

MARS LIFE

By Ben Bova

Excerpt

Jamie Waterman, the half Navaho geologist, discovered the cliff dwelling on Mars, and the fact that an intelligent race lived on the red planet sixty-five million years ago, only to be driven into extinction by the crash of a giant meteor, part of the meteor swarm that bombarded the inner solar system and on Earth wiped out the dinosaurs. Now the exploration of Mars is itself under threat of extinction, as the fundamentalist New Morality movement gains control of the U.S. government and cuts off all funding for the Mars program.

Meanwhile, Carter Carleton, an anthropologist who was driven from his university post by unproven charges of rape, has started to dig up the remains of a Martian village. Science and politics clash on two worlds as Jamie desperately tries to save the Mars program and uncover who the vanished Martians were.

TITHONIUM CHASMA: EXCURSION TEAM

Hasdrabul and Rosenberg were arguing again as they drove in the springy-wheeled camper along the floor of the Tithonium valley.

"I say she's a lesbian," Hasdrabul insisted.

"Absolute nonsense! Shirley's a virgin, I'm rather certain, but she's as heterosexual as you or I."

Hasdrabul looked down at his partner, sitting in the cockpit seat beside him. The seat's pseudoleather padding was worn smooth, cracked in places, he noticed. Rosenberg was driving, both hands gripping the little steering wheel, his eyes focused on the bumpy, rock-strewn landscape before them. Rugged red cliffs towered over them on their left.

"She's always hanging out with other women," Hasdrabul said, ticking points off on his long, slim fingers. "Far's I know she hasn't come on to any of the guys - "

"You mean she hasn't come on to you."

Raising a third finger, "And when a guy gets near her she runs in the other direction."

Rosenberg broke into a grin. "Aha! She ran away from you. Can't blame her, actually: you must have frightened her."

"Me?"

"You can appear rather fearsome, you know. Like some Watusi warrior in coveralls."

"Bullshit," Hasdrabul grumbled.

Still smiling, Rosenberg murmured, "When at a loss for *le mot juste*, lapse into profanity."

"Double bullshit," Hasdrabul said. He slid out of the right-hand seat and got to his feet like a jointed ladder unfolding, stooping to keep his head clear of the bulbous glassteel canopy that curved above. He used both hands to steady himself against the folded-up bunks as the camper swayed and jounced over the rough ground.

"Extraordinary," Rosenberg muttered as the biologist headed back toward the lavatory. Shirley's no lesbian, he told himself. At least she didn't indicate it on her personnel file. The personnel files were strictly confidential, of course, but any member of the exploration team who had even a halfway knowledge of computer hacking could sneak a peek at them. Rosenberg ran a hand through his tightly-curled thatch of strawberry hair. Perhaps Shirley's clever enough to know that the files aren't actually all that secure, he thought. Perhaps she put herself down as hetero because she doesn't want anyone to know her true orientation.

The camper rocked sharply as it trundled across a shallow crater.

"Hey, watch it!" Hasdrabul's voice boomed from the lavatory.

Rosenberg quickly put his free hand back on the steering wheel.

Hasdrabul came back past the bunks and bent over Rosenberg's seat.

"You need a break?" he asked.

Glancing at the digital clock on the control panel, Rosenberg said, "In another fifteen minutes."

"We'll be there by then."

"Right. We can stop and have a bite of lunch before we go outside."

"Good enough," Hasdrabul muttered, sliding back into the right-hand seat. "Just try to avoid the major potholes, will ya?"

Rosenberg frowned at his partner.

Ground truth, Hasdrabul said to himself. That's why Chang's sent us out this time, to determine if the deep radar imagery from the satellites has really spotted the outlines of another buried ancient village. The sensors can provide us with all sorts of data, but until somebody digs up hard, palpable evidence, the kind you can hold in your hand, the sensor data is suspect. It's not enough, never enough. You need ground truth before you can actually believe it.

Well, it's okay with me. Gives me an excuse to dig up soil samples from another spot. Might find some bugs if we bore down deeper than the damned superoxide layer covering the surface.

He tapped the map display on the control panel. "Coming up on the coordinates."

"So I see," said Rosenberg. "Why don't we set up camp by that large boulder there, at two o'clock."

Hasdrabul glanced at the house-sized boulder, then looked down at the map display again. "Okay. That's damn near spang on top of the village."

"If it's actually there."

"It's there," Hasdrabul said firmly. "The big job is to prove it."

"Rather." Rosenberg braked the camper slowly to a full stop. "But let's have a spot of lunch first."

Two hours later the two of them stood panting with exertion beside the probe they had set up where the radar imagery indicated the village's gridwork pattern of streets was laid out thirty-some meters below the valley floor. Their nanosuits were spattered with red dust up to their knees; their gloves and forearms were also coated with rust.

The probe stood vertically, one end stuck into the ground, the other pointing skyward, a flimsy-looking quartet of slanting legs supporting it. Rosenberg thought it looked like a minimalist's model of the Eiffel Tower. A thick power cable ran back to the external outlets on the curving side of the camper.

"How deep is it now?" Hasdrabul asked, straightening up from his kneeling position. Placing both hands on his hips, he arched backward slightly, trying to ease the strain on his spine.

Rosenberg read from the meter on the probe's cluster of instruments. "Seventeen meters. We still have quite a ways to go."

"Ready to pop the laser again?"

"One tick." Rosenberg ran a gloved finger down the indicator lights on the miniaturized box of the instrument panel. "All right. The laser's recharged and primed to go."

Stepping back from the probe, Hasdrabul said, "Okay, hit it."

A puff of gritty, grayish gas sputtered out of the hole and wafted away slowly in the calm air.

"Down another two meters," said Rosenberg.

"Good. But we're not going to be deep enough before the sun sets."

"No. We'll finish tomorrow."

"Why don't we knock off now," Hasdrabul said. It was more than a suggestion. "My back's killing me."

Rosenberg nodded inside the inflated bubble of his helmet. "I'm with you. Too bad someone can't develop nanomachines to do the digging for us."

Hasdrabul grinned at his partner. "Too expensive. We're a lot cheaper."

"Slave labor."

"Damned near."

They shut down the probe for the night and trudged wearily back toward the camper, two thoroughly tired men alone in the rocky cold wilderness of Mars. The massive cliffs loomed over them, glowing russet and pink in the slanting light of the setting sun. Their camper sat like a fat metal caterpillar, sunlight glinting off its curved bug-eye canopy.

Hasdrabul reached the airlock hatch and popped it open. "Well, tomorrow we'll have to guide the supply rocket down."

Rosenberg grunted. "I don't really trust those automated hoppers. Some of them have been in service for nearly twenty years."

"That's why we take over their final guidance," Hasdrabul said, climbing into the airlock.

Rosenberg looked unconvinced.

"Don't worry. I'll put 'er down nice and easy. No sweat."

Rosenberg still looked unconvinced.

TITHONIUM BASE: INFIRMARY

In the few days she had been at the base, Vijay had come to recognize that Nari Quintana ruled the infirmary with a stainless steel fist. The daughter of a Venezuelan oil millionaire and his Japanese wife, Dr. Quintana was serving her second term of duty on Mars. Small, spare, with straight dull hair, she reminded Vijay of a little brown sparrow hopping from bed to bed, making her morning rounds. But everyone warned that this little sparrow had the ferocity of an eagle whenever anyone stirred her wrath.

"Her first name means thunderclap in Japanese," one of the medical technicians had told Vijay when she'd first come into the infirmary, uninvited, to see what she could do to help. "It's very appropriate."

So far, Vijay and the formidable Dr. Quintana had gotten along tolerably well. Quintana was obviously suspicious that the wife of Jamie Waterman would try to usurp her authority. But Vijay smiled as she explained that she only wanted to help in any way she could.

Now she sat before Dr. Quintana's desk. The woman's office wasn't much larger than a phone booth, Vijay thought, and it was as austere and undecorated as Quintana herself.

"I'd like to make more of a contribution than I have so far," Vijay said, as sweetly as she could manage. "I mean, there must be something more that I could do, besides checking the supply stocks for hitch-hiking insects and running routine physicals on the staff."

Quintana's sharp eyes flickered. "You've had enough of the nit-picking, eh?"

Smiling, Vijay replied, "I know someone has to make certain that the packages in storage don't harbor bugs, but I do have a degree in psychology, if that could be of use to you."

"Yes, I know," was as much as Quintana would unbend.

For several moments, Quintana said nothing. Then, abruptly, she stood up.

"Come with me," she said peremptorily as she headed for the door of her office.

Vijay jumped to her feet and followed the doctor.

"Morning rounds," Quintana said over her shoulder as she led Vijay to the infirmary's row of eight beds. Four of them were empty. Vijay understood that most of Quintana's patients were suffering from rather minor accidents rather than disease. The exploration team were mostly young and never left Earth until their health had been thoroughly checked. And Martian microbes were enough different from terrestrial biology that there were was nothing on Mars that could infect humans. At least, that's what the biologists concluded.

This morning, though, a young maintenance technician was lying asleep in one of the beds, an intravenous drip tube in his arm.

"Gastric ulcer," Quintana said, eyeing the computer display screen over the head of the bed.

"He seems awfully young to have an ulcer," Vijay said, also peering at the display screen.

"Allergic to aspirin. He took aspirin every morning to protect his heart," Quintana explained to Vijay. "But it attacked his stomach, instead."

"Some people are allergic to aspirin and don't know it," Vijay murmured as they moved to the next bed, a woman who had twisted her ankle when she slipped on a wet tile in the cafeteria.

"Until a stomach ulcer explodes and they lose half their blood supply in a few minutes."

Vijay said, "An allergy like that wouldn't show up on a routine screening, either."

"Yes, true. Everyone here has been thoroughly screened before being accepted for the Mars program, but the screening can't possibly catch everything." Quintana spoke in flat midwestern American English.

Physical screening is easier than psychological, Vijay thought, remembering Trudy Hall. She had been thoroughly screened for the Second

Expedition, yet she had cracked up emotionally and nearly killed the entire team. Psychological testing could only go so deep, she knew. Mars tests each of us in its own way.

"They seem a healthy enough lot," Vijay replied as she walked along the row of beds beside Quintana. "Of course, they're mostly pretty young. That helps, doesn't it?"

Quintana almost smiled. "Chang, Carleton and your husband are the oldest here."

"And me," Vijay pointed out. "I'm forty-two."

The chief physician actually did smile. "I am thirty-nine."

"Are you married?" Vijay asked.

"Divorced."

"Oh. I'm so sorry."

"Twice."

Vijay has the sense to shut her mouth.

The three accident cases were minor injuries, except for one of Carleton's digging crew who had jumped into the excavation pit thinking that Mars' light gravity would make the thirty-meter drop easy. He had broken both his ankles, and learned that although weight is only one-third of normal on Mars, mass - the amount of matter in a body - doesn't change because of the lower gravity. His bones had broken just as they would have on Earth.

"The major causes of human pain and suffering," Quintana pronounced as they left the man's bed: "pride and stupidity. They often go together."

Vijay thought that maybe the young man - who was a meteorologist who'd volunteered to help Carleton - was trying to show off for some of the women at the dig. Testosterone is the most dangerous drug of all, she thought.

"What are you doing for him?" Vijay asked.

Quintana glanced back at the young man lying in his bed. "We've harvested stem cells from his bone marrow and now we're cultivating them. In a few days we can re-inject them and rebuild the bones good as new."

Vijay nodded. Stem cell therapy was once considered miraculous; now it was routine.

"He doesn't deserve it," Quintana added. "Stupidity like his needs a stronger lesson."

Tough love, Vijay thought. Quintana's a hard case, all right.

As they started back toward Quintana's office, Vijay asked, "Would it be possible for me to set up shop as the resident psychologist? Would that be helpful to you?"

"We do psych tests regularly," Quintana said quickly. "The program office beams questionnaires up from Earth. Everyone is required to participate."

"I see," Vijay said. "I just thought I might offer a kind of counseling service...if anyone needs it."

Quintana said nothing until they reached her office again. Sliding its door shut, she went around her desk and sat once more in the wobbly little chair behind it. Vijay took the only other chair.

"I am the chief physician here," Quintana began. "I am also the only physician here. That is, until you arrived."

"There are the medical technicians, though," said Vijay.

"Of course. Five of them. Usually they outnumber our patients."

"What you're saying is that you don't need me."

Quintana shook her head hard enough to make her mousy hair flutter. "You are here because you are Jamie Waterman's wife and you want to be with your husband. You are also a trained physician with a background in psychology. It would be foolish not to use your talents in some manner."

"Yes, but how?"

Pursing her lips, Quintana said, "You tell me. You've seen the infirmary and the kinds of cases we get here. What can you do to help?"

Vijay hesitated, thinking, She's batted the ball back into my side of the court.

"I don't require an answer this minute," Quintana said. "Take your time. Think about it."

"I know what I'd like to do," Vijay said.

"Yes?"

"I'd like to run a psych profile on the people here. Not the kind of multiple-choice tests they beam up from Earth, but real, personal, in-depth interviews with as many of the personnel as will sit down with me."

"You plan to write a paper for a psychology journal?"

Nodding, Vijay said, "That would be appropriate, don't you think? A psychological profile of the men and women on Mars. You and I could be co-authors."

"I am not a psychologist."

"No, but you're the chief physician here. Your inputs and insights would be very important to the study."

Quintana tapped her desk top absently. Vijay noted that her fingernails were unpolished and clipped very short. Yet the nails on her right hand were longer and well-shaped.

"You play the guitar?" she asked.

Quintana blinked with surprise. "My father taught me when I was a little girl. I brought two of them to Mars with me."

"How wonderful. I can play piano a little."

"No piano here."

"About my psych study," Vijay said. "Of course I'll be available to help you with your patients in any way I can, whenever you need me."

Quintana nodded. The suspicion and anxiety eased somewhat. "While we're at it," she said, "I can teach you the guitar."

TITHONIUM CHASMA: EXCURSION TEAM

"I have good news and bad news," said Izzy Rosenberg.

Puffing from exertion, Hasdrabul looked up from the tubular probe sticking out of the rust-colored sand. "Is this a joke?"

Rosenberg was inside the camper, checking the data from the miniature sensors down at the business end of the probe.

"I wish it were," he said. His voice sounded worried in Hasdrabul's headphone.

Looking toward the camper, parked twenty-some meters from the probe, Hasdrabul said guardedly, "Tell me the good news first, then."

"The GC/MS has picked up a whiff of carbon."

"Carbon?" Hasdrabul stood up straighter. He could *feel* his eyes go wide. The gas chromatograph/mass spectrometer analyzed the gases boiled out of the rock by the laser pulses.

"Where? How deep?"

"At the thirty-meter level, rather where the foundations of the village should be."

"Carbon?" Hasdrabul repeated. "Like, from something organic?"

"It could be," said Rosenberg, his voice curiously flat, unexcited. "Fossilized wood, perhaps. Construction material."

"Or the remains of a body!"

"Whatever. It's definitely not the rock we've been drilling through above that level. It must be part of the village. Building foundations, perhaps."

"Yow!" Hasdrabul leaped into the air and flung his arms over his head joyfully.

"You haven't heard the bad news, Sal."

"Bad news?"

"The laser's drained our battery power almost completely."

"That's not so bad. We'll recharge 'em from the solar cells."

"Not enough sunlight left in the day. Besides, the resupply hopper is due in fifteen minutes. By the time we set it down and transfer the supplies to the camper the sun will be on the horizon."

"Recharge 'em tomorrow, then, first light." Hasdrabul started walking toward the camper.

"Yes, I suppose so."

"The fuel cells're okay, aren't they?"

"So far."

Frowning inside his collapsible bubble helmet, Hasdrabul snapped, "What th' hell's that supposed to mean?"

Rosenberg answered, "I don't like going through the night without the batteries to back up the fuel cells."

Yanking open the airlock's outer hatch, Hasdrabul smiled as he said, "Don't be chicken, Izzy. We got plenty power."

"I suppose so."

"You're a worry wart, Izzy," said Hasdrabul, climbing into the coffin-sized airlock. He sealed the outer hatch and touched the keypad that started the pumps chugging. "You oughtta relax, enjoy life, like me."

"Extraordinary." In Hasdrabul's headset, Rosenberg's voice sounded halfway between astonishment and disgust. "We're two days' ride from the safety of the base, alone out here in a glorified omnibus without a working backup power system, the temperature outside is already twenty-nine below zero, and there's nothing between us and this near-vacuum that's pretending to be an atmosphere except a few millimeters of metal, and you say I should relax. Extraordinary. Simply extraordinary."

The airlock panel cycled from red light through amber and into green. Hasdrabul chuckled as he popped the inner hatch. Izzy's twitchy today. Wonder what's really bothering him?

He pulled his nanofabric bubble helmet off his head and unsealed the torso of the suit.

"What's itchin' you, buddy? Your shorts twisted or something?"

From up in the cockpit Rosenberg answered, "The supply rocket's due eleven minutes. I just got a confirmation from the base."

"Okay," said Hasdrabul as he stepped past the folded-up bunks and slipped into the cockpit's right-hand seat. "I'll bring her in, no sweat." Rosenberg wasn't perspiring, but he looked decidedly edgy.

"Relax, pal." Hasdrabul tapped at the control panel's keyboard, changing the touchscreen displays from their usual configuration to the setup for guiding the resupply hopper down to a soft landing.

"Base says the hopper's oxygen tank pressure is low."

Hasdrabul peered at the displays that sprang up on the panel. "Yeah, so I see. A smidge. Nothing to worry about."

"It's dropping," Rosenberg said, pointing to the graph curves with a shaky finger.

"Yeah, yeah. Still plenty good enough. Damn tank's prob'ly sprung a pinhole leak. We'll have to fix it once she's down."

"In the dark?"

"Tomorrow. Stop worrying."

Rosenberg got up from the driver's seat and headed back toward the lavatory. Hasdrabul studied the displays. Everything nominal except for the oxy tank pressure, and that wasn't anything to really worry about.

By the time Rosenberg returned to the cockpit the hopper's radio beacon was sending a strong beeping signal. Hasdrabul leaned back in his seat.

"She's comin' right down the pipe," he said to Rosenberg, as Izzy slipped into the left-hand seat. "I won't even hafta touch a button."

Still, he reached for the tiny T-shaped joystick that was tucked into a slot on the control panel and balanced it on his left knee.

"There it is!" Rosenberg shouted, rising halfway out of his seat.

They saw a black dot against the darkening saffron of the Martian sky. As the two men watched, the dot grew and took form: a boxy, octagonal shape with four spindly legs jutting out from corners of its structure and a rocket nozzle hanging from its underside. Adapted from the lander/ascent vehicles of the first Mars missions, the hoppers were now used to ferry supplies and equipment from Tithonium Base to teams in the field.

His eyes flicking from the descending hopper to the displays on the control panel, Hasdrabul touched the joystick with a fingertip.

"Just a smidge closer..."

The rocket nozzle flared bright hot gas for a flash of a second. From inside the camper's cockpit they heard it as a thin shriek. The hopper seemed to hesitate in midair, then slowly descended, like an old man settling into an invisible chair. Smaller methane gas jets puffed from around the edges of the octagon and then the hopper touched down, its insect-thin legs bending slightly.

"There y'are," said Hasdrabul grandly as he shut down the controls. "Easy as pie."

Rosenberg grinned weakly at his partner.

"I told you - "

The hopper blew up in a bright explosion of white-hot flame billowing into the thin air. The shock wave rocked the camper.

"Holy shit!" yelled Hasdrabul.

Rosenberg closed his gaping mouth with an audible click, then tried to speak, but found his throat was too parched and constricted to get out any words.

TITHONIUM BASE: THE GARDEN

Jamie was in the greenhouse dome with Kalman Torok, kneeling in the reddish sandy strip between rows of stringbean and pea plants. Most of the dome was devoted to long hydroponics trays, where soybeans, cereal grains and fruits were being grown without soil. But this little patch of a garden was Torok's work. Sunlight poured through the transparent wall of the dome; it felt pleasantly warm inside.

"You should have seen the look on Chang's face when I asked him for a shipment of beetle grubs and earthworms," Torok was saying, his round face split into a happy grin. "The old sourpuss looked as if I'd suddenly grown horns."

Jamie smiled back. "But it's worked. You've turned this sterile ground into productive soil."

Digging his fingers into the faintly pinkish dirt, Torok corrected, "It wasn't sterile, not completely. Damned little organic material in it, but there was some. We had to bake all the oxides out, of course."

He held a palmful of dirt up to Jamie's face. "Smell it. Go ahead, take a whiff."

Jamie sniffed. "It...it almost smells like dirt back home."

"Almost," said Torok, still smiling. "It's taken two years of work, but we've almost got a plot of terrestrial soil here on Mars."

Jerking with surprise, Jamie saw a tiny black beetle push its way out of the dirt and crawl feebly across the clump in Torok's hand.

The biologist laughed. "One of my assistants."

Jamie grinned back at him as Torok gently deposited the handful of dirt back on the ground and patted it smooth. Both men straightened to their feet.

"The next resupply mission will include a shipment of genetically-engineered bacteria that can fix nitrogen for cereal grains," Torok said. "If that works we'll be able to grow our own wheat!"

Looking over the tiny garden, Jamie asked, "Do you think you could grow enough food to feed the whole team here?"

Torok's smile faded. "It's not worth the effort. The hydroponics system is cheaper."

"Really? I thought - "

"Hydroponics takes a lot of water and nutrients, yes. But we recycle the water, and to turn Martian ground into productive soil you'd need to start by baking the oxides out, then bring in earthworms and beetles and such to aerate the dirt, and pump in nutrients by the ton to make up for the lack of organics, and - "

"We can build solar energy farms to provide electricity for baking out the oxides," Jamie interrupted. "And power the lamps, as well," he added, glancing up at the rows of full-spectrum lights hanging from the dome's superstructure. "That's what they do at Selene."

"You'd also have to seal the entire area, lay a concrete slab under it with a bioguard sheet to prevent back contamination into the Martian environment, surround it with more concrete and bioshields."

"That adds to the expense."

"And how," Torok said. "In time, though, I suppose you could make a garden big enough to be self-sufficient, recycling organic wastes the way they grow crops at Selene."

"So what's the problem?"

Raising his heavy dark eyebrows, Torok said, "Well, as I said, the big problem is back contamination. You don't want terrestrial organisms getting loose out in the Martian environment."

Jamie looked through the dome's transparent wall at the frigid, barren desert outside. "Earth plants couldn't survive for five minutes out there."

"Plants, no," said Torok. "But the microorganisms that live on them and in them - maybe yes. Those microbes are tough, and a lot of them are anaerobic. They don't need oxygen to survive."

Jamie nodded. "You're afraid they'd infect the Martian environment."

"It's a long shot, I admit. But we've got to protect the local environment against back contamination. Remember, it wasn't gunpowder and cavalry that destroyed the Native Americans; it was the microbes the Europeans brought with them that killed off men, beasts and plants."

Jamie nodded, thinking, We're aliens here. Visitors. We're not Martians and we never will be, no matter how much we want to be. If we're not careful we could wipe out what's left of Mars's native species, just like the whites decimated the Native Americans.

"But if we could protect the environment from contamination?" Jamie asked. "What then?"

With a shrug, Torok replied, "Building farms big enough to feed the whole crew here will take a lot of time. And money. In the beginning you'll have to bring in the nutrients and aerators and every gram of everything else you need from Earth. That's expensive."

"It's a project worth doing, if we're going to stay on Mars."

Torok's smile returned, but it was melancholy now. "If, Dr. Waterman. If."

"Can you do it?" Jamie asked.

"It can be done, I suppose. But I won't be here to carry it through."

"You're leaving?"

"My term ended two months ago. I've told Chang I'll leave on the next resupply flight."

Jamie stared at the biologist for a silent moment, then spread his arms. "But all this...you'd leave this behind you?"

With a dejected shake of his head, Torok replied, "My wife is suing for divorce back in Budapest. If I don't get back she'll win custody of my children."

"Oh," was all that Jamie could think to say. But then he heard himself suggesting, "Maybe she could come here to be with you..."

"Two sons, ages four and six. And she won't leave Hungary, let alone travel to Mars."

"But what about this farm? What's going to happen to your work?"

Torok's brows contracted almost into a solid line. "I've asked several of my colleagues to look after it. That black giant, the American with the odd name, he showed some interest."

"Hasdrabul," Jamie said.

"Yes, Hasdrabul. He said he'd tend my garden - when he's not busy with other responsibilities."

Jamie realized there was nothing he could do. Torok was leaving, and his experiment would die of neglect without him.

His pocket phone buzzed. Jamie was glad of the interruption.

"Dr. Waterman, you have an incoming message from Mr. Trumball in Boston."

Looking at Torok's glum face, Jamie said, "I've got to get back to my office."

He hurried to the tube that connected the greenhouse dome to the main structure of the base.

*

Dex Trumball was excited, Jamie could see even on the small wall screen.

"It's a coup," he was saying, grinning happily. "A gift. From the Vatican, no less."

Jamie leaned back in his little chair and watched Dex pacing across his office, gesturing with both hands as he spoke. The distance between Mars and Earth defeated any chance of holding a true conversation. Dex talked and Jamie listened.

"He's a priest, Jamie. A Jesuit! We can get plenty of media time with him before he goes. He can counter those pious sonsofbitches who're trying to slit our throats. He can tell the people what we're doing, show them that there's no conflict between religion and science. It's a godsend, I tell you!"

As Jamie listened to Dex chattering on enthusiastically for almost half an hour, he was thinking, DiNardo's older than I am. He must be older than Carleton, even. Will it be safe for him to come here? The fusion ships make the flight fast and easy, but how will DiNardo handle the low gravity here? The whole environment? What will Chang think of having DiNardo here? Will he think I'm trying to subvert his authority? First Carleton horns in on the operation here, then I pop in, and now the priest who was originally picked to lead the geology team on the First

Expedition. Chang's a geologist, for god's sake. He's not going to like this.

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Dex was actually feeling slightly out of breath when he finally wound down and ran out of words. He was on his feet, in the corner of his office where the big windows met. Out there it was a sparkling blue New England afternoon. He could see planes landing and taking off at Logan Aerospaceport and sailboats cutting through the whitecaps of the bay and even the masts of Old Ironsides at its pier in Charlestown, across the harbor.

It'll take Jamie at least fifteen-twenty minutes to get back to me, Dex thought, even if he picked up my message as soon as it arrived at Mars. I ought to get back to work.

He returned to his desk and sat down, but couldn't concentrate on the tasks before him. Wheedling contributions out of increasingly reluctant donors. Dealing with half a dozen government agencies that want to stick their fat asses into our program so they can slow us down even more. Budgeting. That was the most depressing thing of all. How to stretch the funding they had without endangering the people working on Mars. Dex leaned back in his customized leather chair and stared at the ceiling.

But if I can swing the Navaho president onto this tourist idea, and start quietly soliciting funding from a couple of friendly bankers, then maybe...just maybe, we can put this program on a sound financial basis. Maybe even make a few bucks of profit. The Navahos would like that.

But how to get Jamie to agree to it? He's as stubborn as a jackass. Thinks Mars is his private preserve. No, worse. Jamie thinks it's his sacred duty to protect Mars. Keep it pristine. No visitors, except for scientists.

The chime of his phone broke into Dex's thoughts. "Dr. Waterman, from Tithonium Base," said the synthesized voice of his second wife.

Dex snapped to an upright posture and said crisply, "Open message."

Jamie looked wary. Not suspicious or unreceptive, really: just guarded, cautious. He was smiling, but it was the smile that Dex knew he used when he was trying to cover his true feelings.

"Dex, that's great news about Father DiNardo," Jamie began.

Monsignor DiNardo, Dex corrected silently.

"But I'm worried about a couple of things. First, he's kind of old for Mars, don't you think? What kind of physical condition is he in? And what's made him decide to come out here all of a sudden? If we take him, we'll have to make sure he's checked out very carefully. We'll need the best doctors we can find to give him a very thorough physical."

"No problem," Dex muttered, knowing that Jamie couldn't hear him.

"Second, if he comes here it'll probably disturb Dr. Chang. I mean, he's the mission director and a geologist. DiNardo's a geologist too, and he's older and he was originally picked to head the geology team for the First Expedition. Chang's going to feel like DiNardo's breathing down his neck. That wouldn't be fair to him."

Jamie's smile turned warmer. "On the other hand, I agree that having a priest from the Vatican join us here could be a great public relations move. The fundamentalists have been working against us, and Father DiNardo can show that a deeply religious person can still be a scientist who wants to learn about Mars and the Martians."

Dex found himself nodding vigorously.

"So let's proceed carefully," Jamie went on. "It would certainly be great to have Father DiNardo here. I like the man and he's a good geologist. His presence here will create problems with Chang, but I'll try to smooth that out. Above all else, though, we've got to make sure that DiNardo's in top physical condition. So don't start beating the publicity drums until he's passed all the exams. Okay?"

"Okay," Dex replied immediately. "I'll have him checked out sixteen ways from Tuesday. And then we'll have something to stuff under the noses of those psalm-singing bastards!"

TITHONIUM CHASMA: EXCURSION TEAM

Itzak Rosenberg stared at the fireball billowing up from the hopper. It quickly dissipated into the thin Martian atmosphere. He felt as if all the air had been sucked out of his lungs.

"Our supplies," he said weakly.

"Blown to hell," Hasdrabul muttered.

"What could have caused it?"

Hasdrabul was already on the comm link. "Base, this is Excursion Three. We got troubles."

The excursion controller was one of the astronauts. Her slim face, framed with short dark hair, looked puzzled. "The readouts here look screwy," she said.

"Damned hopper blew up!" Hasdrabul snapped.

"Blew up?"

"Exploded! There's nothin' left out there except some smokin' wreckage."

"That's why the readouts cut off," said the controller. In the tiny screen on the control panel she looked almost relieved.

"What the hell happened?" Hasdrabul demanded.

"Are you two okay?"

"Yeah. No damage to the camper."

"None that we can see from inside the cockpit," Rosenberg corrected. Hasdrabul shot a glare at him.

"You'll have to go outside and look your vehicle over for possible damage," the controller instructed.

Nodding, Hasdrabul muttered, "Guess so."

"It's going to be dark in another hour," said Rosenberg.

The controller nodded back. "Then you'll have to make your damage inspection right away."

"Okay, we'll go out right away. But what the hell happened? Why'd that bird blow up?"

"We'll have to go over the diagnostics and get back to you on that. Meanwhile, you check out all your systems and do the exterior inspection."

"Right," Hasdrabul agreed.

"Keep this link open," said Rosenberg, with some urgency.

"Will do," promised the controller.

Rosenberg blurted, "Did the seismometers record the blast?" It was an idiotic question and he knew it but it just popped out of his mouth.

"I'll ask the monitors," the controller said. "Call me back when you complete your inspection."

"Don't shut down this link," Rosenberg repeated.

"Right. I'll keep it open."

Hasdrabul got up from his seat and headed back toward the airlock. Over his shoulder he called, "C'mon, get into your suit."

"I'm staying inside," Rosenberg said, his voice quavering slightly. "I'll check all our systems while you do a visual inspection outside."

Hasdrabul stopped at the narrow closet where their nanosuits hung. For a moment he said nothing. Then, "Go faster if the two of us look her over."

"I...I'll stay inside," Rosenberg said. "I need to, Sal." He felt as if he were glued to the cockpit seat. He thought he couldn't get up even if he wanted to. His legs were too weak to support him. He couldn't even turn around to look at his partner.

"Okay," Hasdrabul said, his voice sounding strange, suspicious, almost accusing. "You stay in."

*

Jamie was poring over the latest communications from Selene, reports on their underground farms and the amount of electrical power they needed to keep the crops growing. We'll have to devote a lot of acreage to solar panels, he thought. The maintenance is going to be tough, keeping them clean of dust. Maybe we can automate that, something like windshield wipers. Then he thought about the monstrous dust storms that sweep across

the planet. He remembered the storm that nearly buried the camper on his first excursion to Tithonium Chasma. With a shake of his head Jamie realized that maintaining a solar-energy farm was going to be a lot more difficult on Mars than on the airless, weatherless Moon.

"Uh, Dr. Waterman?" A soft voice interrupted his musing.

Looking up, Jamie saw that it was Billy Graycloud standing at the entrance to his cubbyhole of an office.

"Come in, Billy," he said.

The youngster didn't move. "There's been an accident."

"Accident?" Jamie shot up from his chair.

"Nobody hurt," Graycloud said quickly. "It's the excursion team, you know, the two guys tracing the old riverbed. Their resupply rocket blew up."

Jamie could see a small crowd gathered around the entrance to the communications center halfway across the dome.

"They're okay?" he asked, coming around his makeshift desk.

"Seem to be," Graycloud replied. Then he added, "So far."

*

Hasdrabul was holding a blackened chunk of metal in his hands as he sank his lanky frame into the padded cockpit seat. Rosenberg stared at it.

"Found this in the ground about a meter and a half from our left front wheels."

"What is it?"

Turning the scorched fragment in his hands, Hasdrabul answered, "What it was was a piece of a storage container. I think. Hard to tell."

"A meter and a half?"

"Give or take a skosh."

"If it had hit us..."

"Would've gone through the skin of this bus like an antitank missile."

Rosenberg shuddered visibly.

"Everything okay in here?" Hasdrabul asked.

"All the systems are on line. No internal damage."

"Are you okay?" Hasdrabul stared at his partner.

Rosenberg took a deep, deliberate breath. "I'm...rather shaken, you know."

"I can see that."

"Control says the hopper's oxygen line must have been leaking. It touched off the methane. That's what caused the explosion."

"They think."

"That's what the diagnostics indicate." Rosenberg felt somewhat better, stronger, as he talked about the impersonal data from the controller's monitoring systems. Yet he still saw in his mind's eye that white-hot explosion. We could have been killed, his inner voice kept repeating. We came within a meter and a half of death.

"Dripped oxy on the hot methane pump, prob'ly," Hasdrabul was saying. Rosenberg nodded. "Yes, that's their explanation."

"How old was that hopper? Some of 'em date back to the first expeditions, don't they?"

"I believe so."

Holding the fragment of debris in one hand, Hasdrabul pointed to the comm screen, which was a blank gray. "Comm link still open?"

"It should be."

"Okay. I'll show this to the geniuses back at base. You go back and heat up some dinner."

Rosenberg hesitated. "Why don't we start back to the base?"

"Now? It'll be dark in another few minutes." The black biologist jerked a thumb toward the scenery outside. The pale shrunken sun was almost touching the jagged horizon. The sky was already turning deep violet.

"I know, but...we'll have to head back before we run out of supplies."

"Tomorrow, after the sun comes up."

"We can run at night."

"And run down the fuel cells? No way. We're not goin' anyplace until the sun comes up," Hasdrabul insisted. "That's final."

TITHONIUM CHASMA: NIGHT

Hasdrabul and Rosenberg ate a warmed-up prepackaged meal in tense silence, broken only by the controller calling from the base to ask about their condition.

Rosenberg went to the cockpit and spoke to the controller. The thermal shutters covered the bug-eye windows up there, preventing the camper's internal warmth from leaking out into the bitter Martian night. When Rosenberg returned he slid into the folded-out bunk that now served as a bench. Across the narrow table sat Hasdrabul, his dark face watching Rosenberg thoughtfully.

"You're scared, huh?"

"It's...I'm not frightened, really."

"Not much."

"It's just that...it's unsettling. Hoppers shouldn't blow up. We shouldn't be stranded out here without supplies. It's not right!"

A slow, patient smile eased across Hasdrabul's face. "Now look, Izzy. We're not stranded. We got plenty food and water for the trip back to base. We'll be fine."

"The batteries are down."

"We'll recharge 'em tomorrow soon's the sun comes up."

"Hurry sunrise," Rosenberg muttered.

They finished their meal, scraped the crumbs into the recycler and placed their plates and cups into the microwave for cleaning. Hasdrabul put a fingertip on the power button, then thought better of it. Save it for daytime, he told himself. Rosenberg folded the table and slid it into its place beneath his bunk.

"I'll hit the john," Hasdrabul said.

"If you don't mind..." Rosenberg pushed past him and hurried into the lavatory.

Poor bastard's scared shitless, Hasdrabul thought. Then he amended, But his bladder's full.

Once they had peeled down to their skivvies and arranged the blankets over their bunks, Rosenberg said, "I've never liked the cold. That's what's bothering me, actually. The night and the dark and cold."

"We'll get through it."

They climbed into their bunks and clicked off the lights. The camper's interior was completely dark except for the faint ghostly greenish glow from the instrument panel up in the cockpit.

Rosenberg murmured into the darkness, "When I was a child in Cambridge, once my sister was born I had to sleep up in the attic. It was always cold up there. Even in the summertime. And drafty. I could feel the wind coming through chinks in the window frames. I could never get warm up there. Never."

"Hey, you wanna talk about cold, you oughtta live in Chicago. Wind that can knock you off your friggin' feet. And cold! Freeze your balls off."

Rosenberg said nothing.

Chuckling, Hasdrabul said, "I remember one winter we had so much snow the whole friggin' city stopped. Nothin' was moving. Took two days before the damn snowplows cleared the streets in our neighborhood. Left snowbanks higher'n my head."

"Higher than your head? Really?"

"I was just a kid then. A lot shorter."

"Oh."

"We'll be okay. Get some sleep. You'll feel better when the sun comes up."

"Yes, I suppose so," Rosenberg said. He closed his eyes. And heard the thin moan of the wind outside. He touched the curving skin of the camper. It felt ice cold. Just a few millimeters of metal between us and death, he thought. It's down to a hundred below zero out there.

He shuddered beneath his two blankets.