

The 400-Million-Year Itch

by Steven Utley

Steven Utley's most recent project is an anthology coedited with Michael Bishop, *Passing for Human*. For most of the past decade, he has been writing a series of linked stories about researchers who travel back in time to the Silurian Age. Since our Dec. 2000 issue, we've published seven of the stories, including "Invisible Kingdoms," "Promised Land," and "A Paleozoic Palimpsest." (Check our Website to see if we've reprinted one of them this month.) You needn't have read any of the previous ones to enjoy this latest look at those who ventured back in time.

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"One gets a bad habit of being unhappy."

—George Eliot

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She had told the earnest young man repeatedly, "I have no interesting stories to tell." He was determined to interview her, however, and now they sat on opposite sides of the small glass-topped table in the garden room of her home in Riverside. The robotler had brought tea and tea things and retired discreetly. "I can't tell you anything that isn't already in the books. I can't tell you who said what to whom. I have a terrible memory for dates. I can't even remember most of the names."

The young man indicated the perfectly set table and smiled disarmingly and said, "Perhaps one of those might help."

"I beg your pardon?"

"I read somewhere that a crumb of madeleine soaked in tea can be a wonderful memory aid."

"I'm afraid I don't understand."

He seemed nonplused by the utter collapse of his *bon mot*. He recovered quickly, though, and said, "What's *missing* from the books is *you* and *your* view of things. You were there through the early days. The exciting part."

"The exciting part. Well." She laughed a shivery, silvery laugh. "It recedes in

the memory even when I want to think about it. It's become as distant and unreal to me as the Paleozoic itself. There was hardly anything to the Paleozoic, nothing vivid or extreme, unless you count the monotony. It was just like any lonely and desolate place in the world today, without any particular—*peculiar* element of danger of its own."

"How do you mean?"

"Oh, you don't have to go through a spacetime anomaly to Laurentia to drown or die of dehydration. Any modern desert will do, or any hot day in a major city, for that matter. And you can drown in your own bath tub. And Gondwana, I understand, all Gondwana was, was just Antarctica on a much bigger scale. Four whole continents, including Antarctica itself, plus India, jammed together and sitting right on the South Pole. You can go freeze your tail off in Antarctica. That's if you want to go all the way to Antarctica to do what you could do in Wisconsin in the wintertime."

He smiled, all calculated winsomeness. "I'm sorry, but I just find that very hard to believe. Spacetime anomalies, the primeval earth, prehistoric animals—"

"*Small* prehistoric animals."

"What about sea scorpions?"

"I think their reputation for ferocity must have been grossly inflated. I never heard of anybody being hurt by one."

"Then what about the so-called jump?"

"The jump doesn't count. That was just how you got there. It rattled my teeth some. It was extremely rough on a few people. Chalk that up to the vagaries of spacetime anomalies. But once you got there, the only extreme thing about it was the monotony. Unless you're the kind who oohed and aahed over trilobites, and even then I'm not sure you'd be distracted for very long. Alcoholism was rampant. So were—you see, when you jump, you go through with all your human baggage. You still have to face the day every morning and deal with other people and get things done. You still have to be who you are. Sometimes who you are isn't enough. Sometimes it's too much."

"Still—hardly humdrum stuff. Plus, you knew and worked intimately with one of the true titans of science."

She fixed a glittering eye upon him. “Yes.”

“It must have been great, working with him.”

“It,” she said, and considered her next words very carefully.

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“Amy, if I have to go,” Cutsinger had told her, “you have to go, too.”

They were lingering over dinner, mildly drunk on wine, Cutsinger humorously self-mocking, but, still, serious in what he proposed they do.

“Well,” she said, “You *know* you don’t *have* to go. Frankly, I’m surprised you’d consider it. We can work on the new book here. You wouldn’t have to leave the house.”

He nodded. “And yet I feel I *do* have to go. Much as the Wright brothers had to go up in their aeroplane, or Bell had to speak into his telephone.”

“It’s not like you *invented* the spacetime anomaly.”

He laughed softly. “Despite my protests, less rigorously accurate practitioners of the journalistic trade have created that impression in the public mind. I am the wizard of time.”

He was, she knew, not being falsely modest. He had not only understood what the anomaly was, how it could be exploited, and had been able to describe lucidly its least arcane aspects, so that a difficult concept could be comprehended, with a modicum of mental effort, by untrained minds—those of the general public and, more particularly, of people charged with overseeing allocation of funds. In short, he had fired everyone’s imagination. Not that he possessed an especially winning manner or that, as the saying went, the television camera loved him. *Time Travel Into The Past*, inaccurate though the phrase was, had virtually sold itself.

“I am,” Cutsinger said, “popularly and inextricably associated with the phenomenon of the anomaly and the Paleozoic expedition. So of course I must go through the anomaly myself. The public, damn them, expect it.”

“Didn’t you always use to tell your classes that quantum physics isn’t a hands-on science? Anyway, it wouldn’t be a pleasure trip. That first man who went through the anomaly said it’s about as pleasurable as getting hit by lightning

can be.”

“Not to go,” he explained in a heavy self-mocking tone, “will demote The Wizard of Time from the magnitude of a Columbus, a Magellan, to that of a mere Henry the Navigator.”

“Prince Henry did vital work without ever putting to sea.”

“Yes. But everyone *remembers* Columbus.”

So that had been that.

Yet from their first day after they had gone through the anomaly, there were signs of trouble. Having recovered from the effects of the transfer, she had acted upon a natural impulse to see the strange prehistoric world they now inhabited. Cutsinger had looked irritated and told her, “We have an awful lot of work to do, and we should get to it.” She could not always be put off, however, but asked directions and immediately headed topside. At the bottom of a ladder she looked up and saw blue sky and serene clouds. When she emerged onto a catwalk just under the overhang of the helicopter deck there was the calm black sea, and covering it like gelatin as far as she could see were the iridescent float-sacs of thousands upon thousands of graptolite colonies. She turned and saw two bluejackets nearby, laughed and pointed, and they laughed, too, waved, exchanged inaudible comments between themselves, then laughed even harder. Suddenly abashed, she returned below, to Cutsinger, nervous and sweating at the bottom of the ladder. Now that he had indulged her on this occasion, he testily declared that it was time to buckle down and get to work.

The work in question consisted in unpacking and pawing through and generally disarranging notes for Cutsinger’s next book. After two hours, Cutsinger abruptly said something about wanting to look in on the jump station.

Amy sat on the edge of her bunk and looked deep into the future and recalled a line from H. G. Wells, to the effect that people were always amazed by the obvious results of their actions. She knew she could have predicted this. The great man suffered from agoraphobia. He could function perfectly well in a large room full of people—the consensus was that he had acquitted himself brilliantly in the early press conferences—for he said that he was fine as long as he had walls around him and a ceiling above. Enclosure equaled security. The big outdoors, however, the open sky, land, and sea, filled him with dread. Now he might risk nausea and glance through a porthole, to calculate the time of day—the familiar twenty-four-hour clock was useless here, maddeningly out of synch with the

speeded-up days and nights—but remove him from the protection of a room, and he began to fidget and sweat, to tremble and stammer. And there were no skies, no lands, and no seas more open, more terrifying in the emptiness of the vistas they presented, than those of the Paleozoic.

I knew this, she thought, I knew this I knew this I knew this. He will never leave the ship. He will never go topside. Here we'll remain for month upon month, officially on an expenses-paid sabbatical but actually entombed in this ship. I knew this. She knew he was a theoretician who would have nothing to do with the running of the jump station, though he might spend inordinate amounts of time within its ozone-scented confines. The technicians there knew their jobs and would have little interest in the theoretical end of things, and in due course they would regard Cutsinger as a pain in the butt. I knew all this, she said, and still I let it happen.

That evening, their first in Paleozoic time, they were to dine at the captain's table. The captain, they had been reliably informed, was Navy to the marrow, always dressed for dinner, and every civilian invited to dine with him—even paleontologists, a notoriously slovenly lot—was expected or in any event felt obliged to follow suit, to the exhaustion of sartorial resources. Amy had come prepared: she laid out the dinner gown. Cutsinger looked at it dubiously.

“That gown,” he said, “defies every physical law. What keeps it from falling off you?”

“Surface tension.”

“Are you really intending to wear that thing?”

“You didn't complain at the Nobels. Anyway, the captain's a stickler for form. Besides, at the Nobels I was just another dame in a gown. Here, I expect to be the *only* dame in a gown.”

She did not regret her choice. The table was immaculately set, the stewards seemed to gleam almost as brightly as the polished service. She found herself seated next to the captain himself and across from a newcomer, introduced as “the famous author” So And So, next to whom sat a volcanologist, also a newcomer. The volcanologist beamed at her and said, “I do Empedocles one better. I go down into the volcano like him, but then I come back out again.”

“I'm sorry—who was Empedocles?”

"Ancient Greek fellow who jumped into the crater of Mount Etna to prove whether or not he was immortal. Turned out he wasn't."

"Ah. He must have been very disappointed."

"Well, briefly, yes, I'm sure."

The round of introductions continued. There was a Navy chaplain and, at the far end of the table from the captain, a marine biologist, and another man the captain said had been head of the sleep-disorder center at Cornell University's New York Hospital in Westchester County. "I'm not sure," the captain admitted, "how to describe what you're doing in Paleozoic time, Doctor."

"Observing all the observers," said the sleep-disorder expert with a quick smile.

"As you can see," the captain said to Amy, "there is a good deal more to this expedition than simply a bunch of paleontologists collecting trilobites and primitive plants. There are soil scientists here, and an astronomy team."

Probably inevitably, the first question directed to the author was, "What have you written?" and clearly he had been expecting it, or at least hoping for it. He was a large man whose heavy egg-shaped head surmounted a heavy egg-shaped body. He patted his red lips with his napkin and favored his questioner, the chaplain, with a warm smile. "Fiction, for the most part," he said. "Perhaps you've read something of mine."

Everyone else at the table appeared more or less to doubt it, but the chaplain, being the sort of man he was, asked, "Please, what are some titles?"

"*Anomalous AI* had just been published and *Planet Janet* was still on the bestseller list back home when I left to come here."

"Ah," said the chaplain. "*Science* fiction."

The author grinned. "What other kind is there?"

"Space travel," the captain put in helpfully, "alien life-forms," and Amy herself contributed, "Spacetime anomalies," drawing a darting look from Cutsinger.

"My light reading matter of choice," the chaplain said apologetically, "is

mythology.”

“All I read,” said the volcanologist, not in the least apologetically, “are murder mysteries.”

“I’m afraid,” Amy said, “about all I read are the scientific journals.”

The captain offered the crestfallen author a regretful look, and the volcanologist asked, “Do you use Ediot to write your stories?”

The author fixed him with a suddenly cold eye and answered frostily, “I do all my own writing. *All my own.*”

“No offense. I just—you know what they say. ‘Ediot, the salvation of many a writing-challenged author.’ Not to imply that you’re writing-challenged. But I do a fair amount of writing myself. Technical stuff, reports, still, I find it’s hard work. I use any help I can get.”

“A creative, idiosyncratic writer is on his own. Ediot is for formal memoranda and other business correspondence. It was conceived with those ends in mind. It’s purposely devoid of personality. So it doesn’t do idiosyncrasy well.”

The volcanologist grinned. “Still, I understand it’s been used by some uncreative, unidiosyncratic writers to turn out a commercially viable work or two.”

The author said, “I don’t deny that,” but looked as though he wished that he could.

“Still—”

To avert an outbreak of hostilities, the chaplain said, “Are you here to research a new time-travel story?”

“Time travel is part of my stock in trade, of course. But I have to confess I much prefer space-travel stories. Some people go somewhere in a starship and find something peculiar. This junket is something my agent sold my publisher on. If memory serves, their exact words were, ‘The Paleozoic expedition has produced a lot of scientific papers, but it hasn’t inspired a thing in the way of literature or art.’”

“Oh, I dunno,” said the volcanologist. “I read a mystery once about this detective who investigates a—something to do with smuggling trilobite larvae, exotic pets, exotic plants, back to the twenty-first century. Was that something of yours?”

“No, but in *Anomalous AI* there’s—”

“The smuggling,” the unheeding volcanologist went on, “was just to set everything else in motion, of course, and get you to all the good stuff you expect to find in a detective story. Dead bodies turning up everywhere, beatings, a beautiful nymphomaniac volcanologist! The main bad guy—”

“Please,” said the chaplain, “don’t tell us. We might find ourselves watching that show one of these days. At least up to the point where the beautiful nymphomaniac comes into the plot.”

“You might not last that long, Chaplain. I didn’t say it was any *good*.”

The author avoided looking at the volcanologist and said evenly, “As my agent and publisher were saying, about literature. ‘The old whaling industry begot *Moby-Dick*, the Civil War begot *The Red Badge of Courage*, World War One begot—”

“World War Two!” The volcanologist laughed. “And then World War Two begat rockets and atomic bombs, which misbegat a lot of wretched pulp fiction!”

The author leaned away from the volcanologist, for whom his dislike was becoming palpable, and the latter, who patently did not care, said to the chaplain, “So, *you* came all this way to tend the local flock?”

The chaplain was a wiry fortyish man with alert eyes and laugh lines around his mouth, and Amy had already decided that she liked his looks. To his further credit, she thought, he received the question as though it were not entirely inane. “Part of it,” he said. “The Protestant portion of it.” He smiled at the author, turned his head to flash it at Amy as well. “We have a priest and a rabbi on board, too.”

“Ah, of course,” said the volcanologist. “Even Navy men of the cloth are specialists. And I imagine there’d be a mullah, too, if there were any Muslims attached to the expedition.”

“There are some Muslims. Some Buddhists and Hindus, too.”

“Do they just fend for themselves?”

“The Navy,” the captain put in from his end of the table, “is only as good as its efforts to maintain its personnel at a peak of physical, mental, and spiritual health.”

“How good of the Navy,” the volcanologist said, “to see to everyone’s needs! And lead them not into temptation, either. The Navy doesn’t provide grog and brothels for its people, does it, Captain?”

The captain looked as though he had bitten into something rancid on the end of his fork. “Certainly not!”

“But,” the chaplain said, as easily as before, “there are still plenty of temptations, even here. Most of the enlisted personnel are men and women in their twenties. All volunteers, of course, and many of them with families back home. They’re young, nevertheless, and a long way from home.”

“Then I’m sure it’s a good thing that experience has taught the Navy to prefer liberal men of the cloth to reactionary ones.”

“Well—”

“After all, what could be more hellish than to be trapped with some raging Calvinist on a ship on the open sea, and a prehistoric sea at that? Seasick, four hundred million years from home, *and* predestined to eternal damnation! Under such conditions, anyone’s morale would collapse! To say nothing of his morals.” The volcanologist winked at Amy. “Or hers.”

In spite of herself, or in spite of Cutsinger, she smiled.

“It sounds pretty hellish, all right,” the chaplain agreed. “The great radicalizing experience of my life—apart from when I felt the call to God’s service, that’s as radicalizing as it gets—I felt pure revulsion at the ideas embodied in Jonathan Edwards’s famous sermon, ‘Sinners in the Hands of an Angry God.’ I find the doctrine of predestination irreconcilable with the concept of a just and loving deity.”

“Well,” said the volcanologist, “even a depraved old secular humanist like me knows that.”

Amy saw Cutsinger glance from the author to the chaplain. “It seems,” he

rumbled, “that I’m the raging Calvinist present.” Every face turned toward him, except Amy’s. She busied herself with her water glass. “Or,” Cutsinger went on after a second, “the steel-trap determinist, anyhow. You’re talking about free will.”

The volcanologist was not easily cowed. He grinned at Cutsinger and said, “Or the next best thing to it.”

“For free will to exist means that in a universe that works on the principle of cause and effect, human beings would have to be exempt from rules that apply to energy and matter in all their other forms.”

“Doctor Cutsinger,” the chaplain said, “that’s the basic tenet of Christianity, of the Judeo-Christian tradition, of all religion. An omniscient, omnipotent deity makes the rules but, being also just, merciful, and loving, makes exceptions as well.”

“I don’t believe in deities, either. I stopped believing in invisible friends when I was still a child.”

“Perhaps,” the chaplain said good-naturedly, “if you had sought an invisible friend who offered salvation—”

“I believe in the either-or of quantum physics. Down at the micro level, everything’s either-or. Either a particle does this or it does that. The universe replicates itself, each replica accommodates one of the possible outcomes. And every either-or begets still more either-or. Whence, endlessly geometrically multiplying universes. On the macro level, each of us makes choices all the time. Sometimes, afterward, we decide they were the wrong choices. We think, If only I’d done that instead of this, or, If only the other thing had happened and not this thing that has in fact happened. In other universes, we did do the other thing, and something else did happen. In one universe, I do the things that get me into Heaven. In another, I do the things that send me straight to Hell.”

Amy sipped her water and found herself thinking an astonishing thought: Would that it were so.

The author’s grin broadened. “You physicists make me fidget. Always arguing over the significance of fractions of a second.”

“In terms of practical significance,” Cutsinger said, “the argument pertains to nothing less important than fixing this expedition in spacetime.”

“Exactly,” said the chaplain. “Are we in Silurian time, or Devonian?”

“That,” the volcanologist answered, “is the question most often asked by people who least understand that geologic time operates on quite an inhuman scale. It rarely coincides with human time, and then only catastrophically. The Silurian does not end at midnight on a Wednesday and the Devonian begin at twelve-oh-one on Thursday. There’s no catastrophic event such as marks the K-T boundary. The significant revolution that does mark the S-D boundary occurs over a period of millions of years as Laurentia, Baltica, and Avalonia close on one another like scissor blades. They swing together as if on hinges, incidentally consuming the Iapetus seaway and raising mountain chains we can trace from Spitzbergen to Venezuela. But slowly. Very, very slowly.”

“Yes, of course,” the author said, “I understand. Slowly.”

“Well,” said the chaplain, “I don’t mind saying I’m proud to be a member of this expedition. I find it all tremendously exciting. You scientists go forth and come back with the most wonderful lots of specimens, plant, animal, mineral.”

“Don’t forget indeterminate.” The marine biologist at the far end of the table had surprised everybody by speaking up. He looked surprised by his own temerity. Then he said, in a slightly nasal tone, “I like things to be organized, yet I know that taxonomy at some level breaks down as surely as quantum mechanics. At whatever points organisms begin to differentiate into the proto-animal, the proto-fungi, and so forth, gross taxonomy becomes subject to its own uncertainty principle.”

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She went to her bunk and lay listening to the ship’s sounds. She tried lying on her side. She tried lying on her other side, her stomach, her back. She lay with her fists clenched and stared into the darkness, and then she squeezed her eyes shut until her nose stopped up and she had to relax to breathe. What’s in the medicine kit for sleepy-time tonight? she wondered. She did not really want to drug herself to sleep, however; she had a hard enough time during the day without a hangover.

Maybe, she thought, I should just reach through the hatch and grab the first Navy boy who comes by and screw his brains out. Screw myself into a coma. I dimly recall that one often falls asleep after sex.

Well, she decided, it just might have to be rape or the next-worst thing. To the best of her knowledge the Navy men aboard, officers and ratings alike, simply did not look upon her as anything more than an appendage of Cutsinger's—though the dirtier-minded ones might, perhaps, imagine she was his lover. In truth, while she had suffered a protracted infatuation with the great man, he had not reciprocated, and their relationship had never moved any further beyond the platonic than occasional mild flirting.

Yes, of course, Amy had told people on occasions beyond counting, it is indeed a privilege and an honor to work with Cutsinger. At one time she had truly believed it, too. Even now, when she had long since decided otherwise, she comported herself as though she still believed it. She never qualified her statement within anyone's hearing by adding "even in the limited and limiting capacity he permits," let alone hinted that it was not that great a pleasure to work with him. The phrase "work with" was beginning to catch in her throat like a sob; she worked *for* Cutsinger, always had. At most, at best, she functioned as a glorified technical assistant, amanuensis, spokesperson—she bit hard on the word: *flunky*—to A Great Man, without the energy any more to counter, reflexively, this humiliating realization with the argument that the menial services she performed were necessitated by the nature of Cutsinger's affliction.

Maybe, she thought, I should just throw myself overboard. Or throw Cutsinger overboard. Oh, the questions that would be asked then. "How *could* you drown the great Cutsinger? What drove you to *do* such a terrible thing?" I was fed up, I'd say. Fed up to here with the great Cutsinger.

On her bunk, she finally slipped into unconsciousness, and the ship's mechanical pulse became Cutsinger's voice. The walls of his world surrounded her, closed in on her, crushed her flat. She slept, but not well, through that night and the many that followed.

He and she still dined at the captain's table, he still held forth at every opportunity on multiple universes, infinitely replicated Earths, and continually diverging timelines, and there was no chance of their being banished from officer's country, because, while he might be a bore, he was also a celebrity, and she, well, whoever she was, whatever she was, she was with him. Most of his listeners, however, signally failed to understand why the paradoxes implied by wave-function collapse could be avoided only by postulating geometrically multiplying universes, had given up trying to figure it out, and frankly admitted that they found it easier, somehow more comforting, simply to imagine that they had indeed traveled into the prehistoric past rather than to some parallel Earth where Paleozoic conditions still obtained. As far as they were concerned,

Cutsinger's work was done: he had got them here and convinced them, finally, that they could dispose of those despised spacesuits, by which the integrity of Paleozoic ecosystems was to have been preserved. Cutsinger was gloweringly insistent upon the point or on any of a great many others, and Amy could only sit beside him, embarrassed, trapped by loyalty, until somebody found a way to change the subject. Then he sat mute but still glowering while the captain's other table guests held forth on a variety of less convoluted, certainly less controversial, topics. For her part, Amy had exhausted all conversational gambits and all plausible excuses to quit the table early and would now have foregone dinner altogether but for Cutsinger's insistence upon providing her with detailed summaries of conversation which he had found especially annoying and felt she ought not to have missed. Aboard the ship, there was no escape. Cutsinger had done no important work since his arrival, unless one counted as important his desultory progress on a book for general readers, a follow-up to his unexpectedly and immensely successful *Events Leading to the Infinite Regress*. Amy knew—because she was the person actually performing the work of editing his notebooks and lectures into approximate book form—that he had nothing new to say about the truly important work he had done early on. Cutsinger had no interest in the Paleozoic *per se*, only in the connection between the prehistoric and the modern worlds. He viewed the great majority of the scientists whom he had ushered into and out of the anomaly—a hundred different varieties of geo- and bio-specialist—as a bus driver might view bus passengers, caring neither whence they had come nor what they might do once delivered to their destinations; nor did he want to be bothered with what they might have to say while in his charge, either. They repaid his disinterest with passive contempt, regarding him as the doorman, the gatekeeper: The Wizard of Time had become a professional greeter. The only scientists with whom he felt an affinity and acknowledged kinship were the astronomers, but they were few in number compared with the earth scientists, the turnover among them was generally quite rapid—they tended to stay only a few weeks, if that long, to make their observations, then returned home to spend months, perhaps years, analyzing the data they had collected.

And Cutsinger was impatient with the Navy officers, found them intellectually unstimulating, their personalities rather drearily similar, their routines, regulations, and rituals, petty and childish.

Yet, as he had got into the habit of remarking, most human interaction is talk, all the rest incidentals, and thus he depended on Amy for a great deal in the way not only of the definite services she performed for him, but also in the indefinite purpose she served by being almost constantly at his side, attending his every word. "You are my sounding board for ideas," he sometimes reminded her, "my confidante," but, any more, she could not help thinking, I am only your

audience, as anonymous as any other audience. And he had no ideas any more, only beliefs.

Amy had been with him since just before the series of events leading to the purely serendipitous discovery of the anomaly. Once—she recalled this rather vaguely now, like an old dream or something that she had read in an unmemorable book—she had been pursuing her own course, a career in physics quite independent of Cutsinger's; she had had friends, lovers, a sense of humor, all the accouterments of A Life. Now she had a career in Cutsinger, and increasingly, especially whenever she had retired to her cabin, she found herself wondering what it might be like to have anything in addition to him, anything at all that had nothing at all to do with him.

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Then, one evening, alone in her gray impersonal cabin deep within the ship, as she began to prepare herself for yet another evening's ordeal, she considered her reflection in the inadequate mirror over the tiny metal sink. She had always freckled excessively at the touch of sunlight, but sunlight had scarcely touched her fair skin in—how long had it been? Long enough, she thought, for her flesh to have become greenish white like a frog's belly. Charming, she thought. Good thing the batrachian complexion's in this year. There were lines at the corners of her eyes and mouth which she was certain she had never seen before. Undressed, she thought, I look fat and rumped. She regarded her small wardrobe; its contents seemed as colorless as the cabin. Almost at random, she picked something and put it on, then tried to gauge the effect in the mirror. Dressed, she thought, smoothing the dress across her belly, in this ridiculous dress, I look rumped and fat.

Still, there was nothing to be done for it. She resigned herself to that absurd table, on this ugly ship, in this godawful time and place. Oh, the incongruity, and she repressed either a smile or a groan—she could not decide which. And the decisions. Fish or meat? White wine or red? Kill myself, or somebody else?

Some time must necessarily pass between the perception of unhappiness and its being given utterance. Certain individuals seem scarcely to hesitate between the two; others, however long they may live, do not live long enough to find their voices. Amy, like most people, occupied a position between these poles of almost reflexive complaint and mute abiding wretchedness; but she tended toward the latter extreme. It had taken her many days, or several weeks, or a few months—she considered each unit of time measurement to see which cast her situation in the light least unflattering to herself—to determine that she was more

miserably unhappy than she had ever imagined possible. She had always accepted, at least in theory, that people were responsible for their own happiness; she had set aside that responsibility because other possibilities seemed more pressing, seemed worthier; early on, it had seemed to her that her own best prospect for happiness inarguably lay in her being somehow indispensable to Cutsinger. There was *The Work* to consider, *The Great Adventure*, the bold new chapter to be written in the annals of science, in which she did not wish to appear as an unsympathetic character.

But no more. If it had taken her a long time, “four hundred million years and some months,” as she bitterly put it to herself, to acknowledge her own intense dissatisfaction, she was ready to express it and to want to alleviate it. On their way from the mess, she told Cutsinger without preamble that she was taking some time off, at least a day, maybe two days, maybe more, she didn’t know but she was definitely going ashore, she needed time to herself, she was going crazy—she had thought it out during the night, composed what she had to say, mentally rehearsed it, but all her preparation came to nothing, or, rather, she achieved her end but at the cost of further damage to her self-esteem. Like an avalanche, unstoppable, relentless, it impelled her forward and almost immediately downward into trembling and tears. He only looked at her in astonishment tinged with horror, his expression eloquent with the unspoken question: Where did *this* come from? Crying and shaking, she saw him glance toward the porthole. Beyond lay the limitless sky, the unpredictable sea, the septic, treacherous world. She heard him say, “Yes, yes, of course, by all means, go,” granting her leave not because he suddenly understood how she felt but because he wanted to avoid a scene.

She saw him shiver there, and again, later, in the boat bay. The boat bay was a large steel grotto, and Cutsinger was visibly uncomfortable there: any moment, the great gate might swing open, exposing him to the external world. Her composure somewhat restored by his swift acquiescence—though she knew that it had been given not out of understanding and compassion, but to avoid being embarrassed by a public display he patently considered to be out of character for her—Amy nodded to him, then stepped down into the boat and found a place for her sea bag and herself among the carefully stowed crates and equipment.

In the instant that the boat moved out of the boat bay, into the sunlight, she felt as though the weight of the ship had been lifted from her shoulders. Light reflected from the surface of the water dazzled her. The bluejackets themselves were much improved in this natural illumination: pallid drones no more, they appeared fresh, vital, even beautiful.

On impulse she spoke to the nearest of them. "The water looks very inviting." The young man seemed almost startled. She ventured a smile.

"Uh, I don't think so, ma'am. It's not safe."

"Why not?"

"Sea scorpions," he said, "and other things, ma'am. Well, so I hear."

The boat touched the crude jetty, and after a moment's hesitation the bluejacket to whom she had spoken offered a hand to help her out. Here she looked back once at the gray ship sitting in the bay and realized with a start that this was her first sight of it as an entire object, rather than as an environment, since before the transfer. The sight of it called up a memory which she could not quite give form in her mind; she knew only that it was unpleasant, whatever it was, and shrugged it away. She wanted to bring no unhappiness ashore with her.

A work detail fell to unloading the crates and equipment from the boat and moving them along the jetty to add them to a small mountain range of crates and equipment along the shore. Other work details, moving with all the purposefulness of social insects, were engaged in carrying away the substance of this mountain range and assembling it into Quonset huts, vehicles, machinery. There were many more people in uniform than not, she noticed, and she wondered where most of the civilian scientists had got to. Then she glimpsed, on the rocky heights behind the camp, tiny human figures making their ways, singly or in small groups, across the steep rock face, and she thought, Of course. They were getting on with what they had come here to do, while the Navy, acting in its support capacity, built a base for them.

She realized with dismay that she did not know what to do next. She had come ashore uncommitted to any particular course of action but conscious of the need for a change of scenery, perhaps even for catharsis, and half-determined on some arduous physical recreation. She wore hiking shoes and carried in her bag, along with essential toiletries, a modest and now useless one-piece swimsuit. Aimlessly, she walked about the camp. The few civilians whom she encountered acknowledged her presence with nods and smiles but clearly had no idea who she might be; just as clearly, they were too busy to be very curious about her. The bluejackets were intent on their assigned duties; as a work detail assembled pipes into showers and erected walls around the showers, she watched, wholly fascinated, and when they stopped and stepped back to take stock of their handiwork, she looked at her watch and was astonished to see how much time had elapsed. She could almost hear Cutsinger asking her how she had spent her

day ashore and almost see the contempt on his face as she fumbled for a meaningful answer. Then she told herself angrily, I'm not here for his sake.

Still, feeling it a point of honor to prevent her excursion's renegeing on its initial promise, she resumed her aimless and now slightly desperate wandering. At length she found herself picking her way up the rough slope behind the camp. She did not climb very far before settling onto a shelflike limestone projection. Despite or perhaps because of the human figures she had seen on it, the dark landscape before her looked even more forbidding close up than it had from the ship. She realized, too, how out of condition she was. Could've been using the ship's gym all this time, she thought. Nevertheless, she felt—she had to think about it for a second—*good*. For ever so long she had been aware of an iron-hard knot of tension at the base of her skull; now, as she began to relax, the tension yielded to a burning soreness in the muscle. It hurt, yet it made her feel better. She gazed down on the camp and its scurrying inhabitants and then out to sea. Again, the sight of the ship filled her with dread; she instantly looked away. Somewhere far out to sea, farther than she could see, the surface would be matted with graptolites drifting through planktonic soup. No scurrying there, she thought, dinner just floats by one's door.

She felt distinctly at a loss. The idea of returning to the ship was repugnant, but not only had her plans for recreation amounted only to vague and now unrealizable notions of hiking and swimming, she had made no arrangements for accommodations. She began to realize that she was famished; she had been too upset to eat breakfast on the ship, had given no thought to eating when she escaped—and the perplexing half-memory returned for a moment, but she still could not grasp it, frowned it away, concentrated on her hunger. It was a good hunger. Eating had been a mechanical exercise for so long that she had forgotten what it was to have a real appetite. She could, she decided, probably eat at the mess tent in the camp, and she imagined other necessary facilities would be available as well. She would need a place to sleep, but finding a bunk on short notice might be an insurmountable matter. The idea of sleeping beneath the stars briefly attracted her. Then she thought of the sea scorpions “and other things” inhabiting the area. She had seen specimens of grotesque arthropods brought aboard the ship, and it now required no great effort of imagination to conjure chitinous night-feeding predators swarming ashore—she quickly shoved the image from her mind and told herself that the creatures could not pose too much of a threat to human beings ashore. She could recall hearing no horror stories along such lines, anyway; perhaps there was nothing in camp to interest sea scorpions—not even cockroaches to eat. Yet, she concluded, discretion was undoubtedly the better part of valor.

The camp appeared to have increased in size in the short time she had been away from it. She judged from the aroma that Navy cooks were preparing to serve the evening meal. The mess tent was full of tired, hungry bluejackets and civilians ready to call it a day. She fell into the mess line. The food was standard fare, slightly tough chicken fresh from the freezer, with side orders of reconstituted vegetables, but Amy discovered that she was ravenously hungry and ate every bite. She wished for a glass of white wine, or even, she thought with a smile, grog, whatever that might be.

“Why, hello!”

She looked up and saw the man who had been head of the sleep-disorder center at Cornell University’s New York Hospital in Westchester County.

“Do you mind if I join you?”

“Please do.”

He sat opposite her and began to saw at his chicken.

“Do you mind my asking,” Amy said, “what you *are* doing here? The night I met you, on the ship, you said something about observing the observers.”

“Actually, I am building the case that the clocks and calendars and other time-keeping devices on which we depend, back in the twenty-first century, and which we have imported into this Paleozoic environment, aren’t just useless here, but injurious.”

“How so?”

“The Siluro-Devonian year is about four hundred days long. The Siluro-Devonian day is about twenty-two and one half hours long. It’s all wrong for our human bodies, which evolved during Quaternary time. The dominant time cycle of our bodies is the circadian rhythm. From the Latin words *circa*, approximately, and *dies*, day. For most of us the circadian cycle is twenty-five hours long, plus or minus a quarter of an hour. This body clock is located in the brain’s hypothalamus, lying above the roof of the mouth. But we also have a weekly cycle of internal rhythms regulating rise and fall of heartbeat and blood circulation, our immune system’s response patterns, changes in body chemicals. When we ignore or abuse these rhythms in the course of twenty-first-century life—and we do it all the time, obeying the clock on the wall instead of the clocks in our bodies—we feel the effects of sleep deprivation. We have the Monday

morning blues and get drowsy in the afternoon. We suffer from sleep disorders and depression. We become irritable and clumsy and, well, stupid. Then we compound our problems by trying to offset our fatigue by using drugs and alcohol. We take stimulants to keep ourselves awake during the workday, and drink or take sleeping pills to knock us out at night so we can get up the next morning and take more stimulants. It's very unhealthy."

He looked at her as he chewed. Then: "May I ask what *you* are doing here?"

"Everybody here knows what he's doing here," Amy said, "except me."

After dinner, she said good night to the sleep-disorder specialist and returned to the communal tent where she had managed to secure a place to pass the night ashore. She sat outside on a campstool and admired the emerging stars for a time. The whole camp seemed to droop in the still, humid twilight. Without warning, a large, somehow familiar shape emerged from the gathering shadows. At first it struck Amy that one of the smaller tents had decided to go for a walk. Then the apparition resolved itself into the author. He drew up before her and favored her with a clearly tipsy grin.

"I think," she told him, "you had better sit down. You're leaning well out of plumb, you know. Another few degrees of tilt out of true, and you're going to roll down into the bay."

"Drink?" he said, holding up a bottle of Scotch.

Amy thought it over for two seconds before answering, "Don't mind if I do." She fetched plastic cups and another camp stool from within the tent; the author sat down like an elephant taking a load off all four feet and poured Scotch into the cups.

"Here's to Robert Heinlein," he said as they clicked cups.

"Who?"

"Twentieth-century science-fiction author."

"Ah."

"Yep." He popped the syllable from his mouth and raised his cup again. "And all the rest of them, too. Clarke, Asimov, Bradbury. Here's to the by-God living literature."

“So,” Amy said after half a minute had passed, “do you, as a sci-fi writer, find it hard to come up with story ideas?”

“Probably no more than anyone did back in the space age. When events catch up with fiction, you just have to push on a little farther out in front.”

“And do you write happy endings?”

“When I can. All stories, all kinds of stories, are about people trying to be happy. A few of them manage to pull it off. But you know what’s disheartening about science fiction?”

“What?”

“What’s disheartening is when events don’t bother to catch up. I expected us to have colonies on the moons of Jupiter and Saturn by now. Research stations. I mean, things like that were supposed to happen in my lifetime. And we’d go *on* from there. Ever onward and outward. Eventually, somehow or other, Einstein be damned, we’d whip together some warp-drive thingumatron and leave the solar system behind, spread throughout the galaxy. Manifest destiny.”

“Not so manifest if you’re a physicist.”

He looked at her curiously. “Ever visit one of the space stations, back, you know, home?”

“No.”

“Well, I did. There’re rides at Disney World that’re more exciting. Same here.”

“Even so. There can’t be too many sci-fi writers who can say they’ve actually done any of the things they like to write about. Space travel, now time travel. Time travel in heavy quotes. You’re like a hero in one of your own stories, almost.”

“I hope not!” He scowled. “Willingly or otherwise, writers tend to buy into myths about writers. Fitzgerald bought into the myth of writer as drunkard and drank himself to death. Hemingway bought into the myth of writer as man’s man. He hunted and fished and boxed and finally blew his own head off. And here I’m a space-traveler *and* a time-traveler. Space travel’s always held much greater

fascination for me than time travel. In or out of heavy quotes. Because space travel was possible. Time travel was *impossible*. All you physicists said so yourself. And, you know, I think—and there're folks I know at NASA and the Jet Propulsion Lab and places who think so, too—the discovery of the spacetime anomaly's the worst thing that ever happened. Just an absolute goddamn disaster.”

“You're trampling on my field now,” she warned, but gently.

“No offense. But the human race was meant to go to the stars. Not sideways in time.”

“Meant to? Manifest destiny again?”

“*Priorities*. We've got our priorities all wrong. There must be some happy balance between the hopes of the future and the realities of the present. We just don't seem to be able to achieve it. And another thing. Time travel's too private. Everybody and his dog could watch those rockets take off. People come from all over. It was for everybody. But time travel? Feh! It's like when they stopped public executions and did it behind prison walls, in seclusion. Like they were ashamed of it.”

The author looked uncomfortable with his own analogy but was slightly too inebriated to figure out why. He pressed on.

“The combined pressure of expanding population, diminishing resources, and simple human curiosity—aspire, whatever you want to call it—was supposed to launch us at the stars and the future. Instead, we're mucking around here in the so-called prehistoric past and haven't even started planning habitats for ourselves at El-Four and El-Five. Most people just can't see the point any more. There's a push on for a land rush into Paleozoic time. Never mind the lack of soil, plant cover, animals. Even some of my colleagues think it's an excellent idea. Hell, one of them told me, this world is practically terraformed already—we can import the plants and animals we need. Oh, the geoscience types would still be able to study their creatures in special preserves. But they can't, they mustn't be greedy. The Paleozoic's a distraction from our true destiny. One giant step sideways.”

“There's another way of looking at it,” said Amy. “From the very first, we physicists explained over and over again that we're not talking about time travel, but about traveling from one universe to another.”

“It's *hard* to give up the stars. It isn't just the funding, though it is the funding, of course. It's the public imagination. Such as it is. People can't seem to

hold more'n one great big idea in their minds at a time. Space travel or time travel. Well, we already have time travel, or the closest thing to it. And the idea's also started to penetrate that we'll never get to even the nearest star fast enough, soon enough, to suit anybody. Stars are unreachable unless we're willing to spend thousands and even tens of thousands of years traveling interstellar distances at a crawl."

"Don't use that accusing tone with me," Amy said. "It's not physics' fault there's no way to exceed light speed."

"You people could at least have the decency to find some kind of short-cut in spacetime. A gateway through hyperspace via black holes."

"We certainly know now that spacetime anomalies exist, but whether we'll ever find one that can take us to the stars—it may be a chimera. Like El Dorado. Or, more aptly, like the Northwest Passage. Not to belittle the effort behind this expedition, particularly since some of it was my own effort, but it's nothing compared to getting people to Mars and back. This world for all practical purposes *is* the Earth, complete to potable water, breathable atmosphere, UV-screening ozone layer, and fifteen p.s.i. at sea level. You can go into the jump station in Houston at nine o'clock in the morning and eat lunch at noon in Gondwana and be back home in time for dinner at six."

"If," the author said glumly, "you don't get concussed coming or going."

"Practically speaking, though, getting here's a snap compared to getting to Mars and back."

"Pity nobody ever figured out how John Carter wished himself to Mars."

"Who?"

"Never mind."

Later, more than a little drunk, as she composed herself for sleep, she thought, In the morning I'll be back in the real world. Eventually, I have to return to the ship, there'll be work for me to do, another few pages of the book to thrash out at the very least. And she was curious to see how Cutsinger had managed without her. Perhaps it would lead to his appreciating her more. Probably not. However her absence might discommode him, she could not conceive of his venturing ashore to reclaim his errant flunky, or for any other reason; she could scarcely imagine that he would obey the captain's order to abandon ship if it were

foundering. Her relationship with the great man, she reflected, was less a relationship between two people than a sort of barycenter, the center of mass in the Cutsinger-Stevenson system. And I can't escape from the system. I not only have to orbit Cutsinger, I have to keep my face turned toward him at all times....

I can see it all. Standing on the jetty, with the boat waiting to take people back to the ship. The boatman says to me, Ma'am, it's time to shove off, please come aboard, and the ship waits like a great iron prison out on the water to receive me—

The *hulks*, she thought with a start, that's what I've been trying to remember. The derelict ships once used as floating prisons. Already she could feel the weight of the ship settling upon her; she could feel muscles in her face and shoulders contract with tension. No, she thought. No. No. Here is where the universe splits and I split with it. I do one thing in one universe and a different thing in the other. I don't know about that other self, I can't speak for her, but in this universe—

But in this universe it's too late. Time to go back to the ship. Cinderella's got to be in by a certain time or turn into a pumpkin.

Cutsinger, she thought, just might be waiting for her in the boat bay. She would ascend to him, and he would give her an ironic smile and say something like, "Did we have a good time?" but before she could frame a reply he would already be talking about something that really interested him. The walls of his world would first enclose her and then *close in* on her. She would look down, out the gate of the boat bay, to the black sea, the starshot sky, and the illuminated section of land wedged between them. Then the gates would slam shut, like the jaws of an immense monster.

I know it will happen that way, she thought. I can see exactly how it will happen, and I'll *let it* happen.

* * * *

Right on schedule, because the Navy adhered rigorously to schedules in defiance of any slovenly Paleozoic notions about day and night, the boat pulled softly away from the jetty, moved out of the circle of illumination cast on the water, and vanished into an oily darkness.

* * * *

“It,” she said, and paused to consider her next words very carefully, and then shook her head and told the young man, “I’m sorry, I just don’t have anything interesting to tell you. It wasn’t my story.”

“But you,” the young man said, “he mentioned you in his autobiography just three times,”

“I wrote most of Cutsinger’s autobiography. Even then I knew how it was all going to end. He would live happily ever after, as he understood the word happily. He’d die full of years and full of honors. And by the time he died, everything that should be told about him would have been told.” She shook her head. “I really, truly do not have anything to add.”

“But *don’t* you feel slighted?”

“I made my choices. Don’t you worry about me. I, too, lived happily ever after.”