

Larry Niven



AT THE BOTTOM OF A HOLE Larry Niven After more than a century of space travel, Man's understanding of his own solar system was nearly complete. So he moved on to industrial development. The next hundred years saw the evolution of a civilization in space. For reasons of economy the Belters concentrated on the wealth of the asteroids. With fusion-driven ships they could have mined

the planets; but their techniques were more universally applicable in free fall and among the falling mountains. Only Mercury was rich enough to attract the Belt miners. For a time Earth was the center of the space industries. But the lifestyles of Belter and flatlander were so different that a split was inevitable. The flatland phobia-the inability to tolerate even an orbital flight-was common on Earth, and remained so. And there were Belters who would never go anywhere near a planet. Between Earth and the Belt there was economic wrestling, but never war. The cultures needed each other. And they were held together by a common bond: the conquest of the stars. The rambots - the unmanned Bussard ramjet probes-were launched during the mid twenty-first century. By 2100 AD, five nearby solar systems held budding colonies: the worlds were jinx, Wunderland, We Made It, Plateau, and Down. None of these worlds was entirely Earthlike. Those who programed the ramrobots had used insufficient imagination. Some results are detailed in this collection. On Earth, three species of cetacean had been recognized as intelligent and admitted to the United Nations. Their lawsuit against the former whaling nations had not been resolved, and in fact never was. The cetaceans enjoyed the legal gymnastics too much ever to end it. Twelve stories below the roof gardens were citrus groves, grazing pastures, and truck farms. They curved out from the base of the hotel in neat little squares, curved out and up, and up, and up and over. Five miles overhead was the fusion sunlight tube, running down the radius of the slightly bulging cylinder that was Farmer's Asteroid. Five miles above the sunlight tube, the sky was a patchwork of small squares, split by a central wedding ring of lake and by tributary rivers, a sky alive with the tiny red glints of self-guided tractors. Lucas Garner was half-daydreaming, letting his eyes rove the solid sky. At the Belt government's invitation he had entered a bubbleworld for the first time, combining a vacation from United Nations business with a chance at a brand new experience -a rare thing for a man seventeen decades old. He found it pleasantly kooky to look up into a curved sky of fused rock and imported topsoil. "There's nothing immoral about smuggling," said Lit Shaeffer. The surface overhead was dotted with hotels, as if the bubbleworld were turning to city. Garner knew it wasn't. Those hotels, and the scattered hotels in the other bubbleworld, served every Belter's occasional need for an Earthlike environment. Belters don't need houses. A Belter's home is the inside of his pressure suit. Garner returned his attention to his host. "You mean smuggling's like picking pockets on Earth?" "That's just what I don't mean," Shaeffer said. The Belter reached into his coverall pocket, pulled out something flat and black, and laid it on the table. "I'll want to play that in a minute. Garner, picking pockets is legal on Earth. Has to be, the way you crowd together. You couldn't enforce a law against picking pockets. In the Belt smuggling is against the law, but it isn't immoral. It's like a flatlander forgetting to feed the parking meter. There's no loss of self-respect. If you get caught you pay the fine and forget it." "Oh." "If a man wants to send his earnings through Ceres, that's up to him. It costs him a straight thirty percent. If he thinks he can get past the goldskins, that too is his choice. But if we catch him we'll confiscate his cargo, and everybody will be laughing at him. Nobody pities an inept smuggler." "Is that what Muller tried to do?" "Yah. He had a valuable cargo, twenty kilos of pure north magnetic poles. The temptation was too much for him. He tried to get past us, and we picked him up on radar. Then he did something stupid. He tried to whip around a hole. "He must have been on course for Luna when we found him. Ceres was behind him with the radar. Our ships were ahead of him, matching course at two gee. His mining ship wouldn't throw more than point five gee, so eventually they'd pull alongside him no matter what he did. Then he noticed Mars was just ahead of him." "The hole." Garner knew enough Belters to have learned a little of their slang. "The very one. His first instinct must have been to change course. Belters learn to avoid gravity wells. A man can get killed half a dozen ways coming too close to a hole. A good autopilot will get him safely around it, or program an in-and-out spin,

or even land him at the bottom, God forbid. But miners don't carry good autopilots. They carry cheap autopilots, and they stay clear of holes." "You're leading up to something," Garner said regretfully. "Business?" "You're too old to fool." Sometimes Garner believed that himself. Sometime between the First World War and the blowing of the second bubbleworld, Garner had learned to read faces as accurately as men read print. Often it saved time-and in Garner's view his time was worth saving. "Go on," he said. "Muller's second thought was to use the hole. An in-and-out spin would change his course more than he could hope to do with the motor. He could time it so Mars would hide him from Ceres whey, he curved out. He could damn near touch the surface, too. Mars's atmosphere is as thin as a flatlander's dreams." "Thanks a lot. Lit, isn't Mars UN property?" "Only because we never wanted it." Then Muller had been trespassing. "Go on. What happened to Muller?" "I'll let him tell it. This is his log." Lit Shaeffer did something to the flat box, and a man's voice spoke. Aril 20, 2112 The sky is flat, the land is flat, and they meet in a circle at infinity. No star shows but the big one, a little bigger than it shows through most of the Belt, but dimmed to red, like the sky. It's the bottom of a hole, and I must have been crazy to risk it. But I 'm here. I got down alive. I didn't expect to, not there at the end. It was one crazy landing. Imagine a universe half of which has been replaced by an ocher Abstraction, too distant and far too big to show meaningful detail, Moving past you at a hell of a clip. A strange, singing sound comes through the walls, like nothing you've ever heard before, like the pound of the wings of the angel of death. The walls are getting \,, -arm. You can hear the thermosystem whining even above the shriek of air whipping around the hull. Then, because you don't have enough problems, the ship shakes itself like a mortally wounded dinosaur. That was my fuel tanks tearing loose. All at once and nothing first, tile four of them sheered their mooring bars and went spinning down ahead of me, cherry red. That faced me with two bad choices. I had to decide fast. If I finished the hyperbola I'd be heading into space on an unknown course with what fuel was left in my inboard cooling tank. My lifiesystem wouldn't keep me alive more than two weeks. There wasn't much chance I could get anywhere in that time, with so little fuel, and I'd seen to, it the goldskins couldn't come to me. But the fuel in the cooling tank would get me down. Even the "flips of Earth use only a little of their fuel getting in and out of their pet gravity well. Most of it gets burned getting them from place to place fast. And Mars is lighter than Earth. But what then? I'd still have two weeks to live. I remembered the old Lacis Solis base, deserted seventy years ago. Surely I could get the old lifiesystems working well enough to support one man. I might even find enough water to turn some into hydrogen by electrolysis. It was a better risk than heading out into nowhere. Right or wrong, I went down. The stars are gone, and the land around me makes no sense. Now I know why they call planet dwellers "flatlanders." I feel like a gnat can a table. I'm sitting here shaking, afraid to step outside. Beneath a red-black sky is a sea of dust punctuated by scattered, badly cast glass ashtrays. The smallest, just outside the port, are a few inches in diameter. The largest are miles across. As I came clown the deep-radar showed me fragments of much larger craters sleep under the dust. The dust is soft and fine, almost like quicksand. I came down like a feather, but the ship is buried to halfway tip the lifiesystem. I set down just beyond the lip of one of the largest craters, the one which houses the ancient flatlander base. From above the base looked I Ike a huge transparent raincoat discarded on the cracked bottom. It's a weird place. But I'll have to go out sometime; how else can I use the base lifiesystem? My Uncle Bat used to tell me stupidity carries the death penalty. I'll go outside tomorrow. April 21, 2112 My clock says it's morning. The Sun's around on the other side of the planet, leaving the sky no longer bloody: It looks almost like space if you remember to look away from gravity, though the stars are dim, as if seen through fogged plastic. A big star has come over the horizon, brightening and dimming like a spinning rock. Must be Phobos, since it came

from the sunset region. I'm going out. LATER: A sort of concave glass shell surrounds the ship where the fusion flame splashed down. The ship's lifesystem, the half that shows above the dust, rests in the center like a frog on a lily pad in Confinement Asteroid. The splashdown shell is all a spiderweb of cracks, but it's firm enough to walk on. Not so the dust. The dust is like thick oil. The moment I stepped onto it I started to sink. I had to swim to where the crater rim slopes out like., _ x. shore of an island. It was hard work. Fortunately the splashdown .,hell reaches to the crater rock at one point, so I won't have to do that again. It's queer, this dust. I doubt you could find its like anywhere in the system. It's meteor debris, condensed from vaporized rock. On Earth dust this fine would be washed down to the sea by rain and turned to sedimentary rock, natural cement. On the moon there would be vacuum cementing, the bugaboo of the Belt's microminiaturization industries. But here, there's just enough "air" to be absorbed by the dust surface . . . to prevent vacuum cementing . . . and not nearly enough to stop a meteorite. Result: it won't cement, nohow. So it behaves like viscous fluid. Probably the only rigid surfaces are the meteor craters and mountain ranges. Going up the crater lip was rough. It's all cracked, tilted blocks of volcanic glass. The edges are almost sharp. This crater must be geologically recent. At the bottom, half-submerged in a shallow lake of dust, is bubbletown. I can walk okay in this gravity; it's something less than my ship's gee max. But I almost broke my ankles a couple of times getting down over those tilted, slippery, dust-covered blocks. As a whole the crater is a smashed ashtray pieced loosely together Like an impromptu jigsaw puzzle. The bubble covers the base like a deflated tent, with the airmaking machinery just outside. The airmaker is in a great cube of black I Metal, blackened by seventy years of Martian atmosphere. It's huge. It must have been a bitch to lift. How they moved that mass from Earth to Mars with only chemical and ion rockets, I'll never know. ,-\.ISO why? What was on Mars that they wanted? If ever there was a useless world, this is it. It's not close to Earth, like the moon. The gravity's inconveniently high. There are no natural : resources. Lose your suit pressure and it'd be a race against t-. me, whether you died of blowout or of red fuming nitrogen dioxide eating your lungs. The wells? Somewhere on Mars there are wells. The first expedition found one in the 1990s. A mummified something was nearby. It exploded when it touched water, so nobody ever knew more about it, including just how old it was. Did they expect to find live Martians? If so, so what? Outside the bubble are two two-seater Marsbuggies. They have an enormous wheelbase and wide, broad wheels, probably wide enough to keep the buggy above the dust while it's moving. You'd have to be careful where you stopped. I won't be using them anyway. The airmaker will work, I think, if I can connect it to the ship's power system. Its batteries are drained, and its fusion plant must be mainly lead by now. Thousands of tons of breathing-air are all about me, tied up in nitrogen dioxide, NO(subtext)2. The airmaker will release oxygen and nitrogen, and will also pick up what little water vapor there is. I'll pull hydrogen out of the water for fuel. But can I get the power? There may be cables in the base. It's for sure I can't call for help. My antennas burned off coming down. I looked through the bubble and saw a body, male, a few feet away. He'd died of blowout. Odds are I'll find a rip in the bubble when I get around to looking. Wonder what happened here? April 22, 2112 I went to sleep at first sunlight. Mars's rotation is just a fraction longer than a ship's day, which is convenient. I can work when the stars show and the dust doesn't, and that'll keep me sane. But I've had breakfast and done clean-ship chores, and still it'll be two hours before sundown. Am I a coward? I can't go out there in the light. Near the sun the sky is like fresh blood, tinged by nitrogen dioxide. On the other side it's almost black. Not a sign of a star. The desert is flat, broken only by craters and by a regular pattern of crescent dunes so shallow that they can be seen only near the horizon. Something like a straight lunar mountain range angles away into the desert; but it's terribly eroded, like something that died a long time ago. Could it be the tilted lip of an

ancient asteroid crater? The Gods must have hated Mars, to put it right in the middle of the Belt. This shattered, pulverized land is like a symbol of age and corruption. Erosion seems to live only at the bottom of holes. LATER: Almost dawn. I can see red washing out the stars. After sundown I entered the base through the airlock, which still stands. Ten bodies are sprawled in what must have been the village square. Another was halfway into a suit in the administration building, and the twelfth was a few feet from the bubble wall, where I save him yesterday. A dozen bodies, and they all died of blowout: explosive decompression if you want to be technical. The circular area under the bubble is only half full of buildings. The rest is a carefully fused sand floor. Other buildings lie in stacks of walls, ceilings, floors, ready to be put up. I suppose the base personnel expected others from Earth. One of the buildings held electrical wiring. I've hooked a cable to the airmaker battery, and was able to adapt the other end to the contact on my fusion plant. There's a lot of sparking, but the airmaker works. I'm letting it fill the stack of empty O-tanks I found against a pile of walls. The nitrogen dioxide is draining into the bubble. I know now what happened to the flatlander base. Bubbletown died by murder. No question of it. When nitrogen dioxide started pouring into the bubble I saw dust blowing out from the edge of town. There was a rip. It was sharp-edged, as if cut by a knife. I can mend it if I can find a bubble repair kit. There must be tins somewhere. Meanwhile I'm getting oxygen and water. The oxygen tanks I can empty into the lifiesystem as they fill. The ship takes it back out of the air and stores it. If I can find a way to get the water here I can just pour it into the john. Can I carry it here in the O-tanks? April 23, 2112 Dawn. The administration building is also a tape library. They kept a record of the base doings, very complete and so far very boring. It reads like ship's log sounds, but more gossipy and more detailed. Later I'll read it all the way through. I found some bubble plastic and contact cement and used them to patch the rip. The bubble still wouldn't inflate. So I went out and found two more rips just like the first. I patched them and looked for more. Found three. When I got them fixed it was nearly sunup. The O-tanks hold water, but I have to heat them to boil the water to get it out. That's hard work. Question: is it easier to do that or to repair the dome and do my electrolysis inside? How many rips are there? I've found six. So how many killers were there? No more than three. I've accounted for twelve inside, and according to the log there were fifteen in the second expedition. No sign of the goldskins. If they'd guessed I was here they'd have come by now. With several months' worth of air in my lifiesystem, I'll be home free once I get out of this hole. April 24, 2112 Two more rips in the bubble, a total of eight. They're about twenty feet apart, evenly spaced around the transparent plastic fabric. It looks like at least one man ran around the dome slashing at the fabric until it wasn't taut enough to cut. I mended the rips. When I left the bubble it was swelling with air. I'm halfway through the town log, and nobody's seen a Martian vet. I was right, that's what they came for. Thus far they've found three more wells. Like the first, these are made of cut diamond building blocks, fairly large, very well worn, probably tens or hundreds of thousands of years old. Two of the four have dirty nitrogen dioxide at the bottoms. The others are dry. Each of the four has a "dedication block" covered with queer, partially eroded writing. From a partial analysis of the script, it seems that the wells were actually crematoriums: a deceased Martian would explode when he touched water in the nitrogen dioxide at the bottom. It figures. Martians wouldn't have fire. I still wonder why they came, the men of the base. What could Martians do for them? If they wanted someone to talk to, someone not human, there were dolphins and killer whales right in their own oceans. The trouble they took! And the risks! Just to get from one hole to another,. Aril 24, 2112 Strange. For the first time since the landing, I did not return to the ship when the sky turned light. When I did start back the sun was up. It showed as I went over the rim. I stood there between a pair of sharp obsidian teeth, staring down at my ship. It looked like the entrance to Confinement

Asteroid. Confinement is where they take women when they get pregnant: a bubble of rock ten miles long and five miles across, spinning on its axis to produce one gee of outward pull. The children have to stay there for the first year, and the law says they have to spend a month out of each year there until they're fifteen. I've a wife named Letty waiting there now, waiting for the year to pass so she can leave with our daughter Janice. Most miners, they pay the fatherhood fee in one lump sum if they've got the money; it's about sixty thousand commercials, so some have to pay in installments. and sometimes it's the woman who pays; but when they pay they forget about it and leave the women to raise the kids. But I've been thinking about Letty. And Janice. The monopoles in my hold would buy gifts for Letty, and raise Janice with enough left over so she could do some traveling, and still I'd have enough commercials left for more children. I'd have them with Letty, if she'd agree. I think she would. How'd I get onto that? As I was saying before I was so rudely interrupted, my ship looks like the entrance to Confinement-or to Farmer's Asteroid, or any underground city. With the fuel tanks gone there's nothing left but the drive and the lifiesystem and a small magnetically insulated cargo hold. Only the top half of the lifiesystem shows above the sea of dust, a blunt steel bubble with a thick door, not streamlined like a ship of Earth. The heavy drive tube -tangs from the bottom, far beneath the dust. I wonder how deep the dust is. The splashdown shell will leave a rim of congealed glass around my lifiesystem. I wonder if it'll affect my takeoff? Anyway, I'm losing my fear of daylight. Yesterday 1. thought the bubble was inflating. It wasn't. More rips were hidden under the pool of dust, and when the pressure built up the dust blew away and down went the bubble. I repaired four rips today before sunlight caught me. One man couldn't have made all those slashes. That fabric's tough. Would a knife go through it? Or would you need something else, like an electric carving knife or a laser? Aril 2 5, 2112 I spent most of today reading the bubbletown log. There was a murder. Tensions among fifteen men with no women around can grow pretty fierce. One day a man named Carter killed a man named Harness, then ran for his life in one of the Marsbuggies, chased by the victim's brother. Neither came back alive. They must have run out of air. Three dead out of fifteen leaves twelve. Since I counted twelve bodies, who's left to slash the dome? Martians? In the entire log I find no mention of a Martian being seen. Bubbletown never ran across any Martian artifact, except the wells. If there are Martians, where are they? Where are their cities? Mars was subjected to all kinds of orbital reconnaissance in the early days. Even a city as small as bubbletown would have been seen. Maybe there are no cities. But where do the diamond blocks come from? Diamonds as big as the well material don't, form naturally. It takes a respectable technology to make them that big. Which implies cities-I think. That mummy. Could it have been hundreds of thousands of years old? A man couldn't last that long on Mars, because the water in his body would react with the nitrogen dioxide around him. On the loon, he could last millions of years. The mummified Martian's body chemistry was and is a complete mystery, barring the napalmlike explosion when water touched it. Perhaps it was that durable, and perhaps one of the pair who left to die returned to cut the dome instead, and perhaps I'm seeing goblins. This is the place for it. If I ever get out of here, you try and catch me near another hole. Aril 26, 2112 The sun shows clear and bright above a sharp-edged horizon. I stand at the port looking out. Nothing seems strange anymore. I've livedhere all my life. The gravity is settling in my bones; I no longer stumble as I go over the crater lip. The oxygen in my tanks will take me anywhere. Give me hydrogen and you'll find me on Luna, selling my monopoles without benefit of a middleman. But it comes slowly. I can get hydrogen only by carrying water here in the base O-tanks and then electrolyzing it into the fuel-cooling tank, where it liquifies. The desert is empty except for a strange rosy cloud that covers one arm of horizon. Dust? Probably. I heard the wind singing faintly through my helmet as I returned to the ship. Naturally the sound can't get through the hull. The desert is

empty. I can't repair the bubble. Today I found four more rips before giving up. They must circle the bubble all the way round. One man couldn't have done it. Two men couldn't. It looks like Martians. But where are they? They could walk on the sand, if their feet were flat and broad and webbed . . . and there'd be no footprints. The dust hides everything. If there were cities here the dust must have covered them ages ago. The mummy wouldn't have shown webbing; it would have been worn away. Now it's starlessly black outside. The thin wind must have little trouble lifting the dust. I doubt it will bury me. Anyway the ship would rise to the surface. Gotta sleep. Aril 27, 2112 It's oh-four-hundred by the clock, and I haven't slept at all. The sun is directly overhead, blinding bright in a clear red sky. No more dust storm. The Martians exist. I'm sure of it. Nobody else was left to murder the base. But why don't they show themselves? I'm going to the base, and I'm taking the log with me. I'm in the village square. Oddly enough, it was easier making the trip in sunlight. You can see what you're stepping on, even in shadow, because the sky diffuses the light a little, like indirect lighting in a dome city. The crater lip looks down on me from all sides, splintered shards of volcanic glass. It's a wonder I haven't cut my suit open yet, making that trip twice a day. Why did I come here? I don't know. My eyes feel rusty, and there's too much light. Mummies surround me, with faces twisted by anguish and despair, and with fluids dried on their mouths. Blowout is an ugly death. Ten mummies here, and one by the edge of town, and one in the admin building. I can see all of the crater lip from here. The buildings are low bungalows, and the square is big. True, the deflated bubble distorts things a little, but not much. So. The Martians came over the lip in a yelling swarm or a silent one, brandishing sharp things. Nobody would have heard them if they yelled. But ten men were in a position to see them. Eleven men. There's a guy at the edge . . . no, they might have come from the other direction. But still, ten men. And they just waited here? I don't believe it. The twelfth man. He's half into a suit. What did he see that they didn't? I'm going to go look at him. By God, I was right. He's got two fingers on a zipper, and he's pulling down. He's not half into a suit, he's half out of it! No more goblins. But who cut the dome? The hell with it. I'm sleepy. April 28, 2112 A day and a half of log to catch up on. My cooling tank is full, or nearly. I'm ready to try the might of the goldskins again. There's air enough to let me take my time, and less chance of a radar spotting me if I move slowly. Goodbye, Mars, lovely paradise for the manic-depressive. That's not funny. Consider the men in the base. Item: it took a lot of knives to make those slits. Item: everyone was inside. Item: no Martians. They would have been seen. Therefore the slits were made from inside. If someone was running around making holes in the bubble, why didn't someone stop him? It looks like mass suicide. Facts are facts. They must have spread evenly out around the dome, slashed, and then walked to the town square against a driving wind of breathing-air roaring out behind them. Why? Ask 'em. The two who aren't in the square may have been dissenters; if so, it didn't help them. Being stuck at the bottom of a hole is not good for a man. Look at the insanity records on Earth. I am now going back to a minute-to-minute log. 1120 Ready to prime drive. The dust won't hurt the fusion tube, nothing could do that, but backblast might damage the rest of the ship. Have to risk it. 1124 The first shot of plutonium didn't explode. Priming again. 1130 The drive's dead. I can't understand it. My instruments swear the fusion shield is drawing power, and when I push the right button the riot uranium gas sprays in there. What's wrong? Maybe a break in the primer line. How am I going to find out? r The primer line's way down there under the dust. 1245 I've sprayed enough uranium into the fusion tube to make a pinch f bomb. By now the dust must be hotter than Washington. How am I going to repair the primer line? Lift the ship in my strong, capable hands? Swim down through the dust and do it by touch? I haven't anything that'll do a welding job tinder ten feet of fine dust. I think I've had it. Maybe there's a way to signal the goldskins. A big, black SOS spread on the dust . . . if I could find something black to spread around.

Have to search the base again. 1900 Nothing in the town. Signaling devices in plenty, for suits and Mars buggies and orbital ships, but only the laser was meant to reach into space. I can't fix a seventy-year-old comm laser with spit and wire and good intentions. I'm going off minute-to-minute. There'll be no takeoff. Aril 29, 2112 I've been stupid. Those ten suicides. What did they do with their knives after they were through cutting? Where did they get them in the first place Kitchen knives won't cut bubble plastic. A laser might, but there can't be more than a couple of portable lasers in the base. I haven't found any. And the airmaker's batteries were stone dead. Maybe the Martians kill to steal power. They wouldn't have fire. Then they took my uranium for the same reason, slicing my primer line under the ,sand and running it into their own container. But how would they get down there? Dive under the dust? Oh. I'm getting out of here. I made it to the crater. God knows why they didn't stop me. Don't they care? They've got my primer fuel. They're under the dust. They live there, safe from meteors and violent temperature changes, and they build their cities there too, Maybe they're heavier than the dust, so they can walk around on the bottom. Why, there must be a whole ecology down there! Maybe one-, celled plants on top, to get energy from the sun, to - be driven down by currents in the dust and by dust storms, to feed intermediate stages of life. Why didn't anybody look? Oh, I wish I could tell someone! I haven't time for this. The town O-tanks won't fit my suit valves, and I can't go back to the ship. Within the next twenty-four hours I've got to repair and inflate the bubble, or die of runout. LATER: Done. I've got my suit off, and I'm scratching like a madman. There were just three slits left to patch, none at all along the edge of the bubble where I found the lone mummy. I patched those three and the bubble swelled up like instant city. When enough water flows in I'll take a bath. But I'll take it in the square, where I can see the whole rim. I wonder how long it would take a Martian to get over the rim and down here to the bubble? Wondering won't help. I could still be seeing goblins. April 30, 2112 The water feels wonderful. At least these early tourists took some luxuries with them. I can see perfectly in all directions. Time has filmed the bubble a little, merely enough to be annoying. The sky is jet black, cut raggedly in half by the crater rim. I've turned on all the base lights. They light the interior of the crater, dimly, but well enough so I'd see anything creeping down on me. Unfortunately they also dim out the stars. The goblins can't get me while I'm awake. But I'm getting sleepy. Is that a ship? No, just a meteor. The sky's lousy with meteors. I've got nothing to do but talk to myself until something happens. LATER: I strolled up to the rim to see if my ship was still there. The Martians might have dragged it into the dust. They hadn't, and there's no sign of tampering. Am I seeing goblins? I could find out. All I'd have to do is peep into the base fusion plant. Either there's a pile there, mostly lead by now . . . or the pile was stolen seventy years ago. Either way the residual radiation would punish my curiosity. I'm watching the sun rise through the bubble wall. It has a strange beauty, unlike anything I've seen in space. I've seen Saturn from an infinity of angles when I pulled monopoles in the rings, but it can't compare to this. Now I know I'm crazy. It's a hole! I'm at the bottom of the lousy hole! The Sun writes a jagged white line along the crater rim. I can see the whole rim from here, no fear of that. No matter how fast they move, I can get into my suit before they get down to me. It would be good to see my enemy. Why did they come here, the fifteen men who lived and died here? I know why I'm here: for love of money. Them too? A hundred years ago the biggest diamonds men could make looked like coarse sand. They may have come after the diamond wells. But travel was fiendishly expensive then. Could they have made a profit? Or did they think they could develop Mars the way they developed the asteroids? Ridiculous! But they didn't have my hindsight. And holes can be useful . . . like the raw lead deposits along Mercury's dawnside crescent. Pure lead, condensed from dayside vapor, free for the hauling. We'd be doing the same with Martian diamonds if it weren't so cheap to make them. Here's the Sun. An

anticlimax: I can't look into it, though it's dimmer than the rock miner's Sun. No more postcard scenery till Wups. I'd never reach my suit. One move and the bubble will be a sieve. Just now they're as motionless as I am, staring at me without eyes. I wonder how they sense me? Their spears are poised and ready. Can they really puncture bubble fabric? But the Martians must know their own strength, and they've done this before. All this time I've been waiting for them to swarm over the rim They came out of the dust pool in the bottom of the crater. I should have realized the obsidian would be as badly cracked down there as elsewhere. They do look like goblins. For moments the silence was broken only by the twin humming of a nearby bumblebee and a distant tractor. Then Lit reached to turn of` the log. He said, "We'd have saved him if he could have held out." "You knew he was there?" "Yah. The Deimos scope watched him land. We sent in a routine request for permission to land on UN property. Unfortunately flatlanders can't move as fast as a drugged snail, and we knew of no reason to hurry them up. A telescope would have tracked Muller if he'd tried to leave." "Was he nuts?" "Oh, the Martians were real enough. But we didn't know that un-I way too late. We saw the bubble inflate and stay that way for a while, and we saw it deflate all of a sudden. It looked like Muller'd lead an accident. We broke the law and sent a ship down to get him if he was still alive. And that's why I'm telling you all this, Garner. As First Speaker for the Belt Political Section, I hereby confess that two Belt ships have trespassed on United Nations property." "You had good reasons. Go on." "You'd have been proud of him, Garner. He didn't run for his suit; he knew perfectly well it was too far away. Instead, he ran toward an O-tank full of water. The Martians must have slashed the moment he turned, but he reached the tank, stepped through one of the holes and turned the O-tank on the Martians. In the low pressure it was like using a fire hose. He got six before he fell." "They burned?" "They did. But not completely. There are some remains. We took three bodies, along with their spears, and left the others in situ. You want the corpses?" "Damn right." Y?" "What do you mean, Lit?" "Why do you want them? We took three mummies and three spears as souvenirs. To you they're not souvenirs. It was a Belter who tied down there." "I'm sorry, Lit, but those bodies are important. We can find out what a Martian's made of before we go down. It could make all the difference." "Go down." Lit made a rude noise. "Luke, why do you want to go down there? What could you possibly want from Mars? Revenge? A million tons of dust?" ``Abstract knowledge." "For what?" "Lit, you amaze me. Why did Earth go to space in the first place, if not for abstract knowledge?" Words crowded over each other to reach Lit's mouth. They Jammed in his throat, and he was speechless. He spread his hands, made frantic gestures, gulped twice, and said, "It's obvious!" "Tell me slow. I'm a little dense." "There's everything in space. Monopoles. Metal. Vacuum for the vacuum industries. A place to build cheap without all kinds of bracing girders. Free fall for people with weak hearts. Room to test things that might blow up. A place to learn physics where you can watch it happen. Controlled environments-" "Was it all that obvious before we got here?" "Of course it was!" Lit glared at his visitor. The glare took in Garner's withered legs, his drooping, mottled, hairless skin, the decades that showed in his eyes - and Lit remembered his visitor's age. ` . . . Wasn't it-" The End

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