in midnight bagpipe recitals that woke up everyone in Dovetail and a few sensitive sleepers in the New Atlantis Clave. During her trip from the campsite of the Mouse Army to the first of the castles, Nell had to use all the wilderness skills she had learned in years of traveling around the Land Beyond: She fought with a mountain lion, avoided a bear, forded streams, lit fires, built shelters. By the time Nell had maneuvered Princess Nell to the ancient moss-covered gates of the first castle, the sun was shining horizontally across the meadow and the air was becoming a bit chilly. Nell wrapped herself up in a thermogenic shawl and set the thermostat for something a little on the cool side of comfortable; she had found that her wits became dull if she got too cozy. The basket had a thermos of hot tea with milk, and the sandwiches would hold out for a while. The highest of the castle's many towers was surmounted by a great four-sailed windmill that turned steadily, even though only a mild breeze could be noticed at Princess Nell's altitude, hundreds of feet below. Set into the main gate was a judas gate, and set into the judas was a small hatch. Below the hatch was a great bronze knocker made in the shape of a letter T, though its shape had become indistinct from an encrustation of moss and lichens. Princess Nell operated the knocker only with some effort and, given its decrepit state, did not expect a response; but hardly had the first knock sounded than the hatch opened up, and she was confronted by a helmet: For the gatekeeper on the other side was dressed from head to toe in a rusty and moss-covered suit of battle armor. But the gatekeeper said nothing, simply stared at Princess Nell; or so she assumed, as she could not see his face through the helmet's narrow vision-slits. "Good afternoon," said Princess Nell. "I beg your pardon, but I am a traveler in these parts, and I wonder if you would be so good as to give me a place to stay for the night." Without a word, the gatekeeper slammed the hatch closed. Nell could hear the creaking and clanking of his armor as he slowly marched away. Some minutes later, she heard him coming toward her again, though this time the noise was redoubled. The rusty locks on the judas gate grumbled and shrieked. The gate door swung open, and Princess Nell stepped back from it as rust flakes, fragments of lichens, and divots of moss showered down around her. Two men in armor now stood there, beckoning her forward. Nell stepped through the gate and into the dark streets of the castle. The gate slammed behind her. An iron vise clamped around each of Princess Nell's upper arms; the men had seized her with their gauntlets. They lifted her into the air and carried her for some minutes through the streets, stairs, and corridors of the castle. These were completely deserted. She did not see so much as a mouse or a rat. No smoke rose from the chimneys, no light came from any window, and in the long hallway leading to the throne room, the torches hung cold and blackened in their sconces. From place to place Princess Nell saw another armored soldier standing at attention, but, as none of them moved, she did not know whether these were empty suits of armor or real men.

Nowhere did she see the usual signs of commerce and human activity: horse manure, orange peels, barking dogs, running sewers. Somewhat to her alarm, she did see an inordinate number of chains. The chains were all of the same, somewhat peculiar design, and she saw them everywhere: piled up in heaps on streetcorners, overflowing from metal baskets, dangling from rooftops, strung between towers. The clanking and squeaking of the men who bore her along made it difficult for her to hear anything else; but as they proceeded higher and deeper into the castle, she slowly became conscious of a deep grinding, growling noise that pervaded the very ashlars. This noise crescendoed as they hustled down the long final hallway, and became nearly earth-shaking as they finally entered the vaulted throne room at the very heart of the castle. The room was dark and cold, though some light was admitted by clerestory windows high up in the vaults. The walls were lined with men in armor, standing stock-still. Sitting in the middle of the room, on a throne twice as high as a man, was a giant, dressed in a suit of armor that gleamed like a looking-glass. Standing below him was a man in armor holding a rag and a wire brush, vigorously buffing one of the lord's greaves. "Welcome to Castle Turing," said the lord in a metallic voice. By this time, Princess Nell's eyes had adjusted to the dimness, and she could see something else behind the throne: a tremendous Shaft, as thick as the mainmast of a dromond, made of the trunk of a great tree bound and reinforced with brass plates and bands. The Shaft turned steadily, and Princess Nell realized that it must be transmitting the power of the giant windmill far above them. Enormous gears, black and sticky with grease, were attached to the Shaft and transferred its power to other, smaller shafts that ran off horizontally in every direction and disappeared through holes in the walls. The turning and grinding of all these shafts and gears made the omnipresent noise she had noted earlier. One horizontal shaft ran along each wall of the throne room at about the height of a man's chest. This shaft passed through a gearbox at short, regular intervals. A stubby, square shaft projected from each gearbox at a right angle, sticking straight out of the wall. These gearboxes tended to coincide with the locations of the soldiers. The soldier who was polishing the lord's armor worked his way around to one of the lord's spiked knee protectors and, in so doing, turned his back on Princess Nell. She was startled to see a large square hole in the middle of his back. Nell knew, vaguely, that the name Castle Turing was a hint; she'd learned a bit about Turing at Miss Matheson's Academy. He had something to do with computers. She could have turned to the Encyclop□a pages and looked it right up, but she had learned to let the Primer tell the story its own way. Clearly the soldiers were not men in armor, but simply wind-up men, and the same was probably true of the Duke of Turing himself. After a short and not very interesting conversation, during which Princess Nell tried unsuccessfully to establish whether the Duke was or was not human, he announced, unemotionally, that he was throwing her into the dungeon forever. This sort of thing no longer surprised or upset Nell because it had happened hundreds of times during her relationship with the Primer. Besides, she had known, from the very first day Harv had given her the book, how the story would come

out in the end. It was just that the story was anfractuous; it developed more ramifications the more closely she read it. One of the soldiers detached himself from his gearbox on the wall, stomped into the corner, and picked up a metal basket filled with one of those peculiar chains Princess Nell had seen everywhere. He carried it to the throne, fished through it until he found the end, and fed the end into a hole on the side of the throne. In the meantime, a second soldier had also detached himself from the wall and taken up a position on the opposite side of the throne. This soldier flipped his visor open to expose some sort of mechanical device in the space where his head ought to have been. A tremendous chattering noise arose from inside the throne. The second soldier caught the end of the chain as it was emerging from his side and fed it into the opening in his visor. A moment later it popped out of a hatch on his chest. In this fashion, the entire length of the chain, some twenty or thirty feet in all, was slowly and noisily drawn out of the basket, into the noisy mechanism hidden beneath the throne, down the second soldier's throat, out the hatch in his chest, and down to the floor, where it gradually accumulated into a greasy heap. The process went on for much longer than Princess Nell first anticipated, because the chain frequently changed direction; more than once, when the basket was nearly empty, the chain began to spew back into it until it was nearly full again. But on the whole it was more apt to go forward than backward, and eventually the last link lifted free from the basket and disappeared into the throne. A few seconds later, the din from the throne stopped; now Nell could only hear a somewhat lesser chattering from the second soldier. Finally that stopped as well, and the chain fell from his chest. The soldier scooped it up in his arms and deposited it in an empty basket that was sitting handily nearby. Then he strode toward Nell, bent forward at the waist, put his hard cold shoulder rather uncomfortably into the pit of her stomach, and picked her up off the floor like a sack of corn. He carried her for some minutes through the castle, most of that time spent descending endless stone staircases, and finally brought her to a very deep, dark, and cold dungeon, where he deposited her in a small and perfectly dark cell. Nell said, "Princess Nell used one of the magic spells Purple had taught her to make light." Princess Nell could see that the room was about two by three paces, with a stone bench on one wall to serve as a bed, and a hole in the floor for a toilet. A tiny barred window in the back wall led to an air shaft. Evidently this was quite deep and narrow, and Nell was close to the very bottom, because no light came through it. The soldier walked out of the cell and pulled the door shut behind him; as he did, she saw that the lock was extraordinarily large, about the size of an iron breadbox mounted to the door, full of clockwork and with a large crank dangling from its center. The door was equipped with a small peephole. Peering out through it, Nell could see that the soldier did not have a key as such. Instead, he took a short length of chain, about as long as his arm, from a peg near the door and fed it into the giant lock. Then he began to turn the crank. The clockwork clicked, the chain clanked, and eventually the bolt shot out and engaged the jamb, locking Princess Nell into the dungeon. Immediately the chain crashed out of the lock and landed on the floor. The

soldier picked it up and hung it back on the wall. Then he clanked away and did not come back until several hours later, when he brought her some bread and water, shoving it through a little hatch in the middle of the door, just above the mechanical lock. It did not take Princess Nell long to explore the limited confines of her cell. In one corner, buried under dust and debris, she found something hard and cold and pulled it out for a better look: It was a fragment of chain, quite rusty, but clearly recognizable as the same sort of chain that she saw all over Castle Turing. The chain was flat. Each link had a toggle: a movable bit of metal in the center, capable of rotating about and snapping into place in either of two positions, either parallel or perpendicular to the chain. During her first night in the cell, Nell discovered two other things. First, the latch on the little door through which her food was delivered was partly accessible from her side, and with a little effort she was able to jam it so that it no longer locked properly. After that, she was able to stick her head out of the hatch and examine her surroundings, including the mechanical lock. Or she could reach out with one arm and feel the lock, spin the crank, and so on. The second discovery came in the middle of the night, when she was awakened by a metallic clanking sound coming through the tiny window on the air shaft. Reaching out with one hand, she felt the end of a chain dangling there. She pulled on it, and after initial resistance, it came freely. In short order she was able to pull many yards of chain into her cell and pile it up on the floor. Nell had a pretty good idea what to do with the chain. Starting with the end, she examined the toggles and began to mark their positions down (the Primer always gave her scratch pages when she needed them). She made a horizontal mark for toggles parallel to the chain and a vertical mark for those that were perpendicular, and came up with this: |||||||- ||||- ||||||||||- ||||||||||- ||||||||||||- - |||||||- - |- ||||||||||||- - - ||||- ||||||||||||||||- ||||||||||-||||- - - - - ||||||||||||||||- ||||||||||||||||- ||||||||||||||- |||||||- ||||||||||- ||||||- If she counted the vertical marks and replaced them with numbers, this amounted to 8-5-12-12-15- -9- -1-13- - -4-21-11-5- - - - -20-21-18-9-14-7- and if the numbers stood for letters of the alphabet, horizontal marks divided the letters, and double horizontals were spaces, this was HELLO I AM- - -DUKE- - - - -TURING Perhaps the multiple horizontals were codes for commonly used words: - - - the - - - - (not used; possibly alan?) - - - - - of If that was right, then the message was HELLO I AM THE DUKE OF TURING, which was interesting, since the giant fellow in the armor had previously identified himself as such, and she deemed it unlikely that he would be sending her a message by this route. This must have come from someone else calling himself the Duke of Turing- perhaps a real, living human being. A few years ago Nell could have relied on it. But in recent years the Primer had become much subtler than it used to be, full of hidden traps, and she could no longer make comfortable and easy assumptions. It was just as likely that this chain had descended straight from the throne room itself, and that the mechanical Duke was, for some unfathomable reason, trying to dupe her. So while she was happy to respond to this message in kind, she intended to take a guarded approach until she had established whether the sender was human or mechanical. The next part of the message was GIVE- - -CHAIN- - - -TUG-- - - - -ANSWER. Assuming

that four horizontal marks stood for alan and six stood for to, this was GIVE THE CHAIN A TUG TO ANSWER. Nell began to flip the toggles on the chain, erasing the message from this personage calling himself the Duke and replacing it with I AM PRINCESS NELL WHY DID YOU IMPRISON ME. Then she gave the chain a tug, and after a moment it began to withdraw from her cell. A few minutes later, back came the message: WELCOME PRINCESS NELL LET US DEVISE A MORE EFFICIENT MEANS OF COMMUNICATION followed by instructions on how to use a more compact system of toggles to represent numbers, and how to convert the numbers into letters and punctuation marks. Once this was settled, the Duke said I AM THE REAL DUKE. I CREATED THESE MACHINES, AND THEY IMPRISONED ME IN A HIGH TOWER FAR ABOVE YOU. THE MACHINE CALLING HIMSELF THE DUKE IS MERELY THE LARGEST AND MOST SOPHISTICATED OF MY CREATIONS. Nell responded, THIS CHAIN WEIGHS HUNDREDS OF POUNDS. YOU MUST BE STRONG FOR A HUMAN. The Duke responded YOU ARE A SHARP ONE PRINCESS NELL! THE FULL WEIGHT OF THE CHAIN IS ACTUALLY SEVERAL THOUSAND POUNDS, AND I MANAGE IT BY MEANS OF A WINCH LOCATED IN MY ROOM AND DERIVING ITS MOTIVE POWER FROM THE CENTRAL SHAFT. Night had long since fallen on the meadow. Nell closed the Primer, packed up her basket, and returned home. She stayed up late into the night with the Primer, just as she had when she was a small child, and as a result was late for church the next morning. They said a special prayer for Miss Matheson, who was at home and said to be feeling poorly. Nell called on her for a few minutes after the service, then went straight back home and dove into the Primer again. She was attacking two problems at once. First, she needed to figure out how the lock on the door worked. Second, she needed to find out whether the person sending her the message was human or mechanical. If she could be confident that he was a human, she could ask him for assistance in opening the lock, but until she had settled this issue, she had to keep her activities a secret. The lock only had a few parts that she could observe: the crank, the bolt, and a pair of brass drums set into the top with digits from 0 to 9 engraved in them, so that by spinning different ways, they could display all the integers from 00 to 99. These drums were in almost constant motion whenever the crank was turning. Nell had managed to detach several yards of chain from the one that she was using to converse with the Duke, and so she was able to feed different messages into the lock and see what result they had. The number on the top changed with every link that went into the machine, and it seemed to determine, in a limited way, what the machine would do next; for example, she had learned that the number happened to be 09, and if the next link in the chain was in the vertical position (which the Duke referred to as a one), the drums would spin around and change the number to 23. But if the next link was, instead, a zero (as the Duke referred to links with horizontal toggles), the number drums would change to 03. But that wasn't all: In this case, the machine would, for some reason, reverse the direction in which the chain was moving through the machine, and also flick the toggle

from zero to one. That is, the machine could write on the chain as well as read from it. From idle chitchat with the Duke she learned that the numbers on the drums were referred to as states. At first she did not know which states led to other states, and so she wandered aimlessly from one state to the next, recording the connections on scratch paper. This soon grew to a table listing some thirty-two different states and how the lock would respond to a one or a zero when it was in each of those states. It took a while for Nell to fill out all the blank spaces in the table, because some of the states were hard to get to-they could be reached only by getting the machine to write a certain series of ones and zeros on the chain. She would have gone crazy with ones and zeros were it not for the frequent interruptions from the Duke, who evidently had nothing better to do than to send her messages. These two parallel courses of inquiry occupied all of Nell's free time for a couple of weeks, and she made slow but steady progress. "You must learn how to operate the lock on your door," the Duke said. "This will enable you to effect an escape and to come and rescue me. I will instruct you." All he wanted to talk about was technology, which wouldn't help Nell in figuring out whether he was a human or a machine. "Why don't you pick your own lock," she responded, "and come and rescue me? I am just a poor helpless young thing all alone in the world, and so scared and lonely, and you seem so brave and heroic; your story really is quite romantic, and I cannot wait to see how it all comes out now that our fates have become intertwined." "The machines placed a special lock on my door, not a Turing machine," responded the Duke. "Describe yourself," Nell wrote. "Nothing special, - I'm afraid," wrote the Duke. "How about yourself?" "Slightly taller than average, flashing green eyes, raven hair falling in luxuriant waves to my waist unless I pin it up to emphasize my high cheekbones and full lips. Narrow waist, pert breasts, long legs, alabaster skin that flushes vividly when I am passionate about something, which is frequently." "Your description is reminiscent of my late wife, God rest her soul." "Tell me about your wife." "The subject fills me with such unutterable sadness that I cannot bear to write about it. Now, let's buckle down to work on the Turing machine." Since the prurient approach had dead-ended, Nell tried a different tack: playing stupid. Sooner or later, the Duke would become a little testy. But he was always terribly patient with her, even after the twentieth repetition of "Could you explain it again with different words? I still don't get it." Of course, for all she knew, he was upstairs punching the walls until his knuckles were bloody and simply pretending to be patient with her. A man who'd been locked up in a tower for years would learn to be extremely patient. She tried sending him poetry. He sent back glowing reviews but declined to send her any of his own, saying it wasn't good enough to be committed to metal. On her twentieth day in the dungeon, Princess Nell finally got the lock open. Rather than making an immediate escape, she locked herself back in and sat down to ponder her next move. If the Duke was human, she should notify him so that they could plan their escape. If he was a machine, doing so would lead to disaster. She had to figure out the Duke's identity before she made another move.She sent him another poem. For the Greek's love she

gave away her heart Her father, crown and homeland. They stopped to rest on Naxos She woke up alone upon the strand The sails of her lover's ship descending Round the slow curve of the earth. Ariadne Fell into a swoon on the churned sand And dreamed of home. Minos did not forgive her And holding diamonds in the pouches of his eyes Had her flung into the Labyrinth. She was alone this time. Through a wilderness Of blackness wandered Ariadne many days Until she tripped on the memory. It was still wound all through the place. She spun it round her fingers Lifted it from the floor Knotted it into lace Erased it. The lace made a gift for him who had imprisoned her. Blind with tears, he read it with his fingers And opened his arms. The answer came back much too quickly, and it was the same answer as always: "I do so envy your skill with words. Now, if you do not object, let us turn our attention to the inner workings of the Turing machine." She had made it as obvious as she dared, and the Duke still hadn't gotten the message. He must be a machine. Why the deception? Clearly, the mechanical Duke desired for her to learn about the Turing machines. That is, if a machine could ever be said to desire something. There must be something wrong with the Duke's programming. He knew there was something wrong with it, and he needed a human to fix it. Once Nell had figured these things out, the rest of the Castle Turing story resolved itself quickly and neatly. She slipped out of her cell and stealthily explored the castle. The soldiers rarely noticed her, and when they did, they could not improvise; they had to go back to the Duke to be reprogrammed. Eventually, Princess Nell found her way into a room beneath the windmill that contained a sort of clutch mechanism. By disengaging the clutch, she was able to stop the Shaft. Within a few hours, the springs inside the soldiers' back had all run down, and they had all stopped in their tracks. The whole castle was frozen, as if she had cast an enchantment over it. Now roaming freely, she opened up the Duke's throne and found a Turing machine beneath it. On either side of the machine was a narrow hole descending straight through the floor and into the earth for as far as her torch light could illuminate it. The chain containing the Duke's program dangled on either side into these holes. Nell tried throwing stones into the holes and never heard them hit bottom; the chain must be unfathomably long. High up in one of the castle's towers, Princess Nell found a skeleton in a chair, slumped over a table piled high with books. Mice, bugs, and birds had nibbled away all of the flesh, but traces of gray hair and whiskers were still scattered around the table, and around the cervical vertebrae was a golden chain bearing a seal with the T insignia. She spent some time going through the Duke's books. Most of them were notebooks where he would sketch the inventions he hadn't had time to build yet. He had plans for whole armies of Turing machines made to run in parallel, and for chains with links that could be set in more than two positions, and for machines that would read and write on two-dimensional sheets of chain mail instead of one-dimensional chains, and for a three-dimensional Turing grid a mile on a side, through which a mobile Turing machine would climb about, computing as it went. No matter how complicated his designs became, the Duke always found a way to simulate their behavior by putting a sufficiently long chain

into one of the traditional Turing machines. That is to say that while the parallel and multidimensional machines worked more quickly than the original model, they didn't really do anything different. One afternoon, Nell was sitting in her favorite meadow, reading about these things in the Primer, when a riderless chevaline emerged from the woods and galloped directly toward her. This was not highly unusual, in and of itself; chevalines were smart enough to be sent out in search of specific persons. People rarely sent them in search of Nell, though. The chevaline galloped at her full-tilt until it was just a few feet away, and then planted its hooves and stopped instantly- a trick it could easily do when it wasn't carrying a human. It was carrying a note written in Miss Stricken's hand: "Nell, please come immediately. Miss Matheson has requested your presence, and time is short." Nell didn't hesitate. She gathered her things, stuffed them into the mount's small luggage compartment, and climbed on. "Go!" she said. Then, getting herself well situated and clenching the hand-grips, she added, "Unlimited speed." Within moments the chevaline was threading gaps between trees at something close to a cheetah's sprint velocity, clawing its way up the hill toward the dog pod grid. From the way the tubes ran, Nell guessed that Miss Matheson was plugged into the Feed in two or three different ways, though everything had been discreetly hidden under many afghans, piled up on top of her body like the airy layers of a French pastry. Only her face and hands were visible, and looking at them Nell remembered for the first time since their introduction just how old Miss Matheson was. The force of her personality had blinded Nell and all the girls to the blunt evidence of her true age. "Please let us be, Miss Stricken," Miss Matheson said, and Miss Stricken backed out warily, strewing reluctant and reproving glances along her trail. Nell sat on the edge of the bed and carefully lifted one of Miss Matheson's hands from the coverlet, as if it were the desiccated leaf of some rare tree. "Nell," Miss Matheson said, "do not waste my few remaining moments with pleasantries." "Oh, Miss Matheson-" Nell began, but the old lady's eyes widened and she gave Nell a certain look, practiced through many decades in the classroom, that still had not lost its power to silence. "I have requested that you come here because you are my favorite student. No! Do not say a word," Miss Matheson admonished her, as Nell leaned her face closer, eyes filling with tears. "Teachers are not supposed to have favorites, but I am approaching that time when I must confess all my sins, so there it is. "I know that you have a secret, Nell, though I cannot imagine what it is, and I know that your secret has made you different from any other girl I have ever taught. I wonder what you suppose you will do with your life when you leave this Academy, as you must soon, and go out into the world?" "Take the Oath, of course, as soon as I reach the age of eligibility. And I suppose that I should like to study the art of programming, and how ractives are made. Someday, of course, after I have become one of Her Majesty's subjects, I should like to find a nice husband and perhaps raise children- " "Oh, stop it," Miss Matheson said. "You are a young woman- of course you think about whether you shall have children- every young woman does. I haven't much time left, Nell, and we must dispense with what makes you like all the other girls and

concentrate on what makes you different." At this point, the old lady gripped Nell's hand with surprising force and raised her head just a bit off the pillow. The tremendous wrinkles and furrows on her brow deepened, and her hooded eyes took on an intense burning appearance. "Your destiny is marked in some way, Nell. I have known it since the day Lord Finkle-McGraw came to me and asked me to admit you- a ragged little thete girl- into my Academy. "You can try to act the same- we have tried to make you the same- you can pretend it in the future if you insist, and you can even take the Oath- but it's all a lie. You are different." These words struck Nell like a sudden cold wind of pure mountain air and stripped away the soporific cloud of sentimentality. Now she stood exposed and utterly vulnerable. But not unpleasantly so. "Are you suggesting that I leave the bosom of the adopted tribe that has nurtured me?" "I am suggesting that you are one of those rare people who transcends tribes, and you certainly don't need a bosom any more," Miss Matheson said. "You will find, in time, that this tribe is as good as any other- better than most, really." Miss Matheson exhaled deeply and seemed to dissolve into her blankets. "Now, I haven't long. So give us a kiss, and then be on your way, girl." Nell leaned forward and pressed her lips against Miss Matheson's cheek, which looked leathery but was surprisingly soft. Then, unwilling to leave so abruptly, she turned her head and rested it on Miss Matheson's chest for a few moments. Miss Matheson stroked feebly at her hair and tut-tutted. "Farewell, Miss Matheson," Nell said. "I will never forget you." "Nor I you," Miss Matheson whispered, "though admittedly that is not saying much." . . . A very large chevaline stood stolidly in front of Constable Moore's house, somewhere between a Percheron and a small elephant in size and bulk It was the dirtiest object Nell had ever seen in her life-its encrustations alone must have weighed hundreds of pounds and were redolent with the scent of night soil and stagnant water. A fragment of a mulberry branch, still bearing leaves and even a couple of actual berries, had gotten wedged into a flexing joint between two adjoining armor plates, and long ropes of milfoil trailed from its ankles. The Constable was sitting in the middle of his bamboo grove, enveloped in a suit of hoplite armor, similarly filthy and scarred, that was twice as big as he was, and that made his bare head look absurdly small. He had ripped the helmet off and dropped it into his fish pond, where it floated around like the eviscerated hull of a scuttled dreadnought. He looked very gaunt and was staring vacantly, without blinking, at some kudzu that was slowly but inexorably conquering the wisteria. As soon as Nell saw the look on his face, she made him some tea and brought it to him. The Constable reached for the tiny alabaster teacup with armored hands that could have crumbled stones like loaves of stale bread. The thick barrels of the guns built into the arms of his suit were scorched on the inside. He plucked the cup from Nell's hands with the precision of a surgical robot, but did not lift it to his lips, perhaps afraid that he might, in his exhaustion, get the distance a bit wrong and inadvertently crush the porcelain into his jaw, or even decapitate himself. Merely holding the cup, watching the steam rise from its surface, seemed to calm him. His nostrils dilated once, then again. "Darjeeling," he said. "Well chosen. Always thought of India as a more

civilised place than China. Have to throw out all of the oolong now, all the keemun, the lung jang, the lapsang souchong. Time to switch over to Ceylon, pekoe, assam." He chuckled. White trails of dried salt ran back from the corners of the Constable's eyes and disappeared into his hairline. He had been riding fast with his helmet off. Nell wished that she had been able to see the Constable thundering across China on his war chevaline. "I've retired for the last time," he explained. He nodded in the direction of China. "Been doing a bit of consulting work for a gentleman there. Complicated fellow. Dead now. Had many facets, but now he'll go down in history as just another damn Chinese warlord who didn't make the grade. It is remarkable, love," he said, looking at Nell for the first time, "how much money you can make shovelling back the tide. In the end you need to get out while the getting is good. Not very honourable, I suppose, but then, there is no honour among consultants." Nell did not imagine that Constable Moore wanted to get into a detailed discussion of recent events, so she changed the subject. "I think I have finally worked out what you were trying to tell me, years ago, about being intelligent," she said. The Constable brightened all at once. "Pleased to hear it." "The Vickys have an elaborate code of morals and conduct. It grew out of the moral squalor of an earlier generation, just as the original Victorians were preceded by the Georgians and the Regency. The old guard believe in that code because they came to it the hard way. They raise their children to believe in that code- but their children believe it for entirely different reasons." "They believe it," the Constable said, "because they have been indoctrinated to believe it." "Yes. Some of them never challenge it- they grow up to be smallminded people, who can tell you what they believe but not why they believe it. Others become disillusioned by the hypocrisy of the society and rebel- as did Elizabeth Finkle-McGraw." "Which path do you intend to take, Nell?" said the Constable, sounding very interested. "Conformity or rebellion?" "Neither one. Both ways are simple-minded- they are only for people who cannot cope with contradiction and ambiguity." "Ah! Excellent!" the Constable exclaimed. As punctuation, he slapped the ground with his free hand, sending up a shower of sparks and transmitting a powerful shock through the ground to Nell's feet. "I suspect that Lord Finkle-McGraw, being an intelligent man, sees through all of the hypocrisy in his society, but upholds its principles anyway, because that is what is best in the long run. And I suspect that he has been worrying about how best to inculcate this stance in young people who cannot understand, as he does, its historical antecedents- which might explain why he has taken an interest in me. The Primer may have been Finkle-McGraw's idea to begin with-a first attempt to go about this systematically." "The Duke plays his cards close," Constable Moore said, "and so I cannot say whether your suppositions are correct. But I will admit it hangs together nicely." "Thank you." "What do you intend to do with yourself, now that you have pieced all of this together? A few more years' education and polishing will place you in a position to take the Oath." "I am, of course, aware that I have favorable prospects in the Atlantan phyle," Nell said, "but I do not think that it would be fitting for me to take the straight and narrow path. I am going to China now to

seek my fortune." "Well," Constable Moore said, "look out for the Fists." His gaze wandered over his battered and filthy armor and came to rest on the floating helmet. "They are coming now." The best explorers, like Burton, made every effort to blend in. In this spirit, Nell stopped at a public M.C., doffed her long dress, and compiled a new set of clothes- a navy blue skin-tight coverall emblazoned with SHIT HAPPENS in pulsating orange letters. She swapped her old clothes for a pair of powered skates on the waterfront, and then headed straight for the Causeway. It rose gently into the air for a few miles, and then the Pudong Economic Zone came into view at her feet, and Shanghai beyond that, and she suddenly began to pick up speed and had to cut the skates' power assist. She'd passed over the watershed now. Nell was alone in China.

The Hackworths have a family reunion; Hackworth strikes out on his quest; an unexpected companion. Atlantis/Seattle was designed small and to the point; the narrow, convoluted straits of Puget Sound, already so full of natural islands, did not leave much room for artificial ones. So they had made it rather long and slender, parallel to the currents and the shipping lanes, and been rather stingy when it came to the parks, meadows, heaths, gentleman farms, and country estates. Much of the Seattle area was still sufficiently rich, civilized, and polite that New Atlantans did not object to living there, and little Victorian mini-claves were scattered about the place, particularly east of the lake, around the misty forest domains of the software khans. Gwen and Fiona had taken a townhouse in one of these areas. These tiny bits of New Atlantis stood out from the surrounding forest in the same way that a vicar in morning coat and wing collar would have in the cave of the Drummers. The prevailing architecture here, among those who had not adopted neo-Victorian precepts, was distinctly subterranean; as if these people were somehow ashamed of their own humanity and could not bear to fell even a handful of the immense Douglas firs that marched monotonously up the tumbling slopes toward the frozen, sodden ridge of the Cascades. Even when it was half buried, a house wasn't even a proper house; it was an association of modules, scattered about here and there and connected by breezeways or tunnels. Stuck together properly and built on a rise, these modules might have added up to a house of substance, even grandeur; but to Hackworth, riding through the territory on his way to visit his family, it was all depressing and confusing. Ten years among the Drummers had not affected his Victorian aesthetics. He could not tell where one house left off and the next one began, the houses were all intertangled with one another like neurons in the brain. His mind's eye again seemed to seize control of his visual cortex; he could not see the firs anymore, just axons and dendrites hanging in black three-dimensional space, packets of rod logic maneuvering among them like space probes, meeting and copulating among the nerve fibers. It was a bit too aggressive to be a reverie and too abstract to be a hallucination. It didn't really clear away until a gust of cold mist hit him in his face, he opened his eyes, and realized that Kidnapper had stopped after emerging from the trees at the crest of a mossy ridgeline. Below him was a rocky bowl with a few cobblestone streets

sketched out in a grid, a green park lined with red geraniums, a church with a white steeple, whitewashed four-story Georgian buildings surrounded by black wrought-iron fences. The security grid was tenuous and feeble; the software khans were at least as good at that kind of thing as Her Majesty's specialists, and so a New Atlantis clave in this area could rely on the neighbors to shoulder much of that burden. Kidnapper picked its way carefully down the steep declivity as Hackworth looked out over the tiny clave, musing at how familiar it seemed. Since leaving the Drummers, he hadn't gone more than ten minutes without being seized by a feeling of d vu, and now it was especially strong. Perhaps this was because, to some degree, all New Atlantis settlements looked alike. But he suspected that he had seen this place, somehow, in his communications with Fiona over the years. A bell clanged once or twice, and teenaged girls, dressed in plaid uniform skirts, began to emerge from a domed school. Hackworth knew that it was Fiona's school, and that she was not entirely happy there. After the crush of girls had gone out of the place, he rode Kidnapper into the school yard and sauntered once around the building, gazing in the windows. Without much trouble he saw his daughter, sitting at a table in the library, hunched over a book, evidently as part of some disciplinary action. He wanted so badly to go in and put his arms around her, because he knew that she had spent many hours suffering like punishments, and that she was a lonely girl. But he was in New Atlantis, and there were proprieties to be observed. First things first. Gwendolyn's townhouse was only a few blocks away. Hackworth rang the bell, determined to observe all of the formalities now that he was a stranger in the house. "May I ask what your visit is regarding?" asked the parlourmaid, as Hackworth spun his card onto the salver. Hackworth didn't like this woman, who was named Amelia, because Fiona didn't like her, and Fiona didn't like her because Gwen had given her some disciplinary authority in the household, and Amelia was the sort who relished having it. He tried not to confuse himself by wondering how he could possibly know all of these things. "Business," Hackworth said pleasantly. "Family business." Amelia was halfiway up the stairs when her eyes finally focused on Hackworth's card. She nearly dropped the salver and had to clutch at the banister with one hand in order to keep her balance. She froze there for a few moments, trying to resist the temptation to turn around, and finally surrendered to it. The expression on her face was one of perfect loathing mixed with fascination. "Please carry out your duties," Hackworth said, "and dispense with the vulgar theatrics." Amelia, looking crestfallen, stormed up the stairs with the tainted card. There followed a good deal of muffled commotion upstairs. After a few minutes, Amelia ventured as far down as the landing and encouraged Hackworth to make himself comfortable in the parlor. He did so, noting that in his absence, Gwendolyn had been able to consummate all of the long-term furniture-buying strategies she had spent so much time plotting during the early years of their marriage. Wives and widows of secret agents in Protocol Enforcement could rely on being well cared for, and Gwen had not allowed his salary to sit around collecting dust. His ex-wife descended the stairway cautiously, stood outside the beveled-glass parlor doors for a

minute peering at him through the gauze curtains, and finally slipped into the room without meeting his gaze and took a seat rather far away from him. "Hello, Mr. Hackworth," she said. "Mrs. Hackworth. Or is it back to Miss Lloyd?" "It is." "Ah, that's hard." When Hackworth heard the name Miss Lloyd, he thought of their courtship. They sat there for a minute or so, not saying anything, just listening to the ponderous ratcheting of the grandfather clock. "All right," Hackworth said, "I won't trouble you talking about extenuating circumstances, as I don't ask for your forgiveness, and in all honesty I'm not sure that I deserve it." "Thank you for that consideration." "I would like you to know, Miss Lloyd, that I am sympathetic to the step you have taken in securing a divorce and harbour no bitterness on that account." "That is reassuring to know." "You should also know that whatever behaviour I engaged in, as inexcusable as it was, was not motivated by rejection of you or of our marriage. It was not, in fact, a reflection upon you at all, but rather a reflection upon myself." "Thank you for clarifying that point." "I realize that any hope I might harbour in my breast of rekindling our former relationship, sincere as it might be, is futile, and so I will not trouble you after today." "I cannot tell you how relieved I am to hear that you understand the situation so completely." "However, I would like to be of service to you and Fiona in helping to resolve any loose ends." "You are very kind. I shall give you my lawyer's card." "And, of course, I look forward to reestablishing some sort of contact with my daughter." The conversation, which had been running as smoothly as a machine to this point, now veered off track and crashed. Gwendolyn reddened and stiffened. "You- you bastard." The front door opened. Fiona stepped into the foyer carrying her schoolbooks. Amelia was there immediately, maneuvering around with her back to the foyer doors, blocking Fiona's view, talking to her in low angry tones. Hackworth heard his daughter's voice. It was a lovely voice, a husky alto, and he would have recognized it anywhere. "Don't lie to me, I recognised his chevaline!" she said, and finally shouldered Amelia out of the way, burst into the parlor, all lanky and awkward and beautiful, an incarnation of joy. She took two steps across the oriental rug and then launched herself full-length across the settee into her father's arms, where she lay for some minutes alternately weeping and laughing. Gwen had to be escorted from the room by Amelia, who came back immediately and stationed herself nearby, hands clasped behind back like a military sentry, observing Hackworth's every move. Hackworth couldn't imagine what they suspected he might be capable of-incest in the parlor? But there was no point in spoiling the moment by thinking of galling things, and so he shut Amelia out of his mind. Father and daughter were allowed to converse for a quarter of an hour, really just queuing up subjects for future conversation. By that time, Gwen had recovered her composure enough to reenter the room, and she and Amelia stood shoulder-to-shoulder, quivering in sympathetic resonance, until Gwen interrupted. "Fiona, your-father-and I were in the midst of a very serious discussion when you burst in on us. Please leave us alone for a few minutes." Fiona did, reluctantly. Gwen resumed her former position, and Amelia backed out of the room. Hackworth noticed that Gwen had fetched some documents,

bound up in red tape. "These are papers setting out the terms of our divorce, including all conditions relating to Fiona," she said. "You are already in violation, I'm afraid. Of course, this can be forgiven, as your lack of a forwarding address as such made it impossible for us to acquaint you with this information. Needless to say, it is imperative for you to familiarise yourself with these documents before darkening my door again." "Naturally," Hackworth said. "Thank you for retaining them for me." "If you will be so good as to withdraw from these premises-" "Of course. Good day," Hackworth said, took the roll of papers from Gwen's trembling hand, and let himself out briskly. He was a bit surprised when he heard Amelia calling to him from the doorway. "Mr. Hackworth. Miss Lloyd wishes to know whether you have established a new residence, so that your personal effects may be forwarded." "None as yet," Hackworth said. "I'm in transit." Amelia brightened. "In transit to where?" "Oh, I don't really know," Hackworth said. A movement caught his eye and he saw Fiona framed in a second-story window. She was undoing the latches, raising the sash. "I'm on a quest of sorts." "A quest for what, Mr. Hackworth?" "Can't say precisely. You know, top secret and all that. Something to do with an alchemist. Who knows, maybe there'll be faeries and hobgoblins too, before it's all over. I'll be happy to fill you in when I return. Until then, please ask Miss Lloyd if she would be so understanding as to retain those personal effects for just a bit longer. It can't possibly take more than another ten years or so." And with that, Hackworth prodded Kidnapper forward, moving at an extremely deliberate pace. Fiona was on a velocipede with smart wheels that made short work of the cobblestone road. She caught up with her father just short of the security grid. Mother and Amelia had just materialized a block behind them in a half-lane car, and the sudden sensation of danger inspired Fiona to make an impetuous dive from the saddle of her velocipede onto Kidnapper's hindquarters, like a cowboy in a movie switching horses in midgallop. Her skirts, poorly adapted to cowboy maneuvers, got all fouled up around her legs, and she ended up slung over Kidnapper's back like a sack of beans, one hand clutching the vestigial knob where its tail would have been if it were a horse, and the other arm thrown round her father's waist. "I love you, Mother!" she shouted, as they rode through the grid and out of the jurisdiction of New Atlantis family law. "Can't say the same for you, Amelia! But I'll be back soon, don't worry about me! Goodbye!" And then the ferns and mist closed behind them, and they were alone in the deep forest.

Carl Hollywood takes the Oath; stroll along the Thames; an encounter with Lord Finkle-McGraw. Carl took the Oath at Westminster Abbey on a surprisingly balmy day in April and afterward went for a stride down the river, heading not too directly toward a reception that had been arranged in his honor at the Hopkins Theatre near Leicester Square. Even without a pedomotive, he walked as fast as many people jogged. Ever since his first visit to London as a malnourished theatre student, he had preferred walking to any other way of getting around the place. Walking, especially along the Embankment where fellow-pedestrians were relatively few, also gave him freedom to

smoke big old authentic cigars or the occasional briar pipe. Just because he was a Victorian didn't mean he had to give up his peculiarities; quite the opposite, in fact. Cruising along past old shrapnel-pocked Cleopatra's Needle in a comet-like corona of his own roiling, viscous smoke, he thought that he might get to like this. A gentleman in a top hat was standing on the railing, gazing stolidly across the water, and as Carl drew closer, he could see that it was Lord Alexander Chung-Sik Finkle-McGraw, who, a day or two earlier, had stated during a cinephone conversation that he should like to meet him face-to-face in the near future for a chat. Carl Hollywood, remembering his new tribal affiliation, went so far as to doff his hat and bow. Finkle-McGraw acknowledged the greeting somewhat distractedly. "Please accept my sincere congratulations, Mr. Hollywood. Welcome to the phyle." "Thank you." "I regret that I have not been able to attend any of your productions at the Hopkins- my friends who have could hardly have been more complimentary." "Your friends are too kind," said Carl Hollywood. He was still a little unsure of the etiquette. To accept the compliment at face value would have been boastful; to imply that His Grace's friends were incompetent judges of theatre was not much of an improvement; he settled for the less dangerous accusation that these friends had a superfluity of goodness. Finkle-McGraw detached himself from the railing and began to walk along the river, keeping a brisk pace for a man of his age. "I daresay that you shall make a prized addition to our phyle, which, as brilliantly as it shines in the fields of commerce and science, wants more artists." Not wanting to join in criticism of the tribe he'd just sworn a solemn Oath to uphold, Carl pursed his lips and mulled over some possible responses. Finkle-McGraw continued, "Do you suppose that we fail to encourage our own children to pursue the arts, or fail to attract enough men such as yourself, or perhaps both?" "With all due respect, Your Grace, I do not necessarily agree with your premise. New Atlantis has many fine artists." "Oh, come now. Why do all of them come from outside the tribe, as you did? Really, Mr. Hollywood, would you have taken the Oath at all if your prominence as a theatrical producer had not made it advantageous for you to do so?" "I think I will choose to interpret your question as part of a Socratic dialogue for my edification," Carl Hollywood said carefully, "and not as an allegation of insincerity on my part. As a matter of fact, just before I encountered you, I was enjoying my cigar, and looking about at London, and thinking about just how well it all suits me." "It suits you well because you are of a certain age now. You are a successful and established artist. The ragged bohemian life holds no charm for you anymore. But would you have reached your current position if you had not lived that life when you were younger?" "Now that you put it that way," Carl said, "I agree that we might try to make some provision, in the future, for young bohemians-" "It wouldn't work," Finkle-McGraw said. "I've been thinking about this for years. I had the same idea: Set up a sort of young artistic bohemian theme park, sprinkled around in all the major cities, where young New Atlantans who were so inclined could congregate and be subversive when they were in the mood. The whole idea was self-contradictory. Mr. Hollywood, I have devoted much

effort, during the last decade or so, to the systematic encouragement of subversiveness." "You have? Are you not concerned that our young subversives will migrate to other phyles?" If Carl Hollywood could have kicked himself in the arse, he would have done so as soon as finishing that sentence. He had forgotten about Elizabeth Finkle-McGraw's recent and highly publicized defection to CryptNet. But the Duke took it serenely. "Some of them will, as the case of my granddaughter demonstrates. But what does it really mean when such a young person moves to another phyle? It means that they have outgrown youthful credulity and no longer wish to belong to a tribe simply because it is the path of least resistance-they have developed principles, they are concerned with their personal integrity. It means, in short, that they are ripe to become members in good standing of New Atlantis-as soon as they develop the wisdom to see that it is, in the end, the best of all possible tribes." "Your strategy was much too subtle for me to follow. I thank you for explaining it. You encourage subversiveness because you think that it will have an effect opposite to what one might naively suppose." "Yes. And that's the whole point of being an Equity Lord, you know-to look after the interests of the society as a whole instead of flogging one's own company, or whatever. At any rate, this brings us to the subject of the advertisement I placed in the ractives section of the Times and our consequent cinephone conversation." "Yes," Carl Hollywood said, "you are looking for ractors who performed in a project called the Young Lady's Illustrated Primer." "The Primer was my idea. I commissioned it. I paid the racting fees. Of course, owing to the way the media system is organised, I had no way to determine the identity of the ractors to whom I was sending the fees- hence the need for a public advertisement." "Your Grace, I should tell you immediately-and would have told you on the cinephone, had you not insisted that we defer all substantive discussion to a face-to-face-that I myself did not ract in the Primer. A friend of mine did. When I saw the advertisement, I undertook to respond on her behalf." "I understand that ractors are frequently pursued by overly appreciative members of their audience," said Finkle-McGraw, "and so I suppose I understand why you have chosen to act as intermediary in this case. Let me assure you that my motives are perfectly benign." Carl adopted a wounded look "Your Grace! I would never have supposed otherwise. I am arrogating this role to myself, not to protect the young lady in question from any supposed malignity on your part, but simply because her current circumstances make establishing contact with her a somewhat troublesome business." "Then pray tell me what you know about the young woman." Carl gave the Equity Lord a brief description of Miranda's relationship with the Primer. Finkle-McGraw was keenly interested in how much time Miranda had spent in the Primer each week. "If your estimates are even approximately accurate, this young woman must have singlehandedly done at least nine-tenths of the racting associated with that copy of the Primer." "That copy? Do you mean to say there were others?" Finkle-McGraw walked on silently for a few moments, then resumed in a quieter voice. "There were three copies in all. The first one went to my granddaughter-as you will appreciate, I tell you this in confidence. A second went to Fiona, the

daughter of the artifex who created it. The third fell into the hands of Nell, a little thete girl. "To make a long story short, the three girls have turned out very differently. Elizabeth is rebellious and high-spirited and lost interest in the Primer several years ago. Fiona is bright but depressed, a classic manic-depressive artist. Nell, on the other hand, is a most promising young lady. "I prepared an analysis of the girls' usage habits, which were largely obscured by the inherent secrecy of the media system, but which can be inferred from the bills we paid to hire the ractors. It became clear that, in the case of Elizabeth, the racting was done by hundreds of different performers. In Fiona's case, the bills were strikingly lower because much of the racting was done by someone who did not charge money for his or her services-probably her father. But that's a different story. In Nell's case, virtually all of the racting was done by the same person." "It sounds," Carl said, "as if my friend established a relationship with Nell's copy-" "And by extension, with Nell," said Lord Finkle-McGraw. Carl said, "May I inquire as to why you wish to contact the ractor?" "Because she is a central part of what is going on here," said Lord Finkle-McGraw, "which I did not expect. It was not a part of the original plan that the ractor would be important." "She did it," Carl Hollywood said, "by sacrificing her career and much of her life. It is important for you to understand, Your Grace, that she was not merely Nell's tutor. She became Nell's mother." These words seemed to strike Lord Finkle-McGraw quite forcefully. His stride faltered, and he ambled along the riverbank for some time, lost in thought. "You gave me to believe, several minutes ago, that establishing contact with the ractor in question would not be a trivial process," he said finally, in quieter voice. "Is she no longer associated with your troupe?" "She took a leave of absence several years ago in order to concentrate on Nell and the Primer." "I see," said the Equity Lord, leaning into the words a little bit and turning it into an exclamation. He was getting excited. "Mr. Hollywood, I hope you will not be offended by my indelicacy in inquiring as to whether this has been a paid leave of absence." "Had it been necessary, I would have underwritten it. Instead there is another backer." "Another backer," repeated Finkle-McGraw. He was obviously fascinated, and slightly alarmed, by the use of financial jargon in this context. "The transaction was fairly simple, as I suppose all transactions are au fond," said Carl Hollywood. "Miranda wanted to locate Nell. Conventional thinking dictates that this is impossible. There are, however, some unconventional thinkers who would maintain that it can be done through unconscious, nonrational processes. There is a tribe called the Drummers who normally live underwater-" "I am familiar with them," said Lord Finkle-McGraw. "Miranda joined the Drummers four years ago," Carl said. "She had entered into a partnership. The two other partners were a gentleman of my acquaintance, also in the theatrical business, and a financial backer." "What did the backer hope to gain from it?" "A leased line to the collective unconscious," said Carl Hollywood. "He thought it would be to the entertainment industry what the philosopher's stone was to alchemy." "And the results?" "We have all been waiting to hear from Miranda." "You have heard nothing at all?" "Only in my dreams," Carl Hollywood said.

Nell's passage through Pudong; she happens upon the offices of Madame Ping; interview with the same. Shanghai proper could be glimpsed only through vertical apertures between the high buildings of the Pudong Economic Zone as Nell skated westward. Downtown Pudong erupted from the flat paddy-land on the east bank of the Huang Pu. Almost all of the skyscrapers made use of mediatronic building materials. Some bore the streamlined characters of the Japanese writing system, rendered in sophisticated color schemes, but most of them were written in the denser high-resolution characters used by the Chinese, and these tended to be stroked out in fiery red, or in black on a background of that color. The Anglo-Americans had their Manhattan, the Japanese had Tokyo. Hong Kong was a nice piece of work, but it was essentially Western. When the Overseas Chinese came back to the homeland to build their monument to enterprise, they had done it here, and they had done it bigger and brighter, and unquestionably redder, than any of those other cities. The nanotechnological trick of making sturdy structures that were lighter than air had come along just at the right time, as all of the last paddies were being replaced by immense concrete foundations, and a canopy of new construction had bloomed above the first-generation undergrowth of seventy- and eighty-story buildings. This new architecture was naturally large and ellipsoidal, typically consisting of a huge neonrimmed ball impaled on a spike, so Pudong was bigger and denser a thousand feet above the ground than it was at street level. Seen from the apex of the big arch in the Causeway through several miles of bad air, the view was curiously flattened and faded, as if the whole scene had been woven into a fabulously complex brocade that had been allowed to gather dust for several decades and then been hung in front of Nell, about ten feet away. The sun had gone down not long before and the sky was still a dim orange fading up into purple, divided into irregular segments by half a dozen pillars of smoke spurting straight up out of the horizon and toward the dark polluted vault of the heavens, many miles off to the west, somewhere out in the silk and tea districts between Shanghai and Suzhou. As she power-skated down the western slope of the arch and crossed the coastline of China, the thunderhead of neon reached above her head, spread out to embrace her, developed into three dimensions- and she was still several miles away from it. The coastal neighborhoods consisted of block after block of reinforced-concrete apartment buildings, four to five stories high, looking older than the Great Wall though their real age could not have exceeded a few decades, and decorated on the ends facing the street with large cartoonish billboards, some mediatronic, most just painted on. For the first kilometer or so, most of these were targeted at businessmen just coming in from New Chusan, and in particular from the New Atlantis Clave. Glancing at these billboards as she went by them, Nell concluded that visitors from New Atlantis played an important role in supporting casinos and bordellos, both the old-fashioned variety and the newer scripted-fantasy emporia, where you could be the star in a little play you wrote yourself. Nell slowed down to examine several of these, memorizing the addresses of ones with especially new or well-executed signs. She had no clear plan in mind yet. All she knew was that she had

to keep moving purposefully. Then the young men squatting on the curbs talking into their cellphones would keep eyeing her but leave her alone. The moment she stopped or looked the tiniest bit uncertain, they would descend. The dense wet air along the Huang Pu was supporting millions of tons of air buoys, and Nell felt every kilogram of their weight pressing upon her ribs and shoulders as she skated up and down the main waterfront thoroughfare, trying to maintain her momentum and her false sense of purposefulness. This was the Coastal Republic, which appeared to have no fixed principles other than that money talked and that it was a good thing to get rich. Every tribe in the world seemed to have its own skyscraper here. Some, like New Atlantis, were not actively recruiting and simply used the size and magnificence of their buildings as a monument to themselves. Others, like the Boers, the Parsis, the Jews, went for the understated approach, and in Pudong anything understated was more or less invisible. Still others-the Mormons, the First Distributed Republic, and the Chinese Coastal Republic itself-used every square inch of their mediatronic walls to proselytize. The only phyle that didn't seem to appreciate the ecumenical spirit of the place was the Celestial Kingdom itself. Nell stumbled across their territory, half a square block surrounded with a stucco-sheathed masonry wall, circular gates here and there, and an old three-story structure inside, done in high Ming style with eaves that curved way up at the corners and sculpted dragons along the ridgeline of the roof. The place was so tiny compared to the rest of Pudong that it looked as if you might trip over it. The gates were guarded by men in armor, presumably backed up by other, less obvious defensive systems. Nell was fairly certain that she was being followed, unobtrusively, by at least three young men who had locked on to her during her initial passage in from the coast, and who were waiting to find out whether she really had somewhere to go or was just faking it. She had already made her way from one end of the waterfront to the other, pretending to be a tourist who just wanted to take in a view of the Bund across the river. She was now heading back into the heart of downtown Pudong, where she had better look as if she were doing something. Passing by the grand entrance to one of the skyscrapers-a Coastal Republic edifice, not barbarian turf-she recognized its mediaglyphic logo from one of the signs she had seen on the way into town. Nell could at least fill out an application without committing herself. It would allow her to kill an hour in relatively safe and clean surroundings. The important thing, as Dojo had taught her long ago in a different context, was not to stop; without movement she could do nothing. Alas, Madame Ping's office suite was closed. A few lights were on in the back, but the doors were locked and no receptionist was on duty. Nell did not know whether to be amused or annoyed; whoever heard of a brothel that closed down after dark? But then these were only the administrative offices. She loitered in the lobby for a few minutes, then caught a down elevator. Just as the doors were closing, someone jumped into the lobby and slammed the button, opening them back up again. A young Chinese man with a small, slender body, large head, neatly dressed, carrying some papers. "Pardon me," he said. "Did you require something?"

"I'm here to apply for a job," Nell said. The man's eyes traveled up and down her body in a coolly professional fashion, almost completely devoid of prurience, starting and stopping on her face. "As a performer," he said. The intonation was somewhere between a question and a declaration. "As a scriptwriter," she said. Unexpectedly, he broke into a grin. "I have qualifications that I will explain in detail." "We have writers. We contract for them on the network." "I'm surprised. How can a contract writer in Minnesota possibly provide your clients with the personalized service they require?" "You could almost certainly get a job as a performer," said the young man. "You would start tonight. Good pay." "Just by looking at the billboards on the way in, I could see that your customers aren't paying for bodies. They are paying for ideas. That's your value added, right?" "Pardon me?" said the young man, grinning again. "Your value added. The reason you can charge more than a whorehouse, pardon my language, is that you provide a scripted fantasy scenario tailored to the client's requirements. I can do that for you," Nell said. "I know these people, and I can make you a lot of money." "You know what people?" "The Vickys. I know them inside and out," Nell said. "Please come inside," said the young man, gesturing toward the diamondoid door with MADAME PING'S written on it in red letters. "Would you care for tea?" . . . "There are only two industries. This has always been true," said Madame Ping, enfolding a lovely porcelain teacup in her withered fingers, the two-inch fingernails interleaving neatly like the pinions of a raptor folding its wings after a long hard day of cruising the thermals. "There is the industry of things, and the industry of entertainment. The industry of things comes first. It keeps us alive. But making things is easy now that we have the Feed. This is not a very interesting business anymore. "After people have the things they need to live, everything else is entertainment. Everything. This is Madame Ping's business." Madame Ping had an office on the hundred-and-eleventh floor with a nice unobstructed view across the Huang Pu and into downtown Shanghai. When it wasn't foggy, she could even see the facade of her theatre, which was on a side street a couple of blocks in from the Bund, its mediatronic marquee glowing patchily through the dun limbs of an old sycamore tree. She had a telescope mounted in one of her windows, fixed upon the theatre's entrance, and noting Nell's curiosity, she encouraged her to look through it. Nell had never looked through a real telescope before. It had a tendency to jiggle and go out of focus, it didn't zoom, and panning was tricky. But for all that, the image quality was a lot better than photographic, and she quickly forgot herself and began sweeping it back and forth across the city. She checked out the little Celestial Kingdom Clave in the heart of the old city, where a couple of Mandarins stood on a zigzag bridge across a pond, contemplating a swarm of golden carp, wispy silver beards trailing down over the colorful silk of their lapels, blue sapphire buttons on their caps flashing as they nodded their heads. She looked into a high-rise building farther inland, apparently a foreign concession of some type, where some Euros were holding a cocktail party, some venturing onto the balcony with glasses of wine and doing some eavesdropping of their own. Finally she leveled the 'scope toward the horizon, out past the vast dangerous

triad-ridden suburbs, where millions of Shanghai's poor had been forcibly banished to make way for highrises. Beyond that was real agricultural land, a fractal network of canals and creeks glimmering like a golden net as they reflected the lambency of the sunset, and beyond that, as always, a few scattered pillars of smoke in the ultimate distance, where the Fists of Righteous Harmony were burning the foreign devils' Feed lines. "You are a curious girl," Madame Ping said. "That is natural. But you must never let any other person-especially a client-see your curiosity. Never seek information. Sit quietly and let them bring it to you. What they conceal tells you more than what they reveal. Do you understand?" "Yes, madam," Nell said, turning toward her interlocutor with a little curtsy. Rather than trying to do Chinese etiquette and making a hash of it, she was taking the Victorian route, which worked just as well. For purposes of this interview, Henry (the young man who had offered her tea) had advanced her a few hard ucus, which she had used to compile a reasonably decent full-length dress, hat, gloves, and reticule. She had gone in nervous and realized within a few minutes that the decision to hire her had already been made, somehow, and that this little get-together was actually more along the lines of an orientation session. "Why is the Victorian market important to us?" Madame Ping asked, and fixed Nell with an incisive glare. "Because New Atlantis is one of the three first-tier phyles." "Not correct. The wealth of New Atlantis is great, yes. But its population is just a few percent. The successful New Atlantis man is busy and has just a bit of time for scripted fantasies. He has much money, you understand, but little opportunity to spend it. No, this market is important because everyone else-the men of all other phyles, including many of Nippon- want to be like Victorian gentlemen. Look at the Ashantis- the Jews- the Coastal Republic. Do they wear traditional costume? Sometimes. Usually though, they wear a suit on the Victorian pattern. They carry an umbrella from Old Bond Street. They have a book of Sherlock Holmes stories. They play in Victorian ractives, and when they have to spend their natural urges, they come to me, and I provide them with a scripted fantasy that was originally requested by some gentleman who came sneaking across the Causeway from New Atlantis." Somewhat uncharacteristically, Madame Ping turned two of her claws into walking legs and made them scurry across the tabletop, like a furtive Vicky gent trying to slip into Shanghai without being caught on a monitor. Recognizing her cue, Nell covered her mouth with one gloved hand and tittered. "This way, Madame Ping does a magic trick- she turns one satisfied client from New Atlantis into a thousand clients from all tribes." "I must confess that I am surprised," Nell ventured. "Inexperienced as I am in these matters, I had supposed that each tribe would exhibit a different preference." "We change the script a little," Madame Ping said, "to allow for cultural differences. But the story never changes. There are many people and many tribes, but only so many stories."

Peculiar practices in the woods; the Reformed Distributed Republic; an extraordinary conversation in a log cabin; CryptNet; the Hackworths depart. Half a day's slow

eastward ride took them well up into the foothills of the Cascades, where the clouds, flowing in eternally from the Pacific, were forced upward by the swelling terrain and unburdened themselves of their immense stores of moisture. The trees were giants, rising branchless to far above their heads, the trunks aglow with moss. The landscape was a checkerboard of old-growth forest alternating with patches that had been logged in the previous century; Hackworth tried to guide Kidnapper toward the latter, because the scarcity of undergrowth and deadfalls made for a smoother ride. They passed through the remains of an abandoned timber town, half small clapboard buildings and half moss-covered and rust-streaked mobile homes. Through their dirty windows, faded signs were dimly visible, stenciled THIS HOUSEHOLD DEPENDS ON TIMBER MONEY. Ten-foot saplings grew up through cracks in the streets. Narrow hedges of blueberry shrubs and blackberry canes sprouted from the rain gutters of houses, and gigantic old cars, resting askew on flat and cracked tires, had become trellises for morning glories and vine maples. They also passed through an old mining encampment that had been abandoned even longer ago. For the most part, the signs of modern habitation were relatively subtle. The houses up here tended to be of the same unassuming style favored by the software khans closer to Seattle, and from place to place a number of them would cluster around a central square with playground equipment, caf stores, and other amenities. He and Fiona stopped at two such places to exchange ucus for coffee, sandwiches, and cinnamon rolls. The unmarked, decussating paths would have been confusing to anyone but a native. Hackworth had never been here before. He had gotten the coordinates from the second fortune cookie in Kidnapper's glove compartment, which was much less cryptic than the first had been. He had no way to tell whether he was really going anywhere. His faith did not begin to waver until evening approached, the eternal clouds changed from silver to dark gray, and he noticed that the chevaline was taking them higher and toward less densely populated ground. Then he saw the rocks and knew he had chosen the right path. A wall of brown granite, dark and damp from the condensing fog, materialized before them. They heard it before they saw it; it made no sound, but its presence changed the acoustics of the forest. The fog was closing in, and they could barely see the silhouettes of scrubby, wind-gnarled mountain trees lined up uncomfortably along the top of the cliff. Amid those trees was the silhouette of a human being. "Quiet," Hackworth mouthed to his daughter, then reined Kidnapper to a stop. The person had a short haircut and wore a bulky waist-length jacket with stretch pants; they could tell by the curve of the hips that it was a woman. Around those hips she had fastened an arrangement of neon green straps: a climbing harness. She wore no other outdoor paraphernalia, though, no knapsack or helmet, and behind her on the clifftop they could just make out the silhouette of a horse, prodding the ground with its nose. From time to time she checked her wristwatch. A tenuous neon strand of rope hung down the bulging face of the cliff from where the woman stood. The last several meters dangled loosely in the mist in front of a small cozy pocket sheltered by the overhang. Hackworth turned around to get

Fiona's attention, then pointed something out: a second person, making his way along the base of the cliff, out of sight of the woman above. Moving carefully and quietly, he eventually reached the shelter of the overhang. He gingerly took the dangling end of the rope and tied it to something, apparently a piece of hardware fixed into the rock. Then he left the way he had come, moving silently and staying close to the cliff. The woman remained still and silent for several minutes, checking her watch more and more frequently. Finally she backed several paces away from the edge of the cliff, took her hands out of her jacket pockets, seemed to draw a few deep breaths, then ran forward and launched herself into space. She screamed as she did it, a scream to drive out her own fear. The rope ran through a pulley fixed near the top of the cliff. She fell for a few meters, the rope tightened, the man's knot held, and the rope, which was somewhat elastic, brought her to a firm but not violent stop just above the wicked pile of rubble and snags at the base of the cliff. Swinging at the end of the rope, she grabbed it with one hand and leaned back, baring her throat to the mist, allowing herself to dangle listlessly for a few minutes, basking in relief. A third person, previously unseen, emerged from the trees. This one was a middle-aged man, and he was wearing a jacket that had a few vaguely official touches such as an armband and an insignia on the breast pocket. He walked beneath the dangling woman and busied himself for a few moments beneath the overhang, eventually releasing the rope and letting her safely to the ground. The woman detached herself from the rope and then the harness and fell into a businesslike discussion with this man, who poured both of them hot drinks from a thermal flask. "Have you heard of these people? The Reformed Distributed Republic," Hackworth said to Fiona, still keeping his voice low. "I am only familiar with the First." "The First Distributed Republic doesn't hang together very well- in a way, it was never designed to. It was started by a bunch of people who were very nearly anarchists. As you've probably learned in school, it's become awfully factionalized." "I have some friends in the F.D.R.," Fiona said. "Your neighbors?" "Yes." "Software khans," Hackworth said. "The F.D.R. works for them, because they have something in common- old software money. They're almost like Victorians- a lot of them cross over and take the Oath as they get older. But for the broad middle class, the F.D.R. offers no central religion or ethnic identity." "So it becomes balkanized." "Precisely. These people," Hackworth said, pointing to the man and the woman at the base of the cliff, "are R.D.R., Reformed Distributed Republic. Very similar to F.D.R., with one key difference." "The ritual we just witnessed?" "Ritual is a good description," Hackworth said. "Earlier today, that man and that woman were both visited by messengers who gave them a place and time-nothing else. In this case, the woman's job was to jump off that cliff at the given time. The man's job was to tie the end of the rope before she jumped. A very simple job-" "But if he had failed to do it, she'd be dead," Fiona said. "Precisely. The names are pulled out of a hat. The participants have only a few hours' warning. Here, the ritual is done with a cliff and a rope, because there happened to be a cliff in the vicinity. In other R.D.R. nodes, the mechanism might be different. For example, person

A might go into a room, take a pistol out of a box, load it with live ammunition, put it back in the box, and then leave the room for ten minutes. During that time, person B is supposed to enter the room and replace the live ammunition with a dummy clip having the same weight. Then person A comes back into the room, puts the gun to his head, and pulls the trigger." "But person A has no way of knowing whether person B has done his job?" "Exactly." "What is the role of the third person?" "A proctor. An official of the R.D.R. who sees to it that the two participants don't try to communicate." "How frequently must they undergo this ritual?" "As frequently as their name comes up at random, perhaps once every couple of years," Hackworth said. "It's a way of creating mutual dependency. These people know they can trust each other. In a tribe such as the F.D.R., whose view of the universe contains no absolutes, this ritual creates an artificial absolute." The woman finished her hot drink, shook hands with the proctor, then began to ascend a polymer ladder, fixed to the rock, that took her back toward her horse. Hackworth spurred Kidnapper into movement, following a path that ran parallel to the base of the cliff, and rode for half a kilometer or so until it was joined by another path angling down from above. A few minutes later, the woman approached, riding her horse, an old-fashioned biological model. She was a healthy, open-faced, apple-cheeked woman, still invigorated by her leap into the unknown, and she greeted them from some distance away, without any of the reserve of neo-Victorians. "How do you do," Hackworth said, removing his bowler. The woman barely glanced at Fiona. She reined her horse to a gentle stop, eyes fixed on Hackworth's face. She was wearing a distracted look. "I know you," she said. "But I don't know your name." "Hackworth, John Percival, at your service. This is my daughter Fiona." "I'm sure I've never heard that name," the woman said. "I'm sure I've never heard yours," Hackworth said cheerfully. "Maggie," the woman said. "This is driving me crazy. Where have we met?" "This may sound rather odd," Hackworth said gently, "but if you and I could both remember all of our dreams-which we can't, of course- and if we compared notes long enough, we would probably find that we had shared a few over the years." "A lot of people have similar dreams," Maggie said. "Excuse me, but that's not what I mean," Hackworth said. "I refer to a situation in which each of us would retain his or her own personal point of view. I would see you. You would see me. We might then share certain experiences together-each of us seeing it from our own perspective. "Like a ractive?" "Yes," Hackworth said, "but you don't have to pay for it. Not with money, anyway." . . . The local climate lent itself to hot drinks. Maggie did not even take off her jacket before going into her kitchen and putting a kettle on to boil. The place was a log cabin, airier than it looked from the outside, and Maggie apparently shared it with several other people who were not there at the moment. Fiona, walking to and from the bathroom, was fascinated to see evidence of men and women living and sleeping and bathing together. As they sat around having their tea, Hackworth persuaded Maggie to poke her finger into a thimble-size device. When he took this object from his pocket, Fiona was struck by a powerful sense of d&#xfffd; vu. She had seen it before, and it was significant. She

knew that her father had designed it; it bore all the earmarks of his style. Then they all sat around making small talk for a few minutes; Fiona had many questions about the workings of the R.D.R., which Maggie, a true believer, was pleased to answer. Hackworth had spread a sheet of blank paper out on the table, and as the minutes went by, words and pictures began to appear on it and to scroll up the page after it had filled itself up. The thimble, he explained, had placed some reconnaissance mites into Maggie's bloodstream, which had been gathering information, flying out through her pores when their tape drives were full, and offloading the data into the paper. "It seems that you and I have a mutual acquaintance, Maggie," he said after a few minutes. "We are carrying many of the same tuples in our bloodstreams. They can only be spread through certain forms of contact." "You mean, like, exchange of bodily fluids?" Maggie said blankly. Fiona thought briefly of old-fashioned transfusions and probably would not have worked out the real meaning of this phrase had her father not flushed and glanced at her momentarily. "I believe we understand each other, yes," Hackworth said. Maggie thought about it for a moment and seemed to get irked, or as irked as someone with her generous and contented nature was ever likely to get. She addressed Hackworth but watched Fiona as she tried to construct her next sentence. "Despite what you Atlantans might think of us, I don't sleep ... I mean, I don't have s ... I don't have that many partners." "I am sorry to have given you the mistaken impression that I had formed any untoward preconceptions about your moral standards," Hackworth said. "Please be assured that I do not regard myself as being in any position to judge others in this regard. However, if you could be so forthcoming as to tell me who, or with whom, in the last year or so . . ." "Just one," Maggie said. "It's been a slow year." Then she set her tea mug down on the table (Fiona had been startled by the unavailability of saucers) and leaned back in her chair, looking at Hackworth alertly. "Funny that I'm telling you this stuff- you, a stranger." "Please allow me to recommend that you trust your instincts and treat me not as a stranger." "I had a fling. Months and months ago. That's been it." "Where?" "London." A trace of a smile came onto Maggie's face. "You'd think living here, I'd go someplace warm and sunny. But I went to London. I guess there's a little Victorian in all of us. "It was a guy," Maggie went on. "I had gone to London with a couple of girlfriends of mine. One of them was another R.D.R. citizen and the other, Trish, left the R.D.R. about three years ago and co-founded a local CryptNet node. They've got a little point of presence down in Seattle, near the market." "Please pardon me for interrupting," Fiona said, "but would you be so kind as to explain the nature of CryptNet? One of my old school friends seems to have joined it." "A synthetic phyle. Elusive in the extreme," Hackworth said. "Each node is independent and self-governing," Maggie said. "You could found a node tomorrow if you wanted. Nodes are defined by contracts. You sign a contract in which you agree to provide certain services when called upon to do so." "What sorts of services?" "Typically, data is delivered into your system. You process the data and pass it on to other nodes. It seemed like a natural to Trish because she was a coder, like me and my housemates and most other people

around here." "Nodes have computers then?" "The people themselves have computers, typically embedded systems," Maggie said, unconsciously rubbing the mastoid bone behind her ear. "Is the node synonymous with the person, then?" "In many cases," Maggie said, "but sometimes it's several persons with embedded systems that are contained within the same trust boundary." "May I ask what level your friend Trish's node has attained?" Hackworth said. Maggie looked uncertain. "Eight or nine, maybe. Anyway, we went to London. While we were there, we decided to take in some shows. I wanted to see the big productions. Those were nice-we saw a nice Doctor Faustus at the Olivier." "Marlowe's?" "Yes. But Trish had a knack for finding all of these little, scruffy, out-of-the-way theatres that I never would have found in a million years- they weren't marked, and they didn't really advertise, as far as I could tell. We saw some radical stuff- really radical." "I don't imagine you are using that adjective in a political sense," Hackworth said. "No, I mean how they were staged. In one of them, we walked into this bombed-out old building in Whitechapel, full of people milling around, and all this weird stuff started happening, and after a while I realized that some of the people were actors and some were audience and that all of us were both, in a way. It was cool- I suppose you can get stuff like that on the net anytime, in a ractive, but it was so much better to be there with real, warm bodies around. I felt happy. Anyway, this guy was going to the bar for a pint, and he offered to get me one. We started talking. One thing led to another. He was really intelligent, really sexy. An African guy who knew a lot about the theatre. This place had back rooms. Some of them had beds." "After you were finished," Hackworth said, "did you experience any unusual sensations?" Maggie threw back her head and laughed, thinking that this was a bit of wry humor on Hackworth's part. But he was serious. "After we were finished?" she said. "Yes. Let us say, several minutes afterward." Suddenly Maggie became disconcerted. "Yeah, actually," she said. "I got hot. Really hot. We had to leave, 'cause I thought I had a flu or something. We went back to the hotel, and I took my clothes off and stood out on the balcony. My temperature was a hundred and four. But the next morning I felt fine. And I've felt fine ever since." "Thank you, Maggie," Hackworth said, rising to his feet and pocketing the sheet of paper. Fiona rose too, following her father's cue. "Prior to your London visit, had your social life been an active one?" Maggie got a little pinker. "Relatively active for a few years, yes." "What sort of crowd? CryptNet types? People who spent a lot of time near the water?" Maggie shook her head. "The water? I don't understand." "Ask yourself why you have been so inactive, Maggie, since your liaison with Mr.-" "Beck. Mr. Beck." "With Mr. Beck. Could it be that you found the experience just a bit alarming? Exchange of bodily fluids followed by a violent rise in core temperature?" Maggie was poker-faced. "I recommend that you look into the subject of spontaneous combustion," Hackworth said. And without further ceremony, he reclaimed his bowler and umbrella from the entryway and led Fiona back out into the forest. Hackworth said, "Maggie did not tell you everything about CryptNet. To begin with, it is believed to have numerous unsavoury connexions and is a perennial focus of Protocol

Enforcement's investigations. And"- Hackworth laughed ruefully- "it is patently untrue that ten is the highest level." "What is the goal of this organisation?" Fiona asked. "It represents itself as a simple, moderately successful data-processing collective. But its actual goals can only be known by those privileged to be included within the trust boundary of the thirty-third level," Hackworth said, his voice slowing down as he tried to remember why he knew all of these things. "It is rumoured that, within that select circle, any member can kill any other simply by thinking of the deed." Fiona leaned forward and wrapped her arms snugly around her father's body, nestled her head between his shoulder blades, and held tight. She thought that the subject of CryptNet was closed; but a quarter of an hour later, as Kidnapper carried them swiftly through the trees down toward Seattle, her father spoke again, picking up the sentence where he had left it, as if he had merely paused for breath. His voice was slow and distant and almost trancelike, the memories percolating outward from deep storage with little participation from his conscious mind. "CryptNet's true desire is the Seed- a technology that, in their diabolical scheme, will one day supplant the Feed, upon which our society and many others are founded. Protocol, to us, has brought prosperity and peace- to CryptNet, however, it is a contemptible system of oppression. They believe that information has an almost mystical power of free flow and self-replication, as water seeks its own level or sparks fly upward- and lacking any moral code, they confuse inevitability with Right. It is their view that one day, instead of Feeds terminating in matter compilers, we will have Seeds that, sown on the earth, will sprout up into houses, hamburgers, spaceships, and books- that the Seed will develop inevitably from the Feed, and that upon it will be founded a more highly evolved society." He stopped for a moment, took a deep breath, and seemed to stir awake; when he spoke again, it was in a clearer and stronger voice. "Of course, it can't be allowed- the Feed is not a system of control and oppression, as CryptNet would maintain. It is the only way order can be maintained in modern society- if everyone possessed a Seed, anyone could produce weapons whose destructive power rivalled that of Elizabethan nuclear weapons. This is why Protocol Enforcement takes such a dim view of CryptNet's activities." The trees parted to reveal a long blue lake below them. Kidnapper found its way to a road, and Hackworth spurred it on to a hand-gallop. Within a few hours, father and daughter were settling into bunkbeds in a second-class cabin of the airship Falkland Islands, bound for London.

From the Primer, Princess Nell's activities as Duchess of Turing; the Castle of the Water-gates; other castles; the Cipherers' Market; Nell prepares for her final journey. Princess Nell remained in Castle Turing for several months. During her quest for the twelve keys, she had entered many castles, outwitted their sentries, picked their locks, and rifled their treasuries; but Castle Turing was an altogether different place, a place that ran on rules and programs that were devised by men and that could be rewritten by one who was adept in the language of the ones and zeroes. She need not content herself with sneaking in, seizing a trinket, and fleeing. Castle Turing she made her own. Its

demesne became Princess Nell's kingdom. First she gave the Duke of Turing a decent burial. Then she studied his books until she had mastered them. She acquainted herself with the states by which the soldiers, and the mechanical Duke, could be programmed. She entered a new master program Into the Duke and then restarted the turning of the mighty Shaft that powered the castle. Her first efforts were unsuccessful, as her program contained many errors. The original Duke himself had not been above this; he called them bugs, in reference to a large beetle that had become entangled in one of his chains during an early experiment and brought the first Turing machine to a violent halt. But with steadfast patience, Princess Nell resolved these bugs and made the mechanical Duke into her devoted servant. The Duke in turn had the knack of putting simple programs into all of the soldiers, so that an order given him by Nell was rapidly disseminated into the entire force. For the first time in her life, the Princess had an army and servants. But it was not a conquering sort of army, because the springs in the soldiers' backs unwound rapidly, and they did not have the adaptability of human soldiers. Still, it was an effective force behind the walls of the castle and made her secure from any conceivable aggressor. Following maintenance schedules that had been laid down by the original Duke, Princess Nell set the soldiers to work greasing the gears, repairing cracked shafts and worn bearings, and building new soldiers out of stockpiled parts. She was heartened by her success. But Castle Turing was only one of seven ducal seats in this kingdom, and she knew she had much work to do. The territory around the castle was deeply forested, but grassy ridges rose several miles away, and standing on the castle walls with the original Duke's spyglass, Nell was able to see wild horses grazing there. Purple had taught her the secrets of mastering wild horses, and Duck had taught her how to win their affection, and so Nell mounted an expedition to these grasslands and returned a week later with two beautiful mustangs, Coffee and Cream. She equipped them with fine tack from the Duke's stables, marked with the T crest-for the crest was hers now, and she could with justifIcation call herself the Duchess of Turing. She also brought a plain, unmarked saddle so that she could pass for a commoner if need be-though Princess Nell had become so beautiful over the years and had developed such a fine bearing that few people would mistake her for a commoner now, even if she were dressed in rags and walking barefoot. Lying in her bunkbed in Madame Ping's dormitory, reading these words from a softly glowing page in the middle of the night, Nell wondered at that. Princesses were not genetically different from commoners. On the other side of a fairly thin wall she could hear water running in half a dozen sinks as young women performed their crepuscular ablutions. Nell was the only scripter staying in Madame Ping's dormitory; the others were performers and were just coming back from a long vigorous shift, rubbing liniment on their shoulders, sore from wielding paddles against clients' bottoms, or snorting up great nostril-loads of mites programmed to seek out their inflamed buttocks and help to repair damaged capillaries overnight. And of course, many more traditional activities were going on, such as douching, makeup removal, moisturizing, and the like. The girls went through these

motions briskly, with the unselfconscious efficiency that the Chinese all seemed to share, discussing the day's events in the dry Shanghainese dialect. Nell had been living among these girls for a month and was just starting to pick up a few words. They all spoke English anyway. She stayed up late reading the Primer in the dark. The dormitory was a good place for this; Madame Ping's girls were professionals, and after a few minutes of whispering, giggling, and scandalized communal shushing, they always went to sleep. Nell sensed that she was coming close to the end of the Primer. This would have been evident even if she hadn't been closing in on Coyote, the twelfth and final Faery King. In the last few weeks, since Nell had entered the domain of King Coyote, the character of the Primer had changed. Formerly, her Night Friends or other characters had acted with minds of their own, even if Nell just went along passively. Reading the Primer had always meant racting with other characters in the book while also having to think her way through various interesting situations. Recently the former element had been almost absent. Castle Turing had been a fair sample of King Coyote's domain: a place with few human beings, albeit filled with fascinating places and situations. She made her lonesome way across the domain of King Coyote, visiting one castle after another, and encountering a different conundrum in each one. The second castle (after Castle Turing) was built on the slope of a mountain and had an elaborate irrigation system in which water from a bubbling spring was routed through a system of gates. There were many thousands of these gates, and they were connected to each other in small groups, so that one gate's opening or closing would, in some way, affect that of the others in its group. This castle grew its own food and was suffering a terrible famine because the arrangement of gates had in some way become fubared. A dark, mysterious knight had come to visit the place and apparently sneaked out of his bedroom in the middle of the night and fiddled with connections between some gates in such a way that water no longer flowed to the fields. Then he had disappeared, leaving behind a note stating that he would fix the problem in exchange for a large ransom in gold and jewels. Princess Nell spent some time studying the problem and eventually noticed that the system of gates was actually a very sophisticated version of one of the Duke of Turing's machines. Once she understood that the behavior of the water-gates was orderly and predictable, it was not long before she was able to program their behavior and locate the bugs that the dark knight had introduced into the system. Soon water was flowing through the irrigation system again, and the famine was relieved. The people who lived in this castle were grateful, which she had expected. But then they put a crown on her head and made her their ruler, which she had not expected. On some reflection, though, it only made sense. They would die unless their system functioned properly. Princess Nell was the only person who knew how it worked; she held their fate in her hands. They had little choice but to submit to her rule. So it went, as Princess Nell proceeded from castle to castle, inadvertently finding herself at the helm of a full-fledged rebellion against King Coyote. Each castle depended on some kind of a programmable system that was a little more complicated than the previous one. After the Castle of the Water-gates,

she came to a castle with a magnificent organ, powered by air pressure and controlled by a bewildering grid of push-rods, which could play music stored on a roll of paper tape with holes punched through it. A mysterious dark knight had programmed the organ to play a sad, depressing tune, plunging the place into a profound depression so that no one worked or even got out of bed. With some playing around, Princess Nell established that the behavior of the organ could be simulated by an extremely sophisticated arrangement of water-gates, which meant, in turn, that it could just as well be reduced to an unfathomably long and complicated Turing machine program. When she had the organ working properly and the residents cheered up, she moved on to a castle that functioned according to rules written in a great book, in a peculiar language. Some pages of the book had been ripped out by the mysterious dark knight, and Princess Nell had to reconstruct them, learning the language, which was extremely pithy and made heavy use of parentheses. Along the way, she proved what was a foregone conclusion, namely, that the system for processing this language was essentially a more complex version of the mechanical organ, hence a Turing machine in essence. Next was a castle divided into many small rooms, with a system for passing messages between rooms through a pneumatic tube. In each room was a group of people who responded to the messages by following certain rules laid out in books, which usually entailed sending more messages to other rooms. After familiarizing herself with some of these rule-books and establishing that the castle was another Turing machine, Princess Nell fixed a problem in the message-delivery system that had been created by the vexatious dark knight, collected another ducal coronet, and moved on to castle number six. This place was entirely different. It was much bigger. It was much richer. And unlike all of the other castles in the domain of King Coyote, it worked. As she approached the castle, she learned to keep her horse to the edge of the road, for messengers were constantly blowing past her at a full gallop in both directions. It was a vast open marketplace with thousands of stalls, filled with carts and runners carrying product in all directions. But no vegetables, fish, spices, or fodder were to be seen here; all the product was information written down in books. The books were trundled from place to place on wheelbarrows and carried here and there on great long seedylooking conveyor belts made of hemp and burlap. Book-carriers bumped into each other, compared notes as to what they were carrying and where they were going, and swapped books for other books. Stacks of books were sold in great, raucous auctions-and paid for not with gold but with other books. Around the edges of the market were stalls where books were exchanged for gold, and beyond that, a few alleys where gold could be exchanged for food. In the midst of this hubbub, Princess Nell saw a dark knight sitting on a black horse, paging through one of these books. Without further ado, she spurred her horse forward and drew her sword. She slew him in single combat, right there in the middle of the marketplace, and the book-sellers simply backed out of their way and ignored them as Princess Nell and the dark knight hacked and slashed at each other. When the dark knight fell dead and Princess Nell sheathed her sword, the commotion closed in

about her again, like the waters of a turbulent river closing over a falling stone. Nell picked up the book that the dark knight had been reading and found that it contained nothing but gibberish. It was written in some kind of a cipher. She spent some time reconnoitering, looking for the center of the place, and found no center. One stall was the same as the next. There was no tower, no throne room, no clear system of authority. Examining the market stalls in more detail, she saw that each one included a man who did nothing but sit at a table and decipher books, writing them out on long sheets of foolscap and handing them over to other people, who would read through the contents, consult rule-books, and dictate responses to the man with the quill pen, who enciphered them and wrote them out in books that were then tossed out into the marketplace for delivery. The men with the quill pens, she noticed, always wore jeweled keys on chains around their necks; the key was apparently the badge of the cipherers' guild. This castle proved fiendishly difficult to figure out, and Nell spent a few weeks working on it. Part of the problem was that this was the first castle Princess Nell had visited that was actually functioning as intended; the dark knight had not been able to foul the place up, probably because everything was done in ciphers here, and everything was decentralized. Nell discovered that a smoothly functioning system was much harder to puzzle out than one that was broken. In the end, Princess Nell had to apprentice herself to a master cipherer and learn everything there was to know about codes and the keys that unlocked them. This done, she was given her own key, as a badge of her office, and found a job in one of the stalls enciphering and deciphering books. As it turned out, the key was more than just a decoration; rolled up inside its shaft was a strip of parchment inscribed with a long number that could be used to decipher a message, if the sender wanted you to decipher it. From time to time she would go to the edge of the market, exchange a book for some gold, then go buy some food and drink. On one of these trips, she saw another member of the cipherer's guild, also taking his break, and noticed that the key hanging around his neck looked familiar: it was one of the eleven keys that Nell and her Night Friends had taken from the Faery Kings and Queens! She concealed her excitement and followed this cipherer back to his stall, making a note of where he worked. Over the next few days, going from stall to stall and examining each cipherer, she was able to locate the rest of the eleven keys. She was able to steal a look at the rule-books that her employers used to respond to the encoded messages. They were written in the same special language used at the previous two castles. In other words, once Princess Nell had deciphered the messages, her stall functioned like another Turing machine. It would have been easy enough to conclude that this whole castle was, like the others, a Turing machine. But the Primer had taught Nell to be very careful about making unwarranted assumptions. Just because her stall functioned according to Turing rules did not mean that all of the others did. And even if every stall in this castle was, in fact, a Turing machine, she still could not come to any fixed conclusions. She had seen riders carrying books to and from the castle, which meant that cipherers must be at work elsewhere in this kingdom. She could not verify that all of them were Turing

machines. It did not take long for Nell to attain prosperity here. After a few months (which in the Primer were summarized in as many sentences) her employers announced that they were getting more work than they could handle. They decided to split their operation. They erected a new stall at the edge of the market and gave Nell some of their rule-books. They also obtained a new key for her. This was done by dispatching a special coded message to the Castle of King Coyote himself, which was three days' ride to the north. Seven days later, Nell's key came back to her in a scarlet box bearing the seal of King Coyote himself. From time to time, someone would come around to her stall and offer to buy her out. She always turned them down but found it interesting that the keys could be bought and sold in this fashion. All Nell needed was money, which she quickly accumulated through shrewd dealings in the market. Before long, all eleven of the keys were in her possession, and after liquidating her holdings and turning them into jewels, which she sewed into her clothes, she rode her horse out of the sixth castle and turned north, heading for the seventh: the Castle of King Coyote, and the ultimate goal of her lifelong quest.

Nell goes to Madame Ping's Theatre; rumors of the Fists; an important client; assault of the Fists of Righteous Harmony; ruminations on the inner workings of ractives. Like much that was done with nanotechnology, Feed lines were assembled primarily from a few species of small and uncomplicated atoms in the upper right-hand corner of Mendeleev's grid: carbon, nitrogen, oxygen, silicon, phosphorus, sulfur, and chlorine. The Fists of Righteous Harmony had discovered, to their enduring delight, that objects made of these atoms burned rather nicely once you got them going. The flat, low Yangtze Delta country east of Shanghai was a silk district well stocked with mulberry trees, which when felled, stacked, and burned beneath the Feed lines would eventually ignite them like road flares. The Nipponese Feed was heavy on the phosphorus and burned with a furious white flame that lit up the night sky in several places as seen from the tall buildings in Pudong. One major line led toward Nanjing, one toward Suzhou, one toward Hangzhou: these distant flares inevitably led to rumors, among the hordes of refugees in Shanghai, that those cities were themselves burning. The New Atlantan Feed had a higher sulfur content that, when burned, produced a plutonic reek that permeated everything for dozens of miles downwind, making the fires seem much closer than they really were. Shanghai was smelling pretty sulfurous as Nell walked into it across one of the bridges linking downtown Pudong with the much lower and older Bund. The Huang Pu had been too wide to bridge easily until nano had come along, so the four downtown bridges were made of the new materials and seemed impossibly fragile compared with the reinforced-concrete behemoths built to the north and south during the previous century. A few days ago, working on a script in Madame Ping's offices far above, Nell had gazed out the window at a barge making its way down the river, pulled by a rickety old diesel tug, swathed in dun tarps. A few hundred meters upstream of this very bridge she was now crossing, the tarps had begun squirming and boiling, and a dozen young

men in white tunics had jumped out from beneath, scarlet bands tied about their waists, scarlet ribbons around their wrists and foreheads. They had swarmed across the top of the barge hacking at ropes with knives, and the tarps had reluctantly and unevenly fallen away to expose a patchy new coat of red paint and, lined up on the top of the barge like a string of enormous firecrackers, several dozen compressed gas tanks, also painted a festive red for the occasion. Under the circumstances, she did not doubt for a moment that the men were Fists and the gas hydrogen or something else that burned well. But before they had been able to reach the bridge, the tanks had been burst and ignited by something too small and fast for Nell to see from her high post. The barge silently turned into a carbuncle of yellow flame that took up half the width of the Huang Pu, and though the diamond window filtered all of the heat out of its radiance, Nell was able to put her hand on the pane and feel the absorbed warmth, not much hotter than a person's skin. The whole operation had been touchingly hapless, in an age when a hand-size battery could contain as much energy as all those cylinders of gas. It had a quaint twentieth-century feel and made Nell oddly nostalgic for the days when dangerousness was a function of mass and bulk. The passives of that era were so fun to watch, with their big, stupid cars and big, stupid guns and big, stupid people. Up- and downstream of the bridge, the funeral piers were crowded with refugee families heaving corpses into the Huang Pu; the emaciated bodies, rolled up in white sheets, looked like cigarettes. The Coastal Republic authorities had instituted a pass system on the bridges to prevent rural refugees from swarming across into the relatively spacious streets, plazas, atria, and lobbies of Pudong and gumming up the works for the office crowd. By the time Nell made it across, a couple of hundred refugees had already picked her out as a likely alms source and were waiting with canned demonstrations: women holding up their gaunt babies, or older children who were trained to hang comatose in their arms; men with open wounds, and legless gaffers dauntlessly knucklewalking through the crowd, butting at people's knees. The taxi-drivers were stronger and more aggressive than the rurals, though, and had a fearsome reputation that created space around them in the crowd, and that was more valuable than an actual vehicle; a vehicle would always get stuck in traffic, but a taxi-driver's hat generated a magic force field that enabled the wearer to walk faster than anyone else. The taxi-drivers converged on Nell too, and she picked out the biggest one and haggled with him, holding up fingers and essaying a few words in Shanghainese. When the numbers had climbed into the right range for him, he spun around suddenly to face the crowd. The suddenness of the movement drove people back, and the meter-long bamboo stick in his hand didn't hurt either. He stepped forward and Nell hurried after him, ignoring the myriad tuggings at her long skirts, trying not to wonder which of the beggars was a Fist with a concealed knife. If her clothes hadn't been made of untearable, uncuttable nanostuff, she would have been stripped naked within a block. Madame Ping's was still doing a decent business. Its clientele were willing to put up with some inconvenience to get there. It was only a short distance from the bridgehead, and the Madame had put a few truculent taxi-drivers on retainer as

personal escorts. The business was startlingly large given the scarcity of real estate in Shanghai; it occupied most of a five-story reinforced-concrete Mao Dynasty apartment block, having started out with just a couple of flats and expanded room by room as the years went on. The reception area reminded one of a not-bad hotel lobby, except that it had no restaurant or bar; none of the clients wanted to see or be seen by any other. The desk was staffed by concierges whose job was to get the clients out of view as quickly as possible, and they did it so well that an uninitiated passerby might get the impression that Madame Ping's was some kind of a walk-in kidnapping operation. One of these functionaries, a tiny woman who seemed oddly prim and asexual considering that she was wearing a black leather miniskirt, briskly took Nell to the top floor, where the large apartments had been built and elaborate scenarios were now realized for Madame Ping's clients. As the writer, Nell of course never actually entered the same room as the client. The woman in the miniskirt escorted her into a nearby observation room, where a high-res cine feed from the next room covered most of one wall. If she hadn't known it already, Nell would have seen from the client's uniform that he was a colonel in Her Majesty's Joint Forces. He was wearing a full dress uniform, and the various pins and medals on his coat indicated that he had spent a good deal of his career attached to various Protocol Enforcement units, been wounded in action several times, and displayed exceptional heroism on one occasion. In fact, it was clear that he was a rather important fellow. Reviewing the previous half-hour, Nell saw that, not surprisingly, he had arrived in mufti, carrying the uniform in a leather satchel. Wearing the uniform must be part of the scenario. At the moment he was seated in a rather typical Victorian parlor, sipping tea from a Royal Albert china cup decorated with a somewhat agonistic briar rose pattern. He looked fidgety; he'd been kept waiting for half an hour, which was also part of the scenario. Madame Ping kept telling her that no one ever complained about having to wait too long for an orgasm; that men could do that to themselves any time they wanted, and that it was the business leading up to it that they would pay for. The biological readouts seemed to confirm Madame Ping's rule: Perspiration and pulse were rather high, and he was about half erect. Nell heard the sound of a door opening. Switching to a different angle she saw a parlormaid entering the room. Her uniform was not as overtly sexy as most of the ones in Madame Ping's wardrobe department; the client was sophisticated. The woman was Chinese, but she played the role with the mid-Atlantic accent currently in vogue among neo-Victorians: "Mrs. Braithwaite will see you now." The client stepped into an adjoining drawing room, where two women awaited him: a heavy Anglo in late middle age and a very attractive Eurasian woman, about thirty. Introductions were performed: The old woman was Mrs. Braithwaite, and the younger woman was her daughter. Mrs. was somewhat addled, and Miss was obviously running the show. This section of the script never changed, and Nell had been over it a hundred times trying to troubleshoot it. The client went through a little speech in which he informed Mrs. Braithwaite that her son Richard had been killed in action, displaying great heroism in the process, and that he was recommending him for a

posthumous Victoria Cross. Nell had already done the obvious, going back through the Times archives to see whether this was a reconstruction of an actual event in the client's life. As far as she could determine, it was more like a composite of many similar events, perhaps with a dollop of fantasy thrown in. At this point, the old lady got a case of the vapors and had to be helped from the room by the parlormaid and other servants, leaving the client alone with Miss Braithwaite, who was taking the whole thing quite stoically. "Your composure is admirable, Miss Braithwaite," said the client, "but please be assured that no one will blame you for giving vent to your emotions at such a time." When the client spoke this line, there was an audible tremor of excitement in his voice. "Very well, then," said Miss Braithwaite. She withdrew a small black box from her reticule and pressed a button. The client grunted and arched his back so violently that he fell out of his chair onto the rug, where he lay paralyzed. "Mites- you have infected my body with some insidious nanosite," he gasped. "in the tea." "But that is impossible- most mites highly susceptible to thermal damage- boiling water would destroy them." "You underestimate the capabilities of CryptNet, Colonel Napier. Our technology is advanced far beyond your knowledge- as you will discover during the next few days!" "Whatever your plan is- be assured that it will fail!" "Oh, I have no plan in particular," Miss Braithwaite said. "This is not a CryptNet operation. This is personal. You are responsible for the death of my brother Richard- and I will have you show the proper contrition." "I assure you that I was as deeply saddened-" She zapped him again. "I do not want your sadness," she said. "I want you to admit the truth: that you are responsible for his death!" She pressed another button, which caused Colonel Napier's body to go limp. She and a maid wrestled him into a dumbwaiter and moved him down to a lower floor, where, after descending via the stairway, they tied him to a rack. This was where the problem came in. By the time they had finished tying him up, he was sound asleep. "He did it again," said the woman playing the role of Miss Braithwaite, addressing herself to Nell and anyone else who might be monitoring. "Six weeks in a row now." When Madame Ping had explained this problem to Nell, Nell wondered what the problem was. Let the man sleep, as long as he kept coming and paid his bill. But Madame Ping knew her clients and feared that Colonel Napier was losing interest and might shift his business to some other establishment unless they put some variety into the scenario. "The fighting has been very bad," the actress said. "He's probably exhausted." "I don't think it's that," Nell said. She had now opened a private voice channel direct to the woman's eardrum. "I think it is a personal change." "They never change, sweetheart," said the actress. "Once they get the taste, they have it forever." "Yes, but different situations may trigger those feelings at different times of life," Nell said. "In the past it has been guilt over the deaths of his soldiers. Now he has made his peace. He has accepted his guilt, and so he accepts the punishment. There is no longer a contest of wills, because he has become submissive." "So what do we do?" "We must create a genuine contest of wills. We must force him to do something he really doesn't want to do," Nell said, thinking aloud. What would fit that bill? "Wake him up," Nell said. "Tell

him you were lying when you said this wasn't a CryptNet operation. Tell him you want real information. You want military secrets." Miss Braithwaite sent the maid out for a bucket of cold water and heaved it over Colonel Napier's body. Then she played the role as Nell had suggested, and did it well; Madame Ping hired people who were good at improvisation, and since most of them never actually had to have sex with clients, she had no trouble finding good ones. Colonel Napier seemed surprised, not unpleasantly so, at the script change. "If you suppose that I will divulge information that might lead to the deaths of more of my soldiers, you are sadly mistaken," he said. But his voice sounded a little bored and disappointed, and the bio readouts coming in from the nanosites in his body did not show the full flush of sexual excitement that, presumably, he was paying for. They still were not meeting their client's needs. On the private channel to Miss Braithwaite, Nell said, "He still doesn't get it. This isn't a fantasy scenario anymore. This is real. Madame Ping's is actually a CryptNet operation. We've been drawing him in for the last several years. Now he belongs to us, and he's going to give us information, and he's going to keep giving it to us, because he's our slave." Miss Braithwaite acted the scene as suggested, making up more florid dialogue as she went along. Watching the bio readouts, Nell could see that Colonel Napier was just as scared and excited, now, as he had been on his very first visit to Madame Ping's several years ago (they kept records). They were making him feel young again, and fully alive. "Are you connected with Dr. X?" Colonel Napier said. "We'll ask the questions," Nell said. "I shall do the asking. Lotus, give him twenty for that!" said Miss Braithwajte, and the maid went to work on Colonel Napier with a cane. The rest of the session almost ran itself, which was good for Nell, because she had been startled by Napier's reference to Dr. X and had gone into a reverie, remembering comments that Harv had made about the same person many years ago. Miss Braithwaite knew her job and understood Nell's strategy instantly: the scenario did not excite the client unless there was a genuine contest of wills, and the only way for them to create that contest was to force Napier to reveal real classified information. Reveal it he did, bit by bit, under the encouragement of Lotus's bamboo and Miss Braithwaite's voice. Most of it had to do with troop movements and other minutiae that he probably thought was terribly interesting. Nell didn't. "Get more about Dr. X," she said. "Why did he assume a connection between CryptNet and Dr. X?" After a few more minutes of whacking and verbal domination, Colonel Napier was ready to spill. "Big operation of ours for many years now-Dr. X is working in collusion with a high-level CryptNet figure, the Alchemist. Working on something they mustn't be allowed to have." "Don't you dare hold back on me," Miss Braithwaite said. But before she could extract more information about the Alchemist, the building was jolted by a tremendous force that sent thin cracks racing through the old concrete. In the silence that followed, Nell could hear women screaming all over the building, and a crackling, hissing sound as dust and sand sifted out of a fissure in the ceiling. Then her ears began to resolve another sound: men shouting, "Sha! Sha!" "I suggest that someone has just breached the wall of your building with an explosive

charge," Colonel Napier said, perfectly calm. "If you would be so good as to terminate the scenario now and release me, I shall try to make myself useful in whatever is to follow." Whatever is to follow. The shouting meant simply, "Kill! Kill!" and was the battle cry of the Fists of Righteous Harmony. Perhaps they wanted Colonel Napier. But it was more likely that they had decided to attack this place for its symbolic value as a den of barbarian decadence. Miss Braithwaite and Lotus had already gotten Colonel Napier out of his restraints, and he was pulling on his trousers. "That we are not all dead implies that they are not making use of nanotechnological methods," he said professorially. "Hence this attack may safely be assumed to originate from a low-level neighborhood cell. The attackers probably believe the Fist doctrine that they are immune from all weapons. It never hurts, in these situations, to give them a reality check of some sort." The door to Napier's room flew open, splinters of blond naked wood hissing across the floor. Nell watched, as though watching an old movie, as Colonel Napier drew a ridiculously shiny cavalry saber from its scabbard and ran it through the chest of the attacking Fist. This one fell back into another, creating momentary confusion; Napier took advantage of it, methodically planting his feet in a rather prissy-looking stance, squaring his shoulders, calmly reaching out, as if he were using the saber to poke around in a dark closet, and twitching the point beneath the second Fist's chin, incidentally cutting his throat in the process. A third Fist had gotten into the room by this point, this one bearing a long pole with a knife lashed to the end of it with the gray polymer ribbon peasants used for rope. But as he tried to wheel the weapon around, its butt end got tangled up in the rack to which Napier had lately been tied. Napier stepped forward cautiously, checking his footing as he went, as if he did not want to get any blood on his boots, parried a belated attack, and stabbed the Fist in the thorax three times in quick succession. Someone kicked at the door to Nell's room. "Ah," Colonel Napier sighed, when it seemed clear that there were no more attackers in this party, "it is really very singular that I happen to have brought the full dress uniform, as edged weapons are not a part of our usual kit." Several kicks had failed to open Nell's door, which unlike the ones in the scenario rooms was made of a modern substance and could not possibly be broken in that way. But Nell could hear voices out in the corridor and suspected that contrary to Napier's speculation, they might have nanotech devices of a very primitive sort- small explosives, say, capable of blowing doors open. She ditched her long dress, which would only get in the way, and got down on knees and elbows to peer through the crack under the door. There were two pairs of feet. She could hear them conversing in low, businesslike tones. Nell opened the door suddenly with one hand, reaching through with the other to shove a fountain pen into the throat of the Fist standing closest to the door. The other one reached for an old automatic rifle slung over his shoulder. This gave Nell more than enough time to kick him in the knee, which may or may not have done permanent damage but certainly threw him off balance. The Fist kept trying to bring his rifle to bear, as Nell kicked him over and over again. In the end she was able to twist the rifle free from his feeble one-

handed grasp, whirl it around, and butt him in the head. The Fist with the pen in his neck was sitting on the floor watching her calmly. She aimed the rifle his way, and he held up one hand and looked down and away. His wound was bleeding, but not all that much; she had ruined his week but not hit anything big. She reflected that it was probably a healthy thing for hini in the long run to be rid of the superstition that he was immune to weapons. Constable Moore had taught her a thing or two about rifles. She stepped back into her room, locked the door, and devoted a minute or so to familiarizing herself with its controls, checking the magazine (only half full) and firing a single round (into the door, which stopped it) just to make sure it worked. She was trying to suppress a flashback to the screwdriver incident. This frightened her until she realized that this time around she was much more in control of the situation. Her conversations with the Constable had not been without effect. Then she made her way down the corridors and stairwells toward the lobby, slowly gathering a retinue of terrified young women along her way. They passed a few clients, mostly male and mostly European, who had been pulled from their scenario rooms and crudely hacked up by the Fists. Three times she had to fire, surprised each time at how complicated it was. Accustomed to the Primer, Nell had to make allowances when functioning in the real world. She and her followers found Colonel Napier in the lobby, about three-quarters dressed, carrying on a memorable edged-weapons duel with a couple of Fists who had, perhaps, been left there to keep the path of escape open. Nell considered trying to shoot at the Fists but decided against it, because she did not trust her marksmanship and also because she was mesmerized by the entire scene. Nell would have been dazzled by Colonel Napier if she had not recently seen him strapped to a rack. Still, there was something about this very contradiction that made him, and by extension all Victorian men, fascinating to her. They lived a life of nearly perfect emotional denial-a form of asceticism as extreme as that of a medieval stylite. Yet they did have emotions, the same as anyone else, and only vented them in carefully selected circumstances. Napier calmly impaled a Fist who had tripped and fallen, then turned his attention to a new antagonist, a formidable character skilled with a real sword. The duel between Western and Eastern martial arts moved back and forth across the lobby floor, the two combatants staring directly into one another's eyes and trying to intuit the other's thoughts and emotional state. The actual thrusts and parries and ripostes, when they came, were too rapid to be understood. The Fist's style was quite beautiful to watch, involving many slow movements that looked like the stretching of large felines at the zoo. Napier's style was almost perfectly boring: He moved about in a crabbed stance, watched his opponent calmly, and apparently did a lot of deep thinking. Watching Napier at work, watching the medals and braid swinging and glinting on his jacket, Nell realized that it was precisely their emotional repression that made the Victorians the richest and most powerful people in the world. Their ability to submerge their feelings, far from pathological, was rather a kind of mystical art that gave them nearly magical power over Nature and over the more intuitive tribes. Such was also the strength of the Nipponese. Before the struggle could be resolved, a

smart flechette, horsefly-size, trailing a whip antenna as thick as a hair and as long as a finger, hissed in through a broken window and thunked into the back of the Fist's neck. It did not strike very hard but must have shot some poison into his brain. He sat down quickly on the floor, closed his eyes, and died in that position. "Not very chivalrous," Colonel Napier said distastefully. "I suppose I have some bureaucrat up on New Chusan to thank for that." A cautious tour of the building turned up several more Fists who had died in the same fashion. Outside, the same old crowd of refugees, beggars, pedestrians, and cargo-carrying bicyclists streamed on, about as undisturbed as the Yangtze. Colonel Napier did not return to Madame Ping's the next week, but Madame Ping did not blame Nell for the loss of his custom. To the contrary, she praised Nell for having correctly divined Napier's wishes and for improvising so well. "A fine performance," she said. Nell had not really thought of her work as a performance, and for some reason Madame Ping's choice of words provoked her in a way that kept her awake late that night, staring into the darkness above her bunk. Since she had been very small, she had made up stories and recited them to the Primer, which were often digested and incorporated into the Primer's stories. It had come naturally to Nell to do the same work for Madame Ping. But now her boss was calling it a performance, and Nell had to admit that it was, in a way. Her stories were being digested, not by the Primer, but by another human being, becoming a part of that person's mind. That seemed simple enough, but the notion troubled her for a reason that did not become clear until she had lain half-asleep and fretted over it for several hours. Colonel Napier did not know her and probably never would. All of the intercourse between him and Nell had been mediated through the actress pretending to be Miss Braithwaite, and through various technological systems. Nonetheless she had touched him deeply. She had penetrated farther into his soul than any lover. If Colonel Napier had chosen to return the following week and Nell had not been present to make up the story for him, would he have missed her? Nell suspected that he would have. From his point of view, some indefinable essence would have been wanting, and he would have departed unsatisfied. If this could happen to Colonel Napier in his dealings with Madame Ping's, could it happen to Nell in her dealings with the Primer? She had always felt that there was some essence in the book, something that understood her and even loved her, something that forgave her when she did wrong and appreciated what she did right. When she'd been very young, she hadn't questioned this at all; it had been part of the book's magic. More recently she had understood it as the workings of a parallel computer of enormous size and power, carefully programmed to understand the human mind and give it what it needed. Now she wasn't so sure. Princess Nell's recent travels through the lands of King Coyote, and the various castles with their increasingly sophisticated computers that were, in the end, nothing more than Turing machines, had caught her up in a bewildering logical circle. In Castle Turing she had learned that a Turing machine could not really understand a human being. But the Primer was, itself, a Turing machine, or so she suspected; so how could it understand Nell? Could it be that the Primer was just a conduit, a technological system that mediated

between Nell and some human being who really loved her? In the end, she knew, this was basically how all ractives worked. The idea was too alarming to consider at first, and so she circled around it cautiously, poking at it from different directions, like a cavewoman discovering fire for the first time. But as she settled in closer, she found that it warmed her and satisfied her, and by the time her mind wandered into sleep, she had become dependent upon it and would not consider going back into the cold and dark place where she had been traveling for so many years.

Carl Hollywood returns to Shanghai; his forebears in the territory of the Lone Eagles; Mrs. Kwan's teahouse. Heavy rains had come rolling into Shanghai from the West, like a harbinger of the Fists of Righteous Harmony and the thundering herald of the coming Celestial Kingdom. Stepping off the airship from London, Carl Hollywood at once felt himself in a different Shanghai from the one he had left; the old city had always been wild, but in a sophisticated urban way, and now it was wild like a frontier town. He sensed this ambience before he even left the Aerodrome; it leaked in from the streets, like ozone before a thunderstorm. Looking out the windows, he could see a heavy rain rushing down, knocking all the nanotech out of the air and down into the gutters, whence it would eventually stain the Huang Pu and then the Yangtze. Whether it was the wild atmosphere or the prospect of being rained upon, he stopped his porters short of the main exit doors so that he could change hats. The hatboxes were stacked on one of the carts; his bowler went into the smallest and topmost box, which was empty, and then he yanked the largest box out from underneath, popping the stack, and took out a ten-gallon Stetson of breathtaking width and sweep, almost like a head-mounted umbrella. Casting an eye into the street, where a rushing brown stream carried litter, road dust, choleraridden sewage, and tons of captive nanotech toward the storm drains, he slipped off his leather shoes and exchanged them for a pair of handtooled cowboy boots, made from hides of gaudy reptiles and avians, the pores of which had been corked with mites that would keep his feet dry even if he chose to wade through the gutters. Thus reconfigured, Carl Hollywood stepped out into the streets of Shanghai. As he came out the doors of the Aerodrome, his duster billowed in the cold wind of the storm and even the beggars stepped away from him. He paused to light a cigar before proceeding and was not molested; even the refugees, who were starving or at least claimed to be, derived more enjoyment from simply looking at him than they would have from the coins in his pocket. He walked the four blocks to his hotel, pursued doggedly by the porters and by a crowd of youngsters entranced by the sight of a real cowboy. Carl's grandfather was a Lone Eagle who had ridden out from the crowding and squalor of Silicon Valley in the 1990s and homesteaded a patch of abandoned ranch along a violent cold river on the eastern slope of the Wind River Range. From there he had made a comfortable living as a freelance coder and consultant. His wife had left him for the bright lights and social life of California and been startled when he had managed to persuade a judge that he was better equipped to raise their son than she was.

Grandfather had raised Carl Hollywood's father mostly in the out-of-doors, hunting and fishing and chopping wood when he wasn't sitting inside studying his calculus. As the years went by, they had gradually been joined by like-minded sorts with similar stories to tell, so that by the time of the Interregnum they had formed a community of several hundred, loosely spread over a few thousand square miles of nearwilderness but, in the electronic sense, as tightly knit as any small village in the Old West. Their technological prowess, prodigious wealth, and numerous large weapons had made them a dangerous group, and the odd pickup-truck-driving desperadoes who attacked an isolated ranch had found themselves surrounded and outgunned with cataclysmic swiftness. Grandfather loved to tell stories of these criminals, how they had tried to excuse their own crimes by pleading that they were economically disadvantaged or infected with the disease of substance abuse, and how the Lone Eagles- many of whom had overcome poverty or addiction themselves-had dispatched them with firing squads and left them posted around the edge of their territory as NO TRESPASSING signs that even the illiterate could read. The advent of the Common Economic Protocol had settled things down and, in the eyes of the old-timers, begun to soften and ruin the place. There was nothing like getting up at three in the morning and riding the defensive perimeter in subzero cold, with a loaded rifle, to build up one's sense of responsibility and community. Carl Hollywood's clearest and best memories were of going on such rides with his father. But as they squatted on packed snow boiling coffee over a fire, they would listen to the radio and hear stories about the jihad raging across Xinjiang, driving the Han back into the east, and about the first incidents of nanotech terrorism in Eastern Europe. Carl's father didn't have to tell him that their community was rapidly acquiring the character of a historical theme park, and that before long they would have to give up the mounted patrols for more modern defensive systems. Even after those innovations had been made and the community had mostly joined up with the First Distributed Republic, Carl and his father and grandfather had continued to do things in the old way, hunting elk and heating their houses with wood-burning stoves and sitting behind their computer screens in dark rooms late into the night hand-tooling code in assembly language. It was a purely male household (Carl's mother had died when he was nine years old, in a rafting accident), and Carl had fled the place as soon as he'd found a way, going to San Francisco, then New York, then London, and making himself useful in theatrical productions. But the older he got, the more he understood in how many ways he was rooted in the place where he grew up, and he never felt it more purely than he did striding down a crowded street in a Shanghai thunderstorm, puffing on a thick cigar and watching the rain dribble from the rim of his hat. The most intense and clear sensations of his life had flooded into his young and defenseless mind during his first dawn patrol, knowing the desperadoes were out there somewhere. He kept returning to these memories in later life, trying to recapture the same purity and intensity of sensation, or trying to get his ractors to feel it. Now for the first time in thirty years he felt the same thing, this time on the streets of Shanghai, hot and pulsing on the edge of a

dynastic rebellion, like the arteries of an old man about to have his first orgasm in years. He merely touched base at his hotel, where he stuffed the pockets of his coat with a sheaf of foolscap, a fountain pen, a silver box loaded with cigars like rounds in an ammo clip, and some tiny containers of nanosnuff that he could use to adjust the functioning of his brain and body. He also hefted a heavy walking-stick, a real wizard's staff loaded with security aerostats that would shepherd him back to the hotel in the event of a riot. Then he returned once more to the streets, shouldering for a mile through the crowd until he reached a teahouse where he had passed many long nights during his tenure at the Parnasse. Old Mrs. Kwan welcomed him warmly, bowing many times and showing him to his favorite corner table where he could look out on the intersection of Nanjing Road and a narrow side street jammed with tiny market stalls. All he could see now were the backs and buttocks of people in the street, jammed up against the glass by the pressure of the crowd. He ordered a big pot of his favorite green tea, the most expensive kind, picked in April when the leaves were tender and young, and spread out his sheets of foolscap across the table. This teahouse was fully integrated into the worldwide media network, and so the pages automatically jacked themselves in. Under Carl Hollywood's murmured commands they began to fill themselves with columns of animated text and windows bearing images and cine feeds. He took his first sip of tea- always the best one- withdrew his big fountain pen from his pocket, removed the lid, and touched it to the paper. He began to inscribe commands onto the page, in words and drawings. As he finished the words, they were enacted before him, and as he drew the lines between the boxes and circles, links were made and information flowed. At the bottom of the page he wrote the word MIRANDA and drew a circle around it. It was not connected to anything else in the diagram yet. He hoped that before long it would be. Carl Hollywood worked on his papers late into the night, and Mrs. Kwan continued to replenish his teapot and to bring him little sweets and decorated the edge of his table with candles as night fell and the teahouse darkened, for she remembered that he liked to work by candlelight. The Chinese people outside, separated from him by half an inch of crosslinked diamond, watched with their noses making white ellipses against the pane, their faces glowing in the candlelight like ripe peaches hanging in dark lush foliage.

The Hackworths in transit, and in London; the East End; a remarkable boatride; Dramatis Personae; a night at the theatre. Smooth, fine-grained arctic clouds undulated slowly like snow drifts into the distance, a thousand miles looking like the width of a front yard, lit but not warmed by a low apricot sun that never quite went down. Fiona lay on her stomach on the top bunk, looking out the window, watching her breath condense on the pane and then evaporate in the parched air. "Father?" she said, very softly, to see if he was awake. He wasn't, but he woke up quickly, as if he'd been in one of those dreams that just skims beneath the surface of consciousness, like an airship clipping a few cloud-tops. "Yes?" "Who is the Alchemist? Why are you looking for him?" "I would rather not explain why I'm looking for him. Let us say that I have incurred obligations that want settling." Her father seemed more preoccupied with the second part of the question than she'd expected, and his voice was steeped in regret. "Who is he?" she insisted gently. "Oh. Well, my darling, if I knew that, I'd have found him." "Father!" "What sort of a person is he? I haven't been afforded many clues, unfortunately. I've tried to draw some deductions from the sorts of people who are looking for him, and the sort of person I am." "Pardon me, Father, but what bearing does your own nature have on that of the Alchemist?" "More than one knowledgeable sort has arrived at the conclusion that I'm just the right man to find this fellow, even though I know nothing of criminals and espionage and so forth. I'm just a nanotechnological engineer." "That's not true, Father! You're ever so much more than that. You know so many stories-you told me so many, when you were gone, remember?" "I suppose so," he allowed, strangely diffident. "And I read it every night. And though the stories were about faeries and pirates and djinns and such, I could always sense that you were behind them. Like the puppeteer pulling the strings and imbuing them with voices and personalities. So I think you're more than an engineer. It's just that you need a magic book to bring it out." "Well . . . that's a point I had not considered," her father said, his voice suddenly emotional. She fought the temptation to peer over the edge of the bed and look at his face, which would have embarrassed him. Instead she curled up in her bed and closed her eyes. "Whatever you may think of me, Fiona- and I must say I am pleasantly surprised that you think of me so favourably- to those who despatched me on this errand, I am an engineer. Without being arrogant, I might add that I have advanced rapidly in that field and attained a position of not inconsiderable responsibility. As this is the only characteristic that distinguishes me from other men, it can be the only reason I was chosen to find the Alchemist. From this I infer that the Alchemist is himself a nanotechnological researcher of some sophistication, and that he is thought to be developing a product that is of interest to more than one of the Powers." "Are you talking about the Seed, Father?" He was silent for a few moments. When he spoke again, his voice was high and tight. "The Seed. How did you know about the Seed?" "You told me about it, Father. You told me it was a dangerous thing, and that Protocol Enforcement mustn't allow it to be created. And besides . . . "Besides what?" She was on the verge of

reminding him that her dreams had been filled with seeds for the last several years, and that every story she had seen in her Primer had been replete with them: seeds that grew up into castles; dragon's teeth that grew up into soldiers; seeds that sprouted into giant beanstalks leading to alternate universes in the clouds; and seeds, given to hospitable, barren couples by itinerant crones, that grew up into plants with bulging pods that contained happy, kicking babies. But she sensed that if she mentioned this directly, he would slam the steel door in her face- a door that was tantalizingly cracked open at the moment. "Why do you think that Seeds are so interesting?" she essayed. "They are interesting inasmuch as a beaker of nitroglycerin is interesting," he said. "They are subversive technology. You are not to speak of Seeds again, Fiona- CryptNet agents could be anywhere, listening to our conversation." Fiona sighed. When her father spoke freely, she could sense the man who had told her the stories. When certain subjects were broached, he drew down his veil and became just another Victorian gentleman. It was irksome. But she could sense how the same characteristic, in a man who was not her father, could be provocative. It was such an obvious weakness that neither she nor any woman could resist the temptation to exploit it-a mischievous and hence tantalizing notion that was to occupy much of Fiona's thinking for the next few days, as they encountered other members of their tribe in London. . . . After a simple dinner of beer and pasties in a pub on the fringes of the City, they rode south across the Tower Bridge, pierced a shallow layer of posh development along the right bank of the river, and entered into Southwark. As in other Atlantan districts of London, Feed lines had been worked into the sinews of the place, coursing through utility tunnels, clinging to the clammy undersides of bridges, and sneaking into buildings through small holes bored in the foundations. The tiny old houses and flats of this once impoverished quarter had mostly been refurbished into toeholds for young Atlantans from all around the Anglosphere, poor in equity but rich in expectations, who had come to the great city to incubate their careers. The businesses on the ground floors tended to be pubs, coffeehouses, and music halls. As father and daughter worked their way east, generally paralleling the river, the lustre that was so evident near the approaches to the bridge began to wear thin in places, and the ancient character of the neighborhood began to assert itself, as the bones of the knuckles reveal their shape beneath the stretched skin of a fist. Wide gaps developed between the waterfront developments, allowing them to look across the river into a district whose blanket of evening fog was already stained with the carcinogenic candy-colored hues of big mediatrons. Fiona Hackworth noticed a glow in the air, which resolved into a constellation when she blinked and focused. A pinprick of green light, an infinitesimal chip of emerald, touched the surface of her eye, expanding into a cloud of light. She blinked twice, and it was gone. Sooner or later it and many others would make their way to the corners of her eyes, giving her a grotesque appearance. She drew a handkerchief from her sleeve and wiped her eyes. The presence of so many lidar-emitting mites prompted her to realize that they had been infiltrating a great expanse of fog for some minutes without really being aware of it;

moisture from the river was condensing around the microscopic guardians of the border. Colored light flashed vaguely across the screen of fog before them, silhouetting a stone column planted in the center of the road: wings of a gryphon, horn of a unicorn, crisp and black against a lurid cosmos. A constable stood beside the pediment, symbolically guarding the bar. He nodded to the Hackworths and mumbled something gruff but polite through his chinstrap as father and daughter rode out of New Atlantis and into a gaudy dave full of loutish thetes scrumming and chanting before the entrances of pubs. Fiona caught sight of an old Union Jack, then did a double-take and realized that the limbs of the St. Andrew's Cross had been enhanced with stars, like the Confederate Battle Flag. She gave her chevaline a nudge and pulled up nearly abreast with her father. Then the city became darker and quieter, though no less crowded, and for a few blocks they saw only dark-haired men with mustaches and women who were nothing more than columns of black fabric. Then Fiona smelled anise and garlic, and they passed into Vietnamese territory for a short time. She would have enjoyed stopping at one of the sidewalk caf?for a bowl of pho, but her father rode on, pursuing the tide that was ebbing down the Thames, and in a few more minutes they had come once again to the bank. It was lined with ancient masonry warehouses-a category of structure now so obsolete as to defy explanation-which had been converted into offices. A pier rode on the surface of the river, riding up and down on the tide, linked to the rim of the granite embankment by a hinged gangway. A shaggy black vessel was tied up to the pier, but it was completely unlit, visible only by its black shadow against the charcoal-gray water. After the chevalines had planted themselves and the Hackworths had dismounted, they were able to hear low voices coming from below. John Hackworth withdrew some tickets from his breast pocket and asked them to illuminate themselves; but they were printed on old-fashioned paper that did not contain its own energy source, and so he finally had to use the microtorch dangling from his watch chain. Apparently satisfied that they had arrived at the right place, he offered Fiona his arm and escorted her down the gangway to the pier. A tiny flickering light bobbed toward them and resolved into an Afro-Caribbean man, wearing rimless glasses and carrying an antique hurricane lamp. Fiona watched his face as his enormous eyes, yellowed like antique ivory billiard balls, scanned their tickets. His skin was rich and warm and glowing in the light of the candle, and he smelled faintly of citrus combined with something darker and less ingratiating. When he was finished, he looked up, not at the Hackworths but off into the distance, turned his back, and ambled away. John Hackworth stood there for a few moments, awaiting instructions, then straightened, squared his shoulders, and led Fiona across the pier to the boat. It was eight or ten meters long. There was no gangway, and persons already on board had to reach out and clutch their arms and pull them in, a breach of formality that happened so quickly that they had no time to become uncomfortable. The boat was basically a large flat open tub, not much more than a liferaft, with some controls in the bow and some sort of modern and hence negligibly small propulsion system built into the stern. As their eyes adjusted to the dim light scattering through the fog, they could

see perhaps a dozen other passengers around the edge of the boat, seated so that wakes from passing vessels would not upset them. Seeing wisdom in this, John led Fiona to the only remaining open space, and they sat down between two other groups: a trio of young Nipponese men forcing cigarettes on one another, and a man and woman in bohemian-but-expensive clothes, sipping lager from cans and conversing in Canadian accents. The man from the pier cast off the painters and vaulted aboard. Another functionary had taken the controls and gently accelerated into the current, cutting the throttle at one point and swinging her about into an oncoming wake. When the boat entered the main channel and came up to speed, it very quickly became chilly, and all the passengers murmured, demanding more warmth from their thermogenic clothing. The AfroCaribbean man made a circuit lugging a heavy chest stocked with cans of lager and splits of pinot noir. Conversation stopped for several minutes as the passengers, all driven by the same primal impulses, turned their faces into the cool wind and relaxed into the gentle thumping of hull against waves. The trip took the better part of an hour. After several minutes, conversation resumed, most of the passengers remaining within their little groups. The refreshment chest made a few more circuits. John Hackworth began to realize, from a few subtleties, that one of the Nipponese youths was much more intoxicated than he was letting on and had probably spent a few hours in a dockside pub before reaching the pier. He took a drink from the chest every time it came by, and half an hour into the ride, he rose unsteadily to his feet, leaned over the edge, and threw up. John turned to smirk at his daughter. The boat struck an unseen wave, rolling sideways into the trough. Hackworth clutched first at the railing and then at his daughter's arm. Fiona screamed. She was staring over John's shoulder at the Nipponese youths. John turned around to see that there were only two of them now; the sick one was gone, and the other two had flung their bellies across the gunwhale and stretched out their arms, fingers like white rays shining into the black water. John felt Fiona's arm pull free from his grasp, and as he turned toward her, he just saw her vaulting over the rail. It was over before he had an opportunity to get really scared. The crew dealt with the matter with a practiced efficiency that suggested to Hackworth that the Nipponese man was really an actor, the entire incident part of the production. The Afro-Caribbean man cursed and shouted for them to hang on, his voice pure and powerful as a Stradivarius cello, a stage voice. He inverted the cooler, dumping out all the beer and wine, then snapped it shut and flung it over the stern as a life preserver. Meanwhile the pilot was swinging the boat round. Several passengers, including Hackworth, had turned on microtorches and focused their beams on Fiona, whose skirts had inflated as she'd jumped in feet-first and now surrounded her like a raft of flowers. With one hand she was clutching the Nipponese man's collar, and with the other, the handle of the ice chest. She did not have the strength or buoyancy to hold the drunken man out of the water, and so both of them were swamped by the estuary's rolling waves. The man with the dreadlocks hauled Fiona out first and handed her off to her father. The fabricules making up her clothing-countless mites linked elbow-to-elbow in a two-dimensional array- went to work

pumping away the water trapped in the interstices. Fiona was wreathed in a sinuous veil of mist that burned with the captured light of the torches. Her thick red hair had been freed from the confines of her hat, which had been torn away by the waves and now fell about her in a cape of fire. She was looking defiantly at Hackworth, whose adrenal glands had finally jumped into the endocrinological fray. When he saw his daughter in this way, it felt as though someone were inexorably sliding a hundred pound block of ice up the length of his spine. When the sensation reached his medulla, he staggered and nearly had to sit down. She had somehow flung herself through an unknown and unmarked barrier and become supernatural, a naiad rising from the waves cloaked in fire and steam. In some rational compartment of his mind that had now become irrelevant, Hackworth wondered whether Dramatis Personae (for this was the name of the troupe that was running this show) had got some nanosites into his system, and if so what exactly they were doing to his mind. Water streamed from Fiona's skirts and ran between the floorboards, and then she was dry, except for her face and hair. She wiped her face on her sleeves, ignoring her father's proffered handkerchief. No words passed between them, and they did not embrace, as if Fiona were conscious now of the impact she was having upon her father and all the others-a faculty that, Hackworth supposed, must be highly acute in sixteen-year-old girls. By now the Nipponese man was just about finished coughing water out of his lungs and gasping piteously for air. As soon as he had the airways up and running, he spoke hoarsely and lengthily. One of his companions translated. "He says that we are not alone-that the water is filled with spirits-that they spoke to him. He followed them beneath the waves. But feeling his spirit about to leave his body, he felt fear and swam to the surface and was saved by the young woman. He says that the spirits are talking to all of us, and we must listen to them!" This was, needless to say, embarrassing, and so all of the passengers doused their torches and turned their backs on the stricken passenger. But when Hackworth's eyes had adjusted, he took another look at this man and saw that the exposed portions of his flesh had begun to radiate colored light. He looked at Fiona and saw that a band of white light encircled her head like a tiara, bright enough that it shone red through her hair, with a jewel centered upon her forehead. Hackworth marveled at this sight from a distance, knowing that she wanted to be free of him for now. Fat lights hung low above the water, describing the envelopes of great ships, sliding past each other as their parallax shifted with the steady progress of the boat. They had come to a place near the mouth of the estuary but not on the usual shipping lanes, where ships lay at anchor awaiting shifts in tides, winds, or markets. One constellation of lights did not move but only grew larger as they drew toward it. Experimenting with shadows and examining the pattern of light cast upon the water from this vessel, Hackworth concluded that the lights were being deliberately shone into their faces so that they could not make any judgments about the nature of the source. The fog slowly congealed into a wall of rust, so vast and featureless that it might have been ten or a hundred feet distant. The helmsman waited until they were about to ram it, then cut the engines. The raft lost

speed instantly and nuzzled the hull of the big ship. Chains, slimy and dripping, descended from the firmament, diverging in Hackworth's view like radiance emanating from some heavy-industrial demigod, clanking harbingers of iron that the crew, heads thrown back ecstatically, throats bared to this kinky revelation, received into their bosoms. They snapped the chains onto metal loops fixed into the floor of the boat. Shackled, the boat rose free of the water and began to ascend the wall of rust, which soared vaguely into the infinite fog. Suddenly there was a railing, an open deck beyond it, pools of light here and there, a few red cigar-coals reciprocating through space. The deck swung under and rose to shove at the hull of the little boat. As they disembarked, they could see similar boats scattered about. "Dodgy" did not begin to describe the reputation of Dramatis Personae in the New Atlantan parts of London, but that was the adjective they always used anyway, delivered in a near-whisper, with brows raised nearly into the hairline and eyes glancing significantly over the shoulder. It had quickly become clear to Hackworth that a man could get a bad reputation simply for having known that Dramatis Personae existed-at the same time, it was clear that almost everyone had heard about it. Rather than being spattered with any more opprobrium, he had sought the tickets among other tribes. After all this it did not surprise him in the least to see that most of the attendees were fellow Victorians, and not just young bachelors having a night out, but ostensibly respectable couples, strolling the decks in their top hats and veils. Fiona vaulted out of the boat before it even touched the deck of the ship and vanished. She had repatterned her dress, ditching the chintzy flowered pattern for basic white, and skipped off into the darkness, her integral tiara glowing like a halo. Hackworth took a slow turn around the deck, watching his fellow-tribesmen trying to solve the following problem: get close enough to another couple to recognize them without getting so close that they can recognize you. From time to time, couples recognized each other simultaneously and had to say something: the women tittered wickedly, and the men laughed from their bellies and called each other scoundrels, the words glancing off the deckplates and burying themselves in the fog like arrows fired into a bale of cotton. Some kind of amplified music emanated from compartments below; atonal power chords came up through the deck like seismic disturbances. She was a bulk cargo carrier, now empty and bobbing, surprisingly jittery for something so big. Hackworth was alone and separate from all humanity, a feeling he had grown up with, like a childhood friend living next door. He had found Gwen by some miracle and lost touch with that old friend for a few years, but now he and solitude were back together, out for a stroll, familiar and comfortable. A makeshift bar amidships had drawn a dozen or so congregants, but Hackworth knew that he could not join in with them. He had been born without the ability to blend and socialize as some are born without hands. "Standing above it all?" said a voice. "Or standing aside perhaps?" It was a man in a clown outfit. Hackworth recognized it, vaguely, as an advertising fetish for an old American fast-food chain. But the costume was conspicuously ill-used, as if it were the sole garment of a refugee. It had been patched all over with swatches of

chintz, Chinese silk, studded black leather, charcoal-gray pinstripe, and jungle camo. The clown wore integral makeup- his face glowed like an injection-molded plastic toy from the previous century with a light bulb stuck inside the head. It was disturbing to see him talk, like watching one of those animated CAT scans of a man swallowing. "Are you of it? Or just in it?" the Clown said, and looked at Hackworth expectantly. As soon as Hackworth had realized, quite some time ago, that this Dramatis Personae thing was going to be some kind of participatory theatre, he had been dreading this moment: his first cue. "Please excuse me," he said in a tense and not altogether steady voice, "this is not my milieu." "That's for damn fucking sure," said the Clown. "Put these on," he continued, taking something out of his pocket. He reached out to Hackworth, who was two or three meters away from him- but shockingly, his hand detached itself from his arm and flew through the air, the smutty white glove like a dirty ball of ice tumbling elliptically through the inner planets. It shoved something into Hackworth's breast pocket and then withdrew; but because Hackworth was watching, it described a smooth sudden figure-eight pattern in space before reattaching itself to the stump of the forearm. Hackworth realized that the clown was mechanical. "Put 'em on and be yourself, mister alienated loner steppenwolf bemused distant meta-izing technocrat rationalist fucking shithead." The Clown spun on his heel to leave; his floppy clown shoes were built around some kind of trick heel with a swivel built in, so that when he spun on his heel he really did spin on his heel, performing several complete rotations before stopping with his back turned to Hackworth and storming away. "Revolutionary, ain't it?" he snapped. The thing in Hackworth's pocket was a pair of dark sunglasses: wraparounds with a glimmering rainbow finish, the sort of thing that, decades ago, would have been worn by a Magnum-slinging rebel cop in a prematurely canceled television series. Hackworth unfolded them and slid the polished ends of the bows cautiously over his temples. As the lenses approached, he could see light coming from them; they were phenomenoscopes. Though in this context, the word phantascope might have been more appropriate. The image grew to fill his sight but would not focus until he put them all the way on, so he reluctantly plummeted into the hallucination until it resolved, and just then the bows behind his ears came alive, stretched, and grew around the back of his skull like a rubber band snapping in reverse, joining in the back to form an unbreakable band. "Release," Hackworth said, and then ran through a litany of other standard yuvree commands. The spectacles would not release his head. Finally, a cone of light pierced space from somewhere above and behind him and splashed across a stage. Footlights came up, and a man in a top hat emerged from behind a curtain. "Welcome to your show," he said. "You can remove the glasses at any time by securing a standing ovation from not less than ninety percent of the audience." Then the lights and curtain vanished, and Hackworth was left with what he had seen before, namely, a cybernetically enhanced night-vision rendering of the deck of the ship. He tried a few more commands. Most phenomenoscopes had a transparent mode, or at least translucent, that allowed the wearer to view what was really there. But these ones were doggedly opaque and would

only show him a mediatronic rendering of the scene. The strolling and chatting theatregoers were represented by preposterously oversimplified wireframes, a display technology unused these eighty years or so, clearly intended to irritate Hackworth. Each figure had a large placard strapped to its chest: JARED MASON GRIFFIN III, aged 35 (too Late to become an interesting character like you!) Nephew of an earl-level Equity Lord (don't you envy him?) Married to that sunken bitch on his right They go on these little escapades to escape their own crzppled lives. (why are you here?) Hackworth looked down and tried to read the placard on his own chest but couldn't focus on it. When he walked around the deck, his viewpoint changed correspondingly. There was also a standard interface that enabled him to "fly" around the ship; Hackworth himself remained in one fixed location, of course, but his viewpoint in the spectacles became unlinked to his real coordinates. Whenever he used this mode, the following legend was superimposed on his view in giant flashing red block letters: JOHN PERCIVAL HACKWORTH'S GODLIKE PERSPECTIVE sometimes accompanied by a cartoon of a wizardly sort of fellow sitting atop a mountain peering down into a village of squalid midgets. Because of this annoyance, Hackworth did not use this feature very frequently. But on his initial reconnaissance, he discovered a few items of interest. For one thing, the Nipponese fellow who had got pissed and fallen overboard had encountered a group of several other people who had, by a remarkable coincidence, also fallen out of their boats on the way here, and who upon being rescued had all begun to emit colored light and see visions that they insisted on recounting to anyone in the vicinity. These people convened into a poorly organized chorus, all shouting at once and articulating visions that seemed to be linked in an approximate way-as if they had all just now awakened from the same dream and were all doing an equally bad job describing it. They stuck together despite their differences, drawn together by the same mysterious attractive force that causes streetcorner crackpots to set up their soapboxes right next to each other. Shortly after Hackworth zoomed toward them in his phenomenoscopic view, they began to hallucinate something along the lines of a giant eyeball peering at them from the heavens, the black skin of its eyelids studded with stars. Hackworth skulked away and focused in on another large gathering: a couple of dozen older people of the trim, fit, and active style, tennis sweaters draped over their shoulders and sensible walking shoes firmly but not too tightly laced to their feet, piling off a small airship that had just moored on the old helicopter pad near the ship's stern. The airship had many windows and was festooned with mediatronic advertisements for aerial tours of London. As the tourists climbed off, they tended to stop in their tracks, so that a severe bottleneck was forever forming. They had to be goaded into the outer darkness by their tour guide, a young actress dressed in a cheesy devil outfit, complete with flashing red horns and a trident. "Is this Whitechapel?" one of them said to the fog, speaking in an American accent. These people were obviously members of the Heartland tribe, a prosperous phyle closely allied with New Atlantis that had absorbed many responsible, sane, educated, white, Midwestern, middleclass types. Listening in on their furtive

conversations, Hackworth divined that these tourists had been brought in from a Holiday Inn in Kensington, under the ruse that they were going to take the Jack the Ripper tour in Whitechapel. As Hackworth listened, the diabolical tour guide explained that their drunken airship pilot had accidentally flown them to a floating theatre, and they were welcome to enjoy the show, which would be starting shortly; a free (to them) performance of Cats, the longest-running musical of all time, which most of them had already seen on their first night in London. Hackworth, still peering through the mocking red letters, did a quick scan belowdecks. There were a dozen cavernous compartments down there. Four of them had been consolidated into a capacious theatre; four more served as the stage and backstage. Hackworth located his daughter there. She was seated on a throne of light, rehearsing some lines. Apparently she'd already been cast in a major role. "I don't want you to watch me like that," she said, and vanished from Hackworth's display in a burst of light. The ship's foghorn sounded. The sound continued to echo sporadically from other ships in the area. Hackworth returned to his natural view of the deck just in time to see a blazing figment rushing toward him: the Clown again, who apparently possessed the special power of moving through Hackworth's display like a phantasm. "Going to stay up here all night, guessing the distance to the other ships by timing the echoes? Or may I show you to your seat?" Hackworth decided that the best thing was not to be ruffled. "Please," he said. "Well, there it is then," said the Clown, gesturing with one maculated glove toward a plain wooden chair right before them on the deck. Hackworth did not believe it was really there, because he hadn't seen it before now. But the spectacles allowed him no way to tell. He stepped forward like a man making his way to the toilet in a dark and unfamiliar room, knees bent, hands outstretched, moving his feet gingerly so as not to bark shins or toes on anything. The Clown had drawn to one side and was watching him scornfully. "Is this what you call getting into your role? Think you can get away with scientific rationalism all night? What's going to happen the first time you actually start believing what you see?" Hackworth found his seat exactly where the display told him it would be, but it wasn't a simple wooden chair; it was foam-covered and it had arms. It was like a seat in a theatre, but when he groped to either side, he did not find any others. So he depressed the seat and fell into it. "You'll be needing this," the Clown said, and snapped a tubular object into the palm of Hackworth's hand. Hackworth was just recognizing it as some kind of torch when something loud and violent happened just below him. His feet, which had been resting on the deckplates, were now dangling in air. In fact, all of him was dangling. A trap door had flown open beneath him, and he was in free fall. "Enjoy the show," the Clown said, tipping his hat and peering down at him through a rapidly diminishing square hole. "And while you're accelerating toward the center of the earth at nine point eight meters per second squared, riddle me this: We can fake sounds, we can fake images, we can even fake the wind blowing over your face, but how do we fake the sensation of free fall?" Pseudopods had sprouted from the chair's foam and wrapped around Hackworth's waist and upper thighs. This was

fortunate as he had gone into a slow backward spin and soon found himself falling face-first, passing through great amorphous clouds of light: a collection of old chandeliers that Dramatis Personae had scavenged from condemned buildings. The Clown was right: Hackworth was definitely in free fall, a sensation that could not be faked with spectacles. If his eyes and ears were to be believed, he was plunging toward the floor of the big theatre he had reconnoitered earlier. But it was not grooved with neat rows of seats like an ordinary theatre. The seats were present but scattered about randomly. And some of them were moving. The floor continued to accelerate toward him until he got really scared and started to scream. Then he felt gravity again as some force began to slow him down. The chair spun around so that Hackworth was looking up into the irregular constellation of chandeliers, and the acceleration shot up to several gees. Then back to normal. The chair rotated so that he was on the level once more, and the phenomenoscope went brilliant, blinding white. The earpieces were pumping white noise at him; but as it began to diminish, he realized it was actually the sound of applause. Hackworth was not able to see anything until he fiddled with the interface and got back to a more schematic view of the theatre. Then he determined that the place was about half full of theatregoers, moving about independently on their chairs, which were somehow motorized, and that several dozen of them were aiming their torches toward him, which accounted for the blinding light. He was on center stage, the main attraction. He wondered if he was supposed to say something. A line was written across his spectacles: Thanks very much, Ladies and gentlemen, for letting me drop in. We have a great show for you tonight. . . . Hackworth wondered if he was somehow obligated to read this line. But soon the torches turned away from him, as more audience members began to rain down through the astral plane of the chandeliers. Watching them fall, Hackworth realized that he'd seen something like it before at amusement parks: This was nothing more than bungee-jumping. It's just that the spectacles had declined to show Hackworth his own bungee cord, just to add an extra frisson to the whole experience. The armrest of Hackworth's chair included some controls that enabled him to move it around the floor of the house, which was coneshaped, sloping sharply in toward the center. A pedestrian would have found difficult footing, but the chair had powerful nanotech motors and compensated for the slope. It was a round theatre, Globe-style. The conical floor was encompassed by a circular wall, pierced here and there by openings of different sizes. Some appeared to be ventilation shafts, some were the apertures of private boxes or technical control rooms, and by far the largest was a proscenium that occupied a quarter of the circumference, and that was currently closed off by a curtain. Hackworth noted that the lowest and innermost part of the house floor was not occupied. He motored down the slope and was shocked to realize that he was suddenly up to his waist in painfully chilly water. He threw the chair into reverse, but it did not respond to the controls. "Dead in the water!" cried the Clown triumphantly, sounding as if he were standing right there, though Hackworth couldn't see him. He found a way to release the chair's built-in restraints and struggled up the raked floor, his legs stiff from

the cold and reeking of seawater. Evidently the central third of the floor actually plunged beneath the waterline and was open to the sea- another fact that Hackworth's spectacles had not bothered to reveal. Again, dozens of lights were on him. The audience was laughing, and there was even some sarcastic applause. Come on in, folks, the water 's fine! suggested the spectacles, but once again Hackworth declined to read the line. Apparently these were nothing more than suggestions tossed out by Dramatis Personae's writers, which faded from the display as they lost their currency. The events of the last few minutes-the phenomenoscopes that couldn't be taken off, the unexpected bungee jump, the plunge into cold seawater-had left Hackworth in a state of shock. He felt a strong need to hole up somewhere and shake off the disorientation. He clambered up toward the perimeter of the house, dodging the occasional moving chair, and tracked by a few spotlight beams from fellow audience members who had taken a particular interest in his personal story. An aperture was above him, glowing with warm light, and passing through it, Hackworth found himself in a cozy little bar with a curving window that afforded an excellent view of the theatre. It was a refuge in more ways than one; he could see normally through the spectacles here, they seemed to be giving him an untampered view of reality. He ordered a pint of stout from the barman and took a seat at the counter along the window. Somewhere around his third or fourth gulp of stout, he realized that he had already submitted to the Clown's imperative. The plunge into the water had taught him that he had no choice but to believe in what the spectades showed his eyes and ears- even though he knew it to be false- and to accept the consequences. A pint of stout went some distance toward warming up his legs, and toward relaxing his mind. He had come here for a show, and he was getting one, and there was no reason to fight it; Dramatis Personae might have a dodgy reputation, but no one had ever accused them of killing a member of the audience. The chandeliers dimmed. The torch-wielding audience went into motion like sparks stirred by a gust of wind, some motoring toward the high ground and others preferring the water's edge. As the house lights faded to black, they amused themselves playing their torches back and forth across the walls and the curtain, creating an apocalyptic sky torn by hundreds of comets. A tongue of clammy, algae-colored light shone beneath the water, resolving itself into a long narrow thrust stage as it rose toward the surface, like Atlantis resurgent. The audience noticed it and bounced their spotlights off the surface, catching a few dark motes in the crossfire: the heads of a dozen or so performers, slowly rising out of the water. They began to speak in something like unison, and Hackworth realized that they were the chorus of lunatics he had seen earlier. "Set me up, Nick," said a woman's voice behind him. "Tucked 'em in, did you?" said the barkeep. "Ninnies." Hackworth turned and saw that it was the young woman in the devil costume who had acted as tour guide for the Heartlanders. She was very petite, dressed in a long black skirt slit all the way to the hipbone, and she had nice hair, very thick and black and glossy. She carried a glass of wheat beer over to the counter, primly swept her devil's tail out of the way in a gesture that Hackworth found hopelessly fetching, and took a seat. Then she let out an explosive sigh and put her

head down on her arms for a few moments, her blinking red horns reflecting in the curved window like the taillights of a full-laner. Hackworth laced his fingers together around his pint and smelled her perfume. Down below, the chorus had gotten out of hand and was trying to pull off a rather ambitious Busby Berkeley dance number. They showed an uncanny ability to act in unison- something to do with the 'sites that had burrowed into their brains- but their bodies were stiff, weak, and badly coordinated. What they did, they did with absolute conviction, which made it good anyway. "Did they buy it?" Hackworth said. "Pardon me?" said the woman, looking up alertly like a bird, as if she hadn't known Hackworth was here. "Do those Heartlanders really believe that story about the drunken pilot?" "Oh. Who cares?" the woman said. Hackworth laughed, pleased that a member of Dramatis Personae was affording him this confidence. "It's off the point, isn't it," the woman said in a lower voice, getting a bit philosophical now. She squeezed a wedge of lemon into her wheat beer and took a sip. "Belief isn't a binary state, not here at least. Does anyone believe anything one hundred percent? Do you believe everything you see through those goggles?" "No," Hackworth said, "the only thing I believe at the moment is that my legs are wet, this stout is good, and I like your perfume." She looked a bit surprised, not unpleasantly so, but she wasn't nearly that easy. "So why are you here? Which show did you come to see?" "What do you mean? I suppose I came to see this one." "But there is no this one. It's a whole family of shows. Interlaced." She parked her beer and executed Phase 1 of the here-is- the-church maneuver. "Which show you see depends on which feed you're viewing." "I don't seem to have any control over what I see." "Ah, then you're a performer." "So far I have felt like a very inept slapstick performer." "Inept slapstick? Isn't that a bit redundant?" It wasn't that funny, but she said it wittily, and Hackworth chuckled politely. "It sounds as though you've been singled out to be a performer." "You don't say." "Now, I don't normally reveal our trade secrets," the woman continued in a lower voice, "but usually when someone is singled out as a performer, it's because they have come here for some purpose other than pure, passive entertainment." Hackworth stuttered and fumbled for words a bit. "Does that- is that done?" "Oh, yes!" the woman said. She rose from her stool and moved to the one right next to Hackworth. "Theatre's not just a few people clowning about on a stage, being watched by this herd of oxen. I mean, sometimes it's that. But it can be ever so much more-really it can be any sort of interaction between people and people, or people and information." The woman had become quite passionate now, forgotten herself completely. Hackworth got boundless pleasure just from watching her. When she'd first entered the bar, he'd thought she had a sort of nondescript face, but as she let her guard down and spoke without any self-consciousness, she seemed to become prettier and prettier. "We are tied in to everything here- plugged into the whole universe of information. Really, it's a virtual theatre. Instead of being hard-wired, the stage, sets, cast, and script are all soft-they can be reconfigured simply by shifting bits about." "Oh. So the show-or interlaced set of shows-can be different each night?" "No, you're still not getting it," she said, becoming

very excited. She reached out and gripped his forearm just below the elbow and leaned toward him, desperate to make sure he got this. "It's not that we do a set show, reconfigure, and a different one next night. The changes are dynamic and take place in real time. The show reconfigures itself dynamically depending upon what happens moment to moment-and mind you, not just what happens here, but what is happening in the world at large. It is a smart play-an intelligent organism." "So, if, for example, a battle between the Fists of Righteous Harmony and the Coastal Republic were taking place in the interior of China at this moment, then shifts in the battle might in some way-" "Might change the color of a spotlight or a line of dialogue- not necessarily in any simple and deterministic fashion, mind you-" "I think I understand," Hackworth said. "The internal variables of the play depend on the total universe of information outside-" The woman nodded vigorously, quite pleased with him, her huge black eyes shining. Hackworth continued, "As, for example, a person's state of mind at any given moment might depend on the relative concentrations of innumerable chemical compounds circulating through his bloodstream." "Yes," the woman said, "like if you're in a pub being chatted up by a fetching young gentleman, the words coming out of your mouth are affected by the amount of alcohol you've put into your system, and, of course, by concentrations of natural hormones- again, not in a simple deterministic way-these things are all inputs." "I think I'm beginning to get your meaning," Hackworth said. "Substitute tonight's show for the brain, and the information flowing across the net for molecules flowing through the bloodstream, and you have it," the woman said. Hackworth was a bit disappointed that she had chosen to pull back from the pub metaphor, which he had found more immediately interesting. The woman continued, "That lack of determinism causes some to dismiss the whole process as wanking. But in fact it's an incredibly powerful tool. Some people understand that." "I believe I do," Hackworth said, desperately wanting her to believe that he did. "And so some people come here because they are on a quest of some sort-trying to find a lost lover, let's say, or to understand why something terrible happened in their lives, or why there is cruelty in the world, or why they aren't satisfied with their career. Society has never been good at answering these questions-the sorts of questions you can't just look up in a reference database." "But the dynamic theatre allows one to interface with the universe of data in a more intuitive way," Hackworth said. "That is precisely it," the woman said. "I'm so pleased that you get this." "When I was working with information, it frequently occurred to me, in a vague and general way, that such a thing might be desirable," Hackworth said. "But this is beyond my imagination." "Where did you hear of us?" "I was referred here by a friend who has been associated with you in the past, in some vague way." "Oh? May I ask who? Perhaps we have a mutual friend," the woman said, as if that would be a fine thing. Hackworth felt himself reddening and let out a deep breath. "All right," he said, "I lied. It wasn't really a friend of mine. It was someone I was led to." "Ah, now we're getting into it," the woman said. "I knew there was something mysterious going on with you." Hackworth was abashed and did not know what to say.

He looked into his beer. The woman was staring at him, and he could feel her eqes on his face like the warmth of a follow spot. "So you did come here in search of something. Didn't you? Something you couldn't find by looking it up in a database." "I'm seeking a fellow called the Alchemist," Hackworth said. Suddenly, things got bright. The side of the woman's face that was toward the window was brilliantly illuminated, like a probe in space lit on one side by the directional light of the sun. Hackworth sensed, somehow, that this was not a new development. Looking out over the audience, he saw that nearly all of them were aiming their spotlights into the bar, and that everyone in the place had been watching and listening to his entire conversation with the woman. The spectacles had deceived him by adjusting the apparent light levels. The woman looked different too; her face had reverted to the way it looked when she came in, and Hackworth now understood that her image in his spectacles had been gradually evolving during their conversation, getting feedback from whatever part of his brain buzzed when he saw a beautiful woman. The curtain parted to reveal a large electric sign descending from the fly space: JOHN HACKWORTH in QUEST FOR THE ALCHEMIST starring JOHN HACKWORTH as HIMSELF. The Chorus sang: He's such a stiff John Hackworth is Can't show emotion to save his life With nasty repercussions, viz He lost his job and lost his wife So now he's on a goshdarn Quest Wandering all o'er the world Hunting down that Alchemist 'Cept when he stops to pick up girls. Maybe he'll clean up his act And do the job tonight A fabulous adventure packed With marvelous sounds and sights Let's get it on, oh Hacker John Let's get it on, on, on. Something jerked violently at Hackworth's neck. The woman had tossed a noose around him while he'd been staring out the window, and now she was hauling him out the door of the bar like a recalcitrant dog. As soon as she cleared the doorway, her cape inflated like a time-lapse explosion, and she shot twelve feet into the air, propelled on jets of air built into her clothing somehow-she payed out the leash so that Hackworth wasn't hanged in the process. F lying above the audience like the cone of fire from a rocket engine, she led the stumbling Hackworth down the sloping floor and to the edge of the water. The thrust stage was linked to the water's edge by a couple of narrow bridges, and Hackworth negotiated one of these, feeling hundreds of lights on his shoulders, seemingly hot enough to ignite his clothing. She led him straight back through the center of the Chorus, beneath the electric sign, through the backstage area, and through a doorway, which clanged shut behind him. Then she vanished. Hackworth was surrounded on three sides by softly glowing blue walls. He reached out to touch one and received a mild shock for his troubles. Stepping forward, he tripped over something that skittered across the floor: a dry bone, big and heavy, larger than a human femur. He stepped forward through the only gap available to him and found more walls. He had been deposited into the heart of a labyrinth. It took him an hour or so to realize that escape through normal means was hopeless. He didn't even try to figure out the labyrinth's floor plan; instead, realizing that it couldn't possibly be larger than the ship, he followed the foolproof expedient of turning right at every corner, which as all clever boys knew must always lead to an exit. But it didn't, and he

did not understand why until once, in the corner of his eye, he saw a wall segment shift sideways, closing up an old gap and creating a new one. It was a dynamic labyrinth. He found a rusty bolt on the floor, picked it up, and threw it at a wall. It did not bounce off but passed through and clattered onto the floor beyond. So the walls did not exist except as figments in his spectacles. The labyrinth was constructed of information. In order to escape, he would have to hack it. He sat down on the floor. Nick the barman appeared, walking unhindered through walls, bearing a tray with another stout on it, and handed it to him along with a bowl of salty peanuts. As the evening went on, other people passed through his area, dancing or singing or dueling or arguing or making love. None of these had anything to do, particularly, with Hackworth's Quest, and they appeared to have nothing to do with each other. Apparently Hackworth's Quest was (as the devil-woman herself had told him) just one of several concurrent stories being acted out tonight, coexisting in the same space. So what did any of this have to do with the life of John Hackworth? And how was Fiona mixed up in it? As Hackworth thought about Fiona, a panel in front of him slid to the side, exposing several yards of corridor. During the next couple of hours he noted the same thing several times: An idea would occur to him, and a wall would move. In this way he moved in fits and starts through the maze, as his mind moved from one idea to the next. The floor was definitely sloping downward, which would obviously bring him below the waterline at some point; and indeed he had begun to sense a heavy drumming noise coming up through the deckplates, which might have been the pounding of mighty engines except that this ship, as far as he knew, wasn't going anywhere. He smelled seawater before him and saw dim lights shining through its surface, broken by the waves, and knew that in the flooded ballast tanks of this ship lay a network of underwater tunnels, and that in those tunnels were Drummers. For all he knew, the whole show was just a figment being enacted in the mind of the Drummers. Probably not the main event either; it was probably just an epiphenomenon of whatever deep processes the Drummers were running down there in their collective mind. A wall panel slid aside and gave him a clear path to the water. Hackworth squatted at the water's edge for a few minutes, listening to the drums, then stood up and began to undo his necktie. . . . He was terribly hot and sweaty, and bright light was in his eyes, and none of these things were consistent with being underwater. He awoke to see a bright blue sky overhead, pawed at his face, and found that the spectacles were gone. Fiona was there in her white dress, watching him with a rueful smile. The floor was pounding Hackworth on the buttocks and evidently had been for some time, as the bony parts of his backside were bruised and raw. He realized that they were on the raft, heading back toward the London docks; that he was naked and that Fiona had covered him with a sheet of plastic to protect his skin from the sun. A few other theatergoers were scattered about, slumped against one another, utterly passive, like refugees, or people who've just had the greatest sex of their lives, or people who are tremendously hung over. "You were quite a hit," Fiona said. And suddenly Hackworth remembered himself being paraded naked and dripping down the thrust stage, waves of applause rolling over him

from the standing audience. "The Quest is finished," he blurted. "We're going to Shanghai." "You're going to Shanghai," Fiona said. "I'll see you off at the dock. Then I'll be going back." She cocked her head over the stern. "Back to the ship?" "I was a bigger hit than you were," she said. "I've found my calling in life, Father. I've accepted an invitation to join Dramatis Personae."

Carl Hollywood's hack. Carl Hollywood leaned back against the hard lacquered back of his corner seat for the first time in many hours and rubbed his face with both hands, scratching himself with his own whiskers. He had been sitting in the teahouse for almost twenty-four hours, consumed twelve pots of tea, and twice called in masseuses to unknot his back. The afternoon light coming in the windows behind him flickered as the crowd outside began to break up. They had been treated to a remarkable free media show, watching over his shoulders for hours as the dramaturgical exploits of John Percival Hackworth had played themselves out, in several different camera angles, on floating cine windows on Carl Hollywood's pages. None of them could read English, and so they had been unable to follow the story of Princess Nell's adventures in the land of King Coyote, which had been streaming across the pages at the same time, the storyline fluctuating and curling in upon itself like a cloud of smoke spun and torn by invisible currents. Now the pages were blank and empty. Carl reached out lazily with one hand and began to stack the sheets on top of each other, just for something to occupy his hands while his mind worked- though it wasn't working, at this point, so much as stumbling blindly through a dark labyrinth a Ia John Percival Hackworth. Carl Hollywood had long suspected that, among other things, the network of the Drummers was a giant system for breaking codes. The cryptographic systems that made the media network run securely, and that made it capable of securely transferring money, were based on the use of immense prime numbers as magic keys. The keys could theoretically be broken by throwing enough computing power at the problem. But at any given level of computing power, code-making was always much easier than code-breaking, so as long as the system kept moving to larger and larger prime numbers as computers got faster, the code-makers could stay far ahead of the code-breakers forever. But the human mind didn't work like a digital computer and was capable of doing some funny things. Carl Hollywood remembered one of the Lone Eagles, an older man who could add huge columns of numbers in his head as quickly as they were called out. That, in and of itself, was merely a duplication of something that a digital computer could do. But this man could also do numerical tricks that could not easily be programmed into a computer. If many minds were gathered together in the network of the Drummers, perhaps they could somehow see through the storm of encrypted data that roared continuously through media space, cause the seemingly random bits to coalesce into meaning. The men who had come to talk to Miranda, who had persuaded her to enter the world of the Drummers, had implied that this was possible; that through them, Miranda could find Nell. Superficially, this would be disastrous, because it would destroy the system used

for financial transactions. It would be as if, in a world where commerce was based upon the exchange of gold, some person had figured out how to change lead into gold. An Alchemist. But Carl Hollywood wondered if it really made a difference. The Drummers could only do such things by subsuming themselves into a gestalt society. As the case of Hackworth demonstrated, as soon as a Drummer removed himself from that gestalt, he lost touch with it completely. All communication between the Drummers and normal human society took place unconsciously, through their influence upon the Net, in patterns that appeared subliminally in the ractives that everyone played with in their homes and saw playing across the walls of buildings. The Drummers could break the code, but they couldn't take advantage of it in an obvious way, or perhaps they simply did not want to. They could make gold, but they were no longer interested in having it. John Hackworth, somehow, was better than anyone else at making the transition between the society of Drummers and the Victorian tribe, and each time he crossed the boundary, he seemed to bring something with him, clinging to his garments like traces of scent. These faint echoes of forbidden data entrained in his wake caused tangled and unpredictable repercussions, on both sides of the boundary, that Hackworth himself might not even be aware of. Carl Hollywood had known little of Hackworth until several hours ago, when, alerted by a friend in Dramatis Personae, he had joined his story in progress on the black decks of the show boat. Now he seemed to know a great deal: that Hackworth was the progenitor of the Young Lady's Illustrated Primer, and that he had a deep relationship with the Drummers that went far beyond anything as simple-minded as captivity. He had not just been eating lotuses and getting his rocks off during his years beneath the waves. Hackworth had brought something back with him this time, when he had emerged naked and streaming with cold seawater from the warren of Drummers in the ballast tanks of the ship. He had emerged with a set of numerical keys that were used to identify certain entities: the Primer, Nell, Miranda, and someone else who went by the name of Dr. X. Before he had fully reentered his conscious state, he had supplied those keys to the Clown, who had been there to haul his gasping and shivering body out of the water. The Clown was a mechanical device, but Dramatis Personae had been good enough to allow Carl Hollywood to control it- and to improvise much of Hackworth's personal script and storyline- for the duration of the show. Now Carl had the keys and, for the purposes of the Net, was indistinguishable from Miranda or Nell or Dr. X or even Hackworth himself. They were written out across the surface of a page, long columns of digits grouped in bunches of four. Carl Hollywood told this sheet to fold itself and then tucked it into his breast pocket. He could use them to untangle this whole business, but that would be another night's hack. Snuff and caffeine had done as much as they could. It was time to go back to the hotel, soak in a bath, get some sleep, and prepare for the final act.

From the Primer, Princess Nell's ride to the Castle of King Coyote; description of the castle; an audience with a Wizard; her final triumph over King Coyote; an enchanted

army. Princess Nell rode north into an explosive thunderstorm. The horses were driven nearly mad with terror by the cannonlike explosions of the thunder and the unearthly blue flashes of the lightning, but with a firm hand and a soothing voice in the ear, Nell urged them forward. The cairns of bones strewn along the roadside were evidence that this mountain pass was no place to dawdle, and the poor animals would be no less terrified huddling under a rock. For all she knew, the great King Coyote was capable of controlling even the weather itself and had prepared this reception to try Princess Nell's will. Finally she crested the pass, and none too soon, as the horses' hooves had begun to slip on a thick layer of ice, and ice had begun thickly to coat the reins and to weigh down the animals' manes and tails. Working her way down the switchbacks, she left the high fury of the storm behind and pushed into masses of rain as dense as any jungle. It was well that she had paused for a few days at the foot of the mountains to review all of Purple's magic books, for on this night ride through the mountains she used every spell Purple had taught her: spells for casting light, for choosing the right fork in the road, for calming animals and warming chilled bodies, for bolstering her own failing courage, for sensing the approach of any monsters foolish enough to venture out in such weather, and for defeating those desperate enough to attack. This night ride was, perhaps, a rash act, but Princess Nell proved equal to the challenge. King Coyote would not expect her to make such a crossing. Tomorrow when the storm on high had cleared, he would send his raven sentinels winging through the pass and down into the plain below to spy on her, as he had for the last several days, and they would return with dismaying news: The Princess had vanished! Even King Coyote's best trackers would not be able to follow her path from yesterday's campsite, so craftily had she covered her real tracks and laid false ones. Dawn found her in the heart of a great forest. King Coyote's castle was built on a high woodland plateau surrounded by mountains; she estimated she was several hours' ride away. Staying well clear of the high road taken by the messengers from the Cipherers' Market, she made camp under an overhanging rock along a river, sheltered from the chill wet wind and safe from the eyes of the raven sentinels, and lit a tiny fire where she made some tea and porridge. She napped until the middle of the afternoon, then rose, bathed in the bitter water of the stream, and untied the oilcloth packet she had brought with her. It contained one of the costumes worn by the messengers who galloped to and from the Cipherers' Market. It also contained a few books containing enciphered messages- authentic ones dispatched from various stalls in the market addressed to King Coyote's castle. As she made her way through the woods toward the high road, she heard massed hoofbeats rolling by and knew that the first contingent of messengers had just come over the pass after waiting for the storm to pass. She waited a few minutes and then followed them. Turning onto the high road out of the dense woods, she reined in her horse and sat for a moment, astonished by her first sight of the Castle of King Coyote. She had never seen its like in all of her travels through the Land Beyond. Its base was as wide as a mountain, and its walls rose sheer and straight into the clouds. Galactic clouds of lights shone from its myriad windows. It was guarded by mighty

stockades, each of them a great castle unto itself, but built not on stony foundations, but upon the very clouds themselves; for King Coyote, in his cleverness, had devised a way to make buildings that floated on the air. Princess Nell spurred her horse forward, for even in her numbness she sensed that someone might be watching the high road from a window high in one of the castle's glittering oriels. As she galloped toward the castle, she was torn between a sense of her own foolishness in daring to assault such a mighty fortress and admiration for King Coyote's work. Faint clouds of diaphanous black oozed between the towers and stockades, and as Princess Nell drew closer, she saw that they were actually regiments of ravens going through their military drills. They were the closest thing King Coyote had to an army; for as one of the ravens had told her, after he had stolen the eleven keys from around her neck, Castles, gardens, gold, and jewels Contentment signify, for fools Like Princess Nell; but those Who cultivate their wit Like King Coyote and his crows Compile their power bit by bit And hide it places no one knows. King Coyote did not preserve his power by armed might but by cleverness, and sentinels were the only army he needed, information his only weapon. As she galloped the final miles to the gate, wondering whether her legs and back would hold out, a thin steam of black issued from a narrow portal high in one of the floating stockades, thickened into a transparent ball, and dove toward her like a plunging comet. She could not help flinching from the illusion of mass and momentum, but, a stone's throw above her head the cloud of ravens parted into several contingents that whirled around and struck from several directions, converging on her, passing around her so closely that the wind from their rattling wings blew her hair back, finally reforming into a disciplined group that returned to its stockade without a look back. Apparently she had passed the inspection. When she reached the mighty gate, it was standing open for her, and no one was guarding it. Princess Nell rode into the broad streets of King Coyote's castle. It was the finest place she had ever seen. Here gold and crystal were not hidden away in the King's treasury but were used as building materials. Green and growing things were everywhere, for King Coyote was fascinated by the secrets of nature and had sent his agents to the farthest reaches of the world to bring back exotic seeds. The wide boulevards of King Coyote's city were lined with trees whose arching limbs closed over the ashlars to form a rustling vault. The undersides of the leaves were silver and seemed to cast a gentle light, and the branches were filled with violet and magenta bromeliads the size of kettles, making a sweet sharp smell, aswarm with ruby-throated hummingbirds and filled with water where tiny fluorescent frogs and beetles lived. The Messenger's Route was marked with polished brass plates set among the paving-stones. Princess Nell followed it down the grand boulevard, into a park that encircled the city, and then onto a rising street that spiraled around the central promontory. As the horse took her toward the clouds, her ears popped again and again, and from each curve in the road she enjoyed a sweeping view over the lower city and into the constellation of floating stockades where the raven sentinels soared, coming and going in flights and squadrons, bringing news from every corner of the empire. She rode by a place where

King Coyote was adding on to the castle; but instead of an army of stonemasons and carpenters, the builder was a single man, a portly gray-bearded fellow puffing at a long slender pipe, carrying a leather bag on his belt. Arriving at the center of the building site, he reached into his bag and drew out a great seed the size of an apple and pitched it into the soil. By the time this man had walked back to the spiral road, a tall shaft of gleaming crystal had arisen from the soil and grown far above their heads, gleaming in the sunlight, and branched out like a tree. By the time Princess Nell lost sight of it around the corner, the builder was puffing contentedly and looking at a crystalline vault that nearly covered the lot. This and many other wonders Princess Nell saw during her long ride up the spiral road. The clouds cleared away, and Nell found that she could see great distances in every direction. King Coyote's domain was in the very heart of the Land Beyond, and his castle was built on a high plateau in the center of his domain, so that from his windows he could see all the way to the shining ocean in every direction. Nell kept a sharp eye on the horizon as she climbed toward the King's inner keep, hoping she might get a glimpse of the faraway island where Harv languished in the Dark Castle; but there were many islands in the distant sea, and it was hard to tell the Dark Castle's towers from mountain crags. Finally the road became level and turned inward to pierce another unguarded gate in another high wall, and Princess Nell found herself in a green, flowery court before the King's keep-a high palace that appeared to have been hewn from a single diamond the size of an iceberg. By now the sun was sinking low in the west, and its orange rays ignited the walls of the keep and cast tiny rainbows everywhere like shards from a shattered crystal bowl. A dozen or so messengers stood in a queue before the doors of the keep. They had left their horses in a corner of the yard where a watering-trough and manger were available. Princess Nell did likewise and joined the queue. "I have never had the honor of carrying a message to King Coyote," Princess Nell said to the messenger preceding her in the queue. "It is an experience you will never forget," said the messenger, a cocky young man with black hair and a goatee. "Why must we wait in this queue? In the stalls at the Cipherers' Market, we leave the books on the table and continue on our way." Several of the messengers turned and looked back at Princess Nell disdainfully. The messenger with the goatee made a visible effort to control his amusement and said, "King Coyote is no small-timer sitting in a stall at the Cipherers' Market! This you will soon see for yourself." "But doesn't he make his decisions the same way as all the others-by consulting rules in a book?" At this the other messengers made no effort to control their amusement. The one with the goatee took on a distinctly sneering tone. "What would be the point of having a King in that case?" he said. "He does not take his decisions from any book. King Coyote has built a mighty thinking machine, Wizard 0.2, containing all the wisdom in the world. When we bring a book to this place, his acolytes decipher it and consult with Wizard 0.2. Sometimes it takes hours for Wizard to reach its decision. I would advise you to wait respectfully and quietly in the presence of the great machine!" "That I will certainly do," said Princess Nell, amused rather than angered by this lowly messenger's

impertinence. The queue moved along steadily, and as darkness fell and the orange rays of the sun died away, Princess Nell became aware of colored lights streaming out from within the keep. The lights seemed to be quite brilliant whenever Wizard 0.2 was cogitating and dropped to a low flicker the rest of the time. Princess Nell tried to make out other details of what was going on inside the keep, but the countless facets broke up the light and bent it into all directions so that she could get only hints and fragments; trying to see into King Coyote's inner sanctum was like trying to remember the details of a forgotten dream. Finally the messenger with the goatee emerged, gave Princess Nell a final smirk, and reminded her to display proper respect. "Next," intoned the acolyte in a chanting voice, and Princess Nell entered the keep. Five acolytes sat in the anteroom, each one at a desk piled high with dusty old books and long reels of paper tape. Nell had brought thirteen books from the Cipherers' Market, and at their direction, she distributed these books among the acolytes for decipherment. The acolytes were neither young nor old but in the middle of their lives, all dressed in white coats decorated, in golden thread, with the crest of King Coyote. Each also had a key around his neck. As Princess Nell waited, they deciphered the contents of the books she had brought and punched the results onto strips of paper tape using little machines built into their tables. Then, with great ceremony, the thirteen paper tapes were coiled up and placed on a tremendous silver platter carried by a young altar boy. A pair of large doors was swung open, and the acolytes, the altar boy, and Princess Nell formed into a procession of sorts, which marched into the Chamber of the Wizard, a vast vaulted room, and down its long central aisle. At the far end of the chamber was-nothing. A sort of large empty space surrounded by elaborate machinery and clockwork, with a small altar at the front. It reminded Princess Nell of a stage, empty of curtains and scenery. Standing next to the stage was a high priest, older and wearing a more impressive white robe. When they reached the head of the aisle, the priest went through a perfunctory ceremony, praising the Wizard's excellent features and asking for its cooperation. As he said these words, lights began to come on and the machinery began to whir. Princess Nell saw that this vault was, in fact, nothing more than an anteroom for a much vaster space within, and that this space was filled with machinery: countless narrow shining rods, scarcely larger than pencil leads, laid in a fine gridwork, sliding back and forth under the impetus of geared power shafts running throughout the place. All of the machinery threw off heat as it ran, and the room was quite warm despite a vigorous draught of cold mountain air being pumped through it by windmill-size fans. The priest took the first of the thirteen rolls of paper tape from the platter and fed it into a slot on the top of the altar. At this point, Wizard 0.2 really went into action, and Princess Nell saw that all the whirring and humming she'd seen to this point had been nothing more than a low idle. Each of its million pushrods was tiny, but the force needed to move all of them at once was seismic, and she could sense the tremendous strains on the power shafts and gear boxes thundering through the sturdy floor of the keep. Lights came on around the stage, some of them built into the surface of the stage itself and some hidden in the machinery

around it. To Princess Nell's surprise, a seemingly three-dimensional shape of light began to coalesce in the center of the empty stage. It gradually formed itself into a head, which took on additional details as the machinery thundered and hissed away: it was an old bald man with a long white beard, his face deeply furrowed in thought. After a few moments, the beard exploded into a flock of white birds and the head turned into a craggy mountain, the white birds swarming about it, and then the mountain erupted in orange lava that gradually filled up the entire volume of the stage until it was a solid glowing cube of orange light. In this fashion did one image merge into another, most astonishingly, for several minutes, and all the time the machinery was screaming away and making Princess Nell most anxious, and she suspected that if she had not seen less sophisticated machines at work at Castle Turing, she might have turned around and fled. Finally, though, the images died away, the stage became empty again, and the altar spat out a length of paper tape, which the priest carefully folded up and handed to one of the acolytes. After a brief prayer of thanks, the priest fed the second tape into the altar, and the whole process started up again, this time with different but equally remarkable images. So it went with one tape after another. When Princess Nell became accustomed to the noise and vibration of the Wizard, she began to enjoy the images, which seemed quite artistic to her- like something a human would come up with, and not machinelike at all. But the Wizard was undoubtedly a machine. She had not yet had the opportunity to study it in detail, but after her experiences in all of King Coyote's other castles, she suspected that it, too, was just another Turing machine. Her study of the Cipherers' Market, and particularly of the rulebooks used by the cipherers to respond to messages, had taught her that for all its complexity, it too was nothing more than another Turing machine. She had come here to the Castle of King Coyote to see whether the King answered his messages according to Turing-like rules. For if he did, then the entire system- the entire kingdom- the entire Land Beyond-was nothing more than a vast Turing machine. And as she had established when she'd been locked up in the dungeon at Castle Turing, communicating with the mysterious Duke by sending messages on a chain, a Turing machine, no matter how complex, was not human. It had no soul. It could not do what a human did. The thirteenth tape was fed into the altar, and the machinery began to whine, then to whir, and then to rumble. The images appearing above the stage flourished into wilder and more exotic forms than any they had seen yet, and watching the faces of the priest and the acolytes, Princess Nell could see that even they were surprised; they had never seen anything of the like before. As the minutes wore on, the images became fragmented and bizarre, mere incarnations of mathematical ideas, and finally the stage went entirely dark except for occasional random flashes of color. The Wizard had worked itself up to such a pitch that all of them felt trapped within the bowels of a mighty machine that could tear them to shreds in a moment. The little altar boy finally broke away and fled down the aisle. Within a minute or so, the acolytes, one by one, did the same, backing slowly away from the Wizard until they were about halfway down the aisle and then turning away and running. Finally even the high priest

turned and fled. The rumbling of the machinery had now reached such a pitch that it felt as though an epochal earthquake were in progress, and Nell had to steady herself with a hand on the altar. The heat coming from back in the machine was like that from a forge, and Nell could see a dim red light from deep inside as some of the pushrods became hot enough to glow. Finally it all stopped. The silence was astonishing. Nell realized she had been cringing and stood up straight. The red glow from inside the Wizard began to die away. White light poured in from all around. Princess Nell could tell that it was coming in from outside the diamond walls of the keep. A few minutes ago it had been nighttime. Now there was light, but not daylight; it came from all directions and was cool and colorless. She ran down the aisle and opened the door to the anteroom, but it wasn't there. Nothing was there. The anteroom was gone. The flowery garden beyond it was gone, and the horses, the wall, the spiral road, the City of King Coyote, and the Land Beyond. Instead there was nothing but gentle white light. She turned around. The Chamber of the Wizard was still there. At the head of the aisle she could see a man sitting atop the altar, looking at her. He was wearing a crown. Around his neck was a key-the twelfth key to the Dark Castle. Princess Nell walked down the aisle toward King Coyote. He was a middle-aged man, sandy hair losing its color, gray eyes, and a beard, somewhat darker than his hair and not especially well trimmed. As Princess Nell approached, he seemed to become conscious of the crown around his head. He reached up, lifted it from his head, and tossed it carelessly onto the top of the altar. "Very funny," he said. "You snuck a zero divide past all of my defenses." Princess Nell refused to be drawn by his studied informality. She stopped several paces away. "As there is no one here to make introductions, I shall take the liberty of doing so myself. I am Princess Nell, Duchess of Turing," she said, and held out her hand. King Coyote looked slightly embarrassed. He jumped down from the altar, approached Princess Nell, and kissed her hand. "King Coyote at your service." "Pleased to make your acquaintance." "The pleasure is mine. Sorry! I should have known that the Primer would have taught you better manners." "I am not acquainted with the Primer to which you refer," Princess Nell said. "I am simply a Princess on a quest: to obtain the twelve keys to the Dark Castle. I note you have one of them in your possession." King Coyote held up his hands, palms facing toward her. "Say no more," he said. "Single combat will not be necessary. You are already the victor." He removed the twelfth key from his neck and held it out to Princess Nell. She took it from him with a little curtsy; but as the chain was sliding through his fingers, he tightened his grip suddenly, so that both of them were joined by the chain. "Now that your quest is over," he said, "can we drop the pretense?" "I'm sure I don't take your meaning, Your Majesty." He bore a controlled look of exasperation. "What was your purpose in coming here?" "To obtain the twelfth key." "Anything else?" "To learn about Wizard 0.2." "Ah." "To discover whether it was, in fact, a Turing machine." "Well, you have your answer. Wizard 0.2 is most certainly a Turing machine-the most powerful ever built." "And the Land Beyond?" "All grown from seeds. Seeds that I invented." "And it is also a Turing machine, then? All controlled by Wizard 0.2?"

"No," said King Coyote. "Managed by Wizard. Controlled by me." "But the messages in the Cipherers' Market control all the events in the Land Beyond, do they not?" "You are most perceptive, Princess Nell." "Those messages came to Wizard-just another Turing machine." "Open the altar," said King Coyote, pointing to a large brass plate with a keyhole in the middle. Princess Nell used her key to open the lock, and King Coyote flipped back the lid of the altar. Inside were two small machines, one for reading tapes and one for writing them. "Follow me," said King Coyote, and opened a trap door set into the floor behind the altar. Princess Nell followed him down a spiral staircase into a small room. The connecting rods from the altar came down into this room and terminated at a small console. "Wizard is not even connected to the altar! It does nothing," Princess Nell said. "Oh, Wizard does a great deal. It helps me keep track of things, does calculations, and so on. But all of that business up there on the stage is just for show- just to impress the commoners. When a message comes here from the Cipherers' Market, I read it myself, and answer it myself. "So as you can see, Princess Nell, the Land Beyond is not really a Turing machine at all. It's actually a person- a few people, to be precise. Now it's all yours." King Coyote led Princess Nell back into the heart of his keep and gave her a tour of the place. The best part was the library. He showed her the books containing the rules for programming Wizard 0.2, and other books explaining how to make atoms build themselves into machines, buildings, and whole worlds. "You see, Princess Nell, you have conquered this world today, and now that you have conquered it, you'll find it a rather boring place. Now it's your responsibility to make new worlds for other people to explore and conquer." King Coyote waved his hand out the window into the vast, empty white space where once had stood the Land Beyond. "There's plenty of empty space out there." "What will you do, King Coyote?" "Call me John, Your Royal Highness. As of today, I no longer have a kingdom." "John, what will you do?" "I have a quest of my own." "What is your quest?" "To find the Alchemist, whoever he may be." "And is there . . ." Nell stopped reading the Primer for a moment. Her eyes had filled up with tears. "Is there what?" said John's voice from the book. "Is there another? Another who has been with me during my quest?" "Yes, there is," John said quietly, after a short pause. "At least I have always sensed that she is here." "Is she here now?" "Only if you build a place for her," John said. "Read the books, and they will show you how." With that, John, the former King Coyote and Emperor of the Land Beyond, vanished in a flash of light, leaving Princess Nell alone in her great dusty library. Princess Nell put her head down on an old leather-bound book and smelled its rich fragrance. One tear of joy ran from each eye. But she mastered the impulse to cry and reached for the book instead. They were magic books, and they drew Princess Nell into them so deeply that, for many hours, perhaps even days, she was not aware of her surroundings; which scarcely mattered as nothing remained of the Land Beyond. But at some length, she realized that something was tickling her foot. She reached down absently and scratched it. Moments later the tickling sensation returned. This time she looked down and was astonished to see that the floor of the library was

covered with a thick gray-brown carpet, flecked here and there with splotches of white and black. It was a living, moving carpet. It was, in fact, the Mouse Army. All of the other buildings, places, and creatures Princess Nell had seen in the Land Beyond had been figments produced by Wizard 0.2; but apparently the mice were an exception and existed independently of King Coyote's machinations. When the Land Beyond had disappeared, all of the obstructions and impedimenta that had kept the Mouse Army away from Princess Nell had disappeared with it, and in short order they had been able to fix her whereabouts and to converge upon their long-sought Queen. "What would you have me do?" Princess Nell said. She had never been a Queen before and did not know the protocol. A chorus of excited squeaking came from the mice as commands were relayed and issued. The carpet went into violent but highly organized motion as the mice drew themselves up into platoons, companies, battalions, and regiments, each of them commanded by an officer. One mouse clambered up the leg of Princess Nell's table, bowed low to her, and then began to squeak commands from on high. The mice executed a close-order drill, withdrew to the edges of the room, and arrayed themselves in an empty box shape, leaving a large open rectangle in the middle of the floor. The mouse up on the table, whom Nell had dubbed the Generalissima, issued a lengthy series of orders, running to each of the four edges of the table to address different contingents of the Mouse Army. When the Generalissima was finished, very high piping music could be heard as the mouse pipers played their bagpipes and the drummers beat their drums. Small groups of mice began to encroach on the empty space, each group moving toward a different spot. Once each group had reached its assigned position, the individual mice arranged themselves in such a way that the group as a whole described a letter. In this way, the following message was written across the floor of the library: WE ARE ENCHANTED REQUEST ASSISTANCE REFER TO BOOKS "I shall bend all my efforts toward your disenchantment," Princess Nell said, and a tremendous, earsplitting scream of gratitude rose from the tiny throats of the Mouse Army. Finding the required book did not take long. The Mouse Army split itself up into small detachments, each of which wrestled a different book from the shelf, opened it up on the floor, and scampered through it one page at a time, looking for relevant spells. Within the hour, Princess Nell noted that a broad open corridor had developed in the Mouse Army, and that a book was making its way toward her, seeming to float an inch above the floor. She lifted the book carefully from the backs of the mice who were bearing it and flipped through it until she found a spell for the disenchantment of mice. "Very well then," she said, and began to read the spell; but suddenly, excited squeaking filled the air and all the mice were running away in a panic. The Generalissima climbed up onto the page, jumping up and down in a state of extreme agitation and waving her forelegs back and forth over her head. "I understand," Princess Nell said. She picked up the book and walked out of the library, taking care not to step on any of her subjects, and followed them out to the vast empty space beyond. Once again the Mouse Army put on a dazzling display of close order drill, drawing itself up across the empty, colorless plain by platoons,

companies, battalions, regiments, and brigades; but this time the parade took up a much larger space, because this time the mice took care to space themselves as far apart as the length of a human arm. Some of the platoons had to march what was, for them, a distance of many leagues in order to reach the edges of the formation. Princess Nell took advantage of the time to wander about and inspect the ranks, and to rehearse the spell. Finally the Generalissima approached, bowed deeply, and gave her the thumbs-up, though Princess Nell had to pick the tiny leader up and squint to see this gesture. She went to the place that had been left for her at the head of the formation, opened up the book, and spoke the magic spell. There was a violent thunderclap, and a rush of wind that knocked Princess Nell flat on her back. She looked up, dazed, to see that she was surrounded by a vast army of some hundreds of thousands of girls, only a few years younger than she was. A wild cheer rose up, and all of the girls fell to their knees as one and, in a scene of riotous jubilation, proclaimed their fealty to Queen Nell.

Hackworth in China; depredations of the Fists; a meeting with Dr. X; an unusual procession. They said that the Chinese had great respect for madmen, and that during the days of the Boxer Rebellion, certain Western missionaries, probably unstable characters to begin with, who had been trapped behind walls of rubble for weeks, scurrying through the sniper fire of the encircling Boxers and Imperial troops and listening to the cries of their flock being burned and tortured in the streets of Beijing, had become deranged and had walked unharmed into the ranks of their besiegers and been given food and treated with deference. Now John Percival Hackworth, having checked into a suite on the top floor of the Shangri-La in Pudong (or Shong-a-lee-lah as the taxi drivers sang it), put on a fresh shirt; his best waistcoat, girded with the gold chain, adangle with his chop, snuffboxes, fob, and watchphone; a long coat with a swallowtail for riding; boots, the black leather and brass spurs hand-shined in the lobby of the Shong-a- lee-lah by a coolie who was so servile that he was insolent, and Hackworth suspected him of being a Fist; new kid gloves; and his bowler, de-mossed and otherwise spruced up a bit, but obviously a veteran of many travels in rough territory. As he crossed the western bank of the Huang Pu, the usual crowd of starving peasants and professional amputees washed around him like a wave running up a flat beach because, though riding here was dangerous, it was not crazy, and they did not know him for a madman. He kept his gray eyes fixed upon the picket of burning Feed lines that demarcated the shrinking border of the Coastal Republic, and let their hands tug at his coattails, but he took no notice of them. At different times, three very rural young men, identifiable as much by their deep tans as their ignorance of modern security technology, made the mistake of reaching for his watch chain and received warning shocks for their trouble. One of them refused to let go until the smell of burned flesh rose from his palm, and then he peeled his hand away slowly and calmly, staring up at Hackworth to show that he didn't mind a little pain, and said something clearly and loudly that caused a titter to run through the crowd. The ride down Nanjing Road took him through the heart of Shanghai's shopping district,

now an endless gauntlet of tanned beggars squatting on their heels gripping the brightly colored plastic bags that served as their suitcases, carefully passing the butts of cigarettes back and forth. In the shop windows above their heads, animated mannikins strutted and posed in the latest Coastal Republic styles. Hackworth noticed that these were much more conservative than they had been ten years ago, during his last trip down Nanjing Road. The female mannikins weren't wearing slit skirts anymore. Many weren't wearing skirts at all, but silk pants instead, or long robes that were even less revealing. One display was centered upon a patriarchal figure who reclined on a dais, wearing a round cap with a blue button on the top: a Mandarin. A young scholar was bowing to him. Around the dais, four groups of mannikins were demonstrating the other four filial relationships. So it was chic to be Confucian now, or at least it was politic. This was one of the few shop windows that didn't have red Fist posters pasted all over it. Hackworth rode past marble villas built by Iraqi Jews in previous centuries, past the hotel where Nixon had once stayed, past the high-rise enclaves that Western businessmen had used as the beachheads of the post-Communist development that had led to the squalid affluence of the Coastal Republic. He rode past nightclubs the size of stadiums; jaialai pits where stunned refugees gaped at the jostling of the bettors; side streets filled with boutiques, one street for fine goods made from alligators, another for furs, another for leathers; a nanotech district consisting of tiny businesses that did bespoke engineering; fruit and vegetable stands; a cul-de-sac where peddlers sold antiques from little carts, one specializing in cinnabar boxes, another in Maoist kitsch. Each time the density began to wane and he thought he must be reaching the edge of the city, he would come to another edge city of miniature three-story strip malls and it would begin again. But as the day went on, he truly did approach the limit of the city and kept riding anyway toward the west, and it became evident then that he was a madman and the people in the streets looked at him with awe and got out of his way. Bicycles and pedestrians became less common, replaced by heavier and faster military traffic. Hackworth did not like riding on the shoulder of highways, and so he directed Kidnapper to find a less direct route to Suzhou, one that used smaller roads. This was fiat Yangtze Delta territory only inches above the waterline, where canals, for transport, irrigation, and drainage, were more numerous than roads. The canals ramified through the black, stinky ground like blood vessels branching into the tissues of the brain. The plain was interrupted frequently by small tumuli containing the coffins of someone's ancestors, just high enough to stay above the most routine floods. Farther to the west, steep hills rose from the paddies, black with vegetation. The Coastal Republic checkpoints at the intersections of the roads were gray and fuzzy, like house-size clots of bread mold, so dense was the fractal defense grid, and staring through the cloud of macro- and microscopic aerostats, Hackworth could barely make out the hoplites in the center, heat waves rising from the radiators on their backs and stirring the airborne soup. They let him pass through without incident. Hackworth expected to see more checkpoints as he continued toward Fist territory, but the first one was the last; the

Coastal Republic did not have the strength for defense in depth and could muster only a one-dimensional picket line. A mile past the checkpoint, at another small intersection, Hackworth found a pair of very makeshift crucifixes fashioned from freshly cut mulberry trees, green leaves still fluttering from their twigs. Two young white men had been bound to the crucifixes with gray plastic ties, burned in many places and incrementally disemboweled. From the looks of their haircuts and the somber black neckties that had been ironically left around their necks, Hackworth guessed they were Mormons. A long skein of intestine trailed from one of their bellies down into the dirt, where a gaunt pig was tugging on it stubbornly. He did not see much more death, but he smelled it everywhere in the hot wet air. He thought that he might be seeing a network of nanotech defense barriers until he realized that it was a natural phenomenon: Each waterway supported a linear black nimbus of fat, drowsy flies. From this he lmew that if he tugged a bit on this or that rein and guided Kidnapper to the bank of the canal, he would find it filled with ballooning corpses. Ten minutes after passing the Coastal Republic checkpoint, he rode through the center of a Fist encampment. As he looked neither right nor left, he could not really estimate its size; they had taken over a village of low brick-and-stucco buildings. A long straight smudge running across the earth marked the location of a burned Feed line, and as he crossed it, Hackworth fantasized that it was a meridian engraved on the living globe by an astral cartographer. Most of the Fists were shirtless, wearing indigo trousers, scarlet girdles knotted at the waist, sometimes scarlet ribbons tied round necks, foreheads, or upper arms. The ones who weren't sleeping or smoking were practicing martial arts. Hackworth rode slowly through their midst, and they pretended not to notice him, except for one man who came running out of a house with a knife, shouting "Sha! Sha!" and had to be tackled by three comrades. As he rode the forty miles to Suzhou, nothing changed about the landscape except that creeks became rivers and ponds became lakes. The Fist encampments became somewhat larger and closer together. When the thick air infrequently roused itself to a breeze, he could smell the clammy metallic reek of stagnant water and knew he was close to the great lake of Tai Wu, or Taifu as the Shanghainese pronounced it. A grayscale dome rose from the paddies some miles away, casting a film of shadow before a cluster of tall buildings, and Hackworth knew it must be Suzhou, now a stronghold of the Celestial Kingdom, veiled in its airborne shield like a courtesan behind a translucent sheen of Suzhou silk. Nearing the shore of the great lake he found his way onto an important road that ran south toward Hangzhou. He set Kidnapper ambling northward. Suzhou had thrown out tendrils of development along its major roads, and so as he drew closer he saw strip malls and franchises, now destroyed, deserted, or colonized by refugees. Most of these places catered to truck drivers: lots of motels, casinos, teahouses, and fast-food places. But no trucks ran on the highway now, and Hackworth rode down the center of a lane, sweating uncontrollably in his dark clothes and drinking frequently from a refrigerated bottle in Kidnapper's glove compartment. A McDonald's sign lay toppled across the highway like a giant turnpike;

something had burned through the single pillar that thrust it into the air. A couple of young men were standing in front of it smoking cigarettes and, as Hackworth realized, waiting for him. As Hackworth drew closer, they ground out their cigarettes, stepped forward, and bowed. Hackworth tipped his bowler. One of them took Kidnapper's reins, which was a purely ceremonial gesture in the case of a robot horse, and the other invited Hackworth to dismount. Both of the men were wearing heavy but flexible coveralls with cables and tubes running through the fabric: the inner layer of armor suits. They could turn themselves into battle-ready hoplites by slapping on the harder and heavier outer bits, which were presumably stashed somewhere handy. Their scarlet headbands identified them as Fists. Hackworth was one of the few members of the Outer Tribes ever to find himself in the presence of a Fist who was not running toward him with a weapon screaming "Kill! Kill!" and found it interesting to see them in a more indulgent mood. They were dignified, formal, and controlled, like military men, with none of the leering and snickering that were fashionable among Coastal Republic boys of the same age. Hackworth walked across the parking lot toward the McDonald's, followed at a respectful distance by one of the soldiers. Another soldier opened the door for him, and Hackworth sighed with delight as cold dry air flowed over his face and began to chase the muggy stuff through the weave of his clothing. The place had been lightly sacked. He could smell a cold, almost clinical greasy smell wafting from behind the counter, where containers of fat had spilled onto the floor and congealed like snow. Much of this had been scooped up by looters; Hackworth could see the parallel tracks of women's fingers. The place was decorated in a Silk Road motif, transpicuous mediatronic panels portraying wondrous sights between here and the route's ancient terminus in Cadiz. Dr. X was seated in the corner booth, his face radiant in the cool, UV-filtered sunlight. He was wearing a Mandarin cap with dragons embroidered in gold thread and a magnificent brocade robe. The robe was loose at the neck and had short sleeves so that Hackworth could see the inner garment of a hoplite suit underneath. Dr. X was at war, and had emerged from the safe perimeter of Suzhou, and needed to be prepared for an attack. He was sipping green tea from a jumbo McDonald's cup, made in the local style, great clouds of big green leaves swirling around in a tumbler of hot water. Hackworth doffed his hat and bowed in the Victorian style, which was proper under the circumstances. Dr. X returned the bow, and as his head tilted forward, Hackworth could see the button on the top of his cap. It was red, the color of the highest ranks, but it was made of coral, marking him as second rank. A ruby button would have put him at the very highest level. In Western terms this made Dr. X roughly equivalent to a lesser cabinet minister or three-star general. Hackworth supposed that this was the highest rank of Mandarin permitted to converse with barbarians. Hackworth sat down across the table from Dr. X. A young woman padded out of the kitchen on silk slippers and gave Hackworth his own tumbler full of green tea. Watching her mince away, Hackworth was only mildly shocked to see that her feet were no more than four inches long. There must be better ways to do it now, maybe by regulating the growth of the

tarsal bones during adolescence. It probably didn't even hurt. Realizing this, Hackworth also realized, for the first time, that he had done the right thing ten years ago. Dr. X was watching him and might as well have been reading his mind. This seemed to put him in a pensive mood. He said nothing for a while, just gazed out the window and occasionally sipped his tea. This was fine with Hackworth, who had had a long ride. "Have you learned anything from your ten-year sentence?" Dr. X finally said. "It would seem so. But I have trouble pulling it up," Hackworth said. This was a bit too idiomatic for Dr. X. By way of explanation, Hackworth flipped out a ten-year-old card bearing Dr. X's dynamic chop. As the old fisherman hauled the dragon out of the water, Dr. X suddenly got it, and grinned appreciatively. This was showing a lot of emotion- assuming it was genuine- but age and war had made him reckless. Have you found the Alchemist?" Dr. X said. Yes," Hackworth said. "I am the Alchemist." When did you know this?" Only very recently," Hackworth said. "Then I understood it all in an instant- pulled it up," he said, pantomiming the act of reeling in a fish. "The Celestial Kingdom was far behind Nippon and Atlantis in nanotech. The Fists could always have burned the barbarians' Feed lines, but this would only have plunged the peasants into poverty and made the people long for foreign goods. The decision was made to leapfrog the barbarian tribes by developing Seed technology. At first you pursued the project in cooperation with second-tier phyles like Israel, Armenia, and Greater Serbia, but they proved unreliable. Again and again your carefully cultivated networks were scattered by Protocol Enforcement. "But through these failures you made contact for the first time with CryptNet, whom you doubtless view as just another triad-a contemptible band of conspirators. However, CryptNet was tied in with something much deeper and more interesting-the society of the Drummers. With their flaky and shallow Western perspective, CryptNet didn't grasp the full power of the Drummers' collective mind. But you got it right away. "All you required to initiate the Seed project was the rational, analytical mind of a nanotechnological engineer. I fit the bill perfectly. You dropped me into the society of the Drummers like a seed into fertile soil, and my knowledge spread through them and permeated their collective mind-as their thoughts spread into my own unconscious. They became like an extension of my own brain. For years I laboured on the problem, twenty-four hours a day. "Then, before I was able to finish the job, I was pulled out by my superiors at Protocol Enforcement. I was close to being finished. But not finished yet." "Your superiors had uncovered our plan?" "Either they are completely ignorant, or else they know everything and are pretending ignorance," Hackworth said. "But surely you have told them everything now," Dr. X said almost inaudibly. "If I were to answer that question, you would have no reason not to kill me," Hackworth said. Dr. X nodded, not so much to concede the point as to express sympathy with Hackworth's admirably cynical train of thought-as though Hackworth, after a series of seemingly inconclusive moves, had suddenly flipped over a large territory of stones on a go board. "There are those who would advocate that course, because of what has happened with the girls," Dr. X said. Hackworth was so startled to hear this that he became somewhat

lightheaded for a moment and too self-conscious to speak "Have the Primers proved useful?" he finally said, trying not to sound giddy. Dr. X grinned broadly for a moment. Then the emotion dropped beneath the surface again, like a breaching whale. "They must have been useful to someone," he said. "My opinion is that we made a mistake in saving the girls." "How can this act of humanity possibly have been a mistake?" Dr. X considered it. "It would be more correct to say that, although it was virtuous to save them, it was mistaken to believe that they could be raised properly. We lacked the resources to raise them individually, and so we raised them with books. But the only proper way to raise a child is within a family. The Master could have told us as much, had we listened to his words." "Some of those girls will one day choose to follow in the ways of the Master," Hackworth said, "and then the wisdom of your decisions will be demonstrated." This seemed to be a genuinely new thought to Dr. X. His gaze returned to the window. Hackworth sensed that the matter of the girls and the Primers had been concluded. "I will be open and frank," said Dr. X after some ruminative tea slurping, "and you will not believe that I am being so, because it is in the heads of those from the Outer Tribes to think that we never speak directly. But perhaps in time you will see the truth of my words. "The Seed is almost finished. When you left, the building of it slowed down very much- more than we expected. We thought that the Drummers, after ten years, had absorbed your knowledge and could continue the work without you. But there is something in your mind that you have gained through your years of scholarly studies that the Drummers, if they ever had it, have given up and cannot get back unless they come out of the darkness and live their lives in the light again. "The war against the Coastal Republic reaches a critical moment. We ask you to help us now." "I must say that it is nearly inconceivable for me to help you at this point," Hackworth said, "unless it would be in the interest of my tribe, which does not strike me as a likely prospect." "We need you to help us finish building the Seed," Dr. X said doggedly. Only decades of training in emotional repression kept Hackworth from laughing out loud. "Sir. You are a worldly man and a scholar. Certainly you are aware of the position of Her Majesty's government, and indeed of the Common Economic Protocol itself, on the subject of Seed technologies." Dr. X raised one hand a few inches from the tabletop, palm down, and pawed once at the air. Hackworth recognized it as the gesture that well-to-do Chinese used to dismiss beggars, or even to call bullshit on people during meetings. "They are wrong," he said. "They do not understand. They think of the Seed from a Western perspective. Your cultures- and that of the Coastal Republic- are poorly organized. There is no respect for order, no reverence for authority. Order must be enforced from above lest anarchy break out. You are afraid to give the Seed to your people because they can use it to make weapons, viruses, drugs of their own design, and destroy order. You enforce order through control of the Feed. But in the Celestial Kingdom, we are disciplined, we revere authority, we have order within our own minds, and hence the family is orderly, the village is orderly, the state is orderly. In our hands the Seed would be harmless." "Why do you need it?" Hackworth said. "We must

have technology to live," Dr. X said, "but we must have it with our own." Hackworth thought for a moment that Dr. X was referring to the beverage. But the Doctor began to trace characters on the tabletop, his hand moving deftly and gracefully, the brocade sleeve rasping across the plastic surface. "Yong is the outer manifestation of something. Ti is the underlying essence. Technology is a yong associated with a particular ti that is"-the Doctor stumbled here and, through a noticeable effort, refrained from using pejorative terms like barbarian or gwailo-"that is Western, and completely alien to us. For centuries, since the time of the Opium Wars, we have struggled to absorb the yong of technology without importing the Western ti. But it has been impossible. Just as our ancestors could not open our ports to the West without accepting the poison of opium, we could not open our lives to Western technology without taking in the Western ideas, which have been as a plague on our society. The result has been centuries of chaos. We ask you to end that by giving as the Seed." "I do not understand why the Seed will help you." "The Seed is technology rooted in the Chinese ti. We have lived by the Seed for five thousand years," Dr. X said. He waved his hand toward the window. "These were rice paddies before they were parking lots. Rice was the basis for our society. Peasants planted the seeds and had highest status in the Confucian hierarchy. As the Master said, 'Let the producers be many and the consumers few.' When the Feed came in from Atlantis, From Nippon, we no longer had to plant, because the rice now came From the matter compiler. It was the destruction of our society. When our society was based upon planting, it could truly be said, as the Master did, 'Virtue is the root; wealth is the result.' But under the Western ti, wealth comes not from virtue but from cleverness. So the filial relationships became deranged. Chaos," Dr. X said regretfully, then looked up From his tea and nodded out the window. "Parking lots and chaos." Hackworth remained silent for a full minute. Images had come into his mind again, not a fleeting hallucination this time, but a full-fledged vision of a China freed from the yoke of the foreign Feed. It was something he'd seen before, perhaps something he'd even helped create. It showed something no gwailo would ever get to see: the Celestial Kingdom during the coming Age of the Seed. Peasants tended their fields and paddies, and even in times of drought and flood, the earth brought forth a rich harvest: food, of course, but many unfamiliar plants too, fruits that :ould be made into medicines, bamboo a thousand times stronger than the natural varieties, trees that produced synthetic rubber and pellets of clean safe fuel. In an orderly procession the suntanned farmers brought their proceeds to great markets in clean cities free of cholera and strife, where all of the young people were respectful and dutiful scholars and all of the elders were honored and cared for. This was a ractive simulation as big as all of China, and Hackworth could have lost himself in it, and perhaps did for he knew not how long. But finally he closed his eyes, blinked it away, sipped some tea to bring his rational mind back into control. "Your arguments are not without merit," Hackworth said. "Thank you for helping me to see the matter in a different light. I will ponder these questions on my return to Shanghai." Dr. X escorted him to the parking lot of the McDonald's. The heat felt pleasant at first, like a

relaxing bath, though Hackworth knew that soon he would feel as if he were drowning in it. Kidnapper ambled over and folded its legs, allowing Hackworth to mount it easily. "You have helped us willingly for ten years," Dr. X said. "It is your destiny to make the Seed." "Nonsense," Hackworth said, "I did not know the nature of the project." Dr. X smiled. "You knew it perfectly well." He freed one hand from the long sleeves of his robe and shook his finger at Hackworth, like an indulgent teacher pretending to scold a clever but mischievous pupil. "You do these things not to serve your Queen but to serve your own nature, John Hackworth, and I understand your nature. For you cleverness is its own end, and once you have seen a clever way to do a thing, you must do it, as water finding a crack in a dike must pass through it and cover the land on the other side." "Farewell, Dr. X," Hackworth said. "You will understand that although I hold you in the highest personal esteem, I cannot earnestly wish you good fortune in your current endeavour." He doffed his hat and bowed low to one side, forcing Kidnapper to adjust its stance a bit. Dr. X returned the bow, giving Hackworth another look at that coral button on his cap. Hackworth spurred Kidnapper on to Shanghai. . . . He followed a more northerly route now, along one of the many radial highways that converged on the metropolis. After he had been riding for some time, he became consciously aware of a sound that had been brushing against the outer fringes of perceptibility for some time: a heavy, distant, and rapid drumbeat, perhaps twice as fast as the beat of his own heart. His first thought, of course, was of the Drummers, and he was tempted to explore one of the nearby canals to see whether their colony had spread its tendrils this far inland. But then he looked northward across the flat land for a couple of miles and saw a long procession making its way down another highway, a dark column of pedestrians marching on Shanghai. He saw that his path was converging with theirs, so he spurred Kidnapper forward at a hand-gallop, hoping to reach the intersection of the roads before it was clogged by this column of refugees. Kidnapper outdistanced them easily, but to no avail; when he reached the intersection, he found it had been seized by the column's vanguard which had established a roadblock there and would not let him pass. The contingent now controlling the intersection consisted entirely of girls, some eleven or twelve years old. There were several dozen of them, and they had apparently taken the objective by force from a smaller group of Fists, who could now be seen lying in the shade of some mulberry trees, hogtied with plastic rope. Probably three-quarters of the girls were on guard duty, mostly armed with sharpened bamboo stakes, though a few guns and blades were in evidence. The remaining quarter were on break, hunkered down in a circle near the intersection, sipping freshly boiled water and concentrating intently on books. Hackworth recognized the books; they were all identical, and they all had marbled jade covers, though all of them had been personalized with stickers, graffiti, and other decorations over the years. Hackworth realized that several more girls, organized in groups of four, had been following him down the road on bicycles; these outriders passed by him now and rejoined their group. He had no choice but to wait until the column had passed. The drumbeat grew and grew in volume until the

pavement shook with each blow, and the shock absorption gear built into Kidnapper's legs went into play, flinching minutely at each beat. Another vanguard passed through: Hackworth easily calculated its size at two hundred and fifty-six. A battalion was four platoons, each of which was four companies of four troops of four girls each. The vanguard consisted of one such battalion, moving at a very brisk double-time, probably going ahead of the main group to fall upon the next major intersection. Then, finally, the main column passed through, organized in battalions, each foot hitting the ground in unison with all the others. Each battalion carried a few sedan chairs, which were passed from one four-girl troop to another every few minutes to spread out the work. They were not luxurious palanquins but were improvised from bamboo and plastic rope and upholstered with materials stripped from old plastic cafeteria furniture. Riding in these chairs were girls who did not seem all that different from the others, except that they might have been a year or two older. They did not seem to be officers; they were not giving orders and wore no special insignia. Hackworth did not understand why they were riding in sedan chairs until he got a look at one of them, who had crossed one ankle up on her knee and taken her slipper off. Her foot was defective; it was several inches too short. But all of the other sedan chair girls were deeply absorbed in their Primers. Hackworth unclipped a small optical device from his watch chain, a nanotech telescope/microscope that frequently came in handy, and used it to look over one girl's shoulder. She was looking at a diagram of a small nanotechnological device, working her way through a tutorial that Hackworth had written several years ago. The column went past much faster than Hackworth had feared; they moved down the highway like a piston. Each battalion carried a banner, a very modest thing improvised from a painted bedsheet. Each banner bore the number of the battalion and a crest that Hackworth knew well, as it played an important role in the Primer. In all, he counted two hundred and fifty-six battalions. Sixty-five thousand girls ran past him, hell-bent on Shanghai.

From the Primer, Princess Nell's return to the Dark Castle; the death of Harv; The Books of the Book and of the Seed; Princess Nell's quest to find her mother. Destruction of the Causeway; Nell falls into the hands of Fists; she escapes into a greater peril; deliverance. Princess Nell could have used all of the powers she had acquired during her great quest to dig Harv's grave or caused the work to be done for her by the Disenchanted Army, but it did not seem fitting, and so instead she found an old rusty shovel hung up in one of the Dark Castle's outbuildings. The ground was dry and stony and veined with the roots of thorn bushes, and more than once the shovel struck ancient bones. Princess Nell dug throughout the long day, softening the hard earth with her tears, but did not slacken until the ground was level with her own head. Then she went into the little room in the Dark Castle where Harv had died of a consumption, carefully wrapped his withered body in fine white silk, and bore it out to the grave. She had found lilies growing wild in the overgrown flower-garden by the little fisherman's cottage, so she put a spray of these in the grave with him, along with a little children's

story-book that Harv had given her for a present many years ago. Harv could not read, and many nights as they had sat round the fire in the courtyard of the Dark Castle, Nell had read to him from this book, and she supposed that he might like to have it wherever he was going now. Filling in the grave went quickly; the loose dirt more than filled the hole. Nell left more lilies atop the long low mound of earth that marked Harv's resting place. Then she turned her back and walked into the Dark Castle. The stain-colored granite walls had picked up some salmon highlights from the western sky, and she suspected that she could see a beautiful sunset from the room in the high tower where she had established her library. It was a long climb up a dank and mildewy staircase that wound up the inside of the Dark Castle's highest tower. In the circular room at the top, which was built with mullioned windows looking out in all directions, Nell had placed all of the books she had gathered during her quest: books given her as presents by Purple, books from the library of King Magpie, the first Faery King that she had vanquished, and more from the palace of the djinn, and Castle Turing, and many other hidden libraries and treasuries that she had discovered or pillaged on her way. And, of course, there was the entire library of King Coyote, which contained so many books that she had not even had time to look at them yet. There was so much work to be done. Copies of all of these books had to be made for all of the girls in the Disenchanted Army. The Land Beyond had vanished, and Princess Nell wanted to make it anew. She wanted to write down her own story in a great book that young girls could read. And she had one remaining quest that had been pressing on her mind of late, during her long voyage across the empty sea back to the island of the Dark Castle: she wanted to solve the mystery of her own origins. She wanted to find her mother. Even after the destruction of the Land Beyond, she had sensed the presence of another in the world, one who had always been there. King Coyote himself had confirmed it. Long ago, her stepfather, the kindly fisherman, had received her from mermaids; whence had the mermaids gotten her? She suspected that the answer could not be found without the wisdom contained in her library. She began by causing a catalog to be made, starting with the first books she had gotten on her early adventures with her Night Friends. At the same time she established a Scriptorium in the great hall of the castle, where thousands of girls sat at long tables making exact copies of all of the books. Most of King Coyote's books had to do with the secrets of atoms and how to put them together to make machines. Naturally, all of them were magic books; the pictures moved, and you could ask them questions and get answers. Some of them were primers and workbooks for novices, and Princess Nell spent a few days studying this art, putting atoms together to make simple machines and then watching them run. Next came a very large set of matched volumes containing reference materials: One contained designs for thousands of sleeve bearings, another for computers made of rods, still another for energy storage devices, and all of them were ractive so that she could use them to design such things to her own specifications. Then there were more books on the general principles of putting such things together into systems. Finally, King Coyote's library included some books inscribed in the King's

own hand, containing designs for his greatest masterpieces. Of these, the two very finest were the Book of the Book and the Book of the Seed. They were magnificent folio-size volumes, as thick as Princess Nell's hand was broad, bound in rich leather illuminated with hair-thin gilt lines in an elaborate interlace pattern, and closed with heavy brass hasps and locks. The lock on the Book of the Book yielded to the same key that Princess Nell had taken from King Coyote. She had discovered this very early in her exploration of the library but was unable to comprehend the contents of this volume until she had studied the others and learnt the secrets of these machines. The Book of the Book contained a complete set of plans for a magical book that would tell stories to a young person, tailoring them for the child's needs and interests- even teaching them how to read if need be. It was a fearsomely complicated work, and Princess Nell only skimmed it at first, recognizing that to understand the particulars might take years of study. The lock on the Book of the Seed would not yield to King Coyote's key or to any other key in Princess Nell's possession, and because this book had been built atom by atom, it was stronger than any mortal substance and could not possibly be broken open. Princess Nell did not know what this book was about; but the cover bore an inlaid illustration of a striped seed, like the apple-sized seed that she had seen used in King Coyote's city to build a crystal pavilion, and this foreshadowed the book's purpose clearly enough. Nell opened her eyes and propped herself up on one elbow. The Primer fell shut and slid off her belly onto the mattress. She had fallen asleep reading it. The girls on their bunkbeds lay all around her, breathing quietly and smelling of soap. It made her want to lie back down and sleep too. But for some reason she was up on one elbow. Some instinct had told her she had to be up. She sat up and drew her knees up to her chest, freeing the hem of her nightgown from between the sheets, then spun around and dropped to the floor soundlessly. Her bare feet took her silently between the rows of bunks and into the little lounge in the corner of the floor where the girls sat together, had tea, brushed their hair, watched old passives. It was empty now, the lights were off, the corner windows exposing a vast panorama: to the northeast, the lights of New Chusan and of the Nipponese and Hindustani concessions standing a few kilometers offshore, and the outlying parts of Pudong. Downtown Pudong was all around, its floating, mediatronic skyscrapers like biblical pillars of fire. To the northwest lay the Huang Pu River, Shanghai, its suburbs, and the ravaged silk and tea districts beyond. No fires burned there now; the Feed lines had been burned all the way to the edge of the city, and the Fists had stopped at the outskirts and hunkered down as they sought a way to penetrate the tattered remains of the security grid. Nell's eye was drawn toward the water. Downtown Pudong offered the most spectacular urban nightscape ever devised, but she always found herself looking past it, staring instead at the Huang Pu, or the Yangzte to the north, or to the curvature of the Pacific beyond New Chusan. She'd been having a dream, she realized. She had awakened not because of any external disturbance but because of what had happened in that dream. She had to remember it; but, of course, she couldn't. Just a few snatches: a woman's face, a beautiful young woman, perhaps

wearing a crown, but seen muddily, as through turbulent water. And something that glittered in her hands. No, dangling beneath her hands. A piece of jewelry on a golden chain. Could it have been a key? Nell could not bring the image back, but an instinct told her that it was. Another detail too: a gleaming swath of something that passed in front of her face once, twice, three times. Something yellow, with a repeating pattern woven into it: a crest consisting of a book, a seed, and crossed keys. Cloth of gold. Long ago the mermaids had brought her to her stepfather, and she had been wrapped in cloth of gold, and from this she had always known that she was a Princess. The woman in the dream, veiled in swirling water, must have been her mother. The dream was a memory from her lost infancy. And before her mother had given her up to the mermaids, she had given Princess Nell a golden key on a chain. Nell perched herself on the windowsill, leaned against the pane, opened the Primer, and flipped all the way back to the beginning. It started with the same old story, as ever, but told now in more mature prose. She read the story of how her stepfather had gotten her from the mermaids, and read it again, drawing out more details, asking it questions, calling up detailed illustrations. There, in one of the illustrations, she saw it: her stepfather's lock-box, a humble plank chest bound in rusted iron straps, with a heavy oldfashioned padlock, stored underneath his bed. It was in this chest that he had stored the cloth of gold-and, perhaps, the key as well. Paging forward through the book, she came across a long-forgotten story of how, following her stepfather's disappearance, her wicked stepmother had taken the lock-box to a high cliff above the sea and flung it into the waves, destroying any evidence that Princess Nell was of royal blood. She had not known that her stepdaughter was watching her from between the branches of a thicket, where she often concealed herself during her stepmother's rages. Nell flipped to the last page of the Young Lady's Illustrated Primer. As Princess Nell approached the edge of the cliff, picking her way along carefully through the darkness, taking care not to snag the train of her nightgown on thorny shrubs, she experienced a peculiar feeling that the entire ocean had become dimly luminescent. She had often noticed this phenomenon from the high windows of her library in the tower and reckoned that the waves must be reflecting back the light of the moon and stars. But this was a cloudy night, the sky was like a bowl of carved onyx, allowing no light to pass down from the heavens. The light she saw must emanate from beneath. Arriving cautiously at the rim of the cliff, she saw that her surmise was true. The ocean-the one constant in all the world- the place from where she had come as an infant, from which the Land Beyond had grown out of King Coyote's seed, and into which it had dissolved- the ocean was alive. Since the departure of King Coyote, Princess Nell had supposed herself entirely alone in the world. But now she saw cities of light beneath the waves and knew that she was alone only by her own choice. "'Princess Nell gathered the hem of her nightgown in both hands and raised it over her head, letting the chill wind stream over her body and carry the garment away,' " Nell said. " 'Then, drawing a deep breath and closing her eyes, she bent her legs and sprang forward into space.' She was reading about the way the illuminated waves

rushed up toward her when suddenly the room filled with light. She looked toward the door, thinking that someone had come in and turned the lights on, but she was alone in the room, and the light was flickering against the wall. She turned her head the other way. The center span of the Causeway had become a ball of white light hurling its marbled shroud of cold dark matter into the night. The sphere expanded until it seemed to occupy most of the interval between New Chusan and the Pudong shoreline, though by this time the color had deepened from white into reddish-orange, and the explosion had punched a sizable crater into the water, which developed into a circular wave of steam and spray that ran effortlessly across the ocean's surface like the arc of light cast by a pocket torch. Fragments of the giant Feed line that had once constituted most of the Causeway's mass had been pitched into the sky by the explosion and now tumbled end over end through the night sky, the slowness of their motion bespeaking their size, casting yellow sulfurous light over the city as they burned furiously in the wind-blast created by their own movement. The light limned a pair of tremendous pillars of water vapor rising from the ocean north and south of the Causeway; Nell realized that the Fists must have blown the Nipponese and Hindustani Feeds at the same moment. So the Fists of Righteous Harmony had nanotechnological explosives now; they'd come a long way since they'd tried to torch the bridge over the Huang Pu with a few cylinders of hydrogen. The shock wave rapped at the window, startling several of the girls from sleep. Nell heard them murmuring to one another in the bunk room. She wondered if she should go in and warn them that Pudong was cut off now, that the final assault of the Fists had commenced. But though she could not understand what they were saying, she could understand their tone of voice clearly enough: They were not surprised by this, nor unhappy. They were all Chinese and could become subjects of the Celestial Kingdom simply by donning the conservative garb of that tribe and showing due deference to any Mandarins who happened by. No doubt this was exactly what they would do as soon as the Fists came to Pudong. Some of them might suffer deprivation, imprisonment, or rape, but within a year they would all be integrated into the C.K., as if the Coastal Republic had never existed. But if the news feeds from the interior meant anything, the Fists would kill Nell gradually, with many small cuts and burns, when they grew weary of raping her. In recent days she had often seen the Chinese girls talking in little groups and sneaking glances at her, and the suspicion had grown in her breast that some of them might know of the attack in advance and might make arrangements to turn Nell over to the Fists as a demonstration of their loyalty. She opened the door a crack and saw two of these girls padding toward the bunk room where Nell usually slept, carrying lengths of red polymer ribbon. As soon as they had stolen into Nell's bunk room, Nell ran down the corridor and got to the elevators. As she awaited the elevator, she was more scared than she had ever been; the sight of the cruel red ribbons in the small hands of the girls had for some reason struck more terror into her heart than the sight of knives in the hands of Fists. A shrill commotion arose from the bunk room. The bell for the elevator sounded. She heard the bunk room door fly open, and someone

running down the hall. The elevator door opened. One of the girls came into the lobby, saw her, and shrieked something to the others in a dolphinlike squeal. Nell got into the elevator, punched the button for the lobby, and held down the DOOR CLOSE button. The girl thought for a moment, then stepped forward to hold the door. Several more girls were running down the hall. Nell kicked the girl in the face, and she spun away in a helix of blood. The elevator door began to close. Just as the two doors were meeting in the center, through the narrowing slit she saw one of the other girls diving toward the wall button. The doors closed. There was a brief pause, and then they slid open again. Nell was already in the correct stance to defend herself. If she had to beat each of the girls to death individually, she would do it. But none of them rushed the elevator. Instead, the leader stepped forward and aimed something at Nell. There was a little popping noise, a pinprick in Nell's midsection, and within a few seconds she felt her arms becoming impossibly heavy. Her bottom drooped. Her head bowed. Her knees buckled. She could not keep her eyes open; as they closed, she saw the girls coming toward her, smiling with pleasure, holding up the red ribbons. Nell could not move any part of her body, but she remained perfectly conscious as they tied her up with the ribbon. They did it slowly and methodically and perfectly; they did it every day of their lives. The tortures of the next few hours were of a purely experimental and preliminary nature. They did not last for long and accomplished no permanent damage. These girls had made a living out of binding and torturing people in a way that didn't leave scars, and that was all they really knew. When the leader came up with the idea of shoving a cigarette into Nell's cheek, it was something entirely novel and left the rest of the girls startled and silent for a few minutes. Nell sensed that most of the girls had no stomach for such things and merely wanted to turn her over to the Fists in exchange for citizenship in the Celestial Kingdom. The Fists themselves began to arrive some twelve hours later. Some of them wore conservative business suits, some wore the uniforms of the building's security force, others looked as if they'd arrived to take a girl out to a disco. They all had things to do when they arrived. It was obvious that this suite would act as local headquarters of some sort when the rebellion began in earnest. They began to bring up supplies on the freight elevator and seemed to spend a lot of time on the telephone. More arrived every hour, until Madame Ping's suite was playing host to between one and two dozen. Some of them were very tired and dirty and went to sleep in the bunks immediately. In a way, Nell wished that they would do whatever they were going to do and get it over with fast. But nothing happened for quite some time. When the first Fists arrived, the girls brought them in to see Nell, who had been shoved under a bed and was now lying there in a puddle of her own urine. The leader shone a light on her face briefly and then turned away, completely uninterested. It seemed that once he'd verified that the girls had done their bit for the revolution, Nell ceased to be relevant. She supposed it was inevitable that, in due time, these men would take those liberties with her that have ever been claimed as angary by irregular fighting men, who have willfully severed themselves from the softening feminine influence of civilized society,

with those women who have had the misfortune to become their captives. To make this prospect less attractive, she took the desperate measure of allowing her person to become tainted with the noisome issue of her natural internal processes. But most of the Fists were too busy, and when some of the grungy foot-soldier types arrived, Madame Ping's girls were eager to make themselves useful in this regard. Nell reflected that a bunch of soldiers who found themselves billeted in a bawdy-house would naturally arrive with certain expectations, and that the inmates would be unwise to disappoint them. Nell had gone into the world to seek her fortune and this was what she had found. She understood more forcibly than ever the wisdom of Miss Matheson's remarks about the hostility of the world and the importance of belonging to a powerful tribe; all of Nell's intellect, her vast knowledge and skills, accumulated over a lifetime of intensive training, meant nothing at all when she was confronted with a handful of organized peasants. She could not really sleep in her current position but drifted in and out of consciousness, visited occasionally by hallucinatory waking dreams. More than once she dreamed that the Constable had come in his hoplite suit to rescue her; and the pain she felt when she returned to full consciousness and realized that her mind had been lying to her, was worse than any tortures others might inflict. Eventually they got tired of the stink under the bed and dragged her out of there on a smear of half-dried body fluids. It had been at least thirty-six hours since her capture. The leader of the girls, the one who had put out the cigarette on Nell's face, cut the red ribbon away and cut off Nell's filthy nightgown with it. Nell's limbs bounced on the floor. The leader had brought a whip that they sometimes used on clients and beat Nell with it until circulation returned. This spectacle drew quite a crowd of Fist soldiers, who crowded into the bunk room to watch. The girl drove Nell on hands and knees to a maintenance closet and made her get out a bucket and mop. Then she made Nell clean up the mess under the bed, frequently inspecting the results and beating her, apparently acting out a parody of a rich Westerner bossing around some poor running dog. It became clear after the third or fourth scrubbing of the floor that this was being done as much for the entertainment of the soldiers as for hygienic reasons. Then it was back to the maintenance closet, where Nell was bound again, this time with lightweight police shackles, and left there on the floor in the dark, naked and filthy. A few minutes later, her possessions- some clothes that the girls didn't like and a book they couldn't read- were thrown in there with her. When she was sure that the girl with the whip had gone, she spoke to her Primer and told it to make light. She could see a big matter compiler on the floor in the back of the closet; the girls used it to manufacture larger items when they were needed. This building was apparently hooked up to the Coastal Republic's Pudong Feed, because it hadn't lost Feed services when the Causeway had blown up; and indeed the Fists probably would not have bothered to establish their base here if the place had been cut off. Once every couple of hours or so, a Fist would come into this closet and order the M.C. to create something, usually a simple bulk substance like rations. On two of these occasions, Nell was outraged in the manner she had long suspected was inevitable. She closed her eyes

during the commission of these atrocities, knowing that whatever might be done to the mere vessel of her soul by the likes of these, her soul itself was as serene, as remote from their grasp, as is the full moon from the furious incantations of an aboriginal shaman. She tried to think about the machine that she was designing in her head, with the help of the Primer, about how the gears meshed and the bearings spun, how the rod logic was programmed and where the energy was stored. On her second night in the closet, after most of the Fists had gone to bed and use of the matter compiler had apparently ceased for the night, she instructed the Primer to load her design into the M.C.'s memory, then crept forward and pressed the START button with her tongue. Ten minutes later, the machine released its vacuum with a shriek. Nell tongued the door open. A knife and a sword rested on the floor of the M.C. She turned herself around, moving in small, cautious increments and breathing deeply so that she would not whimper from the pain emanating from those parts of her that were most tender and vulnerable and yet had been most viciously depredated by her captors. She reached backward with her shackled hands and gripped the handle of the knife. Footsteps were approaching down the hallway. Someone must have heard the hiss of the M.C. and thought it was dinner time. But Nell couldn't rush this; she had to be careful. The door opened. It was one of the ranking Fists, perhaps the rough equivalent of a sergeant. He shone a torch in her face, then chuckled and turned on the overhead light. Nell's body blocked his view of the M.C., but it was obvious that she was reaching for something. He probably assumed it was only food. He stepped forward and kicked her casually in the ribs, then grabbed her upper arm and jerked her away from the M.C., causing such pain in her wrists that tears spurted down her face. But she held on to the knife. The Fist was staring into the M.C. He was startled and would be for several moments. Nell maneuvered the knife so that the blade was touching nothing but the link between the shackles, then hit the ON switch. It worked; the edge of the blade came to life like a nanotech chainsaw and zipped through the link in a moment, like clipping a fingernail. Nell brought it around her body in the same motion and buried it in the base of the Fist's spine. He fell to the ground without speaking- he wasn't feeling any pain from that wound or from anything below his waist. Before he could assess matters any further, she plunged the knife into the base of his skull. He was wearing simple peasant stuff: indigo trousers and a tank-top. She put them on. Then she tied her hair up behind her head using strings cut from a mop and devoted a precious minute or two to stretching her arms and legs. And then it was out into the hallway with her knife in her waistband and her sword in her hands. Going round a corner, she cut a man in half as he emerged from the bathroom; the sword kept going of its own momentum and carved a long gash in the wall. This assault released a prodigious amount of blood, which Nell put behind her as quickly as possible. Another man was on guard in the elevator lobby, and as he came to investigate the sounds, she ran him through several times quickly, taking a page from Napier's book this time. The elevators were now under some kind of central control and probably subject to surveillance; rather than press the button in the lobby, she cut a hole in the

doors, sheathed her sword, and clambered out onto a ladder that ran down the shaft. She forced herself to descend slowly and carefully, pressing herself flat against the rungs whenever the car went by. By the time she had descended perhaps fifty or sixty floors, the building had come awake; all of the cars were in constant motion, and when they went past her, she could hear men talking excitedly inside them. Light flooded into the shaft several floors below. The doors had been forced open. A couple of Fists thrust their heads out carefully into the shaft and began looking up and down, shining torches here and there. Several floors below them, more Fists pried another door open; but they had to pull their heads in rapidly as the ascending car nearly decapitated them. She had imagined that Madame Ping's was playing host to an isolated cell of Fists, but it was now clear that most if not all of the building had been taken over. For that matter, all of Pudong might now be a part of the Celestial Kingdom. Nell was much more profoundly isolated than she had feared. The skin of her arms glowed yellow-pink in the beam of a torch shone up from below. She did not make the mistake of looking down into the dazzling light and did not have to; the excited voice of the Fist below her told her that she had been discovered. A moment later, the light vanished as the ascending elevator interposed itself between Nell and the Fists who had seen her. She recalled Harv and his buds elevator-surfing in their old building and reckoned that this would be a good time to take up the practice. As the car rose toward her, she jumped off the ladder, trying to give herself enough upward thrust to match its velocity. She landed hard on the roof, for it was moving far more rapidly than she could jump. The roof knocked her feet out from under her, and she fell backward, slamming her arms out as Dojo had taught her so that she absorbed the impact with her fists and forearms, not her back. More excited talking from inside the car. The access panel on the roof suddenly flew into the air, driven out of its frame by a well-delivered kick from below. A head popped out of the open hatch; Nell skewered it on her knife. The man tumbled down into the car. There was no point in waiting now; the situation had gone into violent motion, which Nell was obliged to use. She rolled onto her belly and kicked both feet downward into the hatch, spun down into the car, landed badly on the corpse, and staggered to one knee. She had barked the point of her chin on the edge of the hatch as she fell tjirough and bitten her tongue, so she was slightly dazed. A gaunt man in a black leather skullcap was standing directly in front of her, reaching for a gun, and while she was shoving her knife up through the center of his thorax, she bumped into someone behind her. She jumped to her feet and spun around, terrified, readying the knife for another blow, and discovered a much more terrified man in a blue coverall, standing by the elevator's control panel, holding his arms up in front of his face and screaming. Nell stepped back and lowered the point of the knife. The man was wearing the uniform of a building services worker and had obviously been yanked away from whatever he had been doing and put in charge of the elevator's controls. The man whom Nell had just killed, the one in the black leather skullcap, was some sort of low-level official in the rebellion and could not be expected to demean himself by punching the buttons himself. "Keep going! Up!

Up!" she said, pointing at the ceiling. The last thing she wanted was for him to stop the elevator at Madame Ping's. The man bowed several times in quick succession and did something with the controls, then turned and smiled ingratiatingly at Nell. As a Coastal Republic citizen working in services, he knew a few words of English, and Nell knew a few of Chinese. "Down below- Fists?" she said. "Many Fist." "Ground floor-Fists?" "Yes, many Fist ground floor." "Street- Fists?" "Fist, army have fight in street." "Around this building?" "Fist around this building all over." Nell looked at the elevator's control panel: four columns of tightly spaced buttons, color-coded according to each floor's function: green for shopping, yellow for residential, red for offices, and blue for utility floors. Most of the blue floors were below ground level, but one of them was fifth from the top. "Building office?" she said, pointing to it. "Yes." "Fists there?" "No, Fist all down below. But Fist on roof!" "Go there." When the elevator reached the fifth floor from the top, Nell had the man freeze it there, then climbed on top and trashed its motors so that it would remain there. She dropped back into the car, trying not to look at the bodies or smell the reek of blood and other body fluids that had gotten all over it, and that were now draining out the open doors and dripping down the shaft. It would not take long for any of this to be discovered. She had some time, though; all she had to do was decide how to make use of it. The maintenance closet had a matter compiler, just like the one Nell had used to make her weapons, and she knew that she could use it to compile explosives and booby-trap the lobby. But the Fists had explosives of their own and could just as well blow the top floors of the building to kingdom come. For that matter, they were probably down in some basement control room watching traffic on the building's Feed network. Use of the M.C. would simply announce her location; they would shut off the Feed and then come after her slowly and carefully. She took a quick tour of the offices, sizing up her resources. Looking out the panoramic windows of the finest office suite, she saw a new state of affairs in the streets of Pudong. Many of the skyscrapers had been rooted in lines from the foreign Feeds and were now dark, though in some places flames vented from broken windows, casting primitive illumination over the streets a thousand feet below. These buildings had mostly been evacuated, and so the streets were crowded with far more people than they could really handle. The plaza immediately surrounding this particular building had been staked out by a picket line of Fists and was relatively uncrowded. She found a windowless room with mediatronic walls that bore a bewildering collage of images: flowers, details of European cathedrals and Shinto temples, Chinese landscape art, magnified images of insects and pollen grains, many-armed Indian goddesses, planets and moons of the solar system, abstract patterns from the Islamic world, graphs of mathematical equations, head shots of models male and female. Other than that, the room was empty except for a model of the building that stood in the center of the room, about Nell's height. The model's skin was mediatronic, just like the skin of the building itself, and it was currently echoing (as she supposed) whatever images were being displayed on the outside of the building: mostly advertising panels, though some Fists had apparently come in here and scrawled

graffiti across them. On top of the model rested a stylus- just a black stick pointed on one end-and a palette, covered with a color wheel and other controls. Nell picked them up, touched the tip of the stylus to a green area on the palette's color wheel, and drew it across the surface of the model. A glowing green line appeared along the track of the stylus, disfiguring an ad panel for an airship line. Whatever other steps Nell might take in the time she had left, there was one thing she could do quickly and easily here. She was not entirely sure why she did it, but some intuition told her that it might be useful; or perhaps it was an artistic urge to make something that would live longer than she would, even if only by a few minutes. She began by erasing all of the big advertising panels on the upper levels of the skyscraper. Then she sketched out a simple line drawing in primary colors: an escutcheon in blue, and within it, a crest depicting a book drawn in red and white; crossed keys in gold; and a seed in brown. She caused this image to be displayed on all sides of the skyscraper, between the hundredth and two-hundredth floors. Then she tried to think of a way out of this place. Perhaps there were airships on the roof. There would certainly be Fist guards up there, but perhaps through a combination of stealth and suddenness she could overcome them. She used the emergency stairs to make her way up to the next floor, then the next, and then the next. Two flights above, she could hear Fist guards posted at the roof, talking to each other and playing mah-jongg. Many flights below, she could hear more Fists making their way up the stairs one flight at a time, looking for her. She was pondering her next move when the guards above her were rudely interrupted by orders squawking from their radios. Several Fists came charging down the stairway, shouting excitedly. Nell, trapped in the stairwell, made herself ready to ambush them as they came toward her, but instead they ran into the top floor and made for the elevator lobby. Within a minute or two, an elevator had arrived and carried them away. Nell waited for a while, listening, and could no longer hear the contingent approaching from below. She climbed up the last flights of stairs and emerged onto the building's roof, exhilarated as much by the fresh air as by the discovery that it was completely deserted. She walked to the edge of the roof and peered down almost half a mile to the street. In the black windows of a dead skyscraper across the way, she could see the mirror image of Princess Nell's crest. After a minute or two, she noticed that something akin to a shock wave was making its way down the street far below, moving in slow motion, covering a city block every couple of minutes. Details were difficult to make out at this distance: it was a highly organized group of pedestrians, all wearing the same generally dark clothing, ramming its way through the mob of refugees, forcing the panicked barbarians toward the picket line of the Fists or sideways into the lobbies of the dead buildings. Nell was transfixed for several minutes by this sight. Then she happened to glance down a different street and saw the same phenomenon there. She made a quick circuit of the building's roof. All in all, several columns were advancing inexorably on the foundations of the building where Nell stood. In time, one of these columns broke through the last of the obstructing refugees and reached the edge of the broad open plaza that surrounded the foot of Nell's

building, where it faced off against the Fist defenses. The column stopped abruptly at this point and waited for a few minutes, collecting itself and waiting for the other columns to catch up. Nell had supposed at first that these columns might be Fist reinforcements converging on this building, which was clearly intended to be the headquarters of their final assault on the Coastal Republic. But it soon became evident that these newcomers had arrived for other purposes. After a few minutes of unbearable tension had gone by in nearly perfect silence, the columns suddenly, on the same unheard signal, erupted into the plaza. As they debouched from the narrow streets, they spread out into many-pronged formations, arranging themselves with the precision of a professional drill team, and then charged forward into the suddenly panicked and disorganized Fists, throwing up a tremendous battle-cry. When that sound echoed up two hundred stories to Nell's ears, she felt her hair standing on end, because it was not the deep lusty roar of grown men but the fierce thrill of thousands of young girls, sharp and penetrating as the skirl of massed bagpipes. It was Nell's tribe, and they had come for their leader. Nell spun on her heel and made for the stairway. By the time she had reached ground level and burst out, somewhat unwisely, into the building's lobby, the girls had breached the walls of the building in several places and rushed in upon the remaining defenders. They moved in groups of four. One girl (the largest) would rush toward an opponent, holding a pointed bamboo stick aimed at his heart. While his attention was thus fixed, two other girls (the smallest) would converge on him from the sides. Each girl would hug one of his legs and, acting together, they would lift him off the ground. The fourth girl (the fastest) would by this point have circled all the way round and would come in from behind, driving a knife or other weapon into the victim's back. During the half-dozen or so applications of this technique that Nell witnessed, it never failed, and none of the girls ever suffered more than the odd bruise or scrape. Suddenly she felt a moment of wild panic as she thought they were doing the same to her; but after she had been lifted into the air, no attack came from front or back, though many girls rushed in from all sides, each adding her small strength to the paramount goal of hoisting Nell high into the air. Even as the last remnants of the Fists were being hunted down and destroyed in the nooks and corners of the lobby, Nell was being borne on the shoulders of her little sisters out the front doors of the building and into the plaza, where something like a hundred thousand girls- Nell could not count all the regiments and brigades- collapsed to their knees in unison, as though struck down by a divine wind, and presented her their bamboo stakes, pole knives, lead pipes, and nunchuks. The provisional commanders of her divisions stood foremost, as did her provisional ministers of defense, of state, and of research and development, all of them bowing to Nell, not with a Chinese bow or a Victorian one but something they'd come up with that was in between. Nell should have been tongue-tied and paralyzed with astonishment, but she was not; for the first time in her life she understood why she'd been put on the earth and felt comfortable with her position. One moment, her life had been a meaningless abortion, and the next it all made glorious sense. She began to speak, the

words rushing from her mouth as easily as if she had been reading them from the pages of the Primer. She accepted the allegiance of the Mouse Army, complimented them on their great deeds, and swept her arm across the plaza, over the heads of her little sisters, toward the thousands upon thousands of stranded sojourners from New Atlantis, Nippon, Israel, and all of the other Outer Tribes. "Our first duty is to protect these," she said. "Show me the condition of the city and all those in it." They wanted to carry her, but she jumped to the stones of the plaza and strode away from the building, toward her ranks, which parted to make way for her. The streets of Pudong were filled with hungry and terrified refugees, and through them, in simple peasant clothes streaked with the blood of herself and of others, broken shackles dangling from her wrists, followed by her generals and ministers, walked the barbarian Princess with her book and her sword.

Carl Hollywood takes a stroll to the waterfront. Carl Hollywood was awakened by a ringing in his ears and a burning in his cheek that turned out to be an inch-long fragment of plate glass driven into his flesh. When he sat up, his bed made clanking and crashing noises, shedding a heavy burden of shattered glass, and a foetid exhalation from the wrecked windows blew over his face. Old hotels had their charms, but disadvantages too-such as windowpanes made out of antique materials. Fortunately some old Wyoming instinct had caused him to leave his boots next to the bed the night before. He inverted each one and carefully probed it for broken glass before he pulled it on. Only when he had put on all of his clothes and gathered his things together did he go to look out the window. His hotel was near the Huang Pu waterfront. Looking across the river, he could see that great patches of Pudong had gone black against the indigo sky of predawn. A few buildings, connected to the indigenous Feeds, were still lit up. On this side of the river the situation was not so simple; Shanghai, unlike Pudong, had lived through many wars and was therefore made to be robust: the city was rife with secret power sources, old diesel generators, private Sources and Feeds, water tanks and cisterns. People still raised chickens for food in the shadow of the Hongkong & Shanghai Banking Corporation. Shanghai would weather the onslaught of the Fists much better than Pudong. But as a white person, Carl Hollywood might not weather it very well at all. It was better to be across the river, in Pudong, with the rest of the Outer Tribes. From here to the waterfront was about three blocks; but since this was Shanghai, those three blocks were fraught with what in any other city would be three miles' worth of complications. The main problem was going to be Fists; he could already hear the cries of "Sha! Sha!" boiling up from the streets, and shining a pocket torch through the bars of his balcony, he could see many Fists, emboldened by the destruction of the foreign Feeds, running around with their scarlet girdles and headbands exposed to the world. If he weren't six and a half feet tall and blue-eyed, he'd probably try to disguise himself as Chinese and slink to the waterfront, and it probably wouldn't work. He went through his closet and hauled out his big duster, which swept nearly to his ankles. It was proof against bullets and most nanotech projectiles. There was a long item of luggage he

had thrown up on the closet shelf unopened. Hearing the reports of trouble, he had taken the precaution of bringing these relics with him: an engraved lever-action .44 rifle with low-tech iron sights and, as a last-ditch sort of thing, a Colt revolver. These were unnecessarily glorious weapons, but he had long ago gotten rid of any of his guns that did not have historical or artistic value. Two gunshots sounded from within the building, very close to him. Moments later, someone knocked at his door. Carl wrapped his duster around him, in case someone decided to fire through the door, and peered out through the peephole. To his surprise, he saw a white-haired Anglo gentleman with a handlebar mustache, gripping a semiautomatic. Carl had met him yesterday in the hotel bar; he was here trying to clear up some kind of business before the fall of Shanghai. He opened the door. The two men regarded each other briefly. "One might think we had come for an antique weapons convention," the gentleman said through his mustache. "Say, I'm frightfully sorry to have disturbed you, but I thought you might like to know that there are Fists in the hotel." He gestured down the corridor with his gun. Carl poked his head out and discovered a dead bellboy sprawled out in front of an open door, still clutching a long knife. "As it happens, I was already up," said Carl Hollywood, "and contemplating a bit of a stroll to the waterfront. Care to join me?" "Delighted. Colonel Spence, Royal Joint Forces, Retired." "Carl Hollywood." On their way down the fire stairs, Spence killed two more hotel employees whom he had, on somewhat ambiguous grounds, identified as Fists. Carl was skeptical in both cases until Spence ripped their shirts open to reveal the scarlet girdles beneath. "It's not that they're really Fists, you see," Spence explained jovially. "Just that when the Fists come, this sort of nonsense becomes terribly fashionable." After exchanging some more self-consciously dry humor about whether they should settle their bills before departure, and how much you were supposed to tip a bellboy who came after you with a carving knife, they agreed it might be safest to exit through the kitchens. Half a dozen dead Fists littered the floor here, their bodies striped with the marks of cookie-cutters. Arriving at the exit they found two fellow guests, both Israelis, staring at them with the fixed gaze that implies the presence of a skull gun. Seconds later, they were joined by two Zulu management consultants carrying long, telescoping poles with nanoblades affixed to the ends, which they used to destroy all of the light fixtures in their path. It took Carl a minute to appreciate their plan: They were all about to step out into a dark alley, and they would need their night vision. The door began to shudder in its frame and make tremendous booming noises. Carl stepped forward and peered through the peephole; it was a couple of urban homeboy types having at it with a fire axe. He stepped away from the door, shrugging the rifle from his shoulder, levered in a shell, and fired it through the door, aiming away from the youths. The booming stopped abruptly, and they heard the head of the axe ringing like a bell as it fell to the pavement. One of the Zulus kicked the door open and leapt into the alley, whirling his blade in a vast, fatal arc like the blade of a helicopter, slicing through a garbage can but not hitting any people. When Carl came piling through the door a few seconds later, he saw several young toughs scattering down the alley,

dodging among several dozen refugees, loiterers, and street people who pointed helpfully at their receding backsides, making sure it was understood that their only reason for being in this alley at this time was to act as a sort of block watch on behalf of the gwailo visitors. Without talking about it much, they fell into an improvised formation there in the alley, where they had a bit of room to maneuver. The Zulus went in front, whirling their poles over their heads and hollering some kind of traditional war-cry that drove a good many of the Chinese out of their path. One of the Jews went behind the Zulus, using his skull gun to pick off any Fists who charged them. Then came Carl Hollywood, who, with his height and his rifle, seemed to have ended up with the job of long-range reconnaissance and defense. Colonel Spence and the other Israeli brought up the rear, walking backward most of the time. This got them down the alley without much trouble, but that was the easy part; when they reached the street, they were no longer the only focus of action but mere motes in a sandstorm. Colonel Spence discharged most of a clip into the air; the explosions were nearly inaudible in the chaos, but the gouts of light from the weapon's barrel drew some attention, and people in their immediate vicinity actually got out of their way. Carl saw one of the Zulus do something very ugly with his long weapon and looked away; then he reflected that it was the Zulus' job to break trail and his to concentrate on more distant threats. He turned slowly around as he walked, trying to ignore the threat that was just beyond arm's length and to get a view of the larger scene. They had walked into a completely disorganized street fight between the Coastal Republic forces and the Fists of Righteous Harmony, which was not made any clearer by the fact that many of the Coastals had defected by tying strips of red cloth round the arms of their uniforms, and that many of the Fists were not wearing any markings at all, and that many others who had no affiliation were taking advantage of the situation to loot stores and were being fought off by private guards; many of the looters were themselves being mugged by organized gangs. They were on Nanjing Road, a broad thoroughfare leading straight to the Bund and the Huang Pu, lined with four- and five-story buildings so that many windows looked out over them, any one of which might have contained a sniper. A few of them did contain snipers, Carl realized, but many of these were shooting across the street at each other, and the ones who were firing into the street could have been shooting at anyone. Carl saw one fellow with a laser-sighted rifle emptying clip after clip into the street, and he reckoned that this constituted a clear and present danger; so at a moment when their forward progress had stalled momentarily, while the Zulus were waiting for an especially desperate Coastal/Fist melee to resolve itself ahead of them, Carl planted his feet, swung his rifle up to his shoulder, took aim, and fired. In the dim fire- and torch-light rising up from the street, he could see powder explode from the stone window frame just above the sniper's head. The sniper cringed, then began to sweep the street with his laser, looking for the source of the bullet. Someone jostled Carl from behind. It was Spence, who had been hit with something and lost the use of his leg. A Fist was in the Colonel's face. Carl rammed the butt of the rifle into the man's chin, sending him backward into the

melee with his eyes rolled up into their sockets. Then he levered in another shell, raised the weapon to his shoulder again, and tried to find the window with his sniper friend. He was still there, tracing a ruby-red line patiently across the boiling surface of the crowd. Carl took in a deep breath, released it slowly, prayed that no one would bump into him, and squeezed the trigger. The rifle butted him hard in the shoulder, and at the same moment he saw the sniper's rifle fall out of the window, spinning end over end, the laser beam sweeping through the smoke and steam like the trace on a radar scope. The whole thing had probably been a bad idea; if any of the other snipers had seen this, they'd be wanting to get rid of him, whatever their affiliation. Carl levered in another shell and then let the rifle dangle from one hand, pointed down at the street, where it wouldn't be so conspicuous. He got the other hand into Spence's armpit and helped him continue down the street. The ends of Spence's mustache wiggled as he continued with his endless and unflappable line of patter; Carl couldn't hear a word but nodded encouragingly. Not even the most literal-minded neo-Victorian could take that stiff-upper-lip thing seriously; Carl realized now that it was all done with a nod and a wink. It was not Colonel Spence's way of saying that he wasn't scared; it was, rather, a code of sorts, a face-saving way for him to admit that he was terrified half out of his wits, and for Carl to admit likewise. Several Fists rushed them at once; the Zulus got two, the leading Israeli got one, but another came in and bounced his knife from the Israeli's knife-proof jacket. Carl raised the rifle, clamping the stock between his arm and his body, and fired from the hip. The recoil nearly knocked the weapon out of his hand; the Fist practically did a backflip. He couldn't believe they had not reached the waterfront yet; they had been doing this for hours. Something prodded him hard in the back, causing him to stumble forward; he looked back over his shoulder and saw a man trying to run him through with a bayonet. Another man ran up and tried to wrench the rifle out of Carl's hand. Carl, too startled to respond for a moment, finally let go of Spence, reached across, and poked him in the eyes. A great explosion sounded in his ear, and he looked over to see that Spence had twisted himself round and shot the attacker who had the bayonet. The Israeli who had been guarding their rear had simply vanished. Carl raised his rifle toward the people who were converging on them from the rear; that and Spence's pistol opened up a gratifying clear space in their wake. But something more powerful and terrifying was driving more people toward them from the side, and as Carl tried to see what it was, he realized that a score of Chinese people were now between him and the Zulus. The looks on their faces were pained and panicky; they were not attacking, they were being attacked. Suddenly all of the Chinese were gone. Carl and Colonel Spence found themselves commingled with a dozen or so Boers- not just men, but women and children and elders too, a whole laager on the move. All of them surged forward instinctively and reabsorbed the vanguard of Carl's group. They were a block from the waterfront. The Boer leader, a stout man of about fifty, somehow identified Carl Hollywood as the leader, and they quickly redeployed what forces they had for the final push to the waterfront. The only thing Carl remembered of this

conversation was the man saying, "Good. You've got Zulus." The Boers in the vanguard were carrying some sort of automatic weapons firing tiny nanotech high-explosive rounds, which, indiscriminately used, could have turned the crowd into a rampart of chewed meat; but they fired the weapons in disciplined bursts even when the charging Fists penetrated to within a sword's length. From time to time, one of them would raise his head and sweep a row of windows with continuous automatic fire; riflemen would tumble out of the darkness and spin down into the street like rag dolls. The Boers must be wearing some kind of night vision stuff. Colonel Spence suddenly felt very heavy on Carl's arm, and he realized that the Colonel was unconscious, or close to it. Carl slung the rifle over his shoulder, bent down, and picked up Spence in a fireman's carry. They arrived at the waterfront and established a defensive perimeter. The next question was: Were there any boats? But this part of China was half underwater and seemed to have as many boats as bicycles. Most of them seemed to have found their way downstream to Shanghai during the gradual onslaught of the Fists. So when they arrived at the water's edge, they discovered thousands of people with boats, eager to transact some business. But as the Boer leader rightly pointed out, it would be suicide to split up the group among several tiny, unpowered craft; the Fists were paying high bounties for the heads of barbarians. Much safer to wait for one of the larger vessels out in the channel to make its way to shore, where they could cut a deal with the captain and climb on board as a group. Several vessels, ranging from motor yachts to fishing trawlers, were already vying to be the first to make that deal, shouldering their way inexorably through the organic chaff of small boats crowded along the shore. A rhythmic beat had begun to resonate in their lungs. At first it sounded like drumbeats, but as it drew closer it developed into the sound of hundreds or thousands of human voices chanting in unison: "Sha! Sha! Sha! Sha!" Nanjing Road began to vomit forth a great crowd of people shoved out onto the Bund like exhaust pushed out by a piston. They cleared out of the way, dispersing up and down the riverfront. An army of hoplites- professional warriors in battle armor- was marching toward the river, a score abreast, completely filling the width of Nanjing Road. These were not Fists; they were the regular army, the vanguard of the Celestial Kingdom, and Carl Hollywood was appalled to realize that the only thing now standing between them and their three-decade march to the banks of the Huang Pu was Carl Hollywood, his .44, and a handful of lightly armed civilians. A nice-looking yacht had penetrated to within a few meters of the shore. The remaining Israeli, who was fluent in Mandarin, had already commenced negotiations with its captain. One of the Boers, a wiry grandmother with a white bun on her head and a black bonnet pinned primly over that, conferred briefly with the Boer leader. He nodded once, then caught her face in his hands and kissed her. She turned her back on the waterfront and began to march toward the head of the advancing column of Celestials. The few Chinese crazy enough to remain along the waterfront, respecting her age and possible madness, parted to make way for her. The negotiations over the boat appeared to have hit some kind of snag. Carl Hollywood could see individual hoplites vaulting two and

three stories into the air, crashing headfirst into the windows of the Cathay Hotel. The Boer grandmother doggedly made her way forward until she was standing in the middle of the Bund. The leader of the Celestial column stepped toward her, covering her with some kind of projectile weapon built into one arm of his suit and waving her aside with the other. The Boer woman carefully got down on both knees in the middle of the road, clasped her hands together in prayer, and bowed her head. Then she became a pearl of white light in the mouth of the dragon. In an instant this pearl grew to the size of an airship. Carl Hollywood had the presence of mind to close his eyes and turn his head away, but he didn't have time to throw himself down; the shock wave did that, slamming him full-length into the granite paving-stones of the waterfront promenade and tearing about half of his clothes from his body. Some time passed before he was really conscious; he felt it must have been half an hour, though debris was still raining down around him, so five seconds was probably more like it. The hull of the white yacht had been caved in on one side and most of its crew flung into the river. But a minute later, a fishing trawler pulled up and took the barbarians on board with only perfunctory negotiations. Carl nearly forgot about Spence and almost left him there; he found that he no longer had the strength to raise the Colonel's body from the ground, so he dragged him on board with the help of a couple of young Boers- identical twins, he realized, maybe thirteen years old. As they headed across the Huang Pu, Carl Hollywood huddled on a piled-up fishing net, limp and weak as though his bones had all been shattered, staring at the hundred-foot crater in the center of the Bund and looking into the rooms of the Cathay Hotel, which had been neatly cross-sectioned by the bomb in the Boer woman's body. Within fifteen minutes, they were free on the streets of Pudong. Carl Hollywood found his way to the local New Atlantan encampment, reported for duty, and spent a few minutes composing a letter to Colonel Spence's widow; the Colonel had bled to death from a leg wound during the voyage across the river. Then he spread his pages out on the ground before him and returned to the pursuit that had occupied him in his hotel room for the past few days, namely, the search for Miranda. He had begun this search at the bidding of Lord Finkle-McGraw, pursued it with mounting passion over the last few days as he had begun to understand how much he'd been missing Miranda, and was now pressing the work desperately; for he had realized that in this search might reside the only hope for the salvation of the tens of thousands of Outer Tribesmen now encamped upon the dead streets of the Pudong Economic Zone.

Final onslaught of the Fists; victory of the Celestial Kingdom; refugees in the domain of the Drummers; Miranda. The Huang Pu stopped the advance of the Celestial Army toward the sea, but having crossed the river farther inland, it continued to move northward up the Pudong Peninsula at a walking pace, driving before it flocks of starving peasants much like the ones who had been their harbingers in Shanghai. The occupants of Pudong- a mixture of barbarians, Coastal Republic Chinese who feared persecution at the hands of their Celestial cousins, and Nell's little sisters, a third of a

million strong and constituting a new phyle unto themselves- were thus caught between the Celestials on the south, the Huang Pu on the west, the Yangtze on the north, and the ocean on the east. All the links to the artificial islands offshore had been cut. The geotects of Imperial Tectonics, in their Classical and Gothic temples high atop New Chusan, made various efforts to build a temporary bridge between their island and Pudong. It was simple enough to throw a truss or floating bridge across the gap, but the Celestials now had the technology to blow such things up faster than they could be constructed. On the second day of the siege, they caused the island to reach toward Pudong with a narrow pseudopod of smart coral, rooted on the ocean floor. But there were very simple and clear limits to how fast such things could be grown, and as the refugees continued to throng the narrow defiles of downtown Pudong, bearing increasingly dire reports of the Celestials' advance, it became evident to everyone that the land bridge would not be completed in time. The encampments of the various tribes moved north and east as they were forced out of downtown by the pressure of the refugees and fear of the Celestials, until several miles of shoreline had been claimed and settled by the various groups. The southern end, along the seashore, was anchored by the New Atlantans, who had prepared themselves to fend off any assaults along the beach. The chain of camps extended northward from there, curving along the ocean and then eastward along the banks of the Yangtze to the opposite end, which was anchored by Nippon against any onslaught across the tidal flats. The entire center of the line was guarded against a direct frontal assault by Princess Nell's tribe/army of twelve-year-old girls, who were gradually trading in their pointed sticks for more modern weapons compiled from portable Sources owned by the Nipponese and the New Atlantans. Carl Hollywood had been assigned to military duty as soon as he reported to the New Atlantan authorities, despite his efforts to convince his superiors that he might be of more use pursuing his own line of research. But then a message came through from the highest levels of Her Majesty's government. The first part of it praised Carl Hollywood for his "heroic" actions in getting the late Colonel Spence out of Shanghai and suggested that a knighthood might be waiting for him if he ever got out of Pudong. The second part of it named him as a special envoy of sorts to Her Royal Highness, Princess Nell. Reading the message, Carl was momentarily stunned that his Sovereign was according equivalent status to Nell; but upon some reflection he saw that it was simultaneously just and pragmatic. During his time in the streets of Pudong, he had seen enough of the Mouse Army (as they called themselves, for some reason) to know that they did, in fact, constitute a new ethnic group of sorts, and that Nell was their undisputed leader. Victoria's esteem for the new sovereign was well-founded. At the same time, that the Mouse Army was currently helping to protect many New Atlantans from being taken hostage, or worse, by the Celestial Kingdom made such recognition an eminently pragmatic step. It fell to Carl Hollywood, who had been a member of his adopted tribe only for a few months, to forward Her Majesty's greetings and felicitations to Princess Nell, a girl about whom he had heard much from Miranda but whom he had never met

and could hardly fathom. It did not take very deep reflection to see the hand of Lord Alexander Chung-Sik Finkle-McGraw in all this. Freed from day-to-day responsibilities, he walked north from the New Atlantan camp on the third day of the siege, following the tideline. Every few yards he came to a tribal border and presented a visa that, under the provisions of the Common Economic Protocol, was supposed to afford him free passage. Some of the tribal zones were only a meter or two wide, but their owners jealously guarded their access to the sea, sitting up all night staring out into the surf, waiting for some unspecified form of salvation. Carl Hollywood strolled through encampments of Ashantis, Kurds, Armenians, Navajos, Tibetans, Senderos, Mormons, Jesuits, Lapps, Pathans, Tutsis, the First Distributed Republic and its innumerable offshoots, Heartlanders, Irish, and one or two local CryptNet cells who had now been flushed into the open. He discovered synthetic phyles he had never heard of, but this did not surprise him. Finally he came to a generous piece of beach frontage guarded by twelve-year-old Chinese girls. At this point he presented his credentials from Her Majesty Queen Victoria II, which were extremely impressive, so much so that many of the girls gathered around to marvel at them. Carl Hollywood was surprised to hear them all speaking perfect English in a rather high Victorian style. They seemed to prefer it when discussing things in the abstract, but when it came to practical matters they reverted to Mandarin. He was ushered through the lines into the Mouse Army's encampment, which was mostly an open-air hospice for ragged, sick and injured discards from other phyles. The ones who weren't flat on their backs, being tended to by Mouse Nurses, were sitting on the sand, hugging their knees, staring out across the water in the direction of New Chusan. The slope of the land was quite gentle here, and a person could wade for a good long stone's throw into the waves. One person had: a young woman whose long hair fell about her shoulders and trailed in the water around her waist. She stood with her back to the shore, holding a book in her hands, and did not move for a long time. "What is she doing out there?" Carl Hollywood said to his Mouse Army escort, who had five little stars on her lapels. In Pudong, he had figured out their insignia: Five stars meant that she was in charge of (4)5 people, or 1,024. A regimental commander, then. "She is calling to her mother." "Her mother?" "Her mother is beneath the waves," the woman said. "She is a Queen." "Queen of what?" "She is the Queen of the Drummers who live beneath the sea." And then Carl Hollywood knew that Princess Nell was searching for Miranda too. He threw his long coat down on the sand and sloshed out Into the Pacific, accompanied by the officer, and remained at a judicious distance, partly to show due respect, and partly because Nell had a sword in her waistband. Her face was inclined over the pages of her book like a focusing lens, and he half expected the pages to curl and smoke under her gaze. She looked up from the book after some time. The officer spoke to her in a low voice. Carl Hollywood did not know the protocol when one was up to midthigh in the East China Sea, so he stepped forward, bowed as low as he could under the circumstances, and handed Princess Nell the scroll from Queen Victoria II. She accepted it wordlessly and read it through, then

went back to the top and read it again. Then she handed it to her officer, who rolled it up carefully. Princess Nell stared out over the waves for a while, then looked Carl in the eye and said quietly, "I accept your credentials and request that you convey my warm thanks and regard to Her Majesty, along with my apologies that circumstances prevent me from composing a more formal response to her kind letter, which at any other time would naturally be my highest priority." "I shall do so at the earliest opportunity, Your Majesty," Carl Hollywood said. Hearing these words, Princess Nell looked a bit unsteady and shifted her feet to maintain her balance; though this might have been the undertow. Carl realized that she had never been addressed in this way before; that, until she had been recognized in this fashion by Victoria, she had never fully realized her position. "The woman you seek is named Miranda," he said. All thoughts of crowns, queens, and armies seemed to vanish from Nell's mind, and she was just a young lady again, looking for-what? Her mother? Her teacher? Her friend? Carl Hollywood spoke to Nell in a low gentle voice, projecting just enough to be heard over the strumming of the waves. He spoke to her of Miranda, and of the book, and of the old stories about the deeds of Princess Nell, which he had watched from the wings, as it were, by looking in on Miranda's feed many years ago at the Parnasse. Over the next two days many of the refugees on the shore got away on air or surface ships, but a few of these were destroyed in spectacular fashion before they could get out of range of the Celestial Kingdom's weaponry. Three-quarters of the Mouse Army evacuated itself through the technique of stripping naked and walking into the ocean en masse, linked arm-in-arm into a flexible and unsinkable raft that gradually, slowly, exhaustingly paddled across the sea to New Chusan. Rumors spread rapidly up and down the length of the coast; the tribal borders seemed to accelerate rather than hinder this process as interfaces between languages and cultures spawned new variants of each rumor, tailored to the local fears and prejudices. The most popular rumor was that the Celestials planned to give everyone safe passage and that the attacks were being carried out by intelligent mines that had run out of control or, at worst, by a few fanatical commanders who were defying orders and who would soon be brought to heel. There was a second, stranger rumor that gave some people an incentive to remain on the shore and not entrust themselves to the evacuation ships: A young woman with a book and a sword was creating magical tunnels from out of the deep that would carry them all away to safety. Such ideas were naturally met with skepticism among more rational cultures, but on the morning of the sixth day of the siege, the neap tide carried a peculiar omen up onto the sand: a harvest of translucent eggs the size of beach balls. 'When their fragile shells were torn open, they were found to contain sculpted backpacks pierced with a fractal pattern of delicate louvers. A stiff hose extended from the top and connected to a facemask. Under the circumstances, it was not difficult to divine the use of these objects. People strapped the packs onto their backs, slipped on the facemasks, and plunged into the water. The backpacks acted like the gills of a fish and provided a steady supply of oxygen. The gill packs did not carry any tribal identification; they

merely washed up onto the beach, by the thousands, with each high tide, cast up organically by the sea. The Atlantans, Nipponese, and others each assumed that they had come from their own tribes. But many perceived a connection between this and the rumors of Princess Nell and the tunnels beneath the waves. Such people migrated toward the center of the Pudong coast, where the tiny, weak, and flaky tribes had all been concentrated. This contraction of the defensive line became inevitable as the number of defenders was shrunk by the evacuation. Borders between tribes became unstable and finally dissolved, and on the fifth day of the siege the barbarians had all become fungible and formed into a huddle on the uttermost point of the Pudong Peninsula, several tens of thousands of persons packed into an area not exceeding a few city blocks. Beyond that were the Chinese refugees, mostly persons strongly identified with the Coastal Republic who knew that they could never blend into the Celestial Kingdom. These did not dare to invade the camp of the refugees, who were still armed with powerful weapons, but by advancing an inch at a time and never retreating, they insensibly shrank the perimeter so that many barbarians found themselves standing knee-deep in the ocean. The rumor spread that the woman called Princess Nell had a wizard and adviser named Carl, who had appeared out of nowhere one day knowing nearly everything that Princess Nell did, and a few things she didn't. This man, according to rumor, had in his possession a number of magic keys that gave him and the Princess power to speak with the Drummers who lived beneath the waves. On the seventh day, Princess Nell walked naked into the sea at dawn, vanished beneath waves turned pink by the sunrise, and did not return. Carl followed her a minute later, though unlike the Princess he took the precaution of wearing a gill pack. Then all of the barbarians stepped into the ocean, leaving their filthy clothes strewn across the beach, relinquishing the last foothold of Chinese soil to the Celestial Kingdom. They all walked into the ocean until their heads disappeared. The rearguard was made up of the last part of the Mouse Army, which charged naked into the surf, linked up into a raft, and made its way slowly out to sea, nudging a few sick and wounded along with them in makeshift rafts. By the time the last girl's foot broke contact with the sandy ocean bottom, the end of the land had already been claimed by a man with a scarlet girdle round his waist, who stood on the shore laughing to think that now the Middle Kingdom was at last a whole country once more. The last foreign devil to depart from the Middle Kingdom was a blond Victorian gentleman with gray eyes, who stood in the waves for some time looking back over Pudong before he turned around and continued his descent. As the sea rose over him, it lifted the bowler from his head, and the hat continued to bob on the tide for some minutes as the Chinese detonated strings of firecrackers on the shore and tiny shreds of the red paper wrappers drifted over the sea like cherry petals. . . . On one of her forays into the surf, Nell had encountered a man- a Drummer- who had come swimming out of the deep, naked except for a gill pack. This should have astonished her; instead, she had known he was out there before she saw him, and when he came close, she could feel things happening in her mind that were coming in from

outside. There was something in her brain that made her connected to the Drummers. Nell had drawn up some general plans and given them to her engineers for further elaboration, and they had given them to Carl, who had taken them to a functioning portable M.C. in the New Atlantan camp and compiled a little system for examining and manipulating nanotechnological devices. In the dark, motes of light sparkled in Nell's flesh, like airplane beacons in the night sky. They scraped one of these away with a scalpel and examined it. They found similar devices circulating in her bloodstream. These things, they realized, must have been put into Nell's blood when she was raped. It was clear that the sparkling lights in Nell's flesh were beacons signaling to others across the gulf that separates each of us from our neighbors. Carl opened one of the things from Nell's blood and found a rod logic system inside, and a tape drive containing some few gigabytes of data. The data was divided into discrete chunks, each one of which was separately encrypted. Carl tried all of the keys that he had obtained from John Percival Hackworth and found that one of them- Hackworth's key- unlocked some of the chunks. When he examined the decrypted contents, he discovered fragments of a plan for some kind of nanotechnological device. They drew blood from several volunteers and found that one of them had the same little devices in his blood. When they put two of these devices in close proximity, they locked onto one another using lidar and embraced, exchanging data and performing some sort of computation that threw off waste heat. The devices lived in the blood of the human race like viruses and passed from one person to the next during sex or any other exchange of bodily fluids; they were smart packets of data, just like the ones traversing the media network, and by mating with one another in the blood, they formed a vast system of communication, parallel to and probably linked with the dry Net of optical lines and copper wires. Like the dry Net, the wet Net could be used for doing computations- for running programs. And it was now clear that John Percival Hackworth was using it for exactly that, running some kind of vast distributed program of his own devising. He was designing something. "Hackworth is the Alchemist," Nell said, "and he is using the wet Net to design the Seed." . . . Half a kilometer offshore, the tunnels began. Some of them must have been there for many years, for they were rough as tree trunks, encrusted with barnacles and algae. But it was clear that in the last few days they had forked and split organically, like roots questing for moisture; clean new tubes forced their way out through the encrustation and ran uphill toward the tide line, splitting again and again until many orifices presented themselves to the refugees. The shoots terminated in lips that grabbed people and drew them in, like the tip of an elephant's trunk, accepting the refugees with a minimum of seawater. The tunnels were lined with mediatronic images urging them forward into the deep; it always seemed as though a warm dry well-lit space awaited them just a bit farther down the line. But the light moved along with the viewer so that they were drawn down the tunnels in a kind of peristalsis. The refugees came to the main tunnel, the old encrusted one, and continued moving on, now packed together in a solid mass, until they were disgorged into a large open cavity far below

the surface of the ocean. Here, food and fresh water awaited them and they ate hungrily. Two people did not eat or drink except from the provisions they had brought with them; these were Nell and Carl. After they had discovered the nanosites in Nell's flesh that made her a part of the Drummers, Nell had stayed up through the night and designed a counternanosite, one that would seek out and destroy the Drummers' devices. She and Carl had both put these devices into their bloodstreams, so that Nell was now free of the Drummers' influences and both of them would remain so. Nevertheless they did not press their luck by eating of the Drummers' food, and it was well, because after their meal the refugees became drowsy and lay down on the floor and slept, steam rising from their naked flesh, and before long the sparks of light began to come on, like stars coming out as the sun goes down. After two hours the stars had merged together into a continuous surface of flickering light, bright enough to read by, as if a full moon were shining down upon the bodies of slumbering revelers in a meadow. The refugees, now Drummers, all slept and dreamed the same dream, and the abstract lights flickering across the mediatronic lining of the cavern began to coalesce and organize themselves into dark memories from deep within their unconscious mind. Nell began to see things from her own life, experiences long since assimilated into the words of the Primer but here shown once more in a raw and terrifying form. She closed her eyes; but the walls made sounds too, from which she could not escape. Carl Hollywood was monitoring the signals passing through the walls of the tunnels, avoiding the emotional content of these images by reducing them to binary digits and trying to puzzle out their internal codes and protocols. "We have to go," Nell said finally, and Carl arose and followed her through a randomly chosen exit. The tunnel forked and forked again, and Nell chose forks by intuition. Sometimes the tunnels would widen into great caverns full of luminescent Drummers, sleeping or fucking or simply pounding on the walls. The caverns always had many outlets, which forked and forked and converged upon other caverns, the web of tunnels so vast and complicated that it seemed to fill the entire ocean, like neural bodies with their dendrites knitting and ramifying to occupy the whole volume of the skull. A low drumming sound had been skirting the lower limits of perceptibility ever since they had left the cavern where the refugees slumbered. Nell had first taken it for the beat of submarine currents on the walls of the tunnel, but as it grew stronger, she knew that it was the Drummers talking to each other, convened in some central cavern sending messages out across their network. Realizing this, she felt a sense of urgency verging on panic that they find the central assembly, and for some time they ran through the perfectly bewildering three-dimensional maze, trying to locate the epicenter of the drumming. Carl Hollywood could not run as quickly as the nimble Nell and eventually lost her at a fork in the tunnels. From there he made his own judgments, and after some time had passed- it was impossible to know how long- his tunnel dovetailed with another that was carrying a stream of Drummers downward toward the floor of the ocean. Carl recognized some of these Drummers as former refugees from the beaches at Pudong. The sound of the drumming did not build gradually but exploded to a deafening,

mind-dissolving roar as Carl emerged into a vast cavern, a conical amphitheatre that must have been a kilometer wide, roofed with a storm of mediatronic images that played across a vast dome. The Drummers, visible by the flickering light of the overhead media storm and by their own internal light, moved up and down the slopes of the cone in a kind of convection pattern. Caught up in an eddy, Carl was transported down toward the center and found that an orgy of fantastic dimensions was underway. The steam of vaporized sweat rose from the center of the pit in a cloud. The bodies pressing against Carl's naked skin were so hot that they almost burned him, as if everyone were running a high fever, and in some logical abstract compartment of his mind that was, somehow, continuing to run along its own reasonable course, he realized why: They were exchanging packets of data with their bodily fluids, the packets were mating in their blood, the rod logic throwing off heat that drove up their core temperature. The orgy went on for hours, but the pattern of convection gradually slowed down and condensed into a stable arrangement, like a circulating crowd in a theatre that settles into its assigned seats as curtain time approaches A broad open space had formed at the center of the pit and the innermost ring of spectators consisted of men as if these were in some sense the winners of the enormous fornication tournament that was nearing its final round. A lone Drummer circulated around this innermost ring, handing something out; the something turned out to be mediatronic condoms that glowed bright colors when they were stripped onto the men's erect phalluses. A lone woman entered the ring. The floor at the absolute center of the pit rose up beneath her feet, shoving her into the air as on an altar. The drumming built to an unbearable crescendo and then stopped. Then it began again a very slow steady beat and the men in the inner circle began to dance around her. Carl Hollywood saw that the woman in the center was Miranda. He saw it all now: that the refugees had been gathered into the realm of the Drummers for the harvest of fresh data running in their bloodstreams, that this data had been infused into the wet Net in the course of the great orgy, and that all of it was now going to be dumped into Miranda, whose body would play host to the climax of some computation that would certainly burn her alive in the process. It was Hackworth's doing; this was the culmination of his effort to design the Seed, and in so doing to dissolve the foundations of New Atlantis and Nippon and all of the societies that had grown up around the concept of a centralized, hierarchical Feed. A lone figure, remarkable because her skin did not emit any light, was fighting her way in toward the center. She burst into the inner circle, knocking down a dancer who got in her way, and climbed up onto the central altar where Miranda lay on her back, arms outstretched as if crucified, her skin a galaxy of colored lights. Nell cradled Miranda's head in her arms, bent down, and kissed her, not a soft brush of the lips but a savage kiss with open mouth, and she bit down hard as she did it, biting through her own lips and Miranda's so that their blood mingled. The light shining from Miranda's body diminished and slowly went out as the nanosites were hunted down and destroyed by the hunter-killers that had crossed into her blood from Nell's. Miranda came awake and arose, her arms draped weakly around Nell's neck.

The drumming had stopped; the Drummers all sat impassively, clearly content to wait-for years if necessary-for a woman who could take Miranda's place. The light from their flesh had diminished, and the overhead mediatron had gone dim and vague. Carl Hollywood, seeing at last a role for himself, stepped into the center, got one arm under Miranda's knees and another beneath her shoulders, and lifted her into the air. Nell turned around and led them up out of the cavern, holding her sword out before her; but none of the Drummers moved to stop them. They passed up through many tunnels, always taking the uphill fork until they saw sunlight shining down from above through the waves, casting lines of white light on the translucent roof. Nell severed the tunnel behind them, wielding her sword like the sweep of a clock's hand. The warm water rushed in on them. Nell swam up toward the light. Miranda was not swimming strongly, and Carl was torn between a panicky desire to reach the surface and his duty to Miranda. Then he saw shadows descending from above, dozens of naked girls swimming downward, garlands of silver bubbles streaming from their mouths, their almond eyes excited and mischievous. Carl and Miranda were gripped by many gentle hands and borne upward into the light. New Chusan rose above them, a short swim away, and up on the mountain they could hear the bells of the cathedral ringing.

ABOUT THE AUTHOR Neal Stephenson is the author of The Diamond Age, Snow Crash, Zodiac, and The Big U ACKNOWLEDGMENTS Jeremy Bornstein Douglas (Carl Hollywood) Crockford K. Eric Drexier Wayne "Hank" Hansen Steve Horst Steve Johnson Marco Kakofen Sachiko Emma Kashiwaya Kevin Kelly Alan Moores Chris Peterson Rattana Schicketanz Dean Tribble