

Lollipop and the Tar Baby

Blue Champagne, #1

by John Varley, 1947-

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„Zzzzello. Zzz. Hello. Hello.“ Someone was speaking to Xanthia from the end of a ten-kilometer metal pipe, shouting to be heard across a roomful of gongs and cymbals being knocked over by angry giant bees. She had never heard such interference.

„Hello?“ she repeated. „What are you doing on my wavelength?“

„Hello.“ The interference was still there, but the voice was slightly more distinct. „Wavelength. Searching, searching wavelength... get best reception with... Hello? Listening?“

„Yes, I’m listening. You’re talking over... My radio isn’t even...“ She banged the radio panel with her palm in the ancient ritual humans employ when their creations are being balky. „My goddamn radio isn’t even on. Did you know that?“ It was a relief to feel anger boiling up inside her. Anything was preferable to feeling lost and silly.

„Not necessary.“

„What do you mean, not—who are you?“

„Who. Having... I'm, pronoun, yes, I'm having difficulty. Bear with. Me? Yes, pronoun. Bear with me. I'm not who. What. What am I?“

„All right. What are you?“

„Spacetime phenomenon. I'm gravity and causality-sink. Black hole.“

Xanthia did not need black holes explained to her. She had spent her entire eighteen years hunting them, along with her clone-sister, Zoetrope. But she was not used to having them talk to her.

„Assuming for the moment that you really are a black hole,“ she said, beginning to wonder if this might be some elaborate trick played on her by Zoe, „just taking that as a tentative hypothesis—how are you able to talk to me?“

There was a sound like an attitude thruster going off, a rumbling pop. It was repeated.

„I manipulate spacetime framework... no, please hold line... the line. I manipulate the spacetime framework with controlled gravity waves projected in narrow... a narrow cone. I direct at the speaker in your radio. You hear. Me.“

„What was that again?“ It sounded like a lot of crap to her.

„I elaborate. I will elaborate. I cut through space itself, through—hold the line, hold the line, reference.“ There was a sound like a tape reeling rapidly through playback heads. „This is the BBC,“ said a voice that was recognizably human, but blurred by static. The tape whirred again, „gust the third, in the year of our Lord nineteen fifty-seven. Today in—“ Once again the tape hunted.

„...chelson-Morley experiment disproved the existence of the ether, by ingeniously arranging a rotating prism—“ Then the metallic voice was back.

„Ether. I cut through space itself, through a—hold the line.“ This time the process was shorter. She heard a fragment of what sounded like a video adventure serial. „Through a spacewarp made through the ductile etheric continuum—“

„Hold on there. That's not what you said before.“

„I was elaborating.“

„Go on. Wait, what were you doing? With that tape business?“

The voice paused, and when the answer came the line had cleared up quite a bit. But the voice still didn't sound human. Computer?

„I am not used to speech. No need for it. But I have learned your language by listening to radio transmissions. I speak to you through use of indeterminate statistical concatenations. Gravity waves and probability, which is not the same thing in a causality singularity, enables a nonrational event to take place.“

„Zoe, this is really you, isn't it?“

Xanthia was only eighteen Earth-years old, on her first long orbit into the space beyond Pluto, the huge cometary zone where space is truly flat. Her whole life had been devoted to learning how to find and capture black holes, but one didn't come across them very often. Xanthia had been born a year after the beginning of the voyage and had another year to go before the end of it. In her whole life she had seen and talked to only one other human being, and that was Zoe, who was one hundred and thirty-five years old and her identical twin.

Their home was the SHIRLEY TEMPLE, a fifteen-thousand-tonne fusion-drive ship registered out of Lowell, Pluto. Zoe owned SHIRLEY free and clear; on her first trip, many years ago, she had found a scale-five hole and had become instantly rich. Most hole hunters were not so lucky.

Zoe was also unusual in that she seemed to thrive on solitude. Most hunters who made a strike settled down to live in comfort, buy a large company or put the money into safe investments and live off the interest. They were unwilling or unable to face another twenty years alone. Zoe had gone out again, and a third time after the second trip had proved fruitless. She had found a hole on her third trip, and was now almost through her fifth.

But for some reason she had never adequately explained to Xanthia, she had wanted a companion this time. And what better company than herself? With the medical facilities aboard Shirley she had grown a copy of herself and raised the little girl as her daughter.

Xanthia squirmed around in the control cabin of THE GOOD SHIP LOLLIPOP, stuck her head through the hatch leading to the aft exercise room, and found nothing. What she had expected, she didn't know.

Now she crouched in midair with a screwdriver, attacking the service panels that protected the radio assembly.

„What are you doing by yourself?“ the voice asked.

„Why don't you tell me, Zoe?“ she said, lifting the panel off and tossing it angrily to one side. She peered into the gloomy interior, wrinkling her nose at the smell of oil and paraffin. She shone her pencil-beam into the space, flicking it from one component to the next, all as familiar to her as neighborhood corridors would be to a planet-born child. There was nothing out of place, nothing that shouldn't be there. Most of it was sealed into plastic blocks to prevent moisture or dust from getting to critical circuits. There were no signs of tampering.

„I am failing to communicate. I am not your mother, I am a gravity and causality—“

„She's not my mother,“ Xanthia snapped.

„My records show that she would dispute you.“

Xanthia didn't like the way the voice said that. But she was admitting to herself that there was no way Zoe could have set this up. That left her with the alternative: she really was talking to a black hole.

„She's not my mother,“ Xanthia repeated. „And if you've been listening in, you know why I'm out here in a lifeboat. So why do you ask?“

„I wish to help you. I have heard tension building between the two of you these last years. You are growing up.“

Xanthia settled back in the control chair. Her head did not feel so good.

Hole hunting was a delicate economic balance, a tightrope walked between the needs of survival and the limitations of mass. The initial investment was tremendous and the return was undependable, so the potential hole hunter had to have a line to a source of speculative credit or be independently wealthy.

No consortium or corporation had been able to turn a profit at the business by going at it in a big way. The government of Pluto maintained a monopoly on the use of one-way robot probes, but they had found over the years that when a probe succeeded in finding a hole, a race usually developed to see who would reach it and claim it first. Ships sent after such holes had a way of disappearing in the resulting fights, far from law and order.

The demand for holes was so great that an economic niche remained which was filled by the solitary prospector, backed by people with tax write-offs to gain. Prospectors had a ninety percent bankruptcy rate. But as with gold and

oil in earlier days, the potential profits were huge, so there was never a lack of speculators.

Hole hunters would depart Pluto and accelerate to the limits of engine power, then coast for ten to fifteen years, keeping an eye on the mass detector. Sometimes they would be half a light-year from Sol before they had to decelerate and turn around. Less mass equalled more range, so the solitary hunter was the rule.

Teaming of ships had been tried, but teams that discovered a hole seldom came back together. One of them tended to have an accident. Hole hunters were a greedy lot, self-centered and self-sufficient.

Equipment had to be reliable. Replacement parts were costly in terms of mass, so the hole hunter had to make an agonizing choice with each item. Would it be better to leave it behind and chance a possibly fatal failure, or take it along, decreasing the range, and maybe miss the glory hole that is sure to be lurking just one more AU away? Hole hunters learned to be handy at repairing, juryrigging, and bashing, because in twenty years even fail-safe triplicates can be on their last legs.

Zoe had sweated over her faulty mass detector before she admitted it was beyond her skills. Her primary detector had failed ten years into the voyage, and the second one had begun to act up six years later. She tried to put together one functioning detector with parts cannibalized from both. She nursed it along for a year with the equivalents of bobby pins and bubblegum. It was hopeless.

But SHIRLEY TEMPLE was a palace among prospecting ships. Having found two holes in her career, Zoe had her own money. She had stocked spare parts, beefed up the drive, even included that incredible luxury, a lifeboat.

The lifeboat was sheer extravagance, except for one thing. It had a mass detector as part of its astrogational equipment. She had bought it mainly for that reason, since it had only an eighteen-month range and would be useless except at the beginning and end of the trip, when they were close to Pluto. It made extensive use of plug-in components, sealed in plastic to prevent tampering or accidents caused by inexperienced passengers. The mass detector on board did not have the range or accuracy of the one on SHIRLEY. It could be removed or replaced, but not recalibrated.

They had begun a series of three-month loops out from the mother ship. Xanthia had flown most of them earlier, when Zoe did not trust her to run SHIRLEY. Later they had alternated.

„And that’s what I’m doing out here by myself,“ Xanthia said. „I have to get out beyond ten million kilometers from Shirley so its mass doesn’t affect the detector. My instrument is calibrated to ignore only the mass of this ship, not SHIRLEY. I stay out here for three months, which is a reasonably safe time for the life systems on LOLLIPOP, and time to get pretty lonely. Then back for refueling and supplying.“

„The LOLLIPOP?“

Xanthia blushed. „Well, I named this lifeboat that, after I started spending so much time on it. We have a tape of Shirley Temple in the library, and she sang this song, see—“

„Yes, I’ve heard it. I’ve been listening to radio for a very long time. So you no longer believe this is a trick by your mother?“

„She’s not...“ Then she realized she had referred to Zoe in the third person again.

„I don’t know what to think,“ she said, miserably. „Why are you doing this?“

„I sense that you are still confused. You’d like some proof that I am what I say I am. Since you’ll think of it in a minute, I might as well ask you this question. Why do you suppose I haven’t yet registered on your mass detector?“

Xanthia jerked in her seat, then was brought up short by the straps. It was true, there was not the slightest wiggle on the dials of the detector.

„All right, why haven’t you?“ She felt a sinking sensation. She was sure the punchline came now, after she’d shot off her mouth about LOLLIPOP—her secret from Zoe—and made such a point of the fact that Zoe was not her mother. It was her own private rebellion, one that she had not had the nerve to face Zoe with. Now she’s going to reveal herself and tell me how she did it, and I’ll feel like a fool, she thought.

„It’s simple,“ the voice said. „You weren’t in range of me yet. But now you are. Take a look.“

The needles were dancing, giving the reading of a scale-seven hole. A scale seven would mass about a tenth as much as the asteroid Ceres.

„Mommy, what is a black hole?“

The little girl was seven years old. One day she would call herself Xanthia, but she had not yet felt the need for a name and her mother had not seen fit to give her one. Zoe reasoned that you needed two of something before you needed names. There was only one other person on Shirley. There was no possible confusion. When the girl thought about it at all, she assumed her name must be Hey, or Darling.

She was a small child, as Zoe had been. She was recapitulating the growth Zoe had already been through a hundred years ago. Though she didn’t know it, she was pretty: dark eyes with an oriental fold, dark skin, and kinky blonde hair. She was a genetic mix of Chinese and Negro, with dabs of other races thrown in for seasoning.

„I’ve tried to explain that before,“ Zoe said. „You don’t have the math for it yet. I’ll get you started on spacetime equations, then in about a year you’ll be able to understand.“

„But I want to know now.“ Black holes were a problem for the child. From her earliest memories the two of them had done nothing but hunt them, yet they never found one. She’d been doing a lot of reading—there was little else to do—and was wondering if they might inhabit the same category where she had tentatively placed Santa Claus and leprechauns.

„If I try again, will you go to sleep?“

„I promise.“

So Zoe launched into her story about the Big Bang, the time in the long-ago when little black holes could be formed.

„As far as we can tell, all the little black holes like the ones we hunt were made in that time.“

„Nowadays other holes can be formed by the collapse of very large stars. When the fires burn low and the pressures that are trying to blow the star apart begin to fade, gravity takes over and starts to pull the star in on itself.“ Zoe waved her hands in the air, forming cups to show bending space, flailing out to indicate pressures of fusion. These explanations were almost as difficult for her

as stories of sex had been for earlier generations. The truth was that she was no relativist and didn't really grasp the slightly incredible premises behind black-hole theory. She suspected that no one could really visualize one, and if you can't do that, where are you? But she was practical enough not to worry about it.

„And what's gravity? I forgot.“ The child was rubbing her eyes to stay awake. She struggled to understand but already knew she would miss the point yet another time.

„Gravity is the thing that holds the universe together. The glue, or the rivets. It pulls everything toward everything else, and it takes energy to fight it and overcome it. It feels like when we boost the ship, remember I pointed that out to you?“

„Like when everything wants to move in the same direction?“

„That's right. So we have to be careful, because we don't think about it much. We have to worry about where things are because when we boost, everything will head for the stern. People on planets have to worry about that all the time. They have to put something strong between themselves and the center of the planet, or they'll go down.“

„Down.“ The girl mused over that word, one that had been giving her trouble as long as she could remember, and thought she might finally have understood it. She had seen pictures of places where down was always the same direction, and they were strange to the eye. They were full of tables to put things on, chairs to sit in, and funny containers with no tops. Five of the six walls of rooms on planets could hardly be used at all. One, the „floor“, was called on to take all the use.

„So they use their legs to fight gravity with?“ She was yawning now.

„Yes. You've seen pictures of the people with the funny legs. They're not so funny when you're in gravity. Those flat things on the ends are called feet. If they had peds like us, they wouldn't be able to walk so good. They always have to have one foot touching the floor, or they'd fall toward the surface of the planet.“

Zoe tightened the strap that held the child to her bunk, and fastened the velcro patch on the blanket to the side of the sheet, tucking her in. Kids needed a warm, snug place to sleep. Zoe preferred to float free in her own bedroom, tucked into a fetal position and drifting.

„G'night, Mommy.“

„Good night. You get some sleep, and don't worry about black holes.“

But the child dreamed of them, as she often did. They kept tugging at her, and she would wake breathing hard and convinced that she was going to fall into the wall in front of her.

„You don't mean it? I'm rich!“

Xanthia looked away from the screen. It was no good pointing out that Zoe had always spoken of the trip as a partnership. She owned SHIRLEY and LOLLIPOP.

„Well, you too, of course. Don't think you won't be getting a real big share of the money. I'm going to set you up so well that you'll be able to buy a ship of your own, and raise little copies of yourself if you want to.“

Xanthia was not sure that was her idea of heaven, but said nothing.

„Zoe, there's a problem, and I... well, I was—“ But she was interrupted again by Zoe, who would not hear Xanthia's comment for another thirty seconds.

„The first data is coming over the telemetry channel right now, and I'm feeding it into the computer. Hold on a second while I turn the ship. I'm going to start decelerating in about one minute, based on these figures. You get the refined data to me as soon as you have it.“

There was a brief silence.

„What problem?“

„It's talking to me, Zoe. The hole is talking to me.“

This time the silence was longer than the minute it took the radio signal to make the round trip between ships. Xanthia furtively thumbed the contrast knob, turning her sister-mother down until the screen was blank. She could look at the camera and Zoe wouldn't know the difference.

Damn, damn, she thinks I've flipped. But I had to tell her.

„I'm not sure what you mean.“

„Just what I said. I don't understand it, either. But it's been talking to me for the last hour, and it says the damndest things.“

There was another silence.

„All right. When you get there, don't do anything, repeat, anything, until I arrive. Do you understand?“

„Zoe, I'm not crazy. I'm not.“

Then why am I crying?

„Of course you're not, baby, there's an explanation for this and I'll find out what it is as soon as I get there. You just hang on. My first rough estimate puts me alongside you about three hours after you're stationary relative to the hole.“

SHIRLEY and LOLLIPOP, traveling parallel courses, would both be veering from their straight-line trajectories to reach the hole. But Xanthia was closer to it; Zoe would have to move at a more oblique angle and would be using more fuel. Xanthia thought four hours was more like it.

„I'm signing off,“ Zoe said. „I'll call you back as soon as I'm in the groove.“

Xanthia hit the off button on the radio and furiously unbuckled her seatbelt. Damn Zoe, damn her, damn her, damn her. Just sit tight, she says. I'll be there to explain the unexplainable. It'll be all right.

She knew she should start her deceleration, but there was something she must do first.

She twisted easily in the air, grabbing at braces with all four hands, and dived through the hatch to the only other living space in LOLLIPOP: the exercise area. It was cluttered with equipment that she had neglected to fold into the walls, but she didn't mind; she liked close places. She squirmed through the maze like a fish gliding through coral, until she reached the wall she was looking for. It had been taped over with discarded manual pages, the only paper she could find on LOLLIPOP. She started ripping at the paper, wiping tears from her cheeks with one ped as she worked. Beneath the paper was a mirror.

How to test for sanity? Xanthia had not considered the question; the thing to do had simply presented itself and she had done it. Now she confronted the mirror and searched for... what? Wild eyes? Froth on the lips?

What she saw was her mother.

Xanthia's life had been a process of growing slowly into the mold Zoe represented. She had known her pug nose would eventually turn down. She had known what baby fat would melt away. Her breasts had grown just into the small cones she knew from her mother's body and no farther.

She hated looking in mirrors.

Xanthia and Zoe were small women. Their most striking feature was the frizzy dandelion of yellow hair, lighter than their bodies. When the time had come for naming, the young clone had almost opted for Dandelion until she came upon the word xanthic in a dictionary. The radio call-letters for LOLLIPOP happened to be X-A-N, and the word was too good to resist. She knew, too, that Orientals were thought of as having yellow skin, though she could not see why.

Why had she come here, of all places? She strained toward the mirror, fighting her repulsion, searching her face for signs of insanity. The narrow eyes were a little puffy, and as deep and expressionless as ever. She put her hands to the glass, startled in the silence to hear the multiple clicks as the long nails just missed touching the ones on the other side. She was always forgetting to trim them.

Sometimes, in mirrors, she knew she was not seeing herself. She could twitch her mouth, and the image would not move. She could smile, and the image would frown. It had been happening for two years, as her body put the finishing touches on its eighteen-year process of duplicating Zoe. She had not spoken of it, because it scared her.

„And this is where I come to see if I'm sane,“ she said aloud, noting that the lips in the mirror did not move. „Is she going to start talking to me now?“ She waved her arms wildly, and so did Zoe in the mirror. At least it wasn't that bad yet; it was only the details that failed to match: the small movements, and especially the facial expressions. Zoe was inspecting her dispassionately and did not seem to like what she saw. That small curl at the edge of the mouth, the almost brutal narrowing of the eyes...

Xanthia clapped her hands over her face, then peeked out through the fingers. Zoe was peeking out, too. Xanthia began rounding up the drifting scraps of paper and walling her twin in again with new bits of tape.

The beast with two backs and legs at each end writhed, came apart, and resolved into Xanthia and Zoe, drifting, breathing hard. They caromed off the walls like monkeys, giving up their energy, gradually getting breath back under control. Golden, wet hair and sweaty skin brushed against each other again and again as they came to rest.

Now the twins floated in the middle of the darkened bedroom. Zoe was already asleep, tumbling slowly with that total looseness possible only in free fall. Her leg rubbed against Xanthia's belly and her relative motion stopped. The leg was moist. The room was close, thick with the smell of passion.

The recirculators whined quietly as they labored to clear the air.

Pushing one finger gently against Zoe's ankle, Xanthia turned her until they were face to face. Frizzy blonde hair tickled her nose, and she felt warm breath on her mouth.

Why can't it always be like this?

„You're not my mother,“ she whispered. Zoe had no reaction to this heresy. „You're not.“

Only in the last year had Zoe admitted the relationship was much closer. Xanthia was now fifteen.

And what was different? Something, there had to be something beyond the mere knowledge that they were not mother and child. There was a new quality in their relationship, growing as they came to the end of the voyage. Xanthia

would look into those eyes where she had seen love and now see only blankness, coldness.

„Oriental inscrutability?“ she asked herself, half-seriously. She knew she was hopelessly unsophisticated. She had spent her life in a society of two. The only other person she knew had her own face. But she had thought she knew Zoe. Now she felt less confident with every glance into Zoe's face and every kilometer passed on the way to Pluto.

Pluto.

Her thoughts turned gratefully away from immediate problems and toward that unimaginable place.

She would be there in only four more years. The cultural adjustments she would have to make were staggering. Thinking about that, she felt a sensation in her chest that she guessed was her heart leaping in anticipation. That's what happened to characters in tapes when they got excited, anyway.

Their hearts were forever leaping, thudding, aching, or skipping beats.

She pushed away from Zoe and drifted slowly to the viewport. Her old friends were all out there, the only friends she had ever known, the stars. She greeted them all one by one, reciting childhood mnemonic riddles and rhymes like bedtime prayers.

It was a funny thought that the view from her window would terrify many of those strangers she was going to meet on Pluto. She'd read that many tunnel-raised people could not stand open spaces. What it was that scared them, she could not understand. The things that scared her were crowds, gravity, males, and mirrors.

„Oh, damn. Damn! I'm going to be just hopeless. Poor little idiot girl from the sticks, visiting the big city.“ She brooded for a time on all the thousands of things she had never done, from swimming in the gigantic underground disneylands to seducing a boy.

„To being a boy.“ It had been the source of their first big argument. When Xanthia had reached adolescence, the time when children want to begin experimenting, she had learned from Zoe that Shirley Temple did not carry the medical equipment for sex changes. She was doomed to spend her critical formative years as a sexual deviate, a unisex.

„It'll stunt me forever,“ she had protested. She had been reading a lot of pop psychology at the time.

„Nonsense,“ Zoe had responded, hard-pressed to explain why she had not stocked a viro-genetic imprinter and the companion Y-alyzer. Which, as Xanthia pointed out, any self-respecting home surgery kit should have.

„The human race got along for millions of years without sex changing,“ Zoe had said. „Even after the Invasion. We were a highly technological race for hundreds of years before changing. Billions of people lived and died in the same sex.“

„Yeah, and look what they were like.“

Now, for another of what seemed like an endless series of nights, sleep was eluding her. There was the worry of Pluto, and the worry of Zoe and her strange behavior, and no way to explain anything in her small universe which had become unbearably complicated in the last years.

I wonder what it would be like with a man?

Three hours ago Xanthia had brought Lollipop to a careful rendezvous with the point in space her instruments indicated contained a black hole. She had

long since understood that even if she ever found one she would never see it, but she could not restrain herself from squinting into the starfield for some evidence. It was silly; though the hole massed ten to the fifteenth tonnes (the original estimate had been off one order of magnitude) it was still only a fraction of a millimeter in diameter.

She was staying a good safe hundred kilometers from it. Still, you ought to be able to sense something like that, you ought to be able to feel it.

It was no use. This hunk of space looked exactly like any other.

„There is a point I would like explained,“ the hole said. „What will be done with me after you have captured me?“

The question surprised her. She still had not got around to thinking of the voice as anything but some annoying aberration like her face in the mirror. How was she supposed to deal with it? Could she admit to herself that it existed, that it might even have feelings?

„I guess we'll just mark you, in the computer, that is. You're too big for us to haul back to Pluto. So we'll hang around you for a week or so, refining your trajectory until we know precisely where you're going to be, then we'll leave you. We'll make some maneuvers on the way in so no one could retrace our path and find out where you are, because they'll know we found a big one when we get back.“

„How will they know that?“

„Because we'll be renting... well, Zoe will be chartering one of those big monster tugs, and she'll come out here and put a charge on you and tow you... say, how do you feel about this?“

„Are you concerned with the answer?“

The more Xanthia thought about it, the less she liked it. If she really was not hallucinating this experience, then she was contemplating the capture and imprisonment of a sentient being. An innocent sentient being who had been wandering around the edge of the system, suddenly to find him or herself...

„Do you have a sex?“

„No.“

„All right, I guess I've been kind of short with you. It's just because you did startle me, and I didn't expect it, and it was all a little alarming.“

The hole said nothing.

„You're a strange sort of person, or whatever,“ she said.

Again there was a silence.

„Why don't you tell me more about yourself? What's it like being a black hole, and all that?“ She still couldn't fight down the ridiculous feeling those words gave her.

„I live much as you do, from day to day. I travel from star to star, taking about ten million years for the trip. Upon arrival, I plunge through the core of the star. I do this as often as is necessary, then I depart by a slingshot maneuver through the heart of a massive planet. The Tunguska Meteorite, which hit Siberia in 1908, was a black hole gaining momentum on its way to Jupiter, where it could get the added push needed for solar escape velocity.“

One thing was bothering Xanthia. „What do you mean, *as often as is necessary*?“

„Usually five or six thousand passes is sufficient.“

„No, no. What I meant is why is it necessary? What do you get out of it?“

„Mass,“ the hole said. „I need to replenish my mass. The Relativity Laws state that nothing can escape from a black hole, but the Quantum Laws, specifically the Heisenberg Uncertainty Principle, state that below a certain radius the position of a particle cannot be determined. I lose mass constantly through tunneling. It is not all wasted, as I am able to control the direction and form of the escaping mass, and to use the energy that results to perform functions that your present-day physics says are impossible.“

„Such as?“ Xanthia didn't know why, but she was getting nervous.

„I can exchange inertia for gravity, and create energy in a variety of ways.“

„So you can move yourself.“

„Slowly.“

„And you eat...“

„Anything.“

Xanthia felt a sudden panic, but she didn't know what was wrong. She glanced down at her instruments and felt her hair prickle from her wrists and ankles to the nape of her neck.

The hole was ten kilometers closer than it had been.

„How could you do that to me?“ Xanthia raged. „I trusted you, and that's how you repaid me, by trying to sneak up on me and... and—“

„It was not intentional. I speak to you by means of controlled gravity waves. To speak to you at all, it is necessary to generate an attractive force between us. You were never in any danger.“

„I don't believe that,“ Xanthia said angrily. „I think you're doubletalking me. I don't think gravity works like that, and I don't think you really tried very hard to tell me how you talk to me, back when we first started.“ It occurred to her now, also, that the hole was speaking much more fluently than in the beginning. Either it was a very fast learner, or that had been intentional.

The hole paused. „This is true,“ it said.

She pressed her advantage. „Then why did you do it?“

„It was a reflex, like blinking in a bright light, or drawing one's hand back from a fire. When I sense matter, I am attracted to it.“

„The proper cliché would be *like a moth to a flame*. But you're not a moth, and I'm not a flame. I don't believe you. I think you could have stopped yourself if you wanted to.“

Again the hole hesitated. „You are correct.“

„So you were trying to...?“

„I was trying to eat you.“

„Just like that? Eat someone you've been having a conversation with?“

„Matter is matter,“ the hole said, and Xanthia thought she detected a defensive note in its voice.

„What do you think of what I said we're going to do with you? You were going to tell me, but we got off on that story about where you came from.“

„As I understand it, you propose to return for me. I will be towed to near Pluto's orbit, sold, and eventually come to rest in the heart of an orbital power station, where your species will feed matter into my gravity well, extracting power cheaply from the gravitational collapse.“

„Yeah, that's pretty much it.“

„It sounds ideal. My life is struggle. Failing to find matter to consume would mean loss of mass until I am smaller than an atomic nucleus. The loss rate

would increase exponentially, and my universe would disappear. I do not know what would happen beyond that point. I have never wished to find out.“

How much could she trust this thing? Could it move very rapidly? She toyed with the idea of backing off still further. The two of them were now motionless relative to each other, but they were both moving slowly away from the location she had given Zoe.

It didn't make sense to think it could move in on her fast. If it could, why hadn't it? Then it could eat her and wait for Zoe. to arrive—Zoe, who was helpless to detect the hole with her broken mass detector.

She should relay the new vectors to Zoe. She tried to calculate where her twin would arrive, but was distracted by the hole speaking.

„I would like to speak to you now of what I initially contacted you for. Listening to Pluto radio, I have become aware of certain facts that you should know, if, as I suspect, you are not already aware of them. Do you know of Clone Control Regulations?“

„No, what are they?“ Again, she was afraid without knowing why.

The genetic statutes, according to the hole, were the soul of simplicity. For three hundred years, people had been living just about forever. It had become necessary to limit the population. Even if everyone had only one child—the Birthright—population would still grow. For a while, clones had been a loophole. No more. Now, only one person had the right to any one set of genes. If two possessed them, one was excess, and was summarily executed.

„Zoe has prior property rights to her genetic code,“ the hole concluded. „This is backed up by a long series of court decisions.“

„So I'm—“

„Excess.“

Zoe met her at the airlock as Xanthia completed the docking maneuver. She was smiling, and Xanthia felt the way she always did when Zoe smiled these days: like a puppy being scratched behind the ears. They kissed, then Zoe held her at arm's length.

„Let me look at you. Can it only be three months? You've grown, my baby.“

Xanthia blushed. „I'm not a baby anymore, Mother.“ But she was happy. Very happy.

„No. I should say not.“ She touched one of Xanthia's breasts, then turned her around slowly. „I should say not. Putting on a little weight in the hips, aren't we?“

„And the bosom. One inch while I was gone. I'm almost there.“ And it was true. At sixteen, the young clone was almost a woman.

„Almost there,“ Zoe repeated, and glanced away from her twin. But she hugged her again, and they kissed, and began to laugh as the tension was released.

They made love, not once and then to bed, but many times, feasting on each other. One of them remarked—Xanthia could not remember who because it seemed so accurate that either of them might have said it—that the only good thing about these three-month separations was the homecoming.

„You did very well,“ Zoe said, floating in the darkness and sweet exhausted atmosphere of their bedroom many hours later. „You handled the lifeboat like it was part of your body. I watched the docking. I wanted to see you make a mistake, I think, so I'd know I still have something on you.“

Her teeth showed in the starlight, rows of lights below the sparkles of her eyes and the great dim blossom of her hair.

„Ah, it wasn't that hard,“ Xanthia said, delighted, knowing full well that it was that hard.

„Well, I'm going to let you handle it again the next swing. From now on, you can think of the lifeboat as your ship. You're the skipper.“

It didn't seem like the time to tell her that she already thought of it that way. Nor that she had christened the ship.

Zoe laughed quietly. Xanthia looked at her.

„I remember the day I first boarded my own ship,“ she said. „It was a big day for me. My own ship.“

„This is the way to live,“ Xanthia agreed. „Who needs all those people? Just the two of us. And they say hole hunters are crazy. I... wanted to...“ The words stuck in her throat, but Xanthia knew this was the time to get them out, if there ever would be a time. „I don't want to stay too long at Pluto, Mother. I'd like to get right back out here with you.“ There, she'd said it.

Zoe said nothing for a long time.

„We can talk about that later.“

„I love you, Mother,“ Xanthia said, a little too loudly.

„I love you, too, baby,“ Zoe mumbled. „Let's get some sleep, okay?“

She tried to sleep, but it wouldn't happen. What was wrong?

Leaving the darkened room behind her, she drifted through the ship, looking for something she had lost, or was losing, she wasn't sure which. What had happened, after all? Certainly nothing she could put her finger on. She loved her mother, but all she knew was that she was choking on tears.

In the water closet, wrapped in the shower bag with warm water misting around her, she glanced in the mirror.

„Why? Why would she do a thing like that?“

„Loneliness. And insanity. They appear to go together. This is her solution. You are not the first clone she has made.“

She had thought herself beyond shock, but the clarity that simple declarative sentence brought to her mind was explosive. Zoe had always needed the companionship Xanthia provided. She needed a child for diversion in the long, dragging years of a voyage; she needed someone to talk to. Why couldn't she have brought a dog? She saw herself now as a shipboard pet, and felt sick. The local leash laws would necessitate the destruction of the animal before landing. Regrettable, but there it was. Zoe had spent the last year working up the courage to do it.

How many little Xanthias? They might even have chosen that very name; they would have been that much like her. Three, four? She wept for her forgotten sisters. Unless...

„How do I know you're telling me the truth about this? How could she have kept it from me? I've seen tapes of Pluto. I never saw any mention of this.“

„She edited those before you were born. She has been careful. Consider her position: there can be only one of you, but the law does not say which it has to be. With her death, you become legal. If you had known that, what would life have been like in SHIRLEY TEMPLE?“

„I don't believe you. You've got something in mind, I'm sure of it.“

„Ask her when she gets here. But be careful. Think it out, all the way through.“

She had thought it out. She had ignored the last three calls from Zoe while she thought. All the options must be considered, all the possibilities planned for. It was an impossible task; she knew she was far too emotional to think clearly, and there wasn't time to get herself under control.

But she had done what she could. Now The Good Ship LOLLIPOP, outwardly unchanged, was a ship of war.

Zoe came backing in, riding the fusion torch and headed for a point dead in space relative to Xanthia. The fusion drive was too dangerous for SHIRLEY to complete the rendezvous; the rest of the maneuver would be up to LOLLIPOP.

Xanthia watched through the telescope as the drive went off. She could see SHIRLEY clearly on her screen, though the ship was fifty kilometers away.

Her screen lit up again, and there was Zoe. Xanthia turned her own camera on.

„There you are,“ Zoe said. „Why wouldn't you talk to me?“

„I didn't think the time was ripe.“

„Would you like to tell me how come this nonsense about talking black holes? What's gotten into you?“

„Never mind about that. There never was a hole, anyway. I just needed to talk to you about something you forgot to erase from the tape library in the LOL-... in the lifeboat. You were pretty thorough with the tapes in SHIRLEY, but you forgot to take the same care here. I guess you didn't think I'd ever be using it. Tell me, what are Clone Control Regulations?“

The face on the screen was immobile. Or was it a mirror, and was she smiling? Was it herself, or Zoe she watched? Frantically, Xanthia thumbed a switch to put her telescope image on the screen, wiping out the face. Would Zoe try to talk her way out of it? If she did, Xanthia was determined to do nothing at all. There was no way she could check out any lie Zoe might tell her, nothing she could confront Zoe with except a fantastic story from a talking black hole.

Please say something. Take the responsibility out of my hands. She was willing to die, tricked by Zoe's fast talk, rather than accept the hole's word against Zoe's.

But Zoe was acting, not talking, and the response was exactly what the hole had predicted. The attitude control jets were firing, SHIRLEY TEMPLE was pitching and yawing slowly, the nozzles at the stern hunting for a speck in the telescope screen. When the engines were aimed, they would surely be fired, and Xanthia and the whole ship would be vaporized.

But she was ready. Her hands had been poised over the thrust controls. LOLLIPOP had a respectable acceleration, and every gee of it slammed her into the couch as she scooted away from the danger spot.

SHIRLEY's fusion engines fired, and began a deadly hunt. Xanthia could see the thin, incredibly hot stream playing around her as Zoe made finer adjustments in her orientation. She could only evade it for a short time, but that was all she needed.

Then the light went out. She saw her screen flare up as the telescope circuit became overloaded with an immense burst of energy. And it was over. Her radar screen showed nothing at all.

„As I predicted,“ the hole said.

„Why don't you shut up?“ Xanthia sat very still, and trembled.

„I shall, very soon. I did not expect to be thanked. But what you did, you did for yourself.“

„And you, too, you... you ghou! Damn you, damn you to hell.“ She was shouting through her tears.

„Don't think you've fooled me, not completely, anyway. I know what you did, and I know how you did it.“

„Do you?“ The voice was unutterably cool and distant. She could see that now the hole was out of danger, it was rapidly losing interest in her.

„Yes, I do. Don't tell me it was coincidence that when you changed direction it was just enough to be near Zoe when she got here. You had this planned from the start.“

„From much further back than you know,“ the hole said. „I tried to get you both, but it was impossible. The best I could do was take advantage of the situation as it was.“

„Shut up, shut up.“

The hole's voice was changing from the hollow, neutral tones to something that might have issued from a tank of liquid helium. She would never have mistaken it for human.

„What I did, I did for my own benefit. But I saved your life. She was going to try to kill you. I maneuvered her into such a position that, when she tried to turn her fusion drive on you, she was heading into a black hole she was powerless to detect.“

„You used me.“

„You used me. You were going to imprison me in a power station.“

„But you said you wouldn't mind! You said it would be the perfect place.“

„Do you believe that eating is all there is to life? There is more to do in the wide universe than you can even suspect. I am slow. It is easy to catch a hole if your mass detector is functioning: Zoe did it three times. But I am beyond your reach now.“

„What do you mean? What are you going to do? What am I going to do?“ That question hurt so much that Xanthia almost didn't hear the hole's reply.

„I am on my way out. I converted SHIRLEY into energy; I absorbed very little mass from her. I beamed the energy very tightly, and am now on my way out of your system. You will not see me again. You have two options. You can go back to Pluto and tell everyone what happened out here. It would be necessary for scientists to rewrite natural laws if they believed you. It has been done before, but usually with more persuasive evidence. There will be questions asked concerning the fact that no black hole has ever evaded capture, spoken, or changed velocity in the past. You can explain that when a hole has a chance to defend itself, the hole hunter does not survive to tell the story.“

„I will. I will tell them what happened!“ Xanthia was eaten by a horrible doubt. Was it possible there had been a solution to her problem that did not involve Zoe's death? Just how badly had the hole tricked her?

„There is a second possibility,“ the hole went on, relentlessly. „Just what are you doing out here in a lifeboat?“

„What am I... I told you, we had...“ Xanthia stopped. She felt herself choking.

„It would be easy to see you as crazy. You discovered something in LOLLIPOP's library that led you to know you must kill Zoe. This knowledge was too much for you. In defense, you invented me to trick you into doing what you had to do. Look in the mirror and tell me if you think your story will be believed. Look closely, and be honest with yourself.“

She heard the voice laugh for the first time, from down in the bottom of its hole, like a voice from a well. It was an extremely unpleasant sound.

Maybe Zoe had died a month ago, strangled or poisoned or slashed with a knife. Xanthia had been sitting in her lifeboat, catatonic, all that time, and had constructed this episode to justify the murder.

It had been self-defense, which was certainly a good excuse, and a very convenient one.

But she knew. She was sure, as sure as she had ever been of anything, that the hole was out there, that everything had happened as she had seen it happen. She saw the flash again in her mind, the awful flash that had turned Zoe into radiation. But she also knew that the other explanation would haunt her for the rest of her life.

„I advise you to forget it. Go to Pluto, tell everyone that your ship blew up and you escaped and you are Zoe. Take her place in the world, and never, never speak of talking black holes.“

The voice faded from her radio. It did not speak again.

After days of numb despair and more tears and recriminations than she cared to remember, Xanthia did as the hole had predicted. But life on Pluto did not agree with her. There were too many people, and none of them looked very much like her. She stayed long enough to withdraw Zoe's money from the bank and buy a ship, which she named SHIRLEY TEMPLE. It was massive, with power to blast to the stars if necessary. She had left something out there, and she meant to search for it until she found it again.

