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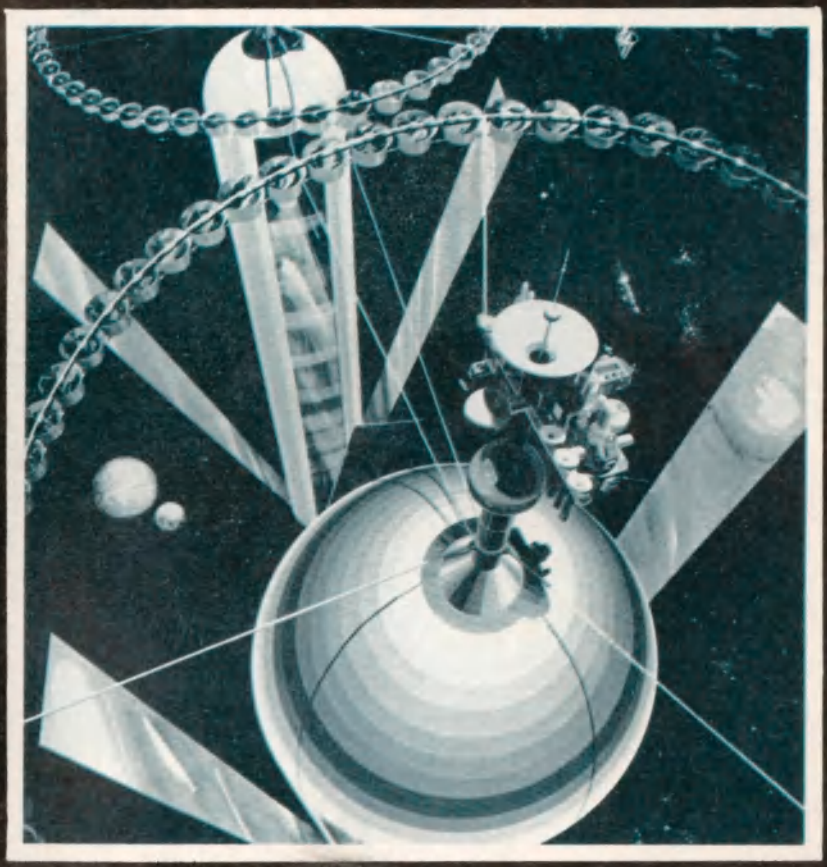

The Last Spaceman by Lester del Ray • **This Joe** by A.E. Van Vogt • **Seed** by Raymond F. Jones • **Skag With the Queer Head** by Murrar Leinster • **Trans-Plutonian** by Milton Lesser

by Lester del Rey

Josh looked back at the opulent tower of Teleport Incorporated . . .

You've thought about owning your own eighteen-wheeler, but what would you be up against if you owned a Starship. Sure, business was business, and if they could teleport materials from here to infinity in exactly no time now, fine. But that didn't give them the right to make cracks about Captain Josh Ames' old Starship. . .

The Last Spaceman

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Captain Josh Ames stopped at the bleak and pitted entrance to Marsport entrance ground. His eyes noted the old scars of the starships, and the dust that had blown over the marks, his bushy grey brows came down, almost hiding the pain that was in those eyes. Then he dropped his glance to the sack in his fingers, found a corner out of the thin wind, and began rolling a cigarette.

The crumbled, greenish tobacco had dried out too much in the arid atmosphere of Mars, and even the eddies of wind made it hard to roll. But he was used to the home grown product of his ship's hydroponic tanks, his fingers completed shaping the smoke almost automatically, twisting the ends, and lighting it. The first draw brought a dry dust with the smoke, setting him coughing, but he was used to that.

There'd been a time when he'd been able to find factory made smokes on the outplanets, but the teleports had ended that, spreading the habit of the smoke tubes from Aldebaran to Betelguese, and replacing the honest smell of tobacco with the perfumed stench of their drugs.

Damn the teleports! Josh looked back at the opulent tower of Teleport, Inc. Even at the distance from the main part of Marsport, he could see the trucks moving at a steady stream into the huge building.

But he jerked his eyes back to the field. After forty years of driving through the starways, it wasn't good to look at the nemesis that had killed the old stellar traffic. Sure, business was business, if they could teleport materials from here to infinity in exactly no time, and at a tenth of the rate it took by ship, it was natural for people to use their service. Even he'd been awed when they first explained to him how the teleports operated by merely converting the matter into waves of energy and then transmitting through space to the teleport on the desired port-of-call where the energy was transformed back into the original matter. But the Teleport men, in their foolish maroon uniforms didn't have to go swaggering around, making cracks about the men who had opened up the planets and the worlds beyond.

There'd always be a need for men who could drive out into space in the big ships. Nobody'd ever built a teleport yet that could handle more than a ton at a transmittal, and nobody would according to what he'd heard. They didn't have to get laws passed making it mandatory to build heavy equipment in units small enough for the teleports.

Out on the field, a planetary ferry-boat came roaring in, its big stacks spitting down flame, for a sloppy landing. They still used them for short-run loads where it was cheaper to ship full assemblies, pilings, logs and similar materials as they were, rather than cutting to fit the teleports.

And by Harry, the same held true

for interstellar shipping - or would be true if Teleport didn't take a loss in disassembling and reassembling, just to make sure it had no competition. Josh could still take a load of green "felikka" timber out past Deneb for less than Teleport could handle it, if they'd be honest about it. He had done it before, and he'd do it again - if he could find a shipper with guts enough to risk it, minus insurance.

But now that Teleport had managed to get control of the old interstellar insurance agencies and refused to insure the starships against loss. . .

The dust sent up little whorls as his feet went out across the field toward the Titwillow. The big ship drew nearer, and Josh let his glance go over her again. Eight hundred feet up she thrust her nose against the sky, a bit squat and wide for beauty, scarred by the ion streams of space, but the best darn ship that ever grew space legs. Twenty years he worked, traded and fought his way until she was his. And now twenty years she'd been home, wife and mother to him. She lay there waiting, her nose pointed to the stars; her holds empty.

Pete McIntosh came out from her, a wizened, gnarled little Scotsman sucking at a pipe that had been unfilled for as long as Josh could remember. The engineer stopped, studying Josh. "How's it?" he asked. Josh shrugged tiredly. "No cargo in Marsport - unless we want to ferry 'mikkla' roots back to Earth! How about overhaul? Did you see the Gannet brothers?"

"Saw 'em," McIntosh nodded. "They're loaded up with work for Teleport, making housings. Josh, there ain't a machine shop on Mars that can handle the retubing for the 'Titwillow.' Gannet's told me so, and they ought to know. What we gonna do now?"

"Ship back the 'mikkla' roots!"

McIntosh stared dumbly at him, and he nodded. They'd lose money on the deal - they weren't equipped for the quick loading and unloading that made planetary ferry-work pay off slightly. "Gotta, Pete. Only way we can get clearance to Dock City on Earth is with a load - and we gotta retube the 'Titwillow'. Besides, once we get earthside, there's bound to be cargo!"

Pete nodded again, doubtfully, but Josh chose not to see it. There had to be cargo. Earth was the center of the Solar trade. And at Dock City, the finest shops in the system would be available.

"Get set to take on 'mikkla'. We blast off as soon as it's aboard."

But it was a week later before the final clearance was through and the 'Titwillow' rose upwards on a shakey pair of legs. The tubes were misfiring, as they had done for the past year and the huge roots had been stowed away sloppily, leaving a list to the starboard that Josh could barely overcome with the side rockets. He fought her, as he'd been

fighting her since the tube trouble began, but she went up. And Mars dropped behind. Finally, Josh reached out for the lever and cut overdrive in.

The automatic threw it out at once, seemingly, but now Earth lay a bare four thousand miles below. The few million miles of planetary distance meant nothing to a ship on overdrive, capable of cutting through all the space between the suns like a train passing telegraph poles. From below, the speaker sent up Pete's whistle, but Josh ignored it. So overdrive wasn't meant to be used between planets; he was in a hurry.

He sent down inquiring signals, and the automatic radar on Earth gave a routine answer directing him in. It was a formality now, though there had been a time when the starships had to wait outside the orbits until there was room to land. He threw on the tubes, muttering as the growl came thru the hull from misfiring; the 'Titwillow' couldn't take much more in her condition, with the badly loaded 'mikkla'' roots adding to the strain.

Josh reached for the vernier on his timer breathing on it gently, and hit the overdrive again. From below, a savage groan and stream of curses came up and he could hear Pete's feet hit the corridor. Then Dock City slapped onto the screens, less than half a mile below, and the 'Titwillow' was coming down on her tail, sliding over toward the edge of the field.

For a second, Josh let his eyes turn to the engineer, frozen in the door to the control room, perspiration oozing from his forehead. "You run the engines, Pete. I'll pilot. . ."

Pete stared incredously at the screen, watching as the ground came up, biting at the broken stem of his pipe. Outside, the whine of the stacks rose to a roar as they touched the surface, and then the 'Titwillow' was down and the rockets were off.

Josh's legs might have been a bit unsteady as he sank back into his chair, but he grinned. "Overdrive can be used that way, Pete. . .when it has to be. It beats burning out a tube." He pointed to the indicator that was flashing crimson on the board. "Number two passed critical limits on the takeoff. Until we get new tubing, we're grounded."

The Scotsman wiped off the sweat, stared out through the port as the ground lay below, and nodded, "If we get retubing."

"We'll get it - we have to. This is Earth."

It was Earth all right. The trucks had hardly started pulling out the 'mikkla' before the jeep drew up and a thin sallow man came up the ramp, glanced at Josh's cap, and pointed to the ship.

"Own her? Good. I'll give you fifty-five thousand, move her myself."

Josh shook his head and cocked

his eyebrows, trying to make sense of it. "You're trying to buy the 'Titwillow'?"

"What else?"

"Not for sale. And she's worth twenty times that."

"Not for scrap she isn't!" The man's eyes were appraising, hard and a little amused. "Look, I get 'em all; sooner or later, they all come back here, if they can make it. Once we used parts for some to fix others and they were worth more. Now. . .well, as far as I know you've got the last one out. And brother, does she need scrapping? You can't tell me you made that last jump on overdrive to show off - I could smell tube fusings as I came within a mile of her. Top price, take it or leave it. She's no good for planetary ferry-work."

Yeah, it was Earth, Josh thought; out on the worlds beyond Sol, they still felt some awe of the big ships that had made the starships possible. But here, business was business.

"You got any tubes that are in A-1 condition?" he asked quietly but some of the urgency in his mind must have come thru, the other looked at him and amusement increased.

"Sure - for a price. I've got a whole set in original packing out in the scrap pile. You can have 'em for fifty bucks apiece. . .if you want, you can have a dozen of them at the same price. But if you want them installed, well. . .that's something else. Oh, we can do it. Acme Scrap used to be Acme Refitting. But we'd have to reassemble the shops and do half of it by hand labor by now. Fifty thousand to reline her, or I'll pay fifty thousand for her scrap value. Better sell now before the price drops."

Josh considered his knuckles, and decided the guy would still be amused if he did take a good swing at his jaw, besides it might be only more wasted time. He forced a grin onto his face. "I'l give you thirty-thousand for the job."

Surprisingly, that wiped out the amusement.

"You kidding?. . .You're not. You really want her retubed." He was suddenly businesslike. Cash in advance. And it will cost you forty-thousand."

"Thirty-two, and that's tops."

"Ummm. If this weren't the slack season. . .okay, you've got a deal, old timer. Stop by the office this afternoon and we'll draw up the papers. Better yet, how about now and split a drink over it."

Without the condescending amusement, some of the hardness left, leaving Josh with a little less resentment. But he shook his head, nodding down to the unloading that still had to be overseen.

The other nodded. "This afternoon then, Captain Ames. And my name's Acme, John Acme; and it's not a phoney. Maybe because we have the same initials, I'm being soft about the price - I won't make

much on the deal. But hang it, I'd never thought I'd have such a job again, and it will make a good story to tell the kids. Where'd you get the money anyhow?"

"Gambling," Josh told him truthfully, neglecting to mention that it had been thirty years before when he gambled on being able to get close enough to a sun to rescue a millionaire party. And it was the last of the money - once it was gone he'd be flat broke - without enough even to pay for fuel. "How come you get the ships for scrap when there are still tubes around?"

Ames stared at him doubtfully. "What good are starships with or without tubes when there is no work for them?. . .We'll see you."

He went down the ramp again, leaving Josh rolling another cigarette. But the old captain's hands were trembling.

"There's got to be cargo," he said slowly. "There always was cargo."

Behind him, Pete McIntosh sucked at another dry pipe. "Sure Josh, Sure."

Across the field the big pile of scrap that had once been starships looked back at them, Josh tossed aside his ruined cigarette and began another. "There's cargo," he repeated. "There has to be."

But two weeks later, Josh Ames sat on a plastileather seat in a room that glistened with chrome and plastic trim, staring at a blank panel. His fingers fumbled for a cigarette before he knew what he was doing; then he reached for the makings, considered the lack of ashtrays and gave it up.

The space office had changed while he was out in the deeps, and was now only a corner of the Planet Ferry-Command - and located in a small part of Teleport, Inc. at that to make it worse. Once it had been a building of its own, reserved for deep spacemen. And in those days there had been a bulletin board listing cargoes while a group of busy clerks took down locations, allocated jobs, helped make routing and arranged for loading.

Now three old men sat in other seats taking advantage of the honorary right to use it as a sort of clubroom. There was dust on the closed window where someone should have answered about cargoes. The only life was a sweeper who came through, making a desultory effort to find enough work to keep him out of the way of some supervisor who might give him a real job. But from outside, the busy sounds of the normal routine of Teleport seeped in.

John stirred, wondering when the girl would let him see someone in authority. Finally, he gave up and reached for tobacco.

Doubtful feet sounded beside him, and he glanced up to see a stooped man with a grizzled beard staring at him. For a second, the deep-space tan on the other face held his eyes then he began to pierce

thru the beard.

"Ed Boyles!" Josh came to his feet, his hand out. They'd gradated from the same space academy, same class. Ed had come from a family with money and had managed to get himself a starship of his own right after graduation, while Josh sweated out his own luck, but that hadn't mattered then, just as the patches on Boyle's jacket mattered now.

"Hi Josh. Thought it was you. Figured I might find somebody I knew. Hey tobacco! Where'd you get it?"

"Grow it on the 'Titwillow'."

"You mean. . ." Puzzlement came onto the other's face. "That's right, I did see them retubing a starship. Meant to go over there to see what one, but - well, I dunno. Still running?"

Josh nodded, holding out a light, while Ed finished rolling. "Still running. Good for forty more years now with the new tubes. All I need. . .What are you doing?"

"Oiler on a planet ferry. Just go sacked. Too old."

"Oh." There wasn't much else to say. Josh had seen the name of Ed's 'Mary Jane' on a piece of scrap in Acme's pile and knew there was no use in asking after Ed's ship. Acme had apparently told the truth - all the other ships had apparently been scrapped or lost. "Want a job? Potluck, as a second on the 'Titwillow'?"

For a second, Ed seemed to hesitate. Then his face split into a grin. "Tell you the truth Josh, that's why I came here, hoping to find you; your engineer said I'd find you here. I went out there to see the ship - I lied to you a little, maybe - and then I figured. . ."

They let it rest at that while they smoked. Then Ed stirred. "How'd you do it Josh? I spent three solid years here, waiting for cargo while the field rent ate up every cent I had before I let the 'Mary Jane' go—and her tubes were getting old. You must be better connected."

"I had enough business to keep going," Josh answered slowly. There was no use telling the other about the long lean hops between stars the last few years, out on the periphery. "I'm waiting for cargo now."

Boyles nodded, still puzzled, but Josh let it go. He had to get cargo and since there was no other ships he could ask what he would practically. Maybe there wasn't much work, but there had to be some. Teleport wouldn't bother undercutting just to keep one starship off the lanes.

Then the girl came in, picking her way past the sleeping older men. "You can come in now, Mr. Ames."

It wasn't even 'Captain Ames' now, it seemed. But Josh shrugged and got up to follow her, motioning Ed Boyles to follow. Well, it had taken two weeks of waiting but it had finally paid off. Now, even if it

was a light cargo, he'd have enough to refuel and get off the planet—and they'd know here where the picking was best; so he could go next where they had work waiting for him.

He followed out of the little room, down the halls into the main shipping center of Teleport. The girl led him past the main offices, through main corridors and finally into a little office where a lean young man with troubled eyes and a look that would have made a starship man of him once, nodded awkwardly.

"Captain Ames, Starship 'Titwillow'"

Josh flipped over his identity cards, and the young man ran through them, not seeming to bother reading them.

Finally he cleared his throat. "As you know, Captain Ames, Teleport has taken over the former space office. Normally we don't operate it as a functioning thing, but. . .well, I've been able to do some investigating for you. We like to observe the courtesies. Afterall your ship and Teleport are the only ones left in the business, and we might as well be friendly rivals."

He tried a small laugh, but it didn't come off well. Josh frowned. "And besides, your charter in taking over space Office says you're responsible for clearing cargo for starships and your Teleport charter on the periphery depends on having a space Office. I looked it up."

"Yeah." The man laughed again, more heartily this time. "Okay Captain Ames, you're right—we're compelled to route you if we can find cargo, and confidentially we'd be happier if we could keep a starship operating at least until the right bills can be put through World Parliament to get around the old monopoly claim. If we found a shipper, you'd get his business, but. . ."

Josh waited. "Well?"

"There's no business to be had. No shipper will take the risk without insurance, particularly when it takes weeks to deliver, and we can teleport there in no time—literally. Even if Teleport were to subsidize you, we couldn't get the business for you. Toward the last, too many ships cracked up."

"But I've got new tubes installed."

"And you were observed making a planet landing practically in overdrive. It made a nice story for the papers—but it isn't the sort of thing that would make shippers want you carrying for them. There's just no work to be had for you."

Josh looked at the man slowly, trying to read duplicity into his face, but it wouldn't wash. The boy was sincere enough—and on his desk was a group of memos with enough of the contents showing to prove that he'd been working at it.

"That's all?"

"That's all Captain Ames. Teleport can't help you. I'm afraid. However, if you'd like to sell the

'Titwillow', we might get you a better than normal price offered for scrap. No?. . .No, I suppose not. Well you might call me in a week. I'll keep trying. Just ask for Mr. Dikter."

Boyles started to cut off as they came near the field, but Josh pulled him back. "There's still food in the galley, Ed. And if Teleport won't get me cargo, I'll get my own."

But he couldn't even make himself believe it now. The boy had been the wrong sort to stall him off. If it had been one of the usual office flunkies, he might have called it cheap politics, but Dikter hadn't been fooling.

He kept most of the thoughts from his mind as he crossed the field, rounding past the squat tubs that were loaded with cargo for Venus and Io, carrying fertilizer that was too odorous for Teleport to handle, without first processing it to kill the smell. He watched the sloppy uniforms around the tubs and shook his head, the men manning the ferries wouldn't have been allowed aboard a fuel tender, in the old days. Now this was all that was left. Then they hit toward the open end of the field and towards the sheds where Acme scrap had finally finished with the retubing of the 'Titwillow'. She stood there, showing up against the dull red of sunset. The last of the machines Acme had used were pulling away, and the clean polish of tube brazings stood out sharply against her pitted hull. Acme might have been high-handled at first, but he'd done a good job; Josh had no complaint on that score. The 'Titwillow' was good for decades now—or would be, with her holds filled and star-landings to be made.

Boyles sighed beside him, accepting the makings of another cigarette silently. Then they reached for the ramp and stopped by common consent looking out over the big deserted field.

"I hear they're planning on moving the ferry service out further, gonna turn this into a big park," Boyles said finally.

Josh nodded and turned back toward the entrance, just as a shout came from below. John Acme was down there, inspecting the job on the tubes.

"Satisfied? But I don't have to ask that. Never did a prettier job, even when Dad was running this as a repair center. When you moving her out, Ames?"

"Pretty soon," Josh answered. "Yeah, as soon as. . ."

But he couldn't even say it, Acme waited, then shrugged. "It'll have to be soon, Ames. According to the old contract form we used, you've got the right to stay here three days from completion. . .and I guess I can stretch it a little. But next week I have a bunch of heavy trucks coming in to deliver scrap, and I'll need every bit of this for the cranes. If you find cargo by then, I'll even let you load, but by next week—

that's it."

"Yeah". Josh tried to think of something to say and failed. Finally, he gave up. "Okay Mr. Acme".

Acme hesitated a moment longer, then he shrugged and went back to his office. Boyles was standing back by the ramp, acting as if he had heard nothing, and Pete McIntosh was talking to him. From Pete's face, it was obvious he had learned of the news from Boyles.

"Supper's on Josh," McIntosh broke the silence. "There's enough for Ed too."

They went up together none of them looking too carefully about as they headed into the living quarters. It had been ten years since Ed Boyles had come aboard the 'Titwillow', out around Rigel, when his 'Mary Jane' had docked along side. Then there had been a regular crew, and a cook even. The decks had been clean and the brightwork sparkled. She was still a clean ship and always would be with Josh running her. But the last five year, while Josh and Pete had learned to run her alone, had taken their toll in appearance.

"How much does it cost at the official Dock?" Josh asked Ed at last. "They got space enough now, and with no business, not attendents it ought to be cheap."

"City ordinance still stands. When you dock, they have to dig up some bum to dummy as an attendent. Rates are still a thousand a week, just to lie to. By the way, did I ever tell you what happened in New Irkusk.

Josh listened dutifully, but his mind went on clicking along in the same rut in spite of Ed's attempt to change the subject. He had exactly one hundred and seventy-three dollars left—not enough to dock for a single day. Three was barely enough fuel in the tanks to lift the 'Titwillow' into new space even if it cost nothing.

But it would lift her once she got up, the overdrive could operate. There was still fuel enough for that. They might not be able to land again, but the old 'Titwillow' could head out into deep space. Food was enough, or there should be. They stocked up on that when the shipper out around Antares had gone broke and was unable to pay the drayage.

He considered it slowly letting the decision sink in. And finally he knew there was no other way. He'd never question the traditions of Space Office; and he didn't intend to change now; a man didn't junk a good ship no matter what the others had done.

But first he'd have to get Ed and Pete out on some pretext. It would be tough, taking off without some one in the engine room, but it could be done, he guessed.

Then as he relaxed, he heard the call from outside. Pete had heard it too and was already throwing the ramp down for John Acme to board.

"Dikter of Teleport on the

phone," he announced. "He says he has a job for you.

Life came back into Josh's legs, and he was down the ramp before Pete's sudden yell could be echoed by Ed Boyles across the little strip of field. He spotted the phone in the office and grabbed it staring at the panel where Dikter's grinning face was looking out.

"You want me?"

"I sure did, Captain Ames." The boy was beaming now. I've got it — the obvious — so blamed obvious, I never even thought of it though I knew vaguely there was supposed to be another starship operating. How'd you like to have a lifetime charter—and at good rates with just one catch?"

Josh sat back slowly, as Acme came back into the office, and began reaching for the makings. "Okay son, let's have it. Where's the catch?"

"That you take me along. I'm sick of office work—and Dad was a starship captain once."

He waited for Josh's nod and began giving details. Acme listened in, for a moment and held out a congratulatory hand. the man's smile was still amused, but sincere enough now.

They began loading in the morning, first the bright trucks with fuel running their hoses up and shooting a stream into the empty belly of the waiting 'Titwillow'. Then Dikter came, a boy in working clothes, somehow gangling and awkward in his new job he'd elbowed his way into.

"All right kid, tell us what the devil we're carrying."

That was the one thing the boy

(continued on page 66)

Kennedy Space Center, Florida - The Apollo 16 Saturn V space vehicle streaks skyward past Florida landscape at the start of NASA's eighth voyage to the moon. (Lift-off recorded at 12:54 P.M. EST 4/16/72)

THIS JOE

by A. E. VAN VOGT

MAYBE HE WAS THE MARTIAN . . . AND WE ONLY EARTHMEN! - - - - - - - -

Martian landscape via Viking Lander shows a field with features similar to that of Earth's deserts.

Sand dunes and large rocks are revealed in this panorama picture of Mars. Support struts of S-Band high-gain antenna extend to top of picture. Middle third of picture-rocky surface is covered by thick deposits of wind blown material forming numerous dunes. Center of third picture on horizon are two low hills which may be part of rim of distant crater. Cloud layer is visible halfway between horizon and top of picture.

I HAD PUT on my pressure suit, and was walking through the roundhouse at Eastport, the Martian rail center, when I saw the stocky, big-chested guy with the purplish, mahogany-colored face come toward me. I knew at a glance that he was an Indian of some kind.

"Senor!" he said.

I stopped, politely, and faced him.

"Senor, I am your new engineer-relief."

That hit me. On Mars, I had run into every creed and race at one time or another. But white men operated the big steam-atomics across the endless plains, and through the mountains, and along

the frozen canals. The reason was very simple. White supremacy was taken for granted.

I tried to hide my surprise. "Glad to have you along," I said. "Better get into your pressure suit. We go out in thirty minutes. What's your name? Mine's Hecton. Bill Hecton."

"Jose Incuhana. I don't wear a pressure suit."

"Sounds like South America," I began—and stopped. "Look, Joe," I said finally, "be a good fellow and go over to the equipment room and ask for an HA-2. Make it snappy, pal. It takes a little while to get into those things. Be seeing you in about twenty minutes."

I turned away awkwardly in my own bulky HA-2. I never did care for pressure suits, but on Mars, with its thin, thin atmosphere, they're essential to ordinary human beings who leave the shelters.

I had walked about five feet when I grew aware that Jose was still with me. He said, "You can see me right now, Senor Hecton." He sounded puzzled.

I turned and faced him, holding in my impatience. "Joe, when did you get to Mars?"

He looked at me soberly with his soft brown eyes. "Two days, senor." He held up two fingers.

"Have you been out there yet?" I pointed at the desolation visible through the asbesglas window.

He nodded. "Yesterday."

His eyes were bright and intelligent looking, and they stared at me as if he was still waiting for the punch line. Baffled, I glanced around, and saw Roundhouse Superintendent Manet. "Hey, Charles!" I called.

Manet, a big Frenchman with a twinkle in his black eyes, came over. He said, "Glad to see you two have been getting acquainted."

"Charles," I said, "tell Joe about Mars. That the oxygen content of the air is about what we have five miles up back home. Tell him about high altitude suits."

Manet shook his head. "Bill, Senor Incuhna is from the Andes Mountains. He was born in a town 18,000 feet above sea level. Mars is just another mountain top to him."

He broke off. "Oh, there's Frank. Hey, Frank, come over here!"

Frank Gray was rod-man on the engine's atomic-heated boiler unit. He strode over, a lean, tense man looking huge in his suit. He was introduced to Senor Incuhna, started to put out his hand, and then drew back with a frown.

"What's going on here?" he said. "I'm near the head of the list to become engineer. Who is bringing in outsiders?"

He didn't wait for a reply, but went on angrily. "I remember now. I've heard of this Indian idea. It's an insult to a good technician. What are they trying to do? Make us think we're just a bunch of day laborers?"

Manet said placatingly, "Frank, you are a good enough scientist to realize that if we can get people who can actually live—"

He stopped. Frank had turned away. We stood silent, watching him walk off. I glanced at Jose, but his face was impassive. Manet took out his watch.

"Better get aboard," he said. "There will be a few gadgets to show Jose, and you check out in exactly sixteen minutes."

On the dot, the steam-atomic locomotive, *Desert Rat,* was eased by an electric mule into the huge chamber which served as an airlock between the roundhouse and the Martian outdoors. A few moments later, I edged open her throttle. Sliding forward under her own thunderous power, she moved onto the frozen tracks of "outside".

In the east, the sun was just tipping the horizon.

* * *

I pointed, and called to Jose through the walkie-talkie in my head globe. He came over from his seat, and followed my finger with his eyes.

"Ice, senor?" he said.

"Ice," I agreed.

Frozen rivulets streaked the metal outer walls. I ran my gaze backward from the bulging front-cab. The door of the decompression chamber was just closing behind us, yet everywhere I looked the long, streamlined locomotive already glistened where moisture had condensed and instantly solidified.

Seventy below. A typical winter dawn in the temperate zone of Mars. Ahead of us, bleak and glittery on the flat plain, was the small Earth settlement of Eastport, center of a great mining area. We glided past the interconnected domes, inside which people lived in apartment units. Lines of railway tracks led into the principle domes, but the cars that were going with us—including a pressure-type passenger car—had already been coupled to the head of a long train of ore dumps.

I backed till we connected, then I slid open the door, and climbed down to the ground. The sun shone directly into my eyes from a sky that was a deep blue-black. Above, the stars were still visible. They'd be with us all day.

I looked back. Jose was at the door. I called up: "Better shut the door!"

I heaved myself into the passenger car, went through the airlock inside, and into the comfortable interior. I took a quick glance at the men who were sitting in the bar, and realized I was piloting an important train. There were four top rail executives whom I knew, and one man who was introduced as Philip Barron, just arrived from Earth. He was a heavily built man with curly brown hair and blue-grey eyes that looked as hard as agates.

Vice-president Henry Wade began: "Bill, our head offices back home have gotten hold of this Andean Indian notion, see it as a cheap way of doing business; and so they're going to populate Mars with them. It's a blind man's deal. In a few years, there'll be tens of thousands of them; they'll stage a revolution and claim Mars as their private precinct, including expropriation of all the priceless equipment we've brought here."

Another man broke in: "How did he strike you, Bill?"

"Joe seems to be all right." I spoke carefully.

"Think he can live in this climate?"

I hesitated. "Seems to be able to breathe the air," I said finally.

A third executive laughed ironically. "One of the new men," he said. "The true Martian human. Hundreds more being technically trained. Women, too. Soon people like you and me, Bill, will just be memories in the Martial rail history."

"Like hell we will," said Vice-president Wade.

But the other man's words made me

uneasy. There were times when I cursed this route and this life, but more often I couldn't imagine anything I'd rather do. Besides, the pay was terrific.

Wade looked at me soberly. "You're going to be asked to give your estimate of him. Our idea is that he should be made to stack up to a high standard."

I said with a shrug, "I can't see this deal depending on my say-so."

Wade replied earnestly, "It'll depend on many things. Superficially, the notion appears to have merit. It's only when you examine it as a whole that you perceive the danger."

Barron, the only Earthside executive present, stood up and offered me his hand. He said, "It's not so bad as they make it sound. We're starting off with eighteen Indians in different types of work. I admit in the long run it's going to save money. Fewer dome shelters, an easing of compression costs, perhaps even a little profit for the shareholders. Is that bad? I don't think so."

As I climbed into the cab a few minutes later, I saw Frank Gray disappear into his section. I looked questioningly at Jose, but his face told me nothing. I hesitated, but Frank was a friend of mine and Jose wasn't; I decided to ask no questions. "Start her off!" I said curtly.

The train began to move, and I looked at my watch. We were eight minutes late. We had about five hundred miles to go before dark, not a great distance unless something went wrong. On Mars in winter, trains didn't run on night schedules. Extreme low temperatures made the rails dangerously brittle.

"Keep her down to twenty miles per hour," I said presently.

Jose nodded, but looked puzzled. Seeing him sitting there, warmly clothed but not in a pressure suit, I began to feel something of the tension that had been in the other men. "Joe," I said suddenly, "what kind of lungs have you got?"

He was no dumb Indian. He had been told about himself, and he gave. Andean man has lungs bigger than normal with more blood vessels in them. His heart can do at least an eighth more work than the heart of sea level man. His blood vessels carry a greater volume of blood, and his nerve cells are less sensitive to oxygen starvation.

When the Spaniards first came to places like Peru and Bolivia, they discovered that neither pigs nor birds, cattle nor Spaniards could breed above ten thousand feet. It was only after a generation had lived at about eight thousand feet that the descendants were able to reproduce at fourteen thousand. The Indians had been there before them from time immemorial.

The facts and figures gave me a sinking sensation. I looked at Jose's purplish-red complexion, and realized that he *could* be a Martian. But it was obvious that I couldn't.

I saw the pile beside the tracks far ahead before Jose did. I expected it, of course; and so I waited, wondering how long it would take him to spot the object. Twenty seconds went by, and then he pointed.

I sighed. No sign of oxygen starvation with that kind of vision.

"Start braking her!" I ordered.

He looked at me with some surprise, and I know he was thinking it was too soon. He was not making due allow-

ance for the fact that it took a lot longer to stop a train on Mars. Same mass as on Earth, but less weight, less friction. We came to a halt, the wheels grinding on the rails, the engine panting and shuddering.

There was no one in sight, only the huge bag lying beside the tracks. I guessed there was about two tons of rock inside the bag. "I'll go outside," I told Joe. "Then you drive forward till I wave for you to stop."

He nodded his acceptance of my instructions. As I slid the door open, he pulled his big collar up over his ears: and, when I had climbed to the ground, he came over and shut the door.

It was not quite so cold as it had been. I guessed the temperature had come up to fifty below. The long train started as I motioned Jose—and stopped when I waved. I used the "claw", a small crane which we carried for the purpose of lifting such bundles into an ore car. And presently I was back inside the engine cab.

I said, "You can speed up now."

The speedometer climbed. At seventy, Jose leveled her off. He explained: "I don't know enough about this terrain, senor, to go any faster."

I nodded, and took control. The speedometer needle edged higher. Jose said, "That bag of stuff, Bill—" He almost said it "Beel"—"who put it beside the track?"

I'd been wondering if he would show any curiosity. "A race of small, furry creatures," I answered. "They're very shy. They live underground, and dig ore for us." I grinned at his puzzled expression. "We don't want the ore, because it's usually only rock. We're interested in the material of the bags. It's as thin as paper, completely transparent, and yet it can withstand the weight of tons of rock. They manufacture it from their own bodies, much the way spiders produce webs. We can't seem to make them understand that we want only the bags."

We did the next fifty miles at an average of 84 miles per hour. It was a straight run, and it was like gliding along on ice. On every side was a flat waste of sand that had not changed in all the years since I had first seen it. The sun was climbing in a sky that was bluer now, the stars faint but still visible. We plunged through that barren world to the hiss of the high speed steam turbines, and the hum of the gears that transmitted their power to the wheels. I felt more than human. I was the master of a juggernaut that violated the ancient silences of a planet millions of miles remote from the planet Earth.

As I saw the hills in the distance rearing up like low mounds, I began to slow. On the panel a red light blinked. "8 miles", the indicator said. I applied the brakes.

Jose pointed questioningly at the winking light.

"Sand on the tracks," I said.

Dune country. Sand so fine that even the thin winds of Mars could lift it. In motion, it looked like trailing smoke. As far as the eye could see there were gusts of it blowing, and here and there the rails had completely disappeared under the drifting stuff.

We moved in fits and starts, swiftly when the track looked clear, and very slow, with our blowers whining and hissing, where there was sand. Altogether, about an hour and a half went

by before, once again, the roadbed belonged to us.

Halfway. And only a few minutes after ten o'clock. We were first. Jose slid open the door.

"Go out?" he asked.

"Sure."

We were on a rocky plain that was as crinkled as an old man's face, and almost the same grayish color. I watched Jose scramble over the rocks and head for a prominence a hundred yards away. It took stiff climbing in places, but he made it with apparent ease.

I grew aware that Frank had come into the cab. I glanced at him; and he said with a sneer, "Showing off to the big shots."

I hadn't thought of that. It could be true. Jose knew that he was being tested, and that there was hostility towards him, not only from Frank Gray.

There was a faint rumble in the distance, and then a shrill whistle. The *Prairie Dog* rounded the bend and bore down on us. Glittering in the sun, the long engine roared past, its thunder somewhat muffled by the thin air, as was the trailing clatter of its empty ore cars. When the train had passed, I saw that Frank was going back into the rod room, and Jose was climbing into the engine.

I looked him over sharply. He was breathing heavily, and his cheeks were mottled. I wondered if it was entirely from exertion. Our eyes met; and he must have guessed why I was watching him, for he said quickly, "It's all right, senor. I feel fine."

I thought I detected a note of irony in his voice. I walked to the door, opened it, and then turned to him. "Jose," I said, "you'll get an honest deal from me, I'm going back to the passenger car. You're on your own from now on in."

Jose looked startled. Then his strong jaw set and he said gravely, "Thank you, senor."

Wade and the other executives were astonished when I explained what I had done. But Barron, Earthside executive, nodded approval. "After all," he said, "it's a fair test. Can he run a train on his own, or can't he?" He finished, "We can always phone him to stop, and then send Bill back up to the engine."

His words were received in silence, and from the sullen expressions of the others I guessed that my action was unpopular. The silence continued while the train accelerated. I must have dozed in my chair, because I wakened with a start to realize that the car was shuddering and swaying. I took a look out of the window, and felt alarm as I saw how swiftly the desert was speeding by.

I glanced around quickly. Three of the men were talking together in low tones; Wade was dozing, and Barron sat placidly smoking a cigar. He looked preoccupied.

I climbed casually to my feet, walked to the phone and called the engine cab. After it had rung five times, I got an uneasy feeling in the pit of my stomach. I returned to my chair; and it seemed to me, as I glanced again out of the window, that the train had actually gained speed. I groaned inwardly, and, glancing up, saw that Wade's shrewd brown eyes were studying me.

"Isn't your man going a little fast?" he said.

His assistant snapped angrily, "Irresponsible, if you ask me!"

Barron sighed, and looked at me gloomily. "Ask him to slow down."

I went to the phone, and he called Frank Gray. The phone rang three times, and then Frank's voice said lazily, "Hello."

"Frank," I said in a low tone, "will you go up to the cab and ask Jose to slow down?"

"I can't hear you," he said. "What do you want?"

I repeated my request, emphasizing the words but still trying to keep my voice down.

Frank said irritably, "Stop mumbling. I can't hear a word you're saying."

I had been feeling both sorry for, and angry with, Jose. But there's only so much you can do to help a man who's got himself into a difficult situation. Clearly, and without worrying about being overheard, I told Frank what I wanted. There was silence when I had finished. Then:

"Go to hell!" said Frank. "It's not up to me."

He stuck to that, despite my arguments. I said finally, "Just a minute!" And whent back to the group. They listened in silence, and then Wade whirled on Barron.

"Look what you've done to us with that Indian of yours!"

Barron chewed his cigar savagely, turned and stared out at the spinning landscape, and then said, "Better order that rod man to do what Bill said."

Wade came back presently from the phone. "I had to give him permission to use force if necessary."

A few minutes later, we began to slow down. By that time Barron was climbing into a pressure suit, and Wade had sent his executive assistant to get a suit for him. They exchanged caustic comments until the train finally came to a halt, Barron stubbornly clinging to the attitude that the defection of one Andean Indian didn't condemn all others. I led the way to the engine, and all I could think about was: What *could* have got into Jose?

Frank opened the cab door for us. There was no sign of Jose as we climbed in. Frank explained, "I found him lying on the floor here gasping for breath, so I put him into the rod room and built up a little pressure." He added complacently, "Nothing wrong with him that a little oxygen won't cure."

I looked at him for a long moment, fighting the suspicion in my mind. I said nothing, however, but made the necessary adjustments in pressure, and went into the rod room. I found Jose sitting on a chair. He looked at me miserably, but shrugged at my question.

I said earnestly, "Jose, I want you to forget that pride of yours, and tell me exactly what happened."

He said unhappily, "I became dizzy, and I had a feeling like bursting. Then I do not know what happened."

"Why did you speed up the train?"

He blinked at me, his dark eyes wide and uncomprehending. "Senor," he said at last, "I do not remember."

"My guess," said Frank from behind me, "is that we ran into a low pressure area, and as far as he was concerned it was the last straw."

I shook my head. I was remembering how Jose had matched my vision early that morning, and remembering also the way he had climbed the hill at Halfway. The stamina he had displayed in those two incidents wouldn't have yielded to a slight change in atmos-

pheric pressure. Also, the cab doors were closed. Since they were nearly airtight, the pressure inside the cab would hardly be that sensitive to temporary changes outside.

I turned and looked at Frank. He stared back at me defiantly. Twice, I started to speak, but each time I remembered how long we'd been friends, and remained silent. Over his shoulder, I saw that Barron was examining the air pressure gauges and controls for the inside of the engine. He walked over to Wade and spoke in a low voice that sounded grim. The vice-president kept shaking his head, and ended the conversation by going over to Frank. He held out his hand.

"Mr. Gray," he said in a too-loud voice, "I want to thank you for saving us from being wrecked. Just remember, I'm behind you all the way."

Barron was tugging at my arm. I went with him out into the cab. He said quietly, "Is it possible to control the air pressure in the cab from the rod room?"

Since he could have obtained that information from other sources, I didn't hesitate. "Yes," I said.

Barron went on, "Did the Indian show any signs of oyxgen starvation in your presence?"

"None."

"Have you any idea whether your rod man is hostile to this notion of bringing in the Indians?"

"I have no idea," I said. I looked at my watch. "But I think we'd better get going. We're 43 minutes late."

Under way again, I left Jose at the throttle, and stepped into the rod room. Frank was adjusting temperatures, and I waited patiently till the gauge readings balanced. Then, he looked at me. I said, "Pretty smart."

He didn't deny it. "It's now or never," he said.

"Then you admit you reduced the air pressure on Jose?"

His tanned face grinned at me through the transparent visor of his suit. "I admit nothing," he said, "but I'm going to wreck that little buzzard's plans if it's the last thing I ever do. And I have an idea I'll get all the backing I need."

I tried to make him see that if there were any human beings at all who could live on Mars without artifice, then no one could fairly deny them the right to do so.

"Call *him* a human being?" Frank sneered.

I stared at him, and in that moment my feeling of friendship disappeared. I said very slowly, "If you bother him again on duty, I'll take it out of your hide."

Frank looked at me sullenly. "I've been wondering just where you stood," he said. "Thanks for telling me."

For an hour we rolled along through a rock-strewn wasteland, and then we came to an area of low hills and green sheets of canal ice. I was telling Jose that the toughest part of the run was over when the red light began to blink.

He looked at me. "Sand?"

I shook my head, frowning. "Not here. Something must be on the tracks, or crossing them."

It was a sand lizard, eighteen feet of senseless scarlet and yellow monstrosity. It had caught its leg under the track between the two ties. All the beast had to do to free itself was to cease pulling forward, but it was too moronic for that.

Wade phoned me, but lost interest as soon as I explained why we'd stopped. "You know how to handle them," he said. And rang off.

I knew the technique all right, but I wasn't happy about it. I explained to Jose that men who hunted the creature wore an over-suit of the super-resistant material we'd picked up at the beginning of our trip. It provided protection against a casual slash, though even it was not much help in a direct attack. In an emergency, safety lay behind the creature. Out of sight with it was out of mind.

Frank Gray sauntered out into the cab. He shook his head when I suggested that he and I help the lizard to free itself. He said, "That thing lives off a particularly tough cactus. It's got teeth you could cut rock with." He finished satirically, "Joe's the man to do the job. If his suit gets torn, it won't do him any harm."

Jose picked up a crowbar. "Where is this over-suit, senor?"

"We carry extras," I said reluctantly. "I'll go with you."

The over-suits covered us completely up to the neck. Above that, my own rigid vitrolite helmet offered me further protection. Jose had only his thickly insulated cap. If his people became permanent fixtures hereabouts, they'd have to make provision for such encounters as this.

I took a long oil gun from the tool box, and we climbed out of the cab. As it saw us approaching, the lizard turned its fiery head, and watched us. But it kept straining steadily forward.

I squirted oil into its fathomless blue eyes. Then the two of us prodded it from its left side, its right side and from behind. In response, the lizard hissed with its tongue, and made a rattling sound with its throat. But it continued to tug forward in that idiotic fashion.

The sun sagged towards mid-afternoon. Patiently, Jose and I kept poking at the beast until, finally, some mental circuit seemed to close inside its brain. It ceased its forward movement. Hissing, it turned as if to come after us.

Its leg slipped easily and naturally from under the track. And it was free.

"Jose!" I yelled. "Get behind it."

The footing wasn't too good in the shifting sand, and Jose moved a little awkwardly. Four inch talons whipped the air so close to his cheek that I held my breath. Then he was behind the creature, which stopped turning, evidently having forgotten his existence.

The last we saw of it, it was laboriously climbing over a rock—instead of around it—and heading away from the tracks.

As we turned back toward the engine, there was a swish and a clank, and the long train moved towards us. I caught sight of Frank Gray high in the cab sitting at the controls. He waved mockingly as the powerful locomotive glided past us, gathering speed with every yard.

I grabbed at the handrail as it swept by, caught hold, and hung on with everything I had. Grimly, I reached for the next rung — just as the cab door above me slid open. Frank bent down and with a long wrench banged me on the fingers. Despite the protection of my heavy gloves, the instant pain and numbness broke my hold. Wildly, I grabbed at the rung below with my other hand.

Frank knelt, and swung his wrench

again. This time he missed, but he drew sparks from the metal. I'd had enough, however. I couldn't let him cripple my other hand. It might send me under the wheels. Before he could strike again, I lowered my feet to the ground, started running, and let go.

I pitched headlong into the gravel of the roadbed. The cushion of air in my pressure suit saved me from serious injury. But I was gasping as I scrambled shakily to my feet. My plan was to swing aboard the ore car, but as I fell in beside the train, running as swiftly in my bulky clothing as I could, I realized the train was going too fast. I was about to give up when a hand like iron grabbed the scruff of my neck.

"Senor, *run*!"

I ran till the salt of exhaustion was in my mouth, until I could hardly see because of the tears in my eyes. I fumbled blindly for a rung of the ore car ladder to which Jose was clinging.

With his clutch supporting most of my weight, I caught that rung; and presently we lay on top of the car gasping for breath.

I stood up, still shaky. "I don't know what that buzzard is up to," I said, when I could speak again, "but we're going into the passenger car, and sit it out."

Our sudden appearance caused a minor sensation. I explained briefly what had happened, then picked up the phone and called the engine. It rang three times, and the line went dead. Since all power on the train was supplied by the locomotive, it seemed evident that Frank had cut the telephone system. His purpose was obvious — to prevent us from calling Marsopolis, our destination.

Silently, I cursed my stupidity for not having called there first. Frank might not have thought of it in time to stop me.

An official was shrugging. "He's behaving very foolishly. He can hardly wreck the train without danger to himself. All we have to do is sit tight."

A sudden thought struck me. I went to the gauge panel. The pressure was a full pound low, and the temperature was down slightly. I turned to the others, frowning.

"I hate to say this, but I'm afraid he's cut the power for our air conditioning."

Philip Barron looked pale, but his eyes were steady. "How long?"

"Not more than an hour," I said. "We could stand the cold, but we'll all pass out if the pressure drops much more than half — all except Jose, that is."

There was a grim silence. Then Barron glanced at Jose musingly, and said "Yes, there is you. I suppose Gray figures it'll be his word against that of an Indian. The arrogant fool! Of course we could all sign a statement as to what actually happened, and leave it with you—"

"To hell with that!" said another official. "That might help Jose, and it might help justice, but what about us?"

I broke in at that point. "You're overlooking one thing. Jose can stand low pressure, but he can't breathe poisoned air, and he wouldn't last long outside after dark. We have only one chance." I turned. "Come on, Jose, let's get aboard that engine."

There was a fire axe in each of two emergency cases at opposite ends of the car. We armed ourselves with them, and a minute later climbed up to the

top of the train and started forward. I could see the glistening blue and red locomotive with its bulging cab, and the figure of Frank Gray sitting in it.

What worried me was that there was a high-powered rifle in the cab—and at the moment Jose and I were as exposed as two sitting ducks. I doubted if Frank would fire unless he had to—bodies with bullets in them would be hard to explain away—but the possibility put a tension in me.

The shallow Martian sky was already darkening in the East, and Earth as an evening star shone brightly above the declining sun. There was still about an hour of daylight left, but since we were well over a hundred miles out, the fact gave me no comfort. We were in semi-mountainous country, and the track was too winding for high-speed travel.

I pulled my collar more tightly around my ears, and bent into the freezing wind. I noticed that Jose paused often to clap his hands together as we started forward along the top of the tank-tender, which carried the engine's water-reserve.

I saw, at this closer range, that Frank was watching us through the glass. The rifle lay on the window-ledge beside him, but he made no move to pick it up. Apparently, he was waiting to see what we were going to do.

I wasn't sure, myself. Get the cab doors open somehow, and hope to get in without being shot down.

We climbed to the top of the cab, and lay prone just above the doors, Jose on one side, and I on the other. Simultaneously, we swung our fire axes down against the heavy panes of the doors. Though shatterproof, they were hardly built to withstand such blows. On my side, a sizable section of glass broke loose, and fell inside.

That much was easy. Now, we had the ticklish problem of getting down there and reaching inside to unlock the doors.

I slid over the edge, and started down the steel ladder alongside the door. Jose's face was just disappearing over the other side. And still we were all right, being protected by the metal walls of the cab. To get at us, Frank would have to poke his rifle through the hole in the glass on either side. But he wouldn't do that. He'd sit there amidships, and try to pot the first hand that reached in. After all, time was in his favor.

The long train glided along into a gathering twilight. The wheels ground and squealed with a steely sound. The engine groaned and shuddered, swaying as it curved past a steep embankment. I was nerving myself for that first, dangerous thrust—when a shot rang out inside the cab. It could only mean one thing. Jose had grabbed first.

Galvanized, I reached through the hole in the glass. And my hope was that Frank's gun might still be turned the other way.

Familiarity counted. I knew that lock, and I opened it with one quick twist of my fingers. And jerked my arm back.

A hole appeared in an unbroken part of the glass just above where my hand had been. And another shot sounded.

Hastily, I gave the door a strong push from the outside. It rolled back with a bang. And then, there was Frank standing in the opening, leveling his rifle at me.

I pressed flat against the cab, but realized the futility of that, and struck

at him with the axe. The blow fell short, as he drew back slightly. I could see his face through the transparent visor of his head globe, his lips twisted, his eyes glittering. In pulling away from me, he had let the muzzle of the rifle drop. Now, deliberately, he raised the gun once more.

As his finger tightened on the trigger, I threw my axe at him. He ducked. The handle of it brushed his shoulder.

For a third time, the muzzle of the gun came up; this time it pointed at my helmet. I thought despairingly: "We're proving our weakness, Frank and I." This whole incident, the very arrival of Jose on Mars, had happened because our air supply *was* so vulnerable.

In some way, I had hoped to drive that fact home to him.

Even as I had the vague thought, I was stooping low, and trying to swing through the door into the cab. The rifle went off practically in my face. And Frank staggered drunkenly.

At least, that was the way things seemed to happen.

What amazed me was that the bullet intended for me went off into the gathering darkness.

And then a fire axe clattered to the floor of the cab out of nowhere—and the truth dawned on me. Jose had thrown it from the other door with enough luck or precision to smash Frank's head globe.

Frank was reeling. He would have plunged through the open door if I hadn't grabbed him instinctively. As I pushed him back inside and followed him, closing the door behind me, I saw Jose leaning against the opposite wall. His left arm was dangling, and dripped blood.

The grayness of shock was in his face. But he grinned at me as I dragged the limp body of Frank Gray toward the rod room, where I could apply pressure and save his life—so that a criminal court could decide what to do with it.

* * *

These days, the story of Jose is the part of my Martian life my kids most want to hear about. Which makes me feel hopeful. Living here in retirement in Colorado at 8500 feet, I've managed to work up a community enthusiasm for a long-run scheme of mine.

We're building a town at 17,000 feet; and our children are already spending time up there. We've got it all figured out.

Their kids are going to be Martians.

SEED

by RAYMOND F. JONES

CHAPTER I — THE COLONY

THE SANDS of Mars hate the men of Earth. That's what the spacemen say, and they have fought the crimson deserts long enough to know.

But Nathan Ord looked down from the window of the ancient jet transport and wondered if they knew the reason. He watched the turmoil of the sands, whipped by the ceaseless winds. He was seeing it for the first time, yet he felt instinctive understanding of the hate this planet held for men.

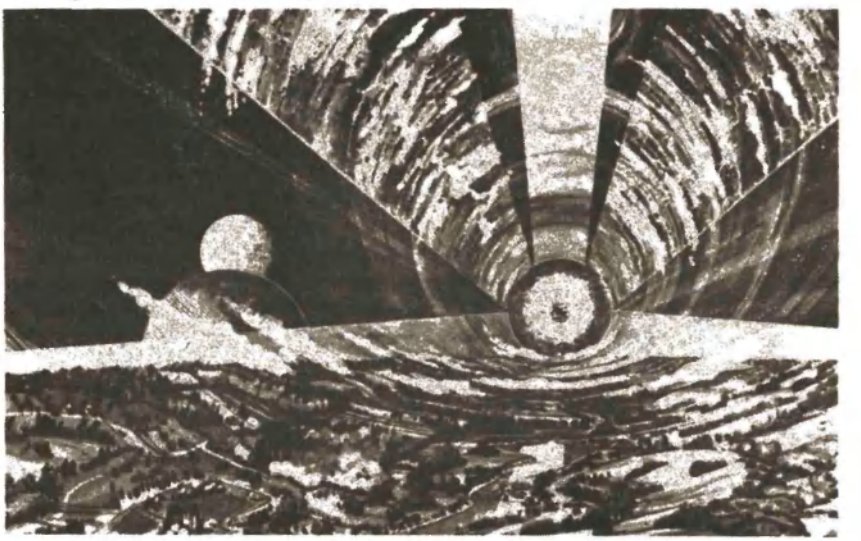
Mars had been clean before men came. Clean like a bone drying under desert skies.

Now it was a garbage dump.

IT WAS THREE GENERATIONS SINCE THE LAST RADIANT BOMB HAD EXPLODED ON EARTH . . .

★ ★ AN IMPORTANT NEW NOVEL ★ ★

A resident of a 21st century space colony might view this vista of Earth like landscape from inside 19-mile long, 4-mile wide home in space.



see inside front cover for detailed description

He looked ahead of him in the cabin of the ship. There was Joey, the one legged. Joey had never had any more than one. There was Alice, the twin-head, one an idiot, the other blessed with incredible genius.

There was—

But he knew them so well he could close his eyes and see them all. They were the mutants.

They were garbage — and Mars is Earth's garbage dump.

Lassiter, the heavy faced guard, moved down the narrow aisle from the pilot's compartment. He looked over his charges carefully in preparation for imminent landing. His shifting weight was felt in the motion of the decrepit plane that was bringing them from the spaceport of Heliopolis to the Mutant Colony. He sat down with a grunt in the seat beside Nathan.

"I guess it's about time for me and you to say goodbye, Doc. It's been nice knowing somebody like you this trip. Gets monotonous going back and forth between here and Earth. Once every month. It's always the same. Nothing but these walking nightmares to talk to. Sometimes I feel sorry for them, but gees it gets you after a while. When I start dreaming about them, though, I'm quitting. I promised myself that.

"I wish I could figure out your angle for sure, Doc. It doesn't make sense.

There was Alice the twin-head (blessed ironically with rare genius); and there was Joey the one legged (and, of course, an idiot); and there was—but Nathan Ord knew them all so well. Doomed to Mars, they were, Earth's garbage dump. The mutants . . .

Any of these would give their right arms—the ones that have right arms—to get back to Earth, but they'll never get there again as long as they live. But here you could turn around on the next ship and be there in a couple of weeks. So what do you do? You come out here like some noble missionary volunteering to spend the rest of your life in this hell. It just doesn't make sense!"

Nathan stared at the lolling, idiot head of Alice. "It's three generations since the last radiant bomb exploded on Earth, and still the mutants come. Somebody's got to find out how to stop it. They won't let me have enough mutants to work with on Earth, so the obvious thing is to go where the mutants are. That's here."

"It's there!" The guard pointed abruptly through the window of the plane. Nathan glanced ahead at a sharp angle. Rising out of the desert was a chunk of rock, utterly alone amid the red sands.

Its flat face was turned away from the flow of constant, surging winds, and at its base huddled the outcast colony.

Some of the mutants stared ahead, too, at the desolate cluster of structures. Nathan caught his breath at the lifeless masks that settled upon those faces he could glimpse in shallow profile.

Up to this moment their exile had been only a promised nightmare. Now it was upon them in all the terror of reality.

"It doesnt have to be that bad," he murmured to Lassiter. "They don't deserve anything like that—"

"What do you expect? The Law says they have to go to Mars and live there. There is never even half enough money to support the colony. Congressmen are under no pressure to provide funds for garbage dumps this far away."

Nathan understood such problems well enough. Most of his own work had been done by necessity in government laboratories.

Lassiter moved away as the ship slanted down for a landing. It rocked even more violently as it whipped through the air stream pouring past the cliff edge. Then it was in the quiet zone and skimming toward the runway. When it touched, the sand was like a sudden clutching hand, but the pilot was used to such landings. He jockeyed to a skillful stop.

Nathan saw the attendants coming out of the administration building. The mutants were rising now as Lassiter loosened their fastenings and prodded them into action.

Nathan remained where he sat. In a moment the line of disembarking mutants appeared on the ramp under the wing of the ship. Nathan could not hear the words of the guards, but their manner spoke for them. Boredom, disgust and rudeness was common display toward their new charges.

Getting out of the plane, Joey lost control of the crutch that took the place of the leg he'd never had. He slid to the sand, bruising and scraping his arm and hands. An attendant snickered. Only his fellow mutants moved to help him.

I should be in line with them, Nathan thought. *I have no right to be separate from them.*

But only by being separate could there be any dream of helping them — or himself.

He shook himself wearily and gathered up the small leather case that held the important elements of his research

and clumped slowly down the aisle.

He came out of the plane, a rumpled, undistinguished man of forty-five with a touch of gray at the tips of his black hair. His face held the look of one listening quietly to other sounds that no one else could hear.

The attendants regarded him with uncertainty for a moment, hesitating to class him with the mutants, then remembering that there was a Dr. Nathan Ord who was coming to take over the research laboratory.

One of them stepped forward, a brash youngster obviously aware that Nathan might someday be in a position to recommend advancement.

"Dr. Ord?"

Nathan nodded, glancing at the dismal stone and adobe building. "Please show me the way to the office of the Chief Administrator."

The attendant offered to carry the leather case, but Nathan shook his head and followed along.

The halls of the administration building showed their age and long neglect. The colony had been in existence for eighty years, and the building was old. The stone floor was worn concave, and the walls bore no trace of the paint they might once have had.

Nathan came to the door marked: Chief Administrator, H. K. Davidson. He entered behind the attendant.

Davidson did not bother to rise as they were introduced and left alone. He motioned carelessly to a worn chair beside the desk and Nathan pulled it up.

For a long time he said nothing. He eyed Nathan while he munched grapes from a bowl on the desk, grapes that must have come from the hydro gardens in Heliopolis, Nathan thought.

Davidson was big and languid, accumulating fat needlessly. His round face had an oily hue, its expanse broken by a ragged black mustache. He wiped his fingers at last on the broad thigh of his rumpled white suit and spoke.

"It's always hard to know what to say to a new man when he comes into this little hell over which I have the honor to preside," he said. "Ordinarily. I don't say anything. A man comes here because he wants a job, and if he hasn't got the guts to turn down an offer like this, he's not much better than the mutant trash out in the compound."

Nathan made no remark, but weighed the bitterness of Davidson. In it was danger, the danger of a sheer, stupid animal. All his life he had been fighting men like Davidson and he was utterly weary of it. But one more wouldn't matter now.

"You're different," Davidson continued abruptly. "I know about you—*all* about you. A first rate man doesn't give up Earth and come here for nothing so I looked up your record. You could have had this job five years ago when Morrison died. Did you know that?"

"Yes," said Nathan. "I knew."

"You were too wild then in your preaching that the mutants could be left on Earth, that they could be cured and left there like human beings. Some very influential Congressmen didn't like it one bit."

"I've said nothing —" interrupted Nathan.

"Oh, no! You learned your lesson. You kept your nose clean and went on to become the top man in mutant biology in the whole damn' System. They

could hardly turn you down then. So you finally arrive here—I wonder why —" Davidson's voice was mocking.

"I had to go where mutant research was possible. That's here. That's why the lab was originally established here —in case you've forgotten—to find a way to eliminate the production of mutants completely. That's my basic research. I have no intention of offending sensitive Congressmen."

"You see that you don't, and we'll get along all right. Publish all the cute little papers you like on what genes are lacking in a mutant who hasn't got a head, and get your name spattered all through the little journals that go for that sort of thing.

"But just you open your mouth one time about leaving mutants on Earth and emptying the colony of them, and you'll think that forty thousand tons of Mars desert has been dumped on you. I've got a good record here. The budget department likes the way I handle their money, and in another year, I'll be due for transfer. Do you understand?"

"I understand very well, Mr. Davidson. I am sure that we shall get along."

"Good. You'll find the lab buildings over on the north end of the area, next to the compound. Doc Collins will show you around."

It was worse than he had supposed, Nathan thought. Davidson was a dead-ender, on his way down, not up. Nathan had seen his kind before, shuttled into some obscure office from which he would never rise, eating his heart out anticipating the promotion that would never come. In the years to come he could make the colony a place of supreme misery for Nathan.

CHAPTER II

DEATH IS THE PENALTY

THE LABORATORY was housed in an equally run down building. He found the door marked Chief of Research, and entered. Inside, a young man in a lab smock was sitting at the desk scribbling a hurried memorandum. He looked up to Nathan and his eyes lighted with excited recognition.

"Dr. Ord!"

He hurried forward and grasped Nathan's hand. "It's wonderful to see you, sir! You'll never know how much I had hoped it would be you to fill this position."

Nathan smiled. "Thanks. I'm glad to know someone besides myself held that same hope. You must be Dr. Don Collins."

"Yes. Excuse me for not introducing myself. The prospect of being able to work under you is somewhat overwhelming."

Nathan enjoyed the kind enthusiasm of Don Collins. It would be pleasant working with this youngster, he thought. He had seen some papers of Collins', and they were very good.

The office was dismally furnished with ancient chairs and desks and filing cabinets. Don caught Nathan's distasteful glance.

"It's not very nice, but it's only preliminary to the lab equipment. We don't get much money out here, you know."

"So I understand. Let's have a pic-

ture of the whole background. I've met Davidson. What more do I need to know?"

"If you've seen Davidson you can visualize the colony. The poor devils out there live like animals. After a few weeks their spirits are as twisted as their bodies. I hope you're right about the possibility of stopping mutation and returning the mutants to society."

Nathan glanced up sharply. "Who told you about that?"

"You did—why? I was just a kid in school when I read your early papers on the subject. They inspired me to turn to genetics in the first place. I was pretty idealistic then, and I've never forgotten it."

"It seems to be a pretty dangerous ideal to have around here."

"Davidson? Yes, of course. I never mention it. Not even in the lab. But I haven't forgotten it. We can find ways to work around the barriers. That's what you came for, isn't it?"

"It's the only reason I came, but I'm five years late because I talked too loud before."

"Can you tell me anything about the procedure?"

"My work shows that destructive mutations have taken place on a molecular level. The original radiation of the bomb attacked the genes of the mutants' ancestors and caused a twisting of the gene molecules, like a pattern of asymmetrical beads distorted by twisting some of them.

"This distortion had been handed on to subsequent generations. Sometimes it passes for generations as a dormant, then breaks out as you see it doing in the colony.

"My discovery consists of a means to restore the proper alignment of gene molecules by a counteracting field."

"You have developed such a field?"

Nathan nodded. "I have more than a thousand case histories of test runs on animals. There were no failures. Now I need to prove its applicability with respect to human beings. I expect a freight ship to bring my equipment within a day or two."

"How do you proceed with the work?"

"Parents are treated with the field before conception of offspring. The latter can then be tested in every known way and shown to be perfectly normal."

Don's eyes lost some of their light, and he sagged visibly. "Then I'm afraid there will be no opportunity here for testing your field on human mutants," he said slowly.

"Why—why do you say that?"

"Didn't you know? There are no births here in the colony. None at all."

Nathan's face whitened. "No! No one ever told me that. Why?"

"The colony is subject to general administration by Davidson's office, and the mutants are subject to examination and observation by us for research purposes, as you know. But the internal organization of the colony is entirely a matter of self government by the mutants themselves."

"What has that to do with the absence of births?"

"It is forbidden by their own laws. Death is the penalty."

Nathan turned his head slowly until he could see the distant compound through the window of the office. He could see the dismal huts of stone and mud and glimpse ant-like figures moving about in dejection that was suggest-

ed even at this distance.

He could understand. He could understand their determination to let their horror die with them.

It was the thing he would do in their place.

"We will have to persuade them to cooperate with us, then," he said at last. "And we'll have to do it without exciting Davidson."

Don shook his head. "You don't know what you're saying when you suggest such a thing. They're bitter and full of hate towards all mankind. Nothing would persuade them to cooperate. They don't *want* to return to humanity or to have descendants. They want to die."

"Nevertheless," said Nathan. "We must have their help."

He put off any contact with the mutants during the remainder of the day. There was plenty to do at the laboratory, getting acquainted with the meager personnel, surveying the equipment with which he would have to work, and trying to fit the scope of his research into the limited means available.

But through it all he knew he was dodging. Dodging the true problem of the mutants' refusal to reproduce themselves. The Law permitted him wide latitude in demanding the mutants for tests and examination that did not involve "cruel or inhuman practices." But he could not force them to procreate. That was outside the bounds of the widest interpretation of his rights over them.

He delayed until midmorning of the next day and then asked Don Collins to show him around.

The compound was actually not a definite enclosure. The administrative buildings, rather, were the ones enclosed. Lumpy adobe walls protected them from the invasion of sand and wind, and a crude stone wall separated the administrative area from the mutants' territory. The latter was thus bounded by the rock eminence on the north, and the fenced-off administration area on the south. On the other two sides there was only the desert and the wind.

Mutants occasionally walked into the desert. They were not missed. No search was ever made for them. It was eighteen hundred miles to the nearest point of civilization.

A guard was stationed at the gate of the compound. He opened it ponderously as Nathan and Don approached. What purpose the guard served, Nathan could only guess. Certainly there was no danger from the poor charges who were locked forever beyond that gate.

Ahead of them stretched a dozen alleys of stone and adobe houses, as hopeless appearing as the human beings who inhabited them. A few mutants sprawled dismally before the walls, trying to catch the few, precious hours of warming sun. Others moved about the streets in futile tasks. In nearly all, the product of crazed genes was visible even at a distance.

"How many are there?" asked Nathan.

"About twenty thousand at the last count. Davidson doesn't worry too much about a census except when the housing gets so bad he has to spend money."

Nathan was appalled at the thought of that number of sick and weary hu-

man beings here. Yet he wondered that the number was not greater with all of earth to draw upon. He asked Don about that.

"The turnover is fast," said Don. "A few long-timers have been here for twenty-five or thirty years. But even taking them into consideration the average life of a mutant here is only four years.

"After they've been here a little while they just don't seem to want to live any more."

Nathan looked at him. "Would you?" he said.

* * *

John Rodin was the internal leader of the colony. No one could remember his coming, for the rest had been children then or were younger in exile than he.

He was a man who gave an air of stupidity at first glance, and that was the way that Nathan saw him.

He was sitting by the narrow window of his hovel when Don led Nathan in. Rodin nodded sullenly at the introduction and continued staring at the distant hill of rock.

Nathan watched the emaciated figure in silence. It was more like a bundle of sticks and burlap than a human being sitting there. And then he saw what the nature of Rodin's mutation was—or had been. The man's head was bent forward and to one side at a grotesque angle, and on his shoulder, pointing back, was a ragged, scarred stump.

Rodin had been a twin-head. As with so many, one head had died. But, as with so few, one had been mercifully amputated.

"I know you," Rodin said, finally, without turning. "I know you and I want nothing that you have to give. I want you to leave us alone."

Nathan stepped farther into the room. "How do you know me?"

Rodin turned then from the window and was shaking with rage. "We are not the stupid savages we ought to be in this hell. We still find out things that go on back home, and we know all about you!"

The words, "back home", from Rodin sent a chill through Nathan. This withered man, forty years a Martian exile, still spoke of Earth as "back home."

"Tell me what you know of me," said Nathan quietly. "Perhaps there are things I would like you to know that you haven't already found out."

"Let me tell you this: We don't need your help. We know what we have to do, and we can do it alone."

"What must you do?"

"Die. That is our contribution to humanity!"

"What would you give," said Nathan, "to be like other men, knowing that your seed might reach to the end of time?"

Rodin's eyes seemed to take the chal-

lenge. He stood suddenly erect by the window and pointed furiously at something beyond Nathan's sight.

"Like other men—? Look!" he commanded. "There is my child!"

Nathan stepped to the window. He stared in the direction of Rodin's pointing finger.

Turning a pathway that led to the house was a woman dressed in heavy shirt and trousers. Protection against the incessant spurs of windborne sand, and the chill of Mars' thin air.

The rough clothes did not hide the tender grace of her stride. Her face was marked by firm maturity that gave Nathan a momentary sense of peace that was strange to him. He searched for a word to describe her. Alive.

For a brief moment Nathan thought that she must be no mutant—and then she turned and faced the house, following the pathway to the door. Her right arm was a diminutive and useless thing.

"I should have had the strength to kill her the day she was born, but in those days we still had a faith that somehow things would work out for us."

Nathan continued to watch her, baffled by the serenity on her face. Then he understood.

"She has never seen Earth, of course," he said.

"She was born here, a native of hell," Rodin grunted. "There were lots of children born during our first years. My wife, Della, and I had hope and we believed that life could go on for us. Then we learned better. Most of the others have died by now. Joanna is almost the last of those born on Mars."

She was thirty-five or a little more, Nathan thought. There was maturity on her face, but not yet the signs of aging.

She entered the house abruptly and started at the sight of the stranger.

"This is Dr. Ord," Rodin said. "You have heard of him."

He took the firm left hand she offered.

"My first greeting to everyone who comes to the laboratory is the same," she said, laughing. "Did you bring any books with you?"

"At least a million feet of tape, but it's not very exciting stuff for a long, cool evening. The word 'gene' is on every other page."

"I don't care. I want to read anything and everything. They give us no books at all, you know. Only the lab men let me read theirs. You'd be surprised what I know about controlled mutation and heredity cycles — and model spaceships. One of the technicians had a hobby of those a long time ago.

"But it's a geography I'd like most—of Earth, of course. I've seen a few pictures, but I want so much to know all about it. I never expect to see it, but everyone who comes here speaks of their coming as exile from heaven. I want to know what they mean."

"The exiles remember only the good things of Earth," said Nathan, "and see only the bad of Mars."

"And you will let me see your books?" she insisted.

"Joanna!" Her father shifted nervously.

"I don't mind at all," said Nathan. "Any of you are welcome to read anything in my library. I'll try to get some you'd like. I should think the Admini-

stration would have seen to it that you had books."

"They do not consider them necessities for dead men," said Rodin. Then he added, "And neither do I! They torment us with things better left forgotten."

"I'm *not* dead," said Joanna. "I'll come over to your library if I may."

"I forbid it!" Rodin exclaimed. "We want nothing of your gifts or your favors. You can't change our laws that way. You can force us to be your guinea pigs to a degree, but not for the purpose that brought you here. Davidson himself will not—"

"I have not come here to break your laws," said Nathan. "I came because I am a man and you are a man, and I think I can help you in the trouble you are in."

"There is no help for us. I forbid Joanna to come to your library! I forbid her any reading of your books!"

Nathan stared at him coldly for a moment. "And I request her presence to assist with a new program of research which is beginning at once."

He turned to Joanna Rodin. "You will please report to the laboratory in the morning."

CHAPTER III

MUTANTS ALSO DREAM

THERE WAS reorganization and survey of the laboratory to fill the afternoon, but Nathan could not get the thought of Rodin off his mind.

He could understand easily how a man could long so much for a child of his own that the whole world became bitter when the child was irrevocably harmed.

He thought of the years of his own longing for his child that could never be born — because he was like John Rodin and Joanna, and Alice, and Joey—

But he had known of his damaging hurt from the very beginning. His own father had showed him, and hidden him well in the great genetic laboratories of the world, where no one might suspect him, and where he could pursue his life-long search to help himself—and others like him.

His thoughts went back to Joanna Rodin. His mind had been so intent on the biological aspects of the mutants' problem that he had ignored the personal side of the question up to now.

Of those whom he might make capable of having normal children, how many would want to? How many would find their defects mutually repulsive so that they would have no desire for mating? Among them all was there any whom Joanna would be willing to accept?

But making sure of methods in regard to human beings was the first consideration. Gene maps, by themselves, could prove that, genetically. He had to lay the other worries aside for the time.

When Joanna appeared he was somewhat startled by her conventional dress which had replaced the rough clothing of the day before. He sensed that it must be the only thing of its kind that she owned, and he felt pleased that she should have worn it.

But she was subdued from her previous buoyancy, as if she had come re-

luctantly and only at his command.

"I'm ready," she announced solemnly as she entered his office.

He rose and offered her a chair. "I'm terribly sorry about yesterday," he said. "I owe you both an apology for my rudeness."

"You were perfectly within your rights. In fact, your order was a needed reminder of our proper place."

"And what is your proper place?"

"Exiles, outcasts — so I am told — have no claim upon mankind for just and equal treatment."

"So you are told—but do you believe it?"

"Of course not! But I find myself pretty much alone in the things that I do believe. It's hard to persist under such conditions."

"Would it help to know that I share your belief?"

"You—? No, I couldn't believe that. You *belong* — we are outcast. You could never share anything with us."

Her eyes opened wider as she turned then to face him more fully, and she scanned his face with nervous intensity. Gradually, it seemed to him that some dark tension released within her.

"Perhaps you could," she said at last, "just a little. I don't think we've ever had anyone in Administration quite like you before. Why did you come?"

"I told your father the truth. I came to help you."

"You aren't telling me all of it," she said, "but I believe you are my friend. Tell me what it is that you want of me."

He opened his mouth to speak and stopped. New doubts about the thing he planned flooded into his mind. He let his eyes take in the whole picture of Joanna sitting there in the sunlight —the firm, sweet lines of her body, the spark of life in her eyes that were surely the brightest on all this drab planet.

She was the ultimate that the colony had to offer. In any human society she would have been marked for beauty and intelligence. Her deformity was a minor thing; it could be ignored by anyone who looked into her face.

It would be better to work with Alice or Joey, or John Rodin until he was more certain of what he could do, until he had evolved the technique for human application of his discoveries.

Yet—it was for the best of them, like Joanna, that the work was being done. And he had no real doubts of its success—

So he told her then how he had been able to right the genes of animals that had been exposed to the cruel force of the radiant bomb. He told her of his hopes for the multitudes of Earth who still bore such ruinous gifts for future generations. He neglected to tell her only his hopes that the present generation of mutants could somehow be salvaged back into the human race—and his own personal need.

When he was through she smiled wistfully. "It sounds very good, but I can scarcely understand the things you say of Earth. The only world I know is Mars. The only people I know are mutants. Everything else is of some imaginary world which I can never hope to know.

"I am told how mutants are captured, robbed, torn from loved ones sometimes—and sent here. I wonder if it is a proud thing to be a part of this mankind of which you speak."

"I wonder, too," said Nathan slow-

ly. "But whether we can be proud of it or not we *are* part of it, and the only possible goal is trying to make it just a little better than it is. That is what I am trying to do."

"Then I think I should like to help you," she said.

* * *

In the laboratory, he secured specimen ova from Joanna, and the assistants prepared them for examination.

Joanna watched with patient interest as Nathan peered intently through the eyepiece of the electron microscope, matching her gene pattern against standard maps.

Nathan was accustomed to seeing such things in his research, but somehow the sight of Joanna's gene pattern turned him a little sick.

Damaged genes composed a map of horror. It seemed as if every conceivable mutation had lodged in her chromosomes. He looked up, appalled.

Joanna turned her head quizzically at his strained expression. "What is it?" she said.

At first he hesitated, and then he remembered that she could easily understand from her wide and varied reading the significance of what he saw.

"Would you like to look?"

She came forward and bent over the eyepiece. A gasp escaped her as she recognized the ruin.

"I'm glad father was so fanatic about my remaining unmarried," she murmured. "Now I can understand how he and mother must have felt about me. They should have killed me!"

"All of that would not come out in any one individual or generation."

"But some of it would — and the rest would go on."

"Yes."

"A twin-head, or a no-legs—or a baby arm like mine. Thank God my seed will end with me."

"But now that you have seen this, you will be able to understand the magnitude of our success if we repair the damage."

"Repair it? To what purpose? It still has no meaning."

"Is there no one—no one at all—you would be willing to marry, if there were no gene deformations?"

"There was—once. But that was so very long ago. He was a sweet boy—he had no arms at all. But we vowed that we would break the law and go away into the rock cliffs and live by ourselves. It was a very young and very foolish dream. He did not live long afterwards."

"But you *will* help in the experiment—willingly?"

"Willingly. Perhaps I can help you set a pattern to be used on those for whom it will be more productive."

She took some tapes that he offered from his large library, and he promised he would get her more of the kind she wanted.

When she was gone that afternoon he felt a depression that he could not explain until he recalled how pleasant it had been with her there.

He smiled to himself. It was just a little late for him to have such interests. He had avoided feminine society for much too long.

He went to the window and stood there, hands clenched behind his back, watching the compound. He thought he could see Joanna walking slowly

towards her father's hut.

Why should it be too late?

He shook his head savagely and moved from the window. They were worlds apart. The world accepted his disguise as a normal. It would never accept her or her kind. Not in their lifetimes, anyway. It would take a generation of proof before the revulsion towards the mutants would die even with the cure he had devised.

He put the thought of Joanna Rodin out of his mind and turned to the task before him.

CHAPTER IV

MOUNTAINS OF EARTH

DURING THE following weeks, Joanna was required to come every day for treatment. It was slow and painstaking work to determine empirically the optimum field and exposure. Each time she had to wait through long intervals while testing and computation went on to establish rules for use of the field on human beings.

In these intervals Nathan managed to spend much of the time with her while the assistants performed the routine computations.

He guided her through the bewildering vastness of his technical library.

She knew virtually nothing of the history of Earth. Her own life had almost no links to the past, yet she could discuss—in technical detail—the ways in which her deficiencies prevented her from becoming any link with the future. She was a human island in time.

The history and geography books which Nathan ordered for her arrived in time for her thirty-eighth birthday.

He had the package wrapped and on his desk when she entered that day. As he busied himself she glanced at the unfamiliar object curiously. Then she read the white card which bore her name and birthday greetings.

She looked at him, her face flushed with embarrassment as always when he made some reference she did not understand.

"What does this mean?"

"Happy birthday!"

She laughed, and it seemed like the ugliest sound he had ever heard, for she was laughing *at* him.

Then, just as abruptly, she stopped and her glowing face paled with grief. At the corners of her eyes he saw the start of tears.

He rose swiftly and rounded the desk. He put an arm about her and tried to still the quiet sobbing.

"I didn't mean to hurt you. What did I do?"

"Don't you see? To a mutant, the day he is born is the day he dies."

He let his arms drop away from

Joanna. He glanced down at the package, the white card, and the bright ribbon.

He had made so little effort to find out the little things she thought and believed. He tried to carry on as if this little world of the laboratory were an utterly normal part of Earth, but now he realized it was no more than a bridge—a shaky bridge between two impossible worlds. He tried to accept Joanna as a normal and treat her as a part of the world from which he came. To her, it was only mockery.

He tore the wrappings off the package and turned the spools slowly in his hands.

"It's just the books I promised you," he said. "Maybe you'd rather look at them some other day."

She recovered quickly with apology in her eyes. "Oh, no! I'm sorry I let it bother me. I know you meant to be kind. Let me see them now. I can take them to the reading room where I won't be in your way."

"Let's look at them right here together."

He led her to the reading machine on the other side of the room and she sat on the broad couch before the screen. He slid a spool into the slot and turned the switch.

"What kind of a voice do you like?"

"Make it your's."

"You'll find it boring."

He adjusted the controls, duplicating his own voice, then sat beside Joanna on the couch.

The screen burst suddenly into three dimensional color revealing a great mountain peak of Earth, capped with snow, and burdened with the cloud-laden sky it seemed to uphold.

Nathan watched the woman. Her breath came quickly at this revelation of Earth. The words of the reader were lost on her.

There were shown visions of roaring, white waters, and broad plains, and harsh, deadly wastes. Only the sight of the latter, so much like her own surroundings, quieted her.

"It would terrify me," she whispered, "to see such a world as that—but I want to!"

"You will — someday," Nathan promised, and then regretted it. Joanna was of Mars. She was born on Mars, and she would die on Mars. For her there was no escape.

For her—and for him—there was no hope.

* * *

Progress was being made. The slow biological processes of repair were restoring the cells of Joanna's body to normal patterns. From the first success was evident. Nathan's ghostliest doubts vanished. If the process could be spread there would be no need for mutants to be born anywhere as a result of the ancient madness that had led to the radiant bomb.

And, suddenly, his accomplishment seemed empty. He had made Joanna potentially fruitful, but to what purpose?

Standing by the window, watching her cross the sandy stretch beyond the gate, he wondered why it bothered him. He had accomplished the thing he had set out to do. Joanna as an individual didn't matter. There would be ways of introducing his process on Earth, and tens of thousands of potential mutants would never realize the

danger with which dead generations had once threatened them.

He wondered why this was not enough. And the answer to that was so easy that he smiled bitterly as it came to him.

The answer was that Joanna did matter.

He had *believed,* he had hoped, and he had somehow known that there would be a time like this and a woman like Joanna. His only fear was that now it was too late—much too late.

She came into the office and took off the rough jacket that covered the dress she wore each day to the laboratory. She regarded his lack of preparation.

"Aren't you ready for me, Nathan?"

He took her arm and led her to the seat by the window. In his hands he carried her latest gene map and its standard comparison. He handed them to her.

"We're all through," he said. "Case number one is successfully completed."

She glanced down at the charts with a quick movement of shock. Then she passed them back with scarecly a moment's examination. For the first time there seemed nothing between them to talk about any longer. There was no reason for her to come to the laboratory again—ever.

She seemed embarrassed as if they had suddenly become strangers. "I'm glad," she said finally. "I'm glad that it was not a failure. What will you do now? Try to get it used on Earth to detect and cure potential mutants?"

"That — eventually. But something more is needed. I need the final evidence that mutancy can be cured."

Her eyes went wide amid the paleness of her face. "I can't give you that, Nathan. You can never get that evidence from me. If I'd known that you would demand that—"

"Joanna—" He touched her arm. "Joanna—with me, could you give the world that evidence—?"

She darted from his touch as if stung, and backed against the desk, her breath heaving the contours of her breast. Then slowly it quieted and the flush subsided in her face.

"Don't say any more, Nathan. Please don't say any more. Just let me go out of here, and don't ask to see me again. Please, Nathan—"

"I'm the clumsiest fool in all space. What I'm trying to say, Joanna, is—that I love you. It's hard to say because I've never said it before, and I'm so far past the age of learning how."

Her eyes moved swiftly, searching his face for some tell-tale betrayal. "I could forgive you any clumsiness except the one I thought you meant. I'm still human, and there has to be a point at which the experiment stops."

"That point was passed long ago," he said. He stood close, daring to put his hands upon her. "I want you to marry me. There will be children to show the world it needn't be afraid any more, but it's not for them that I want you. It's for myself."

She moved aside, out of his reach, then looked up, and her eyes were glistening. "Thanks—thanks so much, Nathan. That's the most wonderful thing that has ever been said to me.

"You know, of course, what the answer is. You couldn't live in my world, and I could never come to yours."

"You still don't understand. You see—I'm one of you."

"You—a mutant?" Joanna faltered.

"Yes. A carrier. I was fortunate to find it out before I let myself love anyone. The research of my whole life has been to cure myself. Now, I can."

He led her to the window seat again. "For a long time I believed that it would come much too late for me. But now I wonder. Can you answer my question?"

"I don't know what to say. You are stirring up everything I thought was dead and buried in me long ago. Surely you know what these weeks of coming here have meant to me. Or have I hidden it so well you couldn't tell?"

"I'm afraid I've forgotten the signs if I ever knew them," he said. But the things you have tried to kill never die.

"In the laboratory I used to hear the girls talking. They would go along at a steady, dull pace, then suddenly come alive. I always knew what had happened. Some boy had appeared on the scene. I lost a couple of dozen good assistants that way.

"And the men, they would talk, too. I'd hear when their babies were born, and I'd hear of the first steps they took. I'd hear of them growing up and going away. It was like standing still and watching all of life flowing by—and being unable to get in the stream of it.

"Wanting to be in the stream never dies until you're dead yourself."

Almost unnoticed, she had relaxed and leaned back against him. He pressed his arm about her waist and touched his face to her hair.

Her hand crept to her breast as if it swelled with some deep ache. "Children—it's like carrying some pleasant dream all your life, knowing it could never come true. But its coming true is frightening. I'm afraid of it. It's something that can't happen to me."

"It can."

CHAPTER V

ESCAPE

AFTER A TIME, she turned her head and looked up into his face.

"What are we going to do, Nathan? This is a crazy, foolish dream. How will we live? *Where* will we live?"

"I'm taking you to Earth," he said.

"They'd only take me away from you and bring me back here!"

"There are a thousand cities and towns where we can lose ourselves. We'll disappear so completely that they'll never find us."

"How could I hide with this arm? They'd know I was a mutant anywhere. And what of your work? You can't give that up, just for me."

"I won't be giving it up. It's done. I've finished all that I set out to do. Don can take over from here.

"We can easily build you an artificial arm to hide your mutation before you go. We'll never be found out, and our children can go into the world free and clean."

"Oh—I don't know what to say!" She pressed her cupped hand against her face. "It will be hiding, hiding for the rest of our lives, fearing that at any moment we'll be trapped and separated. I couldn't bear that. I'd rather not see you again, ever."

"Wouldn't you like to see Earth?"

"Oh, yes! Mountains and clouds

and white water—to see the home of my people—"

"It will be worth it, darling. I'll take care of you so that you'll never be afraid again. I promise you that."

He told Don the next morning of the plans he'd made. The assistant was caught between his instinct to offer congratulations, and the sudden shock of this bizarre contract.

Finally, he blurted out. "How can you make it, Nathan? Joanna Rodin is a wonderful woman, but it's an impossible situation. She's a mutant."

"You didn't know that I was one, too, did you?"

Don sagged into the chair beside the desk, disbelief flattening his face. Nathan gave him the full story.

When he finished, Don was smiling faintly. "Well, I can offer congratulations, and I sincerely hope you find what you're looking for. No one ever took on more of a load than you'll be carrying. I'll help all I can.

"How do you plan to get away from Mars with Joanna? And what will Rodin say if you tell him? You can't even get married, if you want to."

"I've figured out the last one, anyway," said Nathan. "Rodin has civil authority as the leader of the colony. He can marry us."

"He's likely to be overjoyed at that opportunity!"

"As for getting away, I think you can help there, too. A Genetic Congress is due to meet in New York in two weeks. You and I will plan to attend. That is a perfectly legitimate excuse for getting away."

"Me!"

"Yes, we'll apply to Davidson for permission to leave. We would go, of course, on one of the planes that brings mutants from the spaceport. But you won't be on it with me. Joanna will."

Don's face paled. "It won't work, Nathan. We'd never get away with a crazy scheme like that. There are a thousand ways to slip up."

"We'll see that none of them occur. The plane invariably leaves in the evening because none of the pilots like to spend the night here. Boarding it will be an inconspicuous procedure. There are seldom any passengers, and the pilots don't know us, personally. Joanna can wear your clothes; she's almost your height and weight. We'll make it all right."

He tapped his fingers on the desk. "I have not completed my own treatments for mutancy. That will have to be done with equipment I can assemble on Earth. The data we've got on Joanna's case will make it much easier than hers was."

"What's going to happen to me if I don't go with you? Where am I supposed to disappear?"

"Hide out in the compound with the mutants until time enough has passed so that we could be expected back. Then you can report to Davidson as if you've come in on freight ship. He'll never know the difference. You can carry my letter of resignation with you."

"It's crazy — but I hope it works for you!"

When he was alone, Nathan gathered up the records of Joanna's case and left the office. He strode across the yard to the compound gate.

The most critical factor in his plan was Rodin. The mutant leader had to be told, and he had to be persuaded to cooperate. Without this, there was little hope of getting away. Joanna couldn't simply disappear, and Don couldn't be left without a hiding place.

The bitter night-cold was still in the ground beneath his feet. Sand haze curtained the sky and desert beyond the cliffs, enclosing the mutant area in crimson draperies. In this fierce world the mutants were surviving only by a shoddy miracle, he thought. It made him feel sick to think of Joanna's store of wasted years in this place.

Nathan came to Rodin's door and knocked on the thick insulating panel still battened against the cold of night.

Rodin himself opened it. His face darkened at the sight of Nathan. "Joanna's not here," he muttered.

The geneticist held out the packet in his hand. "I have something to show you."

"Why can't you leave us alone?" But even as he spoke, the mutant backed from the door in resignation, and allowed Nathan to pass.

He led the way to a rough table in the almost barren room and sat down. Nathan laid the packet on the table and spread the microphotographs in front of him.

"You know enough genetics to know what this means?" he said.

"I can read a genetic map."

"Good. Here is Joanna's chart before treatment. You can see the damage that was there. Perhaps you can read the patterns involved."

"I can read them. I've seen them before when others used her for a guinea pig."

"And here are the new one — taken at completeion of the treatment."

He laid another set before the man and waited in silence while Rodin glanced and rejected them. And then glanced sharply again —

Rodin caught his breath. He picked up the photo in nervous hands and stared in the dim light from the window slit. Then slowly he put it down and looked at Nathan.

"Can that be Joanna's?" he breathed.

"Joanna is free."

For a moment Nathan thought the old man could not hold back the tears that flooded behind his eyes, but he only shook his head in solemn disbelief.

"You're not lying to me?" he pleaded.

"No. I'm not lying. Joanna is free, and your seed has not come to an end — need not come to an end. Through Joanne can be born perfectly normal children."

Then Rodin crouched suddenly at the edge of the table like some threatened beast.

"By *whom?*" he demanded.

"Me," said Nathan.

"How far can you go?" Rodin cried. "Can't you understand she's human, not an animal to be experimented with and discarded? I won't let you have her anymore. Davidson will back me up. You have no right to treat her like an animal!"

"I'm asking Joanna to be my wife," said Nathan quietly.

"I want to marry her and take her with me."

Rodin had risen in anger, and now he sank down to the bench again.

"I don't understand," he said weak-

ly. "What do you mean? How can you marry her and take her away? There is no place for her kind except here—"

Swiftly, then, Nathan gave the old man the story he had told Joanna and Don Collins, the story of his own private exile among his kind.

"She can go home now," he said. "She can be the first of her kind to return. You remember Earth. Surely you would want Joanna to see it.

"You have authority to marry us. I am asking you to do it, and let her go with me."

Rodin waved his hands feebly. "She doesn't belong there. You could never teach her how to live there. She's a mutant."

"Not any more. She's a normal human being and she has a right to live with her kind. You haven't the right to deny her that."

"You're a mutant, too," said Rodin thoughtfully. "Your place is here with us, not with our persecutors on Earth —I'll be gone soon, and there'll be need for a new leader, a strong one—"

Nathan felt sick inside at the old man's perverse insistence. "Someone's got to bridge the gap back to Earth. Through my work there will come a day when no one will be exiled as you were. We can't help you, but we can help a million others who might pass through this hell before they die.

"And we can help Joanna's sons and daughters. There is no need for them to ever know what this world is like."

"All right," he nodded slowly. "I'll do it. I remember the old words."

The wedding ceremony was a simple thing. Only Don was there to witness. Rodin had even found a yellowed marriage certificate among the forgotten store of papers and documents whose neglect measured the deterioration of his administration within the colony.

And he gave them the ring that Joanna's mother wore.

When the final words were said, Nathan could not repress a tremor. It was as if a strange and mighty thing had been performed. Joanna felt it too, and in her eyes he caught a quick and fleeting terror.

He touched her and drew her towards him. The future lost its appalling uncertainty as his arms closed about her body. And, for the first time, he knew how lonely he had been all his life.

Something of their mood communicated to Rodin. Unaccustomed smiles threatened the spider's web of wrinkles that the years had laid upon his face. His pallor was tinted by a high flush of excitement.

He disappeared into another part of the house and returned with a dust covered bottle.

"This has been around a long time," he said. "But there's no use keeping it any longer."

Joanna stared at it and Nathan laughed with Rodin in the old man's excitement. "Where in the world did you get that?" he said.

"It was left over — from my own wedding. Della and I were so sure then that the future would be all right that we vowed to save it and drink at the wedding of our child. Then — when we knew — I wanted to break it, but she always said no, there might be some other big occa-

sion that would call for it. I had forgotten it until now. It's been buried so long, but it's been kept from freezing. I think it's still good."

It was. He poured the sparkling Burgundy into battered cups and proposed a toast.

"To our descendants," he said.

* * *

There was a plane that afternoon and arrangements had been made with the pilot to carry Dr. Ord and Dr. Collins to the spaceport.

Nathan brought some of Don's clothing for Joanna to wear. As the sun lowered, making a final bloody mist of the sand haze, Joanna changed clothes and packed a few personal belongings in a tiny bag.

Alone, in the room that had been her own during all the long years of life on Mars, she regarded the little pile of goods that she could take. Waves of fear seemed to rise up from them and engulf her again. It was a little like dying, leaving the only life she had ever known. There was nothing of it that she could take with her, except this pitiful pile.

And she *did* want to take other things with her, she thought. She wanted to remember forever this wild, harsh world that had been her home. She could understand the desert. She understood the loneliness of it and its fierce resentment of the intrusion of man. She could understand the dusty, choking shroud it thrust up against the sky in self defense against the great golden ships. And she could understand the lonely, hollow, mocking voices of the great winds.

It was like the mutants themselves, lonely and hated, and lost.

She lay her small collection in the bag and snapped it shut. She adjusted the artificial arm they had hastily manufactured for her. Then she looked about the room for the last time and snuffed out the flickering lamp.

The three men were waiting for her around the rough table when she came out. A light between them cast their fluttering shadows on the walls. Their conversation had died and they sat staring at their hands or at the shadows.

Nathan rose as she entered. "Ready, Joanna?"

She nodded, and then she realized that here was the moment for which none of them had planned. It was the last time for seeing John Rodin, who would die, lonely and alone, in this land he hated with all his heart.

He rose quickly and came to her as she stood in the doorway. He shook his head wearily. "I still wonder—," he said. "I still wonder if this is right, Joanna. But when you get there take a good look at everything for me. Watch the sky and listen for the birds, and learn how it is to feel rain on your face. Lay on the grass and listen to the trees on a summer day—then you will know about Mars!"

He kissed her quickly, with a fierceness that showed the hunger and terror in his heart. Then he led her — almost pushed her towards the doorway.

Nathan shook hands quickly with Don and Rodin and then stumbled with Joanna out into the Martian night. For a moment Rodin was outlined in the feeble yellow light of the doorway, and then he slammed it against the cold.

The wind-driven sand was like crystals of ice beating against their faces. They drew the parka hoods tight and

ran, half blinded, towards the compound gates. In the laughter of this they began to lose the dread that haunted their journey. Only as they approached the gate did Nathan warn Joanna to keep silent.

They passed the barrier without a challenge. Then they stopped at the laboratory to pick up Nathan's things. On the landing area the plane was ready, its primers already glowing blue-white in the darkness.

"Thought you were never coming," the pilot growled as they climbed aboard. "Another five minutes in this hole and I would have taken off without you. Isn't fit for a dead dog out there."

The cabin was empty except for themselves. They took separate seats. Belted down, they tried to catch a short nap before the plane reached Heliopolis.

It was scarcely possible in the buffeting of the night winds, and each of them lay silent and awake. Nathan worried over the hundred details that remained ahead of them. As long as they were on Mars there was danger of Davidson waking like some sleeping giant and hounding them back to the prison.

Joanna tried to hide the fear that crawled up within her. Sheer physical fear in her first flight. Nathan had forgotten that she had never flown.

The weaving of the ship made her sick, and the vanishing of all that was familiar would not let her rest. She watched the dark night and it seemed to eat up the past as the plane flowed through it. It left her on a perilous edge of time where only an uncertain future stretched ahead of her, and the past was a dream that could never be dreamed again.

A couple of hours later the plane settled into the long glide that brought them to Heliopolis and the combined space and airport. Far away they saw the garish lights of the city flaming against the desert. It was like a night club in Siberia, Nathan thought, but the city flourished.

They left the plane quickly, reclaiming their bags, and said goodnight to the pilot. There was a single cab waiting on the field. It took them to a cheap hotel that Nathan knew.

The clothing Joanna wore did not reveal her sex. Its thick, shapeless bulk was complete disguise, but in the hotel she threw back the hood, and they registered as Mr. and Mrs. Ord.

Perhaps some day, if there were ever suspicions about their identity, there would be investigations of Mr. and Mrs. Ord, and how they came to Heliopolis. But by that time they would be far away and hidden well from all the world.

The newness of their life together was all but forgotten that night as fatigue washed over them and they fell asleep in each other's arms.

The warming mid-day sunlight put their night journey a thousand years into the past. Nathan felt tremendous relief as they rode towards the port again, and towards the silver bullet of the spaceship which rose high above the surroundings. He began to understand the tensions that had built up through the night before and the days before it.

Joanna's eyes were shining. It was the first glimpse she'd ever had of one of the mighty ships at such close range. From childhood, she had seen them

streaking overhead in the night. She had wondered at the freedom that the monsters symbolized. She had never imagined it would be hers.

Until now.

In the elevator that lifted them to the high port above the fins she trembled with the excitement of it, and clung to Nathan like a child.

As they passed over the short ramp that led them to the interior of the ship, Nathan felt relieved. No one had approached with a rough grasp of his arm and said, "You're under arrest, Dr. Ord."

No one had pointed a finger in his face and laughed at an old fool who believed he could finish one life and begin another. No one had spoken to them at all except the steward who greeted them pleasantly and escorted them to their cabins.

Inside, with the door locked, Joanna dropped her coat and hat and sank down onto the bed. Nathan heard a small whimper of grief.

He turned her over gently and sat beside her. "You're not sorry?" he said.

"Oh, no, darling. It's just so new that it's—like a hurt. And I wish that Dad could have known what it was like to be going home. He always spoke of it as home. I wish they could all go back—"

They watched takeoff from the special observation chairs provided at the ports. The sudden increase of weight sickened Joanna, but she cried out with a final exclamation of farewell as the ship burst the atmosphere almost over the mutant colony.

The rock and the whole colony was no more than a speck, but she knew in that moment that she was leaving home. There was a depth of sorrow in it that she knew she must never reveal to Nathan.

They came out into the stars then. The planet shrank below them and Joanna saw space for the first time. She clung to the padded edge of the observation chair like a little girl pressing her nose against a store window.

"If all this should end right now, this moment would be worth it," she murmured.

With the lessening of acceleration pressure, Nathan rose from his chair and sat beside her, his arm on her shoulder. "Don't say that until you have seen Earth in all her seasons," he said

CHAPTER VI

WAITING

THEY SPENT NEARLY all of the two weeks in their cabin, going out but little among the other passengers on the promenade or in the dining room. In spite of herself, Joanna felt uncontrollable terror comng — for the first time—into the presence of those who had exiled her and her kind.

She felt outcast still, as if they knew instinctively her defect and her ancestry. She began to wonder if all human life was the way she saw it about her.

There were tourists and business men and women aboard, friendly to a degree, but conscious of the social necessity to dazzle each other in some respect —clothes, wit, or money.

Nathan shook his head when she asked about it. "Shipboard company seldom represents mankind, thank Heav-

en. You'd think this would bring out the best in all of us, instead of the worst.

"There is still a prestige in being able to travel among the stars, and men haven't gotten used to it. They creak a bit with the newness of their wings. On Earth there are plenty of people who have never been out here, people who haven't been out of the country in which they were born. Those are the ones that we will live among. Sometimes they understand the stars far better than these who travel between them to show off a new wardrobe en route.

"You'll find plenty of human beings to love."

* * *

The big liner did not go directly to Earth. Its home landing was the Moon, from which smaller ferries completed the last leg of the trip. There was disappointment for Joanna in this interruption of the flight. Nathan had neglected to tell her that it would be this way.

By the time she learned of it, the Earth was huge and green in the sky and the ship was pursuing the Moon in its orbit.

She stood watching the continents and the seas. Nathan pointed out the features of the world that was to be her home, guiding the small telescope mounted on the sill.

"It looks like the wheat country of America is getting rain," he said. "They needed it badly, and synthetics still can't replace good dark bread."

"I've never eaten anything but synthetics," said Joanna. "I wonder what real food tastes like. Do you suppose it will make me sick?"

"We'll find a country village where somebody still knows how to make real bread, and where they make butter out of cow's milk. You can get someone to teach you how, and you'll think it's the richest food in the world."

They watched the ocean then, and the turmoil of a great storm that Nathan told her was raising great white waves on the water.

She couldn't picture that in her mind. It was hard for her to imagine there was that much water in all creation.

Then they sighted the Moon rising swiftly over the curve of Earth, and the ship sped towards it.

"We'd better get the bags put out for the porter," said Nathan.

* * *

The Terminal was a frigid, sterile place. The whole ship was engulfed by it so that nothing of the lunar surface was visible. There was only the huge, impersonal vault in which even their voices seemed lost.

There was delay in the ferry connection. They stopped at the cafeteria, hoping there might be some natural food available. There was none, and

they ate the synthetic meal slowly while waiting.

It was unusual, Nathan thought. He knew that the ferries were supposed to be in constant readiness for the liners. The conversation of all the other passengers in the cafeteria and out in the Terminal waiting room seemed stilled by the strange and unexplained delay.

No announcement had been made. It was just that the ferry gates were not open. The attendants had nothing to say, merely shaking their heads when asked. There was an uncertain waiting as for some signal by which they might know the waiting mass was free to go.

And then that signal came.

And Nathan felt he had known just what it would be.

Two men approached the table and stood on either side of him and Joanna.

"You're under arrest, Dr. Ord," one of the men said. "Please come along with us and make no disturbance."

They rose from the table like dreamers, not yet awake, and were guided firmly along towards an office at one side of the vaulted Terminal.

He ought to have known, Nathan thought. Forty-five years of brutal experience should have taught him that they didn't have a chance. He was not living in a world where dreams came true.

But it would be worse for Joanna. She had *seen* Earth, now, and had to live forever with the knowledge that it could never be hers.

They sat on chairs in the crowded office of one of the executives of the space line. He was a gray-haired, prim-faced man who looked at them accusingly from across the polished desk, as if they should be ashamed of making such a disturbance for him.

There were others, too, strangers who made no bother to remove their hats.

It was one of these that spoke. "We received word from Administrator Davidson at the mutant colony that you aided the escape of one of the mutants, Joanna Rodin. I assume that this is Miss Rodin with you. Do you have anything to say to these charges?"

Nathan shook his head wearily. "No—I have nothing to say, except that she is not Miss Rodin. She is Mrs. Ord, my wife—and she is not a mutant."

The questioner pursed his lips in exasperation. "All right, you can have trial on the full charges, if you wish. It would be a lot easier if you would just do things the nice way."

"I am the former Miss Rodin," Joanna said, speaking for the first time. "I was born in the mutant colony. I presume I am the one you want."

"You're a mutant—?"

She reached for the hidden fastenings on the artificial arm and released them. Silently, she laid the arm on the desk in front of her.

The gray haired executive shrank in distaste. A shocked silence pervaded the room as if she had suddenly stripped off her clothes in front of them, a mixture of pity and disgust.

"I will return to the colony with you," she said. "But don't punish my husband for our foolishness. He is a great man and the whole world needs him too badly for that."

"We have nothing to say about that," said the officer. "We only work here. You will return to Mars on the next ship. Dr. Ord, it will be necessary for you to stand trial on Earth."

Nathan looked straight ahead, star-

ing between the figures of the men. His fingers toyed with a miniature rocket paper-weight on the polished desk.

"You think I'm lying, don't you?" he said. "Joanna is no mutant. She is cured. Although her parents were mutants and she has a withered arm because of it, there is no mutation within her. Her genes can be passed on for a hundred generations and remain clean of any defect she might possess.

"You know who I am. You know my work, my reputation. You know that I'm not lying when I say that I have done this for her. Why can't you let us go?"

"I'm not saying that I don't believe you," the officer replied.

Somehow, Nathan sensed that the eyes of all of them were on Joanna now. He turned his head slowly. His throat ached at the sight of her. For just a moment he couldn't define what he saw, and then he knew. Of them all she was the only one that was unafraid.

His eyes dwelt again upon the black contour of the hair that sheathed her head, the warmth and tenderness of her eyes, the strong, graceful maturity of her figure so erect now before the onslaught of these officers of a law she never made and had never been asked to uphold. A law to which she could only submit.

"We don't make the rules," the officer was saying. "And the law doesn't say anything about genes. It only says that mutants have to be exiled to Mars. There's nothing we can do. I'm sorry. You can have a few moments alone, if you like—"

Nathan looked directly into his eyes for the first time. He smiled. "I think we shall have much more time than that. I shall go back to Mars with her."

"I'm afraid your Chief wouldn't be likely to recommend that you hold your job there again, and I'm sure you won't be allowed to serve a prison term out there."

"You don't understand. You can't take us apart. You see, I happen to be one of them. The law says that I have to go to the colony, too."

"Nathan!"

Joanna's cry was of sudden pain as if he'd slashed through all her defenses.

"Oh, Nathan—you shouldn't. They would never have known. You had no need to tell. I'm not worth that much to you."

The officer was confused. He looked from one to the other. "I don't understand. Are you saying, Dr. Ord, that you have been a mutant masquerading as a normal all your life?"

Nathan nodded.

The officer tipped his hat backward and stood looking at them with his hands on his hips. "I'm glad," he said at last. "I'm kinda glad—for you both."

* * *

It was on the way to the room where they were to be held in custody that the same officer handed them a message in an opened yellow envelope.

"This came for you. Unfortunately, we had to open it, since it pertained to a wanted case. You may know that it didn't help us in any way, if that will make it easier for you. We'd have caught you anyway."

They went into the room alone and sat down on the bed. Utter weariness filled Nathan with a longing to sleep and forget, but he unfolded the sheet inside the envelope. It was from Don. It read:

Nathan, I hope this reaches you in time. Rodin went to Davidson the day you left and reported what you had done. I don't know why the crazy fool did it. He wouldn't say anything except that he had been wrong and that you both belonged here. He said nothing could come of hiding all the rest of your lives.

There was not a thing I could do. Rodin sent me away, refusing to involve me, but I still can't help you. I hope that there may be some way out for you.—Don.

Nathan and Joanna finished the message together. For an instant Nathan felt sickening rage towards the old man who had thwarted them with such meaningless betrayal.

While they sat there they heard the faint throbbing that went through the Terminal as a ferry took off for home.

He and Joanna could have been on it. They could have been on the final leg of their journey to Earth!

If they hadn't been betrayed by a crazy old man.

Then Nathan saw the look in Joanna's eyes. There was an understanding there that baffled him and added to his anger, but there was pleading, too, for him to understand.

"Don't you see what it would have been like?" she said softly. "We would have grown to hate each other. There would have been no peace. They would have set out to hunt us and never given up.

"All our lives we would have waited for this moment. It wouldn't have worked. I'm only sorry for what I've done to you—"

No — it wouldn't have worked, he saw. It would never have worked out for her. Maybe for him, but not for Joanna. There could have been no freedom on Earth for her. Only on Mars. He felt a strange sense of relief.

He wondered about Rodin's motives. Why had he done it? Was it out of revenge or out of longing for Joanna? And why had he let them get this far in the first place?

He thought of what Don had sent in his message:—*you both belonged here*—

That was surely the simple truth, he thought. He belonged with the rest of his people in exile. He had done his work. There was a way out now for unborn mutant millions. Some day the colony would be dead and gone. It didn't matter that it would not be soon.

Joanna was still watching his face and he drew her close to him. He understood the thing that Rodin had done. Rodin despised him for quitting when only half his life was over, but he'd been willing to see them go for Joanna's sake. Then he weakened and forced them to come back—back where they belonged.

The colony needed a strong man to lead it when he was gone, John Rodin had said. Perhaps *he* could be that man, Nathan thought. The mutants had to be taught to lift up their eyes like men again. Someone inside, someone who was one of them, and still possessed the hope which they had all abandoned had to do it for them. That was a goal worth all the rest of his years.

Don could treat Nathan and the others. And some day he would go back to Earth, and he would carry the news of normal children being born in the

(continued on page 65)

SKAG WITH THE QUEER HEAD

by MURRAY LEINSTER

. . . OR WAS IT, SKAG MIGHT HAVE ASKED, THE PROFESSOR WHO HAD THE QUEER HEAD . . . FEATURE-LENGTH NOVELET!

Deena's jaws flashed shut on the extended wrist.

CHAPTER I

WHEN DEENA HAD her puppies, she was attended by no less eminent a person than Dr. B. J. Danil, late Warton Professor of Experimental Biology at Braddock University. For Deena was no ordinary dog. Neither she nor her mate, Skag. They were the only dogs of their kind, in fact, in the whole world.

The time of the event was the middle of an Alaskan winter, with the temperature thirty-odd degrees below zero. The place was the kennel Deena shared with Skag behind Professor Danil's

quite improbable dwelling up the Chinook River, sixty miles above Duggan's Landing and the same distance from any other human habitation.

When it was all over, Professor Danil let Skag into the high wire enclosure. Skag looked carefully at the professor's hands and went composedly to the kennel door. He poked his blunt nose into the doorway thrusting aside the hanging flap of canvas. Skag and Deena had large, odd heads. They made noises to each other which were not growls or whines or barks, and there seemed to be understanding between them. Skag turned his head and looked at Professor Danil with an air of careful estimate, and then he lay down in the snow outside the kennel, keeping his eyes steadily on the man.

Professor Danil laughed shortly.

"No?" he asked mockingly. "No? We shall see! A very promising litter, Skag! You and Deena were good material. There should be more good material in your offspring. We shall see!"

The dog gave no sign. He lay still in the snow, watching. Professor Danil laughed again and went out of the kennel enclosure, locking the wire gate behind him. He went to his own house and let himself in.

It was an unlikely place for any human to exist, sixty miles above Duggan's Landing on the Chinook. There were double windows of glass, and wooden floors. The furniture and books had been brought in from Outside and floated up the river on the same flatboat that brought the sections of the house to be assembled here. Professor Danil stamped off his boots and slipped out of his parka. He had gone from thirty-odd below zero to a practically tropical seventy above, and from an environment of utter Arctic savagery outside to one that was fantastically luxurious.

The interior of the house would have been accepted as adequate even among the faculty of Braddock University, from which Professor Danil had departed some two hours before his resignation was demanded by an outraged faculty council, just three hours after a flaring front-page article about his experimental methods had appeared in the local newspaper, and about twenty minutes before men from the District Attorney's office arrived to ask pointed and embarrassing questions. Here, in the wilderness, there was no one to demand his resignation from anything, or to criticize his methods of scientific research. He had worked, here, without interference. There were rows of bulging notebooks above the desk in his living-room. There were rows of specimen-jars above his apparatus in the room he used as a laboratory. For four years he had labored with his own peculiar kind of zest, for the scientific results whose importance nobody could deny. But the rest of the world didn't like the way he got them.

Now he rubbed his hands and blinked satisfiedly. He went into his modern bathroom and washed. When he came out he went to his desk and took up his latest, only half-filled notebook. He made a neat entry.

"Deena had her puppies today. She understood that I was helping her and was most cooperative. Skag understood, too. I must give him another intelligence-test. It is apparent that the faculty of learning is the faculty of integration, and that the faculty of integra-

tion is capable of crossing the borderline into reason. Skag reasons. He looked carefully at my hands to be sure that I was not carrying away any of his puppies. That indicates memory, reflection, and foresight. I am quite sure that he knows exactly what happened to the puppies in Deena's first litter and that he anticipates what may happen to these.

"Note; of the litter, four especially seem well adapted to development. However, I shall allow them to gain more strength before I begin . . ."

While he wrote, out in the kennel Deena licked and caressed her puppies with a lavish affection. They squirmed and whimpered blindly about her.

Presently Professor Danil put the notebook away and went into his laboratory. There was nothing to do there—yet — but he looked with satisfaction upon the specimen-jars. There was one series of seven that he examined with especial contentment. Each was very neatly, very precisely labeled with exact data. Two of the specimens had almost survived, and those two would have had heads like Deena and Skag, if they had lived.

Professor Danil rubbed his hands. He went to the kitchen and prepared a hearty meal. Afterward he meticulously washed and dried all his implements. Then he read comfortably for an hour or more. Just before sundown he put on his out-door clothing and went out to the kennel again. Skag got up rather stiffly from his post outside the kennel door and stood aside while Professor Danil went in to examine the puppies and Deena.

With a sort of malicious glee, Professor Danil pretended to have something hidden under his parka when he came out of the kennel. Skag bristled. He moved quickly to be between his master and the locked gate of the kennel-yard. He eyed the man steadily. Professor Danil walked toward the gate. Skag did not move out of his way. His gaze became strangely calculating.

With a sudden sharp intake of breath, Professor Danil stopped short. Skag with the queer head crouched.

"You fool!" snarled Professor Danil, in sudden fury. "I'm not taking your pups! Look!"

He abandoned the pretense of carrying a hidden something. He made it plain that he carried nothing at all. But Skag eyed him as steadily as before. He made those queer noises that were neither barks nor whines nor yelps. Other sounds came from the kennel.

Skag moved quietly aside. He walked stiff-legged back to the door of the kennel, and lay down before it.

Professor Danil unlocked the gate. Outside, he swore suddenly. He shook his fist at the big dog who lay on guard before the kennel.

"Smart, eh?" he raged. "You know I don't want to kill you because you're my best specimen! But don't think you can disobey *me!* I can duplicate you now! And after this I'll have a gun to kill you with!"

The dog gave no sign. The man went back to the house, muttering. But after he was inside once more, he chuckled suddenly. He went again to his notebook and wrote down an exact account of Skag's actions. He gave full details, adding his own interpretation of the noises Skag had made, and to which Deena had replied.

"They communicate," wrote Professor Danil. *"Not in words, of course, because it is unthinkable that in their life-span they could have built up a vocabulary. That would be the work of many generations. Skag, apparently, expressed a generalized anxiety, and Deena replied by a generalized expression of satisfaction. It it were not for the imbecility of the public, and the stupidity of my sheep-like confreres in experimental biology, I would be able to have an assistant at work studying the sounds they make. It would throw a most valuable light on the origins of human speech . . ."*

CHAPTER II

THERE WAS A winter storm, and after it a period of cold so intense that it seemed starkly impossible. The inner of the double windows of the cabin frosted over. The scientist knew that the mercury would stand at forty below zero or less—how much less he could not estimate. He could simply have taken a thermometer outdoors, but Professor Danil was a specialist. Experimental biology was his line, and the mutation he considered responsible for human intelligence was his specialty. His own technic for producing an equivalent mutation in experimental animals was his life passion. He made everything ready for the work he was to do, but it had really been ready before the puppies were born.

He wrote exact and elaborate memoranda of the prospective method of the results he anticipated, of the theory back of each intended move. He referred constantly to his book, *"The Decisive Mutation, the Origin of Homo Sapiens."* His experiments were to prove the hypothesis he had advanced in that work, which the scientific world had accepted with only tepid interest because it could be only speculation.

During the worst of the more-than-bitter cold, Professor Danil stayed within his cabin-laboratory, venturing out no more often than once a day to feed the two grown dogs in the kennel-enclosure, and to observe the growth of the pups. He wrote up his notes. He rephrased them. He perfected them. In particular, he devoted pages of his fine handwriting to an impassioned and vehement defense of his methods. The results his operations were intended to produce required operative shock as an aid to surgery. In short, anaesthetics could not be used. The fact that the dogs must suffer pain was an essential to the success of the experiment! He waxed savagely witty at the expense of his detractors. But he grew restless; eager to get about the work which would prove him the one man of the twentieth century who had produced an entirely new scientific research procedure.

"I consider," he wrote, *"that the mutation which made man a thinking animal was one which caused him to retain all his life the foetal skull-shape which all other primates possess at some stage of their development, but outgrow. It is perhaps the stage in which instinctive knowledge is developed or implanted in the individual. It is the stage which puppies are leaving at birth. It is the stage when the conformation of the brain is adapted to learn-*

ing and integration.

"A young animal, retaining some vestiges of this conformation, is capable of learning. An old or mature animal, having acquired the mature skull-shape of his species, is no longer readily able to integrate new experiences with past ones.

"Deena and Skag, in whom I have been able to preserve the skull-shape of very young dogs, have intelligence I estimate as equal at least to that of a ten-year-old human child. If I am able to preserve the same skull-shape in some of their offspring, the result in effective intelligence should be even greater. After all, in teaching Skag and Deena, I was able to pass on their acquired thought-processes to their off-spring in a more easily acquired form.

"I look for much more effective intelligence in the second generation. If I were able to produce an actual, inheritable mutation, instead of of an artificial one which is not inherited, the race of reasoning dogs I could produce would probably develop a typical canine culture, different from that of homo sapiens, but not necessarily inferior . . ."

One day in so many Professor Danil spent in the chores essential to life in the wilds. He had mail and supplies brought to him in the two or three annual contacts he had with the rest of humanity, but there was much he had to do himself. A whiskery Alaskan sourdough Joe Timmins brought up the winter's accumulated mail and scientific magazines just after the ice broke. He took away Professor Danil's list of needed supplies. He brought up those supplies before freeze-up with the summer's accumulation of mail and learned periodicals.

Perhaps once or twice during the summer, and sometimes once during the winter, some other person might stop at the cabin. But few stopped a second time. Professor Danil was not an amiable person and he was infinitely scornful of his intellectual inferiors. He needed no human society. He made it plain that he wanted none.

Even Joe Timmins camped by the river-shore when he brought up supplies. To avoid the need for contacts with other inferior persons, Professor Danil had become self-sufficient even to the extent of chopping his own wood, though even a doubly-insulated arctic house like his called for much fuel.

One day in four or five, he chopped wood. Another day in the same period he sawed. He knew that when his work with the puppies began, he'd not have much time to spare, so he must lay in an adequate supply of firewood ahead of time. But he became extremely impatient.

"It is irritating," he wrote in his notebook, *"that I cannot begin work while the puppies are younger. Obviously, the earlier I begin, the earlier I can arrest the change toward the adult, non-learning skull-shape. The more infantile the final skull, the greater the receptivity of the final mind, and consequently the greater the intelligence. . . . But the necessity of trauma for satisfactory results requires a reserve of ability to resist surgical shock. . . ."*

Surgical shock, in part, means pain.

A second storm struck. There would have been no more than three hours of daylight now, anyhow, but while the storm raged there was no difference be-

tween dark arctic night and pale arctic day. A wind blew with such violence that Danil remained indoors. Twice in two days he struggled out to the kennel to feed the dogs. On the third day he essayed to carry one of the pups back to the cabin with him. Impatience to begin work moved him. He did not think the puppy would survive more than the first day's treatment, but even so he might learn some details that would be helpful with the others. . . .

When he reached for the puppy, Deena uttered a cry that was something between a bark and a snarl. Professor Danil grinned mirthlessly at her. He drew back, but only for an instant.

"After all," he said, "I made you, Deena! I'll do with your pups as I please!"

His left hand moved to a pocket in his parka. He reached out again with his right.

Deena's jaws flashed shut on the extended wrist. She held fast, making raging sounds, but somehow not crushing the hand. Professor Danil went into a cold, furious rage. Such tantrums had spoiled many experiments in the past, but he could not control them. When he, who felt so infinitely superior to the rest of the human race, was defied by an animal—and one essentially of his own creation!—he became fury incarnate. His left hand snatched out a pistol with which to kill Deena.

Then he choked as Skag's jaws closed on that wrist. Skag was in the kennel. He'd darted in through the hanging canvas flap at Deena's outcry. And silently, he'd waited until the pistol came out. Now his jaws held the wrist which held the gun.

Skag had been a Malemute puppy, and he had a Malemute husky's hundred-pound frame—despite his queer head—and he was a match for any man in fair fight. He could have crushed the wrist-bones in his jaws with a single savage pressure.

But he waited. His eyes rolled upward and he regarded the man, but he held the wrist fast. Deena held to her own grip. She snarled a little — and Skag answered. But he did not release Professor Danil's wrist.

The unreasoning anger left the scientist utterly. In a sudden horrible instant he saw his situation. He was sixty miles from the nearest human contact. Two huge dogs held him helpless.

CHAPTER III

FOR SECONDS THE tableau remained unchanged. Skag did not snarl or growl. He gripped the wrist behind the hand with the pistol. His eyes were fixed on the man's face. They were intelligent as no ordinary dog's eyes are intelligent. And they were grim. Outside, the storm-wind blew, screaming among the barren trees left about the cabin. There was blinding, abrasive snow in that wind. There was a penetrating, horrible chill that could freeze the very marrow of a man's bones if he were unsheltered and merely kept still.

Sweat started out on the man's face despite the ghastly cold. He spoke harshly:

"Let go, Skag! Deena, let go!"

Skag's eyes remained fixed on him. Deena made a querilous sound which was plainly another of those noises by which the two animals communicated.

Skag growled softly. Staring steadily up at tne man, he pressed ever so slightly more upon the pistol-holding wrist. He shook it gently.

Danil cursed. Without the pistol he would be defenseless. But he was defenseless now. They had only to crunch down upon their present grip, and he would be essentially handless, unable to help himself or feed himself or survive even one day in this frozen wilderness.

Skag growled a little. He knew what the pistol was. He'd seen Danil kill other dogs with it—failures in his experiments. He was demanding that Danil drop the weapon.

Danil's voice grew shrill. He commanded hysterically. He ordered frantically. He raged. But he dared not pull trigger, and he dared not let go of the pistol.

Feeling — all sensation — slowly left his left hand from the pressure on its wrist. Despairing panic filled Danil, with such hatred and fury as no man ought ever to know. Skag and Deena were dogs with queer heads. He had performed operation after operation upon them while they were puppies, applying his unequalled skill with a zealous ruthlessness. He had discovered that developmental changes begin in isolated tissues, and spread. He had extirpated each focus of change. He had made these dogs intelligent. They were his creations. But they were still only dogs — animals! For them to dare to hold him at their mercy — to dare to hate him—Danil would have gone mad with rage had he not been practically mad with terror.

Deena quivered with her hatred of him. Over and over again she made that querulous sound which must have been a demand that Skag let her crunch her strong jaws home. Each time Skag growled faintly.

Suddenly he shook his head impatiently. Danil cried out in pain as the dog's teeth wrenched his arm. The pistol dropped from his numbed fingers.

Instantly Skag released him. He deliberately picked up the pistol in his jaws, carried it to the side of the kennel, and then stood over it. He regarded the man steadily, though his eyes burned.

Danil fled.

Back in the cabin, it was an hour before he could review the situation calmly. Then it was another hour before he had determined on his course of action. He made his notes.

"Skag and Deena," he wrote, *"very evidently understand that I permitted them to mate because I intend their puppies for experimental purposes. The fact that Deena's first litter was used in this way has plainly made a strong impression. They do seem resolved that this litter shall not be similarly used. The fact that they have the intelligence I gave them complicates the matter.*

"I expect to use them to instruct those of their pups who may survive the developmental operations, so I cannot afford to kill them. But I shall have to make them unable to defy me. The situation seems to call for a drug in their food which will make them helpless, and then some operation to make them incapable of defying me.

"I shall have to debate the method by which I can leave them capable of caring for those of their young who survive, without any power to injure me. They must have the power to feed them-

selves and to walk to some extent. . . ."

He wrote on, zestfully, making the notes which some day would force the scientific world to recognize his genius.

Outside, the arctic storm howled and raged. There was blinding snow and screaming wind and numbing cold. But Skag and Deena, in the kennel within the high wire fence which no dog could leap or climb, Skag and Deena made noises to each other. Skag picked up the pistol in his jaws and went out into the storm.

He dug a hole in the snow, where it had drifted deep against and through the wire-mesh fencing. He dropped in the pistol and covered it. The storm erased all traces of his digging, almost instantly. He went back to the kennel. Deena was in the act of licking her puppies over from head to foot in lavish adoration. Skag made gruff noises. She got up and poked out her nose beyond the canvas door - flap. She whined anxiously. Skag made more noises.

Obediently, Deena picked up one of the puppies in her mouth. It dangled and squirmed ludicrously in puppy-helplessness. held by the loose skin at the back of its neck. Skag picked his way carefully among the other sprawling small bodies. He picked up a second puppy.

Next day, when the winter sun rose for the brief period of daylight—but made only a grey half-light beneath the storm-clouds—Professor Danil came to the kennel-gate and called harshly. There was no movement in response. Danil had the dogs' food ready for feeding. It was suitably medicated. He called again. The kennel was still. There were no tracks on the windswept snow.

He put down the platter of food and went back to the cabin. He came back with a rifle in his hand. Very cautiously, he unlocked the gate and entered the kennel-yard. With the rifle cocked, he approached the kennel in which the two dogs and their pups should be.

It was empty. The dogs and their pups were gone. In his fury, it was minutes before Professor Danil realized that drifted snow had piled up against and through the wire fence until a resolute dog could leap the balance of the distance, both to go out and to return.

When he did realize it, the man gazed about him. He went back to the cabin, and soon came out prepared for a journey. He set out savagely on snow-shoes to look for tracks of his missing animals. With their young to carry, one at a time, Skag and Deena could not have gone far. And Skag would have to hunt food for them.

Professor Danil planned his course of action. If necessary, he would kill both the grown dogs. They had defied him. But he would rather not. If only he could wound them so they could be captured, or if he could trap them, or—best of all, if he could come upon their den when both the grown dogs were absent and get back to the cabin with the pups. . . .

That would be best. Because Skag and Deena had the intelligence of many human adults. They were admirable parents. If their puppies were in Danil's power, they would submit themselves abjectly to him.

CHAPTER IV

ON THE SECOND day, he found Skag's tracks in the snow. He followed them, coddling his anger. He backtracked Skag toward the place from which he had come, which would be where Deena and the puppies were. In soft deep snow the trail was clear. He followed it for four miles. Then suddenly, behind him, there was an outcry and there was enormous urgency in it.

Danil turned, swearing. He moved toward the sound, confident in his weapon. He came upon fresh tracks. Skag had — this became clear later — gone near the cabin to scout his master's activities. He trailed and found Danil back-trailing to the den. He ran desperately to overtake him. And a hundred yards short of his master, he made that extraordinary noise.

But Danil did not understand this at first. Cursing, now that Skag knew his whereabouts, he pursued the dog savagely. Over and over again he read in the snow where Skag had gone on a few hundred yards, or half a mile or so, and then stopped to watch and listen and sniff to see if his master still followed.

It was not until darkness drew near that an infuriating suspicion came to Danil. He stopped short and cursed, and then headed back toward the spot where Skag had first discovered him. He doggedly went back to tracing the old, original set of Skag's footprints. And a bare quarter-mile from where Skag had lured him aside, he found where Skag and Deena had denned. *Had* denned. The place was empty now. There was the heavy trail of many, repeated journeyings away from it. Deena had been warned of danger by Skag's outcry. While Danil followed the male dog, Deena had shifted her puppies to a new hiding-place.

The trail was plain, but it led away into gathering darkness. And as Danil took the first furious step to follow, he heard a low, throaty growl from somewhere unseen. Skag warned him, Skag defied him. Skag dared him to try to trail through the blackness of an arctic night.

Danil went back to his cabin. As he went, he raged—and listened fearfully.

Yet, when he was safely back at his cabin, he opened the door to the dark interior and closed it again — and crouched down before the door without. A long time later he saw a vague form moving cautiously nearer to the cabin. The form watched, and listened, and advanced a step, and watched. . . .

Danil waited. But Skag — if it was Skag—did not come too near. After a long time he started to move silently away again. Danil aimed his rifle at an indistinct target, with cold-stiffened hands which trembled. He emptied the rifle's magazine at that moving blur against the snow. It vanished at breakneck speed.

Inside the cabin, though, Danil wrote his notes with a neat blend of scientific self-satisfaction and anger.

"There is no question about the grade of his intelligence. He lured me away from his den, which I would have found in a quarter of an hour more. He threatened me when I had thought of trying to trail Deena to the new den in the dark. It would have been highly dangerous, as I see now. Then he followed me back to the cabin to make sure I made no further attempts

tonight against Deena and his pups.

"I am convinced that he did not approach the cabin more closely because he saw that I had made no light inside. Now that I have shot at him, he knows of his danger. With the brain-power he has displayed, it becomes more and more probable that I will have to kill him if I cannot disable him beyond any power to harm me. But more than ever I see that this litter of pups, containing his and Deena's potentialities, should be the means by which my theories can be proven even over the objections of fools and imbeciles to my methods. Skag does reason! But—"

Here Danil's handwriting changed from the neat and even penmanship of one writing a scientific memorandum to the savage scrawl of a man in a passion—*"but that same intelligence I created in him will make him learn what it means to defy me!"*

Danil was a very vain man. He paced up and down his cabin that night, working himself up into a corrosive fury. He had been lured away from absolute success—the capture or the maiming of Deena and the securing of her pups. Skag had made a fool of him! Skag had mocked him! And Skag had dared to threaten him! Skag—

Next morning Danil set out very grimly for a showdown. He made his way to the den he had found at sunset the night before. There was the broad trail where Deena had carried away the pups while Skag coaxed Danil into futile pursuit. It was hopeless for the dogs to try to hide their trail in snow like this.

Inside the den—a hollow place in a huge, still-standing tree — there were scraps of tiny bones and bits of rabbit-fur. The dogs had hunted for food in the days since they had fled from their kennel. They had devised some way to catch snowshoe rabbits. They had been prudent and foresighted parents.

Solicitous parenthood and intelligence always go together, though, in all the animal world. With the brain-power of at least ten-year-old humans, coupled with the fierce emotions of maturity, Skag and Deena would be anxious parents indeed. Of course they intended fiercely to keep their offspring from being made into such as they were—dogs with queer heads and vast intelligence, and a memory of months of screaming torment as the price. But the point was that, with their intelligence, they must be desperately anxious about Danil's unending pursuit. If they could be captured without being killed.

Danil muttered satisfactorily to himself as he plodded over the snow. He would make cages for them. He would put them in the laboratory where they could see and smell and hear all the process that would make their puppies like themselves. When it was over, he might have to kill them, but before that they would learn who was the master!

With his rifle ready, he moved onward from the den. He followed the trail that darkness and Skag, together, had forbidden him to follow the night before.

And it led to the smooth, windswept ice of the river. He spent all the rest of daylight trying to find where they had left the trackless ice. He saw no sign of them before the early darkness made further search impossible.

But he saw signs at his cabin, when he got back. Skag had gone boldly to

it, secure in the knowledge of Danil's absence. He had worked at the fastening of the door with his mouth until he managed to open it. He entered the cabin, which now was bitter cold. And — it must have been that he hadn't dared spend time in hunting with Danil so furiously on his trail—he carried off a huge side of bacon for his family. There was much more food in cans, but the opening of cans would be beyond the two dogs.

At first, Danil merely groaned in a black fury at the insolence of it. But then, suddenly, he grinned. He rubbed his hands exuberantly together. He laughed a little, zestfully. It was a very, very unpleasant sort of laughter.

While a sullen new snowstorm began outside and filled the night with drifting, twisting, falling flakes of white, Professor Danil set to work happily to prove his superority to the dogs he had created. He got out bear-traps which he had never before used, and which neither Skag nor Deena could imagine to exist. He prepared them lovingly for use. His notes, when he wrote them, were precise and zestful. He even put down in detail his intentions for the future. Danil was not an amiable man.

Out in the darkness the snow fell and wiped out all past trails, and drove all small animals to hiding. And somewhere away in the bare-branched forest, Deena nosed her small puppies proudly so that they tumbled about her in the new den that Skag had found for them. Skag squatted by the entrance. Sometimes he blinked out at the falling snow. Sometimes he turned his head toward his family, safe in a hollow log. Sometimes he made those queer sounds which only he and Deena among all dogs ever seemed to use. They were not quite words. They were neither barks nor yelps nor whines. But they were some sort of communication.

CHAPTER V

THE SNOW FELL steadily for four days, and Danil viewed this with contentment. While it snowed, hunting would be poor indeed. Skag and Deena would go hungry. The puppies would be half-starved. Skag — having intelligence equal to those of many men— would become desperate for his mate and offspring.

On the fifth day, the snow ceased. Danil went out-of-doors. He set out on snowshoes, rifle in hand. His purpose was to search for tracks which would lead him to the hiding-place of Deena and the puppies. He had no expectation of finding them easily. He suspected that somehow Skag had gotten his family hidden so that it would take days of search to find them. But he would find them, in time!

Today, he actually left his cabin so that Skag would repeat his raid of nearly a week ago. Skag had remembered how the man opened the door. Skag had stood on his hind legs and pulled the latch-string—Danil had abandoned locks; if they were not oiled they stuck, and if they were oiled they froze—and Skag entered—for food. He would see that Danil was not at home today. He would try to repeat his raid . . .

Danil grinned to himself as he trudged through the thin woodland on his almost circular woods-type snow-

shoes. He was wary, of course. His rifle was ready. But he knew that Skag understood firearms, as the incident of the pistol had proved. Danil had no fear of attack as long as he had his rifle, but he did not really expect to see any trace of the dogs until his return to the cabin. Then, he believed, he would find Skag blood-smeared and raging and desperate, caught in the bear-traps that waited for him inside the cabin door. Perhaps Deena would be there too, whimpering and frantic, trying crazily to help him get free. And Danil . . .

Danil enjoyed in anticipation what would follow his return. He might shoot Deena, delicately, so that she could not get away. In any case he would secure her. He would leave Skag in the traps while he backtrailed Deena and found the pups. And then, afterward . . .

Danil did not even think seriously of the finding of the new den today. So of course he found it.

Only three miles from his cabin he blundered on the tracks. He did not even need to follow them any considerable distance. A quarter of a mile, almost straight toward the river-shore, and then he saw where they led. Plainly, unmistakably, into the hollow of a great dead-fall. He threw off the safety of his rifle. He was happily confident. He advanced with the rifle ready.

"Skag!" he snapped. "Deena! Come out!"

With a sudden shock of ironic satisfaction, he realized that the dogs' intelligence might lead to the most zestful possible conclusion to this whole affair. They — and only they — would understand the menace of the rifle as well as a human being would do. They —and only they—would realize that with the rifle bearing down upon them, disobedience would mean bullets. Skag and Deena, alone of all dogs because of their queer heads, would be susceptible to capture by the threat of shooting, as men and women would have been in their case.

Danil wanted to laugh triumphantly, but instead he snarled;

"Come out of there or I shoot!"

There was a puppy-whimpering in the hollow tree. Then a stirring. Then Deena came out. She faced him with blazing eyes. She did not try to run away — that would have been desertion of her puppies. She did not try to rush him. She knew that would mean death. She stood there, terribly and despairfully defiant.

"Yes?" said Danil mockingly. He never knew how many human words the dogs understood, but it was many. He'd talked to them often for the satisfaction of hearing his own voice. "You know how it is, eh? You run, I shoot. You rush, I shoot. Either way I take your puppies and make them smart dogs like you and Skag—but a damned sight more obedient! When I'm through with them they won't dare to run away like you did!"

He did laugh. By now, he was sure, Skag was a raging prisoner in the bear-traps inside the cabin door. Deena — on three legs she might run away, but not on two — disable her. Take the pups and put them in the cabin, make sure Skag was suitably helpless and knew of his master's final triumph, and then come back for Deena so that she could care for and instruct such of the puppies as survived the operations that should make them Deena's own kind.

He brought the rifle up to bear. As its muzzle lined up with her body, she broke out in a screaming outcry of hatred and defiance. It was indescribable and unearthly. It—

Something huge and silent and terrible struck Danil. It tumbled him from his feet. It was Skag, monstrous and deadly. He made no sound at all. He struck with the full weight of his body, flung in so desperate a leap that as Danil fell sprawling, Skag tore free with fragments of Danil's parka in his jaws.

The scientist started up, his mouth parted in something that started to be a scream, but became a wheezing gasp instead. Because Deena and Skag, together, sprang once more — but they sprang together at the rifle that had been knocked from Danil's hands. They both got it. Then Skag released it. He made sounds.

Deena went bounding away over the snow, dragging the rifle behind her. Skag moved stiffly to the mouth of the hollow tree from which tiny scufflings and puppy-whinings came. He stood there, tense and trembling. After a moment a low growl came from his throat. His eyes were not a dog's eyes. They were stern eyes, grim eyes, with intelligence behind them, and they looked at Danil with a burning steadiness that was more terrifying than any snarling could have been.

Danil, gasping, tried to back away. But it was not easy to walk backward on even rounded woods-snowshoes. Then Deena came back. The rifle was gone. And Deena was a female. At sight of Danil her lips drew back and her eyes blazed. He had threatened her pups. She swerved toward him, snarling.

Danil screamed. Flight was impossible. He climbed a tree with startling agility, practically gibbering in his terror. Deena raged uncontrollably about the base of it, though Skag only looked up with those grim and burning eyes. They knew that Danil was unarmed, now. He was safe, but he was unarmed.

Once he was sure they could not reach him, Danil screamed curses at them. His vanity was irreparably injured. He was Professor B. H. Danil, late of Braddock University. He was a great man, a superior man, infinitely above other humans, and they only dogs. He raged at them with the venom and fury possible only to a vain man whose ego had been deflated.

But he stayed up the tree. He expected them to take their pups and move away again, out of some residual fear of him. But they had no fear of him now. They knew he had no gun. And this was their home. There was no reason for them to move.

After an hour, he grew very quiet. He hoped they would forget about him. Then perhaps he could slip down and away when both grown animals went to hunt. But they did not forget. Skag lay in the entrance of the hollow deadfall which housed his family. From time to time he raised his eyes to the man in the tree.

That was all. At nightfall, Danil still hoped. But it grew colder at night. He could not exercise to keep warm, because the branches on which he rested were coated with ice. He could only cling to the tree.

Once during the long dark hours the dogs heard querulous, moaning noises up in the tree, as if Professor Danil wept hopelessly to himself be-

cause he did not dare come down and because the cold ate ever deeper into the marrow of his bones.

That was not many hours after darkness fell. When the gray light came again he was still up in the tree. But he did not move.

CHAPTER VI

WHEN THE ICE broke, that spring Joe Timmins came upriver with Professor Danil's spring mail. Joe Timmins was a whiskery, sourdough Alaskan. There was no sign of life about the house. He shouted, and then he opened the heavy cabin door. He stared blankly at the sight of beartraps with gaping jaws, set to catch any living creature who might enter. He swore, and first sprang them with sticks. Then he went gingerly through the cabin. Professor Danil had not been there for a long time.

When he went outdoors, he saw a dog with a queer head looking at him. It came up and wagged its tail.

"Hi, Skag!" said Joe Timmins. "Where the hell's your master?"

Skag came forward in friendly fashion. He had seen Joe Timmins several times before, and the man was kindly. Skag remembered. He remembered everything. He stayed companionably with Joe Timmins while the sourdough sought for some indication of where he should send word that Professor Danil had vanished from the cabin in which he spent his winters alone. But Skag was bored when Timmins began to look through the notebooks. He trotted away.

Timmins read cursorily, skipping here and there. He was looking for an address to write to. But suddenly, what he read began to have meaning. He happened to have chosen the last notebook of all, concerning Skag and Deena. He screwed up his face. Later he rumbled furiously as he read.

When he finished, he was breathing hard. He went out, and Skag was nowhere to be seen. Joe Timmins moved rather grimly in the direction toward which Skag had vanished. He found a clear trail, alternately in slushy snow and soft mud. It was a well-used trail—by dogs. Joe Timmins followed it three miles.

Then Skag came to greet him, wagging his tail. Deena looked at him suspiciously from the mouth of a fallen hollow tree. A small pack of gangling, boisterous half-grown pups came sniffling cautiously at the man. Skag made sounds, and they wagged their tails. Joe Timmins found it incredible, but he had read all about it in Professor Danil's notebook.

"Look here!" said Joe Timmins wrathfully. "Those books say you got as much sense as a man. But it looks to me like you killed that fella Danil—even if he did need killin'!"

Then he stopped helplessly. A man does talk to a dog. But Joe Timmins had talked as to a man. He was embarrassed.

Deena made noises. Skag blinked idly, and then his eyes went up and up. He looked steadily, satisfiedly, overhead. Joe Timmins followed his gaze up into the tree. Then he gasped. It was perfectly clear what had happened.

The day Joe Timmins was going downstream, he set fire to Danil's cab-

in and watched it go up in flames. Skag watched indifferently as the smoke billowed up. Joe Timmins said indignantly;

"Dammit, there ain't nothin' else to do! Nobody'd believe me! I'll tell 'em his cabin caught fire an he was burned out in the middle of the winter, an' he musta tried to make it to Duggan's Landin' — an' didn't. I ain't goin to try to make 'em believe what I read in them notebooks!"

Flames gushed high, and Skag drew back a little. He waited around in a friendly fashion until Joe Timmins — sure the cabin was finished — got into his canoe and pushed off. Skag wagged his tail as the boat moved out from shore.

"Listen here, Skag," said Joe Timmins. "You keep outa sight of men, or they'll try to make a sledge-dog outa you an' you'll have to kill 'em! That goes for Deena too. I don't know about the pups. They oughta make out all right. But you two better be sure and stay outa sight!"

Skag wagged his tail again. Joe Timmins felt like a fool. He paddled downstream. As he paddled his lips worked as if he were phrasing something to himself. His expression grew more and more dubious.

Around the first bend from the site of the cabin he stopped paddling and spat overside.

"Hell!" said Joe Timmins. "I couldn't ha' done anything else! Nobody'd believe me! It wouldn't be no use to tell the truth to nobody!"

So much was plainly true. Then Joe Timmins spat again.

"In fact," he declared firmly as he picked up the paddle one more, "from now on I ain't even goin' to tell the truth about this to myself!"

SEED by Raymond F. Jones *(continued from page 50)*

mutant colony.

The name of Dr. Nathan Ord could not disappear from the world without a stir, either. That would draw attention to the colony, and the time would come when it could not be smothered beneath the indolence of men like Davidson.

He felt very good. He felt the comfort for which he had longed throughout a lifetime. It came with the sense of Joanna's weight in his arms, and the pressure of her body against his.

He expressed his only regret. "They could at least have let you see Earth—just once."

She smiled up at him with renewed confidence. "It doesn't matter. There will be a time when the stream will be reversed and go from Mars to Earth. Our children — or their children. It's not important just now."

* * * * * *

(continued from page 12)

had refused to tell though the rest of the deal had been above board enough. The charter was direct from Teleport Inc., paying a flat fee per month for charter over and above the cost of all supplies. It was something that Josh had known once, complete charter.

Dikter shook his head. "Does it matter?"

Then the trucks began arriving with the big crates all stamped with the seal of Teleport and Josh looked for evidence of what they contained. . .But they were not uniform and there was no way of telling the contents.

"No," he decided. "No, maybe not. I've carried cargoes before without knowing that."

But he liked some cargoes less than others, he thought to himself. And the kid hadn't been too smart. The two men that were to go along with the cargo as supercargo meant that it was something special. If the government or whoever was backing this wanted to play it that way, it was their business.

"Hell," he decided. "It gets carried, that's enough. Right now I'd even be willing to think about shipping teleports. . ."

The gasp from Dikter wasn't necessary then. It should have been obvious as the kid had said. No matter what the Teleport Company officials had claimed, there was one cargo they could never transport. The first teleport on any planet had to be transported here by ship. There had been a time when Teleport had tried vainly to get the starships to do it for them and finally had to build their own ship. Now, well if they needed a second ship to spread from planet to planet fast enough, he wouldn't be cutting the throat of other ship owners or destroying trade by spreading the machines for them. There were no more shipowners and no trade to destroy.

"Well, we'd better get below and supervise stowage," he said, slowly. "We've got cargo coming aboard. And on the 'Titwillow', when we head for deep space, we stow it right! I've never lost or damaged a cargo, and I don't intend to start now. Mr. Boyles, you're in charge. Mr. McIntosh, Mr. Dikter, you take orders from Mr. Boyles. And step lively, sirs!"

Then he chuckled, wrily at first, but with more spirit after a moment. . .The joke was on Teleport Inc., after all. They had spent years driving the starships out, but they lost. And they'd always lose.

As long as there were new planets, there'd always be starships. And that meant there would always be room for a good deep-spaceman. Maybe the service was a little smaller. . .but it wasn't licked yet. And it never could be.

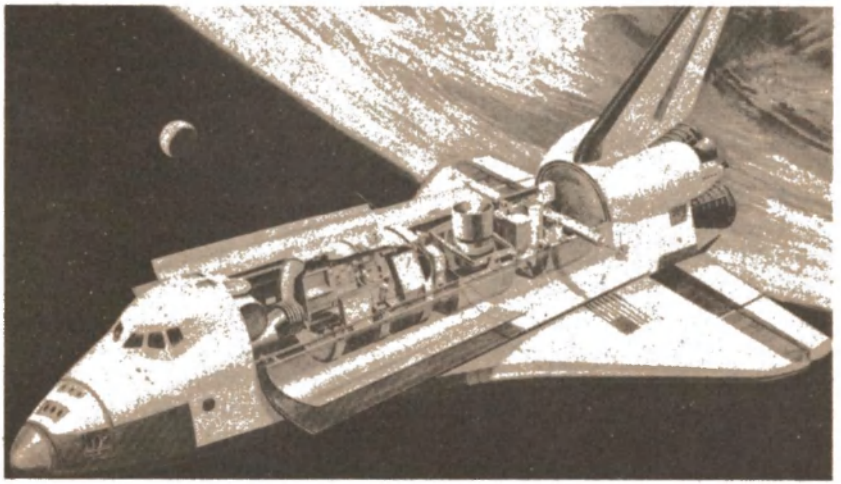
He tossed aside the factory produced cigarette and reached for his makings, before heading down to see that the stowage was going as it should.

. . . they were terrible beasts, and Conklin knew she would be helpless before them. . .

Trans-Plutonian

by Milton Lesser

A new planet, a new Earth-girl, and nothing to disturb a spatial paradise-so long, that is, as its hideous inhabitants stayed petrified.



Artists concept illustrates configuration of Spacelab in the payload bay of Space Shuttle. At aft end are two pallent sections on which are mounted various scientific instruments. Equipment on pallet is operated remotely from pressurised module.

Conklin's discovery of the tenth planet could have made him a great scientist, but he wasn't thinking of that, he had blasted out beyond the edge of the flat spatial disc which is the solar system only because there was no place to go. Pluto, actually, was more than eight billion miles away, on the other side of the sun and the police had followed Conklin's battered Triton out beyond Neptune's orbit. There was no place else to go. Up and down, north and south of the solar equa-

tor, were meaningless concepts applied to the great sweeps of space and the notices for Conklin's capture were posted on every world from Mercury to the Neptunian satellite.

If Conklin could not go outward, he could go nowhere and so he simply continued on the plane of the eliptic beyond the Plutonian orbit. He had enough canned air, water and food for months-for years if necessary and he could blast out beyond Pluto and get lost for a while. The furor would not last forever and when it died down he could come back into the system.

But his stowaway posed a problem. Robbery of the Ganymed Earth freighter was one thing, and murder was quite another. After a time, when he ventured back into the system, there would always be the possibility, that he would be caught. He hardly considered it seriously until now-but he had to, here beyond Neptune. He had to ever since he refueled on Ariel and blasted off again only to find a girl onboard.

At other times, Conklin could have admired her, she was an Earth girl on Ariel and she was beautiful. Conklin did not know why she was running away and he had no time to find out. Four days ago he accelerated beyond Neptune and he'd hardly time to sleep since then. The girl could wait. . .

The 'Triton' screamed straight for the tenth planet and it was the cube of a million to one shot. One moment space was empty in front of the ship with the infinite parsecs beckoning Conklin. The next, a haze-glo swam into view in the foreport then slipped away beyond the left edge of the plastiglas.

"Hey!" Conklin blurted, "Did you see that? Kid, did you see that?"

The girl nodded. "It was a planet. It couldn't have been anything but a planet. . ."

Conklin gritted his teeth. "I know it. This could change everything. Run? The devil, what do I have to run for? We can hold up on this globe for as long as we want. If its cold, there'll be solid oxygen, and we can melt it-no sir, we don't have to run."

And then Conklin was busy with the controls, swinging up 'Triton' in a tight arc which threw the girl back, whimpering against the bulkheads. Conklin could feel the five-gram battering ram against his chest, constricting his guts, but he smiled grimly. What did a little pain now matter? Soon he would be safe. He could hide away as long as he wanted, on a planet the solar system did not know existed. For a moment he pictured the dismay with which the police would view his disappearance, and then he chuckled, despite the pain. In a while, they would think he had met with an accident someplace in space. It was true Conklin couldn't land on any known world: there the virgil was

unending-but out in space anything could happen and they would think Conklin was dead.

His eyes were slits against the pain when he saw the planet slowly swim into view. It hovered there in the port and gradually, Conklin lined it up on the crosshairs. Then it grew larger and soon covered the entire port. Conklin blasted the fore-tubes once and then again, and the pressure slapped him hard against the chair.

Slowly, he brought the ship in. They landed with hardly a bump, and Conklin reached in a cabinet and took out a bottle of liquor and poured himself a big drink. His hands were trembling. If those gravs had piled up a little more, he knew he would have blacked out and the ship would have plowed a burning furrow half way across the planet. He was lucky.

The girl wasn't so lucky. She lay stretched out behind Conklin, unconscious. He bent and examined her swiftly. Satisfied he stood up. In an hour or two she'd be up and around, but he was in no hurry. He had all the time in the world. Time was his friend-and here on the tenth planet nothing could go wrong. He watched easy rise and fall of the girl's breasts beneath the tight metallic blouse, and he grunted. Time was definitely on his side and he was in no hurry to get back into the system. He leaned back and stretched, then lit a cigarette. Slowly, he walked to the instrument panel and examined the dials.

This tenth planet was weird, there was plenty of oxygen outside and inert gases. The temperature was thirty degrees Centigrade and gravity registered at point seven-five earth norm. Conklin smiled.

Everything was perfect. Conklin did not know how this could be, six billion miles from the sun, but the planet could have been a second Earth, a little smaller, but with Earth-norm temperature and an atmosphere that almost matched Earth's atom for atom. Conklin did not know what caused the warmth. Very probably the planet was a young one. Fires still burned within the crust. He didn't care.

But of one thing, he was glad. They would have no need to stay within the battered 'Triton'. They could live outside, on the surface of the planet itself. It would be pleasant waiting for the solar system to forget about him. He looked at the girl again, and drew in his breath sharply. With a setup like this, he almost wouldn't mind staying here forever.

Conklin buckled the blaster to his belt and stepped into the airlock. The lock mechanism would respond to his touch from either side thus the girl could not lock him out. It was true she could open the lock from inside, but she would be probably too afraid to venture out. Meanwhile, Conklin wanted to see what his new home was like.

When he opened the outer door.

the first thing he thought of was a museum. A natural history museum with stuffed animals and models of plants, with everything perfectly realistic except for one thing, there was no motion, no life. Conklin was gasing on a world of statues.

He reached for his blaster and gripped it tightly. Afterall, this was a dead place and he would have no fear of creatures that did not move. He had read someplace of a petrified forest-he knew a great section of the Mars Desert had become petrified overnight because of history's dawn. He knew the long-dead creatures were perfectly preserved for all to see.

This tenth planet was like that. They were in a forest of great fern-like plants, but nothing had stirred. Conklin could see the denizens of that forest, weird unearthly beasts, the type seen only in nightmares. Huge creatures not unlike that of Earth's dawn-perhaps more like dragons of primitive mythology.

But Conklin returned the blaster to his belt. They were dead. He did not know why they stood about in the eternal forest in a wide tableau of unmoving action but they were dead. Petrified. And he need not fear them.

Off to the left, a great jawed monster stood above a serpentine thing, the massive head poised a yard above a coil of the serpent. Two great forelegs holding the serpent down. The great jaw was open and it seemed ready to close about the serpent's body and tear it in half. But the jaws were motionless and the serpent did not move. It could have been a picture.

Fascinated, Conklin came closer. There was a syrupy-blue wetness on the serpents coils. It was blood, but of course it could not be wet, it only looked wet. Conklin reached out with his hand and touched it. He recoiled in horror and stared at his fingers. They were sticky. He wanted to run back to the ship. He did not know why, but he wanted to run. The blueish goo clung to his fingers; it was blood. He knew this could not be. This was a strange world, one of statues, it could not hurt him. He had nothing to fear. The wetness could be explained. He must not get panicky.

He looked again, what he saw was impossible. A big drop of saliva was poised on the lower jaw of the monster, gleaming in the strange light which must have come from subterranean sources. The head was bent low over the coils of the serpent, afraid now but now too grimly to resist, Conklin reached up and touched the drop. It rolled off the jaw to the ground!

His hand had touched the creature's jaw and the flesh was soft and warm. The creature was alive. It stood there unmoving, poised for the death blow, but it was alive.

Conklin ran, ahead of him was the 'Triton'. Conklin had to reach it, he had to. . .

His foot caught on a vine and he

stumbled. He went down and rolled over-dazed. He sat up, gingerly rubbing a spot on his head, facing around again toward the tableau of the two monsters fighting. He heard the sound then. It was a scream. . .a wild horrible shrill scream. It took a while before he realized it came from his own throat.

The teeth of the dragon were buried in the coils of the serpent-still unmoving, it seemed to Conklin, but they were buried there.

A slight wind fanned the sweat on his face. There had been no wind before. The jaws of the monster began to open slowly - so slowly that at first, Conklin could not see it. It was like a moving picture cut down to an impossibly slow speed without the individual pictures becoming apparent. Conklin sat rooted at the spot, watching.

A coil of the serpentine body lifted so ponderously, that Conklin had to stare hard to see any motion. But it was moving, and now the dragon's jaw hung open and Conklin could see the sluggish flow of blood from a new wound in the serpents coils, a wound that had not been there before.

Conklin tore his eyes away and stood up. Everything was moving faster now - but still impossibly slow, but fast enough for him to see the motions for what they were. The dragon jaw was about to close again.

A pair of horrible eyes stared up at Conklin from the mated vines at his feet, and a sloth-like creature extended two hairy arms with a slowness that would have made an earth-tortise appear fleet.

He ran. Twice he tripped again, but he got up and ran. All about him the tempo began to speed up - and he turned once when he reached the 'Triton's' lock and saw the dying serpent writhing on the ground. It writhed furiously as the big jaws closed in on it until it finally lay still. Then the dragon creature began to eat, and Conklin's hands began to tremble so much, he could hardly manipulate the lock.

Something was slithering toward him through the undergrowth and he screamed. His breath came in burning gasps and he wanted to scream again, but no sound came. Then the door sprung in and he plunged into the airlock, panting. For a moment he stood against the inner door, too weak to open it. And then he lifted his hands and worked the lock.

He sat down in the control cabin, aware he could see the girl nowhere. He had looked through the ship hurriedly but he could not find her. Now he sat there panting, and reached for the liquor, but his hands were trembling too much and he let them fall in his lap. He was so tired-

When he awoke, the girl sat cross-legged on the floor in front of him.

"Hello," she said.

"Hello? Where the devil did you come from. You weren't in the ship when I returned. . ."

"Of course I was. I was right here. I saw you come in."

"Then why didn't I see you? Tell me that."

"I think I know, but look Mr. Conklin-"

"Eh? You know my name?"

"Of course I know your name. The reward posters are up on Ariel, like anyplace else. You're running away from the law, Mr. Conklin."

He gaped at her in mock horror. "Izatso? So I'm running, but you can talk? Sure you can talk. Sister, you're running away from something or you wouldn't have stowed away."

Then, abruptly Conklin remembered the outside. He ran toward the forward port and looked out. There was the statue world again - everything poised for action, but nothing moving. Everything was motionless as he had first seen it. He ran to the side port and looked out. The dragon-creature had half a serpent protruding from its mouth, but it was not moving.

"I'm going nuts," Conklin said. "Nuts."

The girl shrugged, but Conklin saw her grinning a little. No one asked you to run away and now that you have, Mr. Conklin, no one is responsible for what happens to you."

Conklin brightened. "Okay. You just remember that. You ran away too and no one is responsible for what happens to you."

"That was different, I didn't run from the law. I simply left Ariel to elope with my fiance to elope on Mars. Dad didn't approve, but we wanted to get married. I thought your ship was heading Marsward, but obviously it was a mistake. Now I'm stuck here with you."

"Yeah," said Conklin. "Yeah." They could stay in the ship and he could forget all about the weird nightmare outside. . .He reached out and grabbed the girl's arm, lifting her off the floor and pulled her toward him.

She struck out with an open palm and hit him hard across the face. He let go of her hand, "Just don't do that again, Mr. Conklin."

"No?" And then Conklin tensed. In her other hand the girl held his blaster. . .pointed. . .waivering at his chest.

"No," she said.

Conklin leaned back and smiled. He had the time. Plenty of time. If the girl wanted to play hard to get, what was the difference.

"Okay," he said. "Sorry, very sorry. We're all alone here. A couple of billion miles from the nearest human, but I've not the right to touch you."

"Don't be funny."

"Hell, I ain't funny, but I don't like a gun staring at me like that. Want to put it down like a good girl?"

She smiled. "Okay, but just don't try anything." Then she placed the gun on an open shelf of the cabinet, near the bottle of liquor.

He'd let her take the lead from now on. He'd be nice and friendly, but for a while at least, she'd do the leading. He thought it would be better that way.

"You know," he said, we've discovered a planet. That's pretty good."

Conklin found here an opening wedge for conversation. Every time he thought of what lay outside, he trembled. He pushed it from his mind now that he was safely in his ship, the girl being more important. "Hey, how'd you know all about that?"

"Oh. That's easy. Dad is chief astronomer on the Ariel observatory staff. He talks all the time about his work."

"You know that he talks about?"

The girl nodded. "I guess I'm something of a scientist myself. It must run in the family."

"Yeah," Conklin muttered. "Then maybe you can explain what in blases is going on out there. Can you? Eh?"

"Well maybe I can. I think I know."

"Honey, if you can, I'll love you for life."

She laughed and Conklin liked the sound. He wanted to reach out and take her in his arms. But he would wait and let her get lonely first.

"I'd hardly like that, but if you promise not to do it, I'll try to tell you."

Conklin chuckled and raised three fingers in an age old salute. "On my boy scout's honor."

"Well, then, how long do you think you were outside the ship?"

She had dropped the Mr.; she was getting friendly.

"Oh, about ten minutes, maybe twenty."

"You were outside for a week."

"Ha, ha, very funny."

"I'm not trying to be funny. You were outside for a week. You can check the food cabinet. You know I wouldn't throw any food away."

"Well what do you know-" She wasn't lying. Conklin could see that but he couldn't understand.

"I saw you out there after you awoke. First you walked around all those statues in a normal fashion, but then you began to slow down. You became sluggish, incredibly sluggish and it took me hours. . .days to see you move at all. Just like the animals. I couldn't believe my eyes. You were almost a statue. You came back to the ship like the hour hand of a clock."

"Well I don't get it. What's going on?"

"Don't you see, Conklin? Hmmm, no you wouldn't. If my Dad was here, he would have a field day. . ."

"Maybe I ain't so dumb," said Conklin. "Maybe you could tell me." He was serious now - he knew he had come close to being killed out there, and he wanted to know why.

He got up and walked to the port,

looking at the world of statues. Nothing moved, not in a way he could see. "Tell me-"

"It's a foreign world, Conklin; not native to our solar system. I don't know where it comes from but that isn't important It was free in space and the sun caught it and gave it an orbit out here. It's a totally alien, foreign world. There's no law that states all metabolisms are the same. They are the same or approximately the same in our solar system, but they don't have to be."

"Met-?"

"Metabolism. The rate of bodily function. Growth and decay. Production and destruction. In short, life. Here on this world the whole setup is different. Vastly slower. We have no instruments here, we can't tell, but there is an incredible difference. Everything is slow, slow that everything appears to be statues. See?"

"Yeah, I think so. So what happened when I went outside?"

"That part is easy. First you saw everything the way we see it now, from the port. Statues. But then, gradually, in a few minutes, your functioning slowed down. Every part of your functioning slowed down and you were not aware of this. You became attuned to the world outside and everything began to move. They were moving all the time, too slow for you to see, and when you slowed down in every way, four perceptions - everything, you became part of this world. Everything out there was normal to you because you were functioning at a rate thousands of times below normal. Now do you see?"

Conklin nodded and said he did.

"Then after a wekk, you got in through the doors, and-"

"Yeah, then why wasn't I hungry?"

"You wouldn't be. Everything was slower. Your whole manner of living. To you only ten or twenty minutes had passed, not a week."

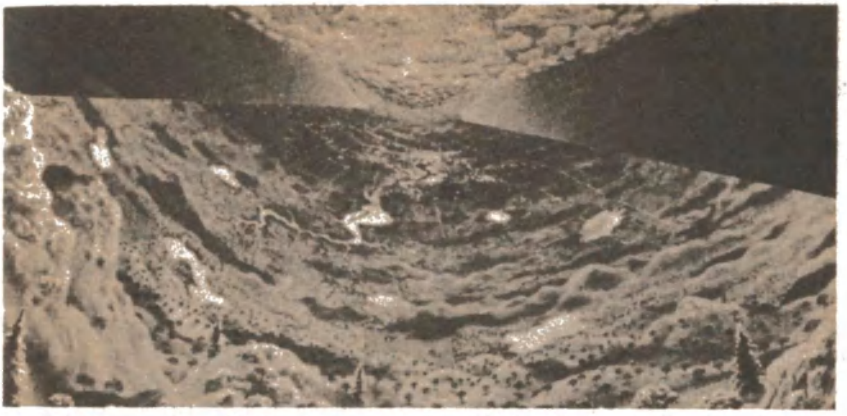
"Okay, but why didn't I see you?"

"You couldn't. I never stood still long enough. Your eyes couldn't see that rapidly. Nothing registered. Then you fainted and gradually sped up to the normal metabolic rate. Then you got up."

Conklin thought he understood it now. What the girl said had made sense, even if it was a little hazy around the edges, he thought he could understand it. And now he saw she was really involved in this science stuff. She liked it and her eyes shone as if she had been kissed or something. Or maybe she wanted to be kissed.

He reached out and touched her hand. She did not pull it away. She sat there and stared straight ahead. Conklin bent forward and kissed her. The open palm struck once more. She abruptly stood up.

"Cut that out Conklin. I'm warning you. That's a danger and I know it. I almost go off into a funk when I think: almost, but not quite.



Artists conception of 21st century space colony. This 10 mile long 4 mile wide cylinder is one of several space colony concepts. Here the space station is positioned to orbit around Earth.

Crescent earthrise prior to TEI, lunar farside in foreground. Apollo 17, the last lunar manned flight launched December 7, 1972. Cernan and Schmitt spent 75 hours in Taurus-Littrow mountainous region of moon, southeast of the Serenitatis Basin.

So you just cut it out, Conklin-"

"Listen, kid-"

Suddenly the girl reached for the blaster. Conklin grabbed her shoulders and shoved her back roughly. She went tumbling against the bulkhead and crumbled to the floor.

She sat up slowly and Conklin had the blaster in his hand.

"Now don't you be funny!" If this fool kid didn't know there was more to life than just science, he would teach her.

He moved forward slowly, the blaster in his hand. The girl stood up and edged along the wall until she stood at the lock. Then she played with it for a moment and the door swung open.

"Stop!" Conklin cried. "Where do you think you're going?"

"Why - outside, so stop bothering me."

"Stop, stop or I'll blast you."

The girl laughed. "Are you kidding, you wouldn't want to do that. You want me for company, don't you?"

Of course the girl was right. It had just been an empty threat. But she couldn't go outside. She'd slow down like the animals and then they'd get her. "Stop!" he called and ran for the door.

It slammed in his face, and the girl called back: "Come and get me."

It took Conklin less than a minute to make up his mind. He knew he would not have much more time than that. The girl would begin to slow down and the animals would get her. They were terrible beasts and she would be helpless before them.

Conklin had remembered what he had seen the last time and what almost happened. He did not want to go outside, but he wanted the girl. That was more important. If he reacted quick enough and got her, they would be safe.

He ran into the airlock and paused. One of the spacesuits was missing. Fool girl - as scientific as she was, she didn't realize there was no need for a spacesuit.

It was the same as last time. A world of statues. Now Conklin was afraid because he knew that unless he got back to the 'Triton', the statues would start to move and he did not want that.

He walked now among the creatures which did not move, and although his eyes did not support this, he knew they were alive and moving. It was maddening, but he accepted that. He had to get the girl and return to the ship before the atmosphere affected them.

Off in the distance he could see the girl, her spacesuited figure big and bulky. He called out to her and the fishbowl helmet of the suit swung halfway around. Even at the distance, he could see her smiling. He ran, and at a hundred yards away she began to run.

Because he was not encumbered with a spacesuit, he could move faster, and presently the distance between them was halved, but that was all after that he could not gain. The girl stopped running, but he could not gain an inch. She stood and watched him, bulky gloved hands on bulky hips, smiling, then she took a step backward toward him - she shimmered!

She shimmered and fainted and became a phantom. Now he only saw the barest shadow right next to him, moving slowly in a circle. He heard what might have been laughter, but he could not tell. It was one short musical sound, the girl laughing at her normal rate. His rate was declining.

Around him, sluggishly the life of the jungle began to stir. It all

seemed so unreal. And then it began to quicken. Something reached down toward him from above - a great column of flesh, with two gaping jaws. He screamed and tried to run. It felt as though he was running at his usual speed, but he knew he wasn't. He was moving slowly, but faster than the beast, but he was getting slower all the time.

He screamed again and then he cried: "Save me. Please, please-"

He was down on the ground. He didn't know how. He could not see anything. Something had bowled him over and he was on the ground and felt as if he were being dragged. The ground became blurry-hazy. Everything faded behind a mist and he heard the whimpering voice again, his own. "Get me out of here! Please! Back to the ship-"

He sat in the control cabin and the girl started the rockets. He heard the engine booming and felt the ship accelerate, the pressure would have stopped him from moving, but he could not move anyway. His hands and feet were tied firmly to the chair.

"How did you do it?" he said. "How?"

Soon the acceleration slackened and he saw the girl get up and stretch leisurely, the metallic blouse and skirt tight against her body. Now he had lost more than the girl, he had lost his freedom.

"It was a spacesuit," she said. "I wore the spacesuit with canned air from the ship and my metabolism was untouched. But you slowed down like the last time. You looked like a statue. I threw you over and dragged you back to the ship. Then I tied you up before you returned to your normal metabolic rate."

"Then, out there you saved my life. . ."

"Sure, sure I did. I didn't want you to die out there where no one would know it. The police want you-"

"Not the police," Conklin pleaded. "You wouldn't take me to the police." He squirmed around and watched the tenth planet disappear.

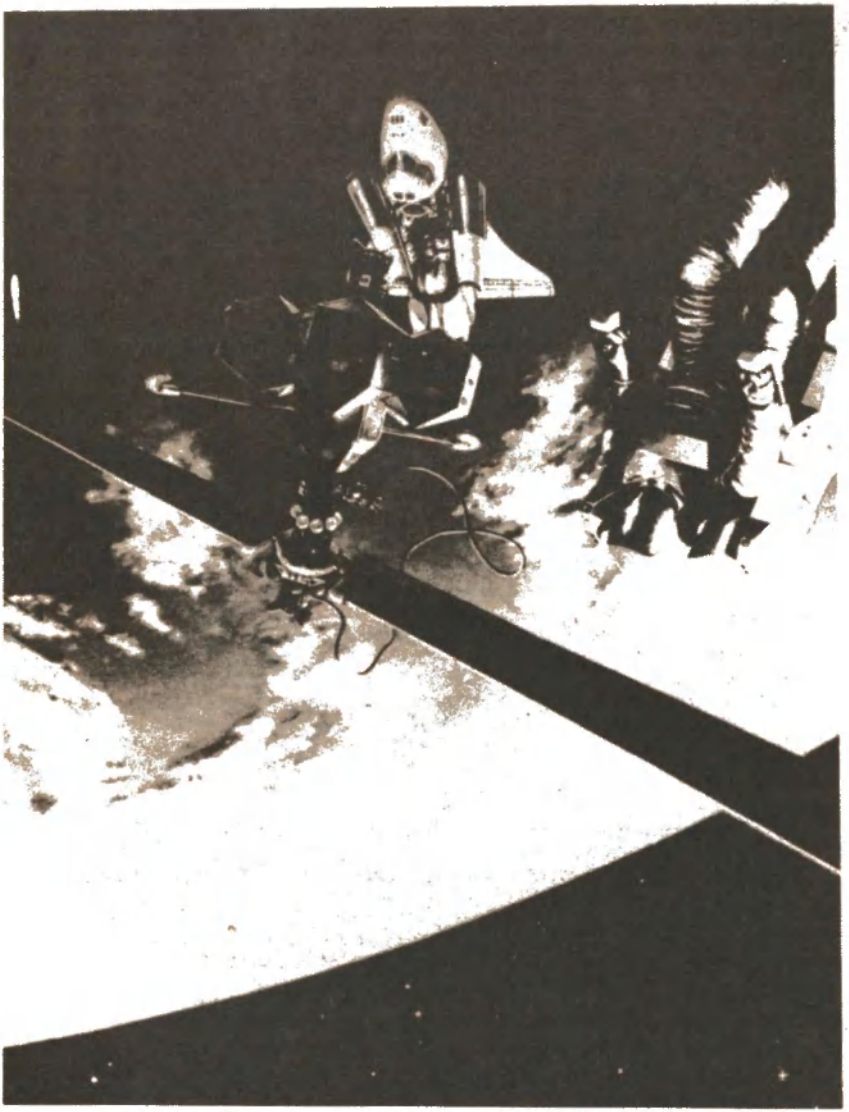
The girl smiled. "Well, not yet. They're looking for you all over the system, and I guess it doesn't matter where I take you. First thing I'm going to do is land this ship on Mars and find my fiance, there's a marriage which is kind of overdue. . ."

Conklin was hopeful. Then she wouldn't take him to the police.

"And then," she said, "there will be plenty of time to hand you over to the authorities on Mars. First you can watch the wedding if you'd like."

Conklin knew he wouldn't like it.

Astronaut John Young commandor of Apollo 16 stands on rim of Plum crator collecting lunar samples at Station No. 1 during first EVA at Descartes landing site. Scene photographed by Charles M. Duke Jr., Lunar module pilot.



Space shuttle manned maneuvering unit is a propulsive backpack device. Unit has a six-degree of freedom control authority, an automatic attitude hold capability and electrical outlets for auxiliary equipment.

MARVEL SCIENCE - FICTION QUIZ

by The Editors

Get out your astrogation charts, junior and senior enthusiasts, and see what you can do with the following group of questions. You need a hundred and fifty points this trip to merit graduation from a twenty-first century astrogation school, but you're definitely on the way if you can score a hundred points. The thirty-point bonus question, incidentally, should help.

PART I

You get ten points for each of the following general questions:

1. There are three common "yardsticks" for measuring stellar distances. What are they?
2. Hollywood has met the success of DESTINATION MOON by producing pictures from two very famous science-fiction stories. Name them.
3. What freakish behavior sets Uranus apart as unique from the rest of the planets?
4. In interplanetary parlance, what is *Brennschluss?*
5. Name the first "true man" in the evolutionary ladder that leads to the modern *homo sapiens.*

PART II

One answer, and only one, completes each of the following statements for 10 points. Find it.

6. The first human inhabitants of America probably (a) came here from Asia via an ancient land bridge which connected Siberia with Alaska, (b) originated from a pre-human ape on the South American continent, (c) came from Europe on trans-Atlantic hops via Iceland and Greenland.
7. In his controversial dialogue Timaeus, the famous Greek philosopher Plato mentions (a) a method for space travel which almost parallels current developments, (b) the use of atomic power in legendary Crete, (c) a lost continent of Atlantis which was destroyed by flood.
8. Several hundred years later—and two thousand years ahead of the times—the Roman Lucretius wrote about (a) atoms, (b) thinking machines, (c) airplanes.
9. Over six hundred light years from the Solar System, the star Deneb is still one of the brightest in the sky because (a) there is no absorbing medium in that section of space, (b) Deneb is a super-giant star (c) Deneb is white, and white light travels furthest.
10. The approximate age of the Earth is best determined by (a) the salt content in its oceans, (b) the half life of certain radioactive elements, (c) the weathering of its ancient basalt rocks.

PART III

You have to determine whether the following statements are true or false, receiving ten points each time you're right.

11. The long dimension of our lens-shaped Galaxy is approximately 60,000 light years.

12. Comets are probably great formations of dust particles captured by the sun as it swept through "dust-clouds" in space.
13. Its hundreds of millions of stars comprise the bulk of matter within our Galaxy.
14. Brontosaurus is the largest land mammal ever found.
15. If the Earth were thrust ten million miles closer to the sun, the heat would be sufficient to destroy the human race.

PART IV

For ten points each, find the item in column two which matches each term in column one.

16. The Moon
17. Zeus
18. Flourine
19. Lesser Magellanic Cloud
20. Arizona

a. Famous for one huge meteor crater.
b. Dark nebula.
c. Member of "Halogen Family" of elements.
d. Less than two light-seconds from Earth.
e. Found adjacent to coal deposits.
f. Location of atomic research.
g. Ruler of mythological Greek gods.
h. Comparatively close exterior galaxy.

BONUS QUESTION

A gift of thirty points to help your score—provided you've seen the motion picture DESTINATION MOON and provided you're "up" on problems of astrogation.

There is one flagrant scientific error in that otherwise excellent movie. What is it?

(*Turn page for Answers*)

I. 1. (a) Astronomical unit (distance from earth to sun, about 93,000,000 miles), (b) light year (distance light would travel, at its speed of 186,000 miles per second, in one year, (c) parsec (3.25 light years).

2. When Worlds Collide, by Balmer and Wylie: Who Goes There?, (The Thing) by John W. Campbell, Jr.

3. Uranus does not spin like a top (as do the remainder of the planets). Instead, its axis is inclined nearly ninety degrees, and Uranus rolls along in its orbit.

4. *Brennschluss* is that moment at which a rocket ship would commence coasting to its destination, after the engines have been shut off or the fuel is exhausted.

5. Cro Magnon.

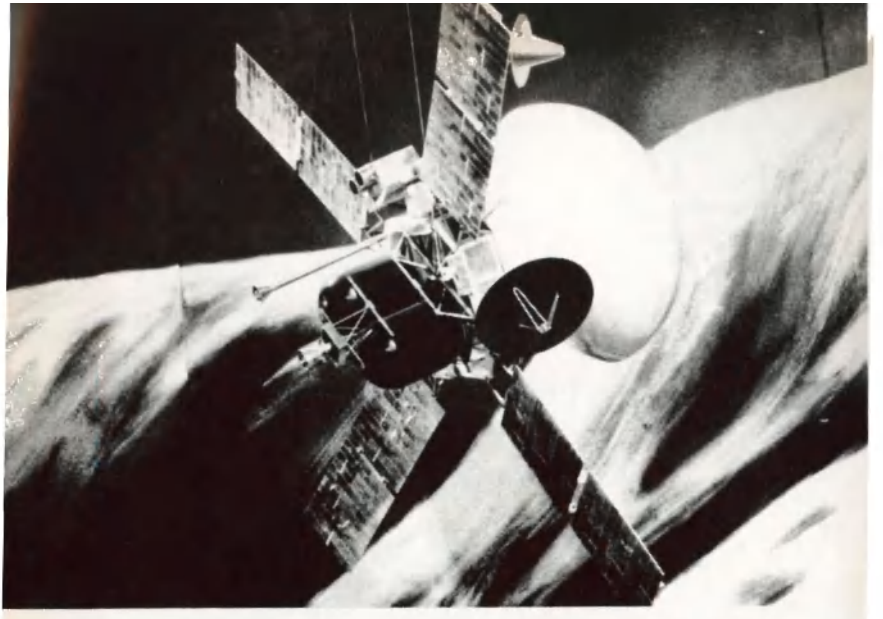
II. 6-a; 7-c; 8-a; 9-b; 10-b.

III. 11-T; 12-T—the obscuring rifts in the Milky Way are such dust clouds; 13-F—surprisingly, it has recently been found that because of its great extent there is more mass to the tenuous whisps of interstellar gas, mostly hydrogen and calcium, that exist between the stars; 14-F—the dinosaur in question is not a mammal; 15-F—on the contrary, at this distance the added heat would cause the waters of the ocean to evaporate more rapidly, chilling the Earth and probably causing another ice age.

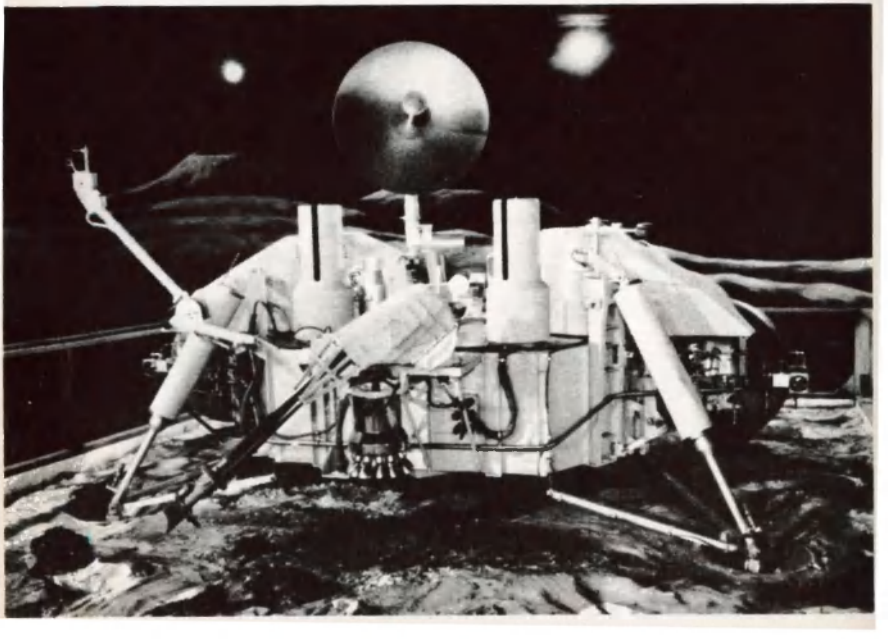
IV. 16-d; 17-g; 18-c; 19-h; 20-a.

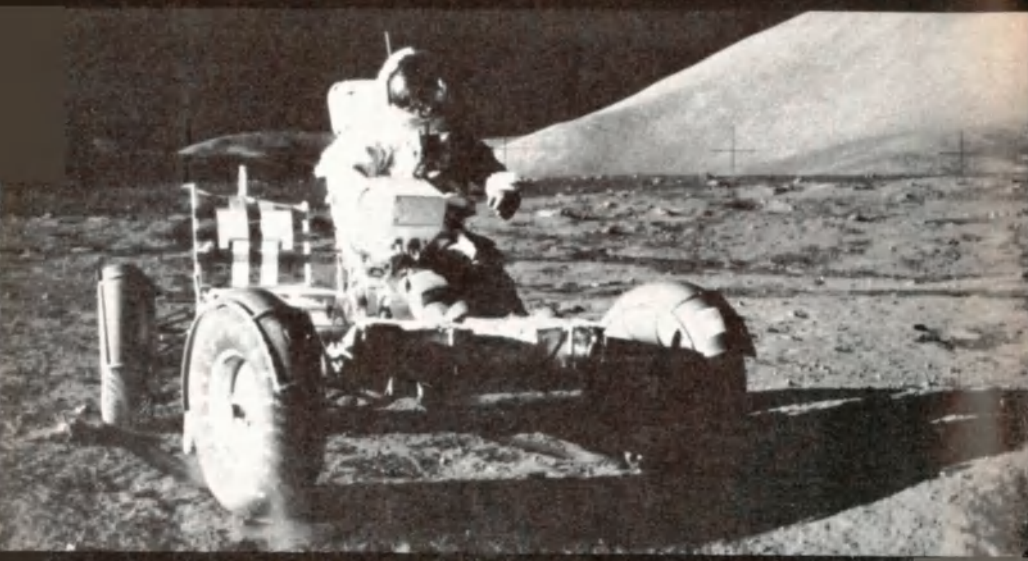
Bonus Question: The spacesuits of the characters did not frost over upon entering the ship from outer space or the moon—but they should have, of course, since they would be at several hundred degrees below zero Fahrenheit, and this temperature would cause moisture to condense out of the nearby air within the ship, moisture which would instantly freeze into ice when it came into contact with the exteriors of the spacesuits.

Cernan walking toward Rover, deployed U.S. flag behind him APOLLO 17, the last lunar manned flight, was launched December 7, 1972. The Apollo 17 crew Eugene A. Cernan, Commander; Ronald E. Evans, Command Module Pilot; and Harrison H. Schmitt, Lunar Module Pilot splashed down in the Pacific Ocean on December 19, 1972. Cernan and Schmitt spent 75 hours in the Taurus-Littrow mountainous region of the moon, southeast of the Serenitatis Basin.

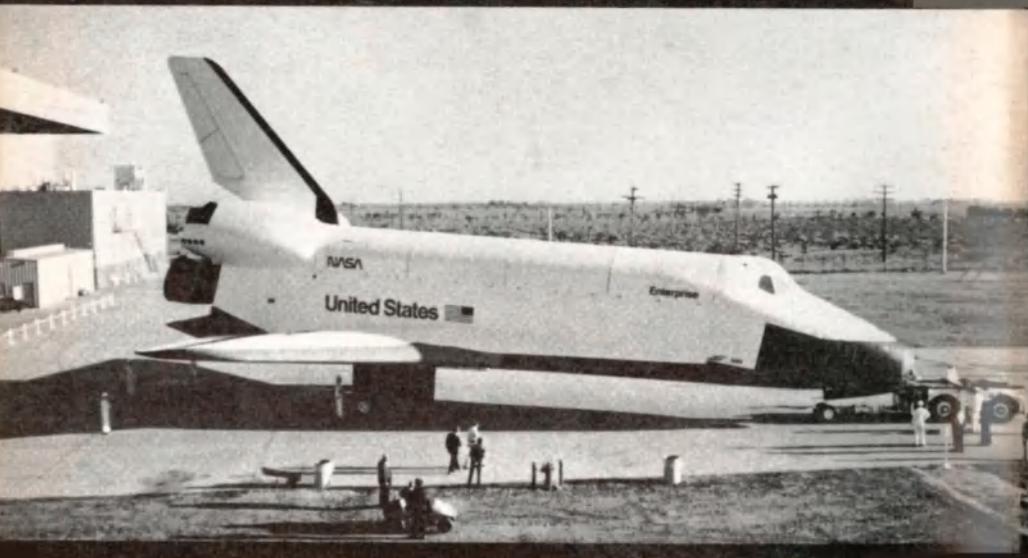


A) Full scale engineering model of Viking Spacecraft against a Marscape At Kennedy Space Center-U.S. Bicentennial Exposition on Science and Technology.





1972 - Apollo 17 EVA Lunar Roving Vehicle operated by Astronuaut Eugene A. Cernan at Taurus Littrow landing site



Ground-level view of Space Shuttle Orbiter 101 'Enterprise' which was actually flown piggy-back on a '747', February 1977!