

*I wrote "Pi in the Sky" in Lynchburg, Virginia, in Fall, 1981. My inspiration was a trip that my wife, three children and I had taken to visit my brother, then living on Grand Turk Island in the Caribbean. The story first appeared in my anthology, The 57th Franz Kafka, Ace Books, 1983, and is reprinted in my anthology, Gnarl!, Four Walls Eight Windows, 2000.*

— [R.R.](#)

## ***Pi in the Sky***

Rudy Rucker

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The fragmented shells beneath Jane's feet began to flicker and sway. She took her husband's arm.

"Let's go back, Morris."

"Already?"

"I'm dizzy. The sun ... it's too much."

Morris looked at her closely, his dark eyes concerned. She leaned against him, smiling weakly.

"You're right," said Morris. "It's too much at noon like this. Let's go back to Andrew's."

Jane shaded her eyes and looked back along the beach. The beach sand was pure white; the hot waves were pale blue. Grand Turk Island, March 22, 1992. This was their honeymoon.

Jane's brother, Andrew, lived here, and they could stay with him for free. Andrew made his living teaching the occasional tourist to skin-dive.

Back at the house there was nothing doing. The shutters were closed against the heat. Andrew was lying on a couch, smoking and listening to soft Hawaiian music. In the next room, Andrew's wife Julie lay on their bed's white sheets, reading a Borges anthology.

"You see," said Andrew as they came in. "I told you."

"You were right," grinned Morris. He did not enjoy talking to his brother-in-law.

"I almost had sunstroke," said Jane. "Morris, too. It was like being hit on the head with a hammer."

"At three we'll go out in the boat," promised Andrew. "We can go down off the shelf today."

"Great," said Morris. "How deep?"

With slow, economical gestures, Andrew lit another cigarette. "As the spirit moves us. My equipment's good for a hundred meters. Last week I saw whales down there. A whole pod."

It was four-thirty by the time they were actually in the boat. Everything happened late down there. Island time. As a gesture towards assimilation, Morris had stopped wearing his digital watch. Now he was sitting back by the boat's electric motor, happy to be doing something. Up in the front of the boat with her brother, Jane smiled back at her husband.

"Don't forget to exhale on the way up," Andrew cautioned her. "And stay near me. Yesterday, every time I looked for you, all I could see was a flipper sticking out from behind a reef."

"I love it down there," said Jane. "The flip and flow of it, everything so alive and full of color. It's a relief from my job at the cancer labs. All the doctors do is kill things. Sad, colorless little mice. There's a sort of blender that liquifies a mouse every thirty

seconds."

"At least Morris doesn't kill things," muttered Andrew. "What's he supposed to do with those computers anyway?"

"It was something to do with breaking codes. A universal decoder. But you should ask him yourself, Andrew. You never talk to him. Aren't you glad to see us?"

"Oh, sure, Sis. At least he finally married you. I didn't like the way he was living off you all last year, and still not committing himself. This way he can't bug out when he gets his degree and the bucks start rolling in."

"Morris would never do that, Andrew."

The sun had filled the boat's batteries with a good charge. Before long, they'd jounced out to where the water-color changes. Near the shore it's turquoise, but when you get out to where the continental shelf drops off, the water suddenly looks deep green. Andrew threw an anchor out and signaled Morris to cut the motor. The air was hot and damp, palpable as wet silk. It'd be good to get underwater.

"Okay," said Andrew, relaxed and professional. "Let's get our wet suits on. It's cold down there."

Morris helped Jane into the tight rubber garment. "I can't believe we're doing this. Somehow I never thought that I would spend a honeymoon skin-diving in the Caribbean. This is just fantastic."

"Stick near me and exhale on the way up," repeated Andrew. "I think we'll go down fifty meters today. No point going much further ... it gets gloomy after that. And dangerous."

"How deep *is* the water here?" asked Morris.

"Down off the shelf it's over a mile. Two thousand meters."

"Unreal. Can we bring up some sponges?"

"I'll give you a knife for your belt. But I don't really like bringing live things up. They belong down there. Up here they just lie around and stink."

Andrew checked the anchor again, and then they donned facemasks, flippers, weights and airleaves. The airleaves were the latest in scuba equipment: folded packs of special gas-exchange membrane. Instead of carrying your air in a pressurized tank, you could simply extract it from the water around you. The airleaves were, in effect, artificial gills. They made it possible to stay down much longer.

Underwater now, Jane looked up at the boat, an odd slipper-shape black against the wrinkled mirror of the water's surface. She took an almost sensual pleasure at drawing air in through her mouthpiece. When she breathed out, the vibrations of the bubbles filled her ears with lively sound. Morris was above her, Andrew below. All around them darted bright bits of color --- parrot fish, tetras, clown-fish, lopes --- vibrant flecks, wheeling like shattered light. Now Andrew was waving to Jane, gesturing her closer. He'd found something. Gently flapping her hands, Jane sank to his level.

Using the butt of his spear, Andrew prodded a small, untidy-looking fish. At the first touch of the spear, the fish stopped swimming and puffed itself up. A blow-fish! Now it was the size of a basketball, all spiny and uptight. As her smile was invisible, Jane showed her amusement with a happy hand-wave. Morris joined them, and they swam a bit deeper.

It was like being at the lip of a tremendous cliff. Directly beneath them was the sandy bottom which slopes up to become Grand Turk's beach. But a few meters ahead the bottom stopped abruptly. Fighting a feeling that she would fall, Jane swam out over the edge. A sheer wall of fissured rock dropped down beneath her, down and down into invisibility. A mile of water.

Something touched Jane's elbow. Morris. His eyes were wide and excited behind the glass of his face-mask. With a long outrush of bubbles, he kicked himself down past the cliff's edge, down past a group of protruding sponges. Andrew and Jane followed.

With each few meters of further descent, things changed. At one level there was color, at the next everything was blue, then brown, then grey. Jane noticed that as the

pressure increased, the shape of her air-bubbles changed. Instead of being lovely musical spheres, they were now squeezed into nasty sickle-shaped saucers. The sound of the bubbles seemed like mocking laughter. The pressure, the dark, the cold ... she felt so confused. Her ears hurt. How long had they been down? How deep were they? Morris was far below, darkly twitching. He should come back!

Looking around desperately, Jane found Andrew at her side. He showed her his depth gauge. Sixty meters. Was that a lot? *Stay*, Andrew signaled to her. *Don't follow*. Then he kicked his way down after Morris. Jane held her nostrils and blew. With a sticky pop, her ears finally cleared. As the pain went, so did her panic. The satanic cackling of her air-bubbles changed to sweet chiming. Beneath the music sounded something else, something profound and solemn, some giant song that set her whole body athrill. Behind her were the jumbled surfaces of the cliff; far beneath her were Andrew and Morris, but there, out there in the depths, something vast was moving.

Strange giant fish. Two, three of them, as big as whales, singing a deep, mysterious song that Jane *felt* more than *heard*. The song had a dense, packed quality --- each note was filled with hidden cadences and falls.

The creatures were pale-green, mottled here and there with ugly splotches of red. The oddest thing was that each of them bore bunches of tentacles where the pectoral fins might have been. Five tentacles per bunch. These were not creatures of Earth. Their vast, pale-purple eyes glowed feverishly. Were they ill? Their immense tails seemed to beat with an unhealthy stutter. Impossibly huge, impossibly weightless, they circled once, as if to stare at the humans, then glided off into the endless volume of sea.

Andrew reappeared, half-dragging Morris by one arm. Was something wrong? Morris held his other arm against his chest, hugging something to himself. The knife-scabbard at his belt was empty.

Andrew pointed up towards the surface, then mimed bubbles coming out of his mouth. *Breathe out*. All the way to the surface. Jane fixed her wandering mind on that

one thing. *Breathe out.*

Finally air, real air. Sunlight. She flopped over the gunwale and into the boat. Morris and Andrew were already there.

"What happened?" asked Jane. "I felt so strange."

"That's rapture of the depths," said Andrew. "Nitrogen gets into your blood. I should have warned you. Morris here was ready to swim all the way down."

"I was not," protested Morris. "I just had to look at that funny sort of canyon in the cliff. You didn't have to rush me like that, Andrew."

"What did you do with my knife?"

"It broke. This thing, I pried it loose in there." Morris held out the object that he'd been cradling against his chest. It was a narrow cone, six inches long and marked with an intricate pattern of black and grey rings.

"How beautiful," exclaimed Jane. "Is it a seashell? Is there still something in it?"

Andrew took the object from Morris's reluctant grasp and examined it closely. "I don't think it's a shell. A fossil, maybe, or some kind of coral. You look, Jane."

The cone felt strangely heavy to Jane. The base and the tip were white. The tip was so fine that it curled back on itself like a wire. The main part of the cone was marked with many black rings, some broad, some fine. The base was somewhat hollowed out. Jane held the hollow up to her ear and listened, just as if it were a conch.

"It works," she announced. "Even though it's not a shell, it's got the ocean sound in it. Try it, Morris."

Morris pressed the cone to his ear, listening hard to the intricate pattern of hisses.

"Did you see the giant fishes?" Jane asked Andrew.

"There aren't any whales today. We would have seen them spouting."

"I know, Andrew. These weren't whales. They were just as big, but they had tentacles. I heard them singing."

Andrew regarded his sister quizzically. "That rapture of the depths really got to

you, didn't it?"

"This sound is interesting," said Morris, the cone still pressed to his ear. "It sounds like the stripes look."

Andrew's wife, Julie, heated up a can of corned beef for supper. Almost no one on Grand Turk ate fresh fish, not even the natives. They preferred the glamour of canned or frozen imports. Washed down with bottle after bottle of Beck's beer, the corned beef tasted pretty good. Morris told Julie of his adventure.

"There was a big rift in the cliff, a sort of canyon almost. I could see something bright towards the back."

"You're lucky there wasn't a barracuda in there," chided Andrew. "Or a moray eel. I don't know why you couldn't wait for me."

"Face it, I was zonked. I'll be the first to admit it. It's incredible the effect that a little extra nitrogen in your bloodstream has. But I saw this bright spot back in the canyon and it looked like ... like an altar. I was thinking of a movie I saw on TV one night, *The Idol's Eye*. It felt like I was in some alien temple to steal treasure." Morris gave Jane a special smile. He was proud to have done something unexpected for once. "So I entered the temple of the deep and there I found it, snagged in a big branch of white coral. Look, Julie."

Morris took the striped cone out from his pocket and laid it on the table by Julie's plate. Julie, a sexy, full-lipped woman in her early thirties, picked the cone up and examined its tip.

"It's so sharp. There's a sort of curly wire at the tip. Maybe it's a part from some crashed airplane's radio. Don't resistors have stripes like that?"

Andrew took the cone. "That's a thought, Julie. There was that big plane-crash this winter. The smugglers."

"How did you know they were smugglers?" asked Jane.

"They never radioed for help. And no one could ever trace them. Some of the

villagers saw the plane go down at night, all lit up." Andrew turned his attention back to the little striped cone. "You know, it's smooth enough to be man-made. And that really does look like a wire at the tip. Why don't we smash it open?"

"No!" cried Morris. "It's mine."

"Yeah?" taunted Andrew. "And what about my thirty-seven-dollar knife? While I was swimming down to rescue Morris, he was busy breaking my knife. And meanwhile Jane was hallucinating some new kind of giant fish. What a zoo. These two were worse than the Kansans ... and that's going some."

"Tell them about the Kansans," urged Julie.

Andrew gave Morris back his cone and launched into a series of linked tales about the various wackos he'd guided into the depths. Julie chimed in with details. Once they got started, Andrew and Julie could talk all night. There was still no decent TV reception on Grand Turk, and the residents were accustomed to passing the evenings in endless yak-sessions.

Jane and Morris got to bed around midnight, exhausted and full of beer. One of the nightly thunderstorms was wandering around in the distance. Jane fell asleep quickly.

At four A. M. something woke her. She lay there wondering what, then remembered that there was supposed to be someone in bed with her. Where was Morris? She lay there for a minute, listening to the rain on Andrew's tin roof. The sound of the water made her thirsty.

She found Morris at the kitchen table, bent over a sheet of paper, making notations. His free hand held the striped cone pressed to his ear.

"Jane." He set the cone down, then picked it up again, eyeing it in wonder. "This is unbelievable. The pattern of stripes and the pattern of sound ... they're the same. This thing is specially designed to code up a certain string of numbers. The pattern is a noisy fractal."

"What are you talking about? It's four in the morning."



mean something. There's an endless string of digits coded up in this thing. I think it must be an alien artifact. I can't wait to hook the wire up to a signal analyzer."

"How would an alien artifact get here?"

"Didn't you hear what Andrew said about an unidentified airship crashing last winter? It must have been a UFO. Those giant whale-like fish you saw ... they might be the aliens! This cone is packed with alien information! I'll decode it with my new program!"

And decode it he did. As soon as they got back up to Boston, Morris rushed into his lab and hooked the cone's little wire up to his computer. The cone began feeding out an endless sequence of digits, apparently the same digits as were coded up in the nuances of its shading. Breaking the code was not easy, but once a very large sample of the numbers had been examined it was possible for Morris's decoding program to produce results. On May 9th the first print-outs appeared.

That day, when Jane came by to pick up Morris, she found him in the computer room, surrounded by a crowd of people: graduate students, professors, and a reporter from the *Boston Globe*.

"You're saying that you have a whole library of books written by extraterrestrials?" queried the reporter. "Can you show me the books?"

Morris and the other graduate students laughed happily.

"That's the library," Morris said, pointing. "Right there."

The striped cone rested on cushioned supports in a plexiglass box. The curly little hair of a wire at the cone's tip was fixed to a cable leading into the lab's incredibly powerful CRAY-3 gigaflop computer. The machine's ink-jet printer was running. A secondary knot of excited scientists stood flipping through the pages of the print-out. Not wanting to disturb Morris, Jane walked over and asked them what they were reading.

"What I'm reading?" exclaimed one of them, a distinguished mathematics professor named Slade. Morris had taken Jane to a party at his house once. "I'm reading

the solution to the Riemann Conjecture. I've spent my whole life working on this problem and now your husband's decoding program has found the answer in a goddamn seashell from outer space."

"Aren't you glad?" said Jane. "Isn't it wonderful?"

"No," cried the professor. "It's a disaster! I've lived for nothing!"

"Don't be a fool, Slade," interrupted one of the others. "What if it prints out a cure for cancer?"

"What makes you think that giant space-fish suffer from cancer?" snapped Slade. "And even if they did, why should we be able to understand their cure? Most of this stuff is gibberish. Only mathematics is the same for everyone. Only the mathematicians are going to be out of a job."

Slade's prediction proved false. Over the next couple of weeks, information poured out of the cone at an ever-increasing rate. Morris located a section of the code which served as a sort of index to the rest of it. Like some tiny horn of plenty, the cone disgorged not only brilliant mathematical monographs, but also new theories of physics, strange alien philosophies, and a complete history of the creatures who had built it.

Each day the newspapers and TV shows were filled with all of the newest facts about the extraterrestrials:

They call themselves the "Leutians." They inhabit a world orbiting Barnard's Star, a world completely covered with water. The water is as atmosphere for them; they float above their planet's sea-bed like blimps over mountains. With no need for shelter, Leutians do not have our concept of society. Information is exchanged not by crowding together, but rather by long, powerful songs which reverberate the deeps for leagues and leagues. Owing to an existence in a sea's constant flux, the Leutian world-view is quite essentially different from ours. They lack, for instance, our belief in the primacy of time over space. The events of a typical Leutian story or myth are organized not in terms of temporal occurrence, but rather in terms of spatial location. Most Leutian physics is still

incomprehensible for us. Leutian mathematics places much more emphasis on geometry than on algebra; yet they have the answers to virtually every mathematical puzzle which we have ever proposed. Leutians have three sexual genders, the extra sex serving an enzymatic purpose. Their religion is very odd: rather than regarding God as large and powerful, the Leutians view Him as small and simple. In their discussions of God, the Leutian books refer to some hidden knowledge known only as the Joke. We do not yet know what the Joke is.

And so on. Jane and Morris began to tire of it. With the incessant round of receptions and interviews, Morris hardly had time for his new wife. And Jane herself had her own interviews to attend. After all, she was the only person who had actually seen the Leutians. Over and over she answered the same three or four questions: over and over Morris described how he had found the cone. When the government decided to organize a search for the Leutians off Grand Turk, Jane and Morris were happy to join in.

Thinking fast, Andrew had persuaded the government to buy him a five-million-dollar mini-sub. With an experienced deep-sea diver as co-pilot, Andrew explored the surrounding ocean bottom, finally finding some charred sections of the Leutian ship's vast hull. The seekers speculated that the Leutian home-planet's air was very tenuous, and that the creatures had been badly burned by the heat of entering the Earth's atmosphere. The red splotches, which Jane had observed on the Leutians, took on a sinister significance.

Meanwhile a fleet of ships combed the island waters, sonars a-ping. Nothing. Andrew's further searches were also unsuccessful. One by one, the reporters left Grand Turk. By mid-June, it felt like a second honeymoon. Though Jane wondered why Morris wasn't eager to rush back to his machines, she postponed any inquiries. In any case, as far as money went, they were fixed for life. The U.S. government was buying Morris's salvage rights to the cone. Instead of sponging off Andrew, Jane and Morris could now pay for the ramshackle comfort of the Turk's Head Inn.

June 24th was a Wednesday. Jane and Morris had a pleasant lunch of daiquiris and lobster-tail salad, the lobsters fresh from Grand Turk's waters. Happy and full, they wandered up to their room from the hotel's shady veranda. Instead of air-conditioning, their room had a large ceiling fan, right over the big, clean bed.

"Morris," asked Jane after awhile. "There's something I've sort of wanted to ask you. Only we've been so happy here I didn't dare."

Morris smiled and kissed her. Success had mellowed him fast. "You wonder why I don't want to rush back and play with my computer."

"Well, yes. Don't you have to take care of your decoding program?"

Morris made a face halfway between a grimace and a smile. "It's not my decoding program anymore. One of the Leutian books had a better one. Nothing I could ever do with computers can match what those books have in them."

"That must bother you. Professor Slade said something about having lived for nothing once he saw the answer to his big math problem in the Leutian books."

"Slade. Slade's crazy. What about lobster-tails? What about the beach?"

Jane knew Morris well enough to detect an edge of bitterness in these remarks. "But you miss the intellectual adventure don't you, Morris? Don't you, in a way, wish we could get rid of the cone and go back to the way things were?"

"I'm sure that someone like Slade *will* try to get rid of it," said Morris. "But it's impossible. There's no way for us to lose the Leutian knowledge. That's the Joke."

There was a sudden pounding on their door. "Jane, Morris!" hollered Andrew's voice. "Come quick! The Leutians have washed up on the south beach!"

Andrew drove Julie, Jane, Morris, and the lone remaining TV camera-man in his Jeep. Grand Turk's south beach was wild and deserted, a prime place for beachcombing. Thick seaweed clotted the water, and the ocean waves beat in just as they did a million years ago. Ten meters out from shore, out where the shallows ended, lay the three bloated corpses.

Gulls and terns whirled above them, tearing off strips of the strange flesh. One of the hulks had swung around so that its tail rested on dry sand. A pack of wild dogs gathered there to fight over the meat. The Leutians' huge purple eyes glared up at the sky like jewels in toppled idols' heads. The smell was wild and sweet, smoke and ambergris.

"Oh," cried Jane, "Oh, Morris, why did they leave home?"

Morris was looking up and down the beach with interest. He and Jane had never been here yet. He leaned over to examine a blue glass sphere, a fishing-float washed from who knows where.

"Why?" repeated Jane. "Why did they come?"

Hefting the float, Morris finally met her eyes. "They wanted to get away from the Joke. They wanted intellectual adventure."

"But what is it, Morris? What is the Joke?"

"The code numbers for their library. Their library is coded up as an endless sequence of digits, right?"

"So?"

"Well it just happens ..." Morris held up the glass sphere. "You know what pi is, don't you, Jane? Pi is the ratio of a circle's circumference to its diameter, right? In decimals, pi starts out 3.14159265358979. There's plenty of simple programs to generate the rest of the digits."

"Three, one, four. Wasn't that ..."

"You got it, Jane. You've got the Joke. The library of all Leutian knowledge is coded up by the decimal expansion of pi. There's no getting rid of it."

Half happy, half sad, they stood there, looking out past the gulls and dogs, out past the Leutians, out to the living sea. Beyond that lay the sky --- so big, so small.

---End---