WORLDS OF

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SCIENCE FICTION

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Complete Novella

The Merchants of Venus

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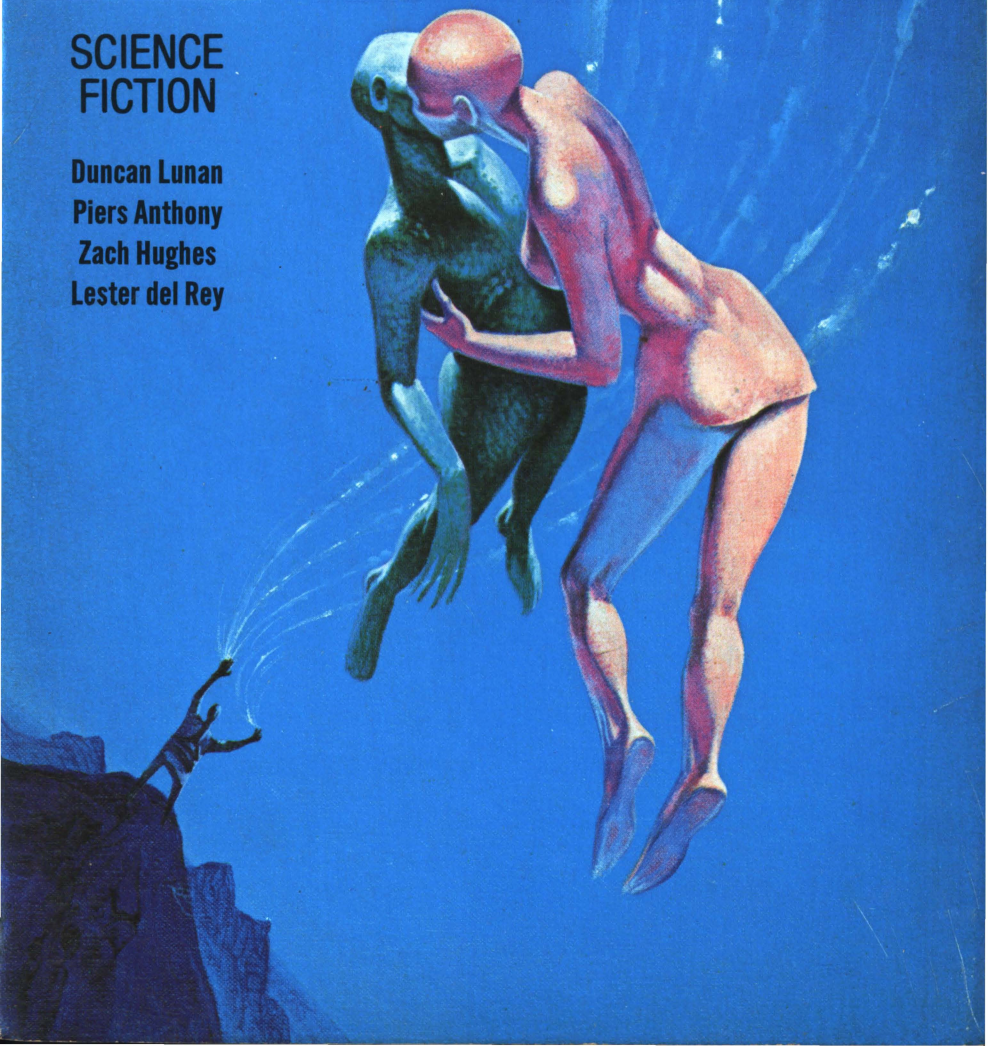
Duncan Lunan
Piers Anthony
Zach Hughes
Lester del Rey



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ALL NEW STORIES

Cover by GAUGHAN, suggested by THE BOOK OF RACK THE HEALER

Arnold E. Abramson, *Publisher* Bernard Williams, *Consultant*

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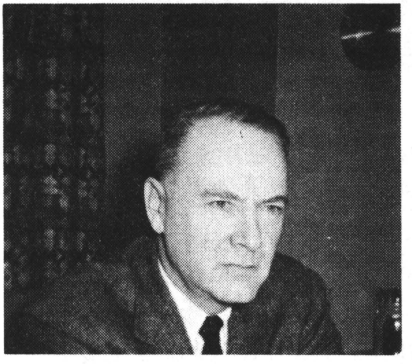
A MESSAGE FROM THE PUBLISHER



ARNOLD E. ABRAMSON

The United States Postal Service, now a semi-independent governmental corporation, recently increased postage rates by 1.4 *billion* dollars.

And that's just the beginning. In its new budget, the Postal Service is asking for an additional *414 million dollars*!

Included is an increase in magazine and newspaper rates of *142%* over the next five years—starting with a 30% increase this year. And with no reasonable prospect of any improvement in service to you.

Despite the President's efforts to curb inflation by means of his 5.5% price and wage stabilization program, the Postal Service pursues this irresponsible plan for enormous rate increases—both immediate and future. Where is the logic in achieving success on some fronts while permitting the Postal Service to touch off roaring inflation in its own area?

The contemplated postal increases, of course, would start an inevitable inflationary chain-reaction. Unable to absorb the higher costs, publishers would be obliged to pass on a portion of them to the public—and to advertisers who in turn would have to pass on the increases to consumers of their goods. Directly or indirectly, *it will be you who pays!*

So we earnestly appeal to the President, to Congress and to you, the readers of *Worlds of IF*, to hold the line on postal-rate increases for at least three compelling reasons:

1. *To deter the general inflation threatening all of us—man, woman and child.*

2. *To protect yourself, specifically, from inflationary pressures on advertised products that you buy.*

3. *To keep costs at a level permitting the free press of America to survive.*

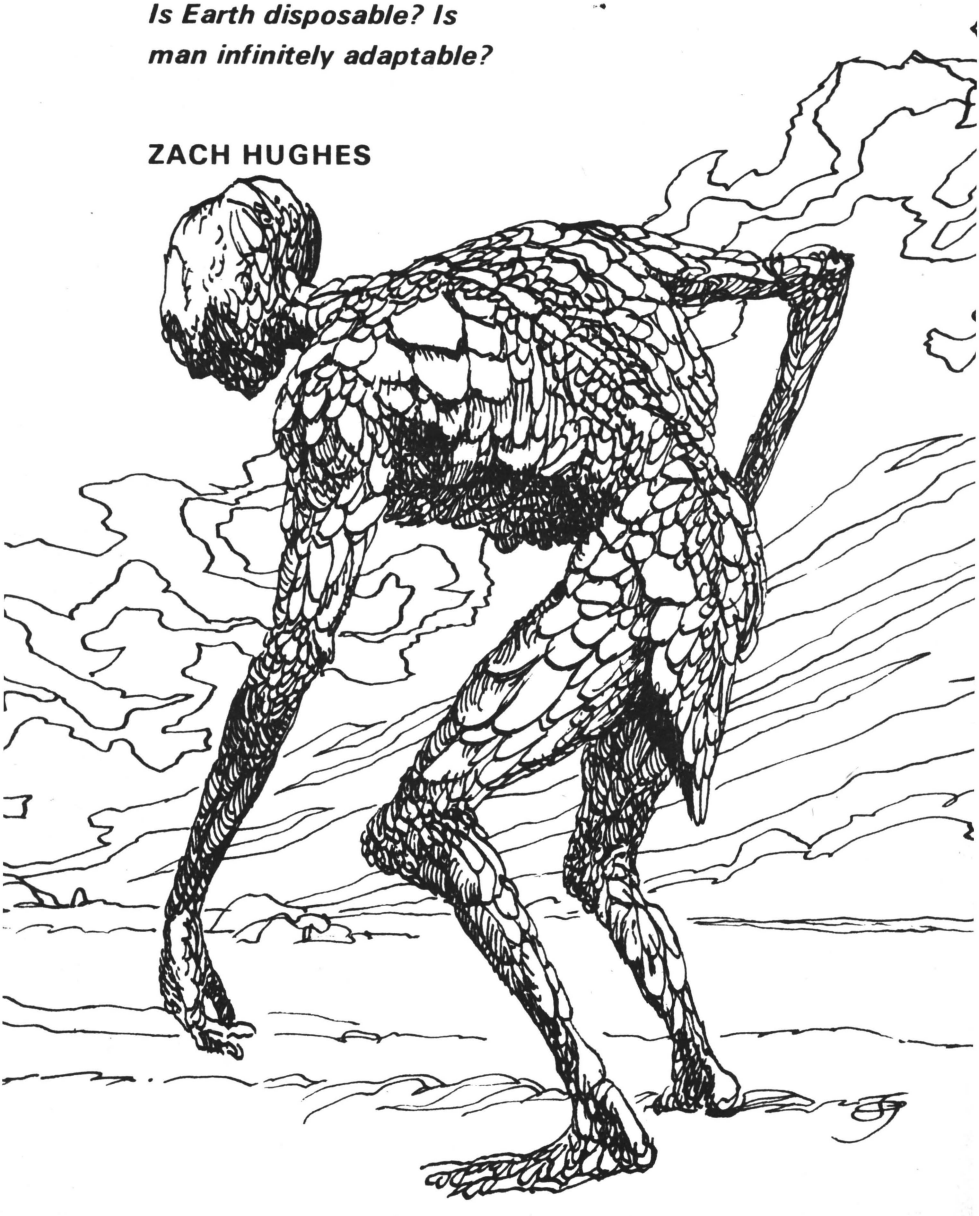
We feel that our position is reasonable. We hope that you agree and will write your Congressman accordingly. It would please us to have a copy of your letter.

PUBLISHER

THE BOOK OF RACK THE HEALER

Is Earth disposable? Is man infinitely adaptable?

ZACH HUGHES



I

FOR the pleasure of Deepsoft the Keeper, the arching dome of her chamber was drawn to a thinness that admitted the dayglow. Yellowish outside light filtered through the membranous shell, purpled as the end of the sun circle lifted clouds of settled gases from dank, dark valleys and swirled them, noxious, heavy, to thicken the atmosphere. Shifting light attracted Deepsoft's wide, pink eyes. Her heavy head lifted, nodded, jerked. Her long-fingered hands plucked at her coverlet. Her legs moved with an awkward lack of coordination.

She made a wet sound of pleasure as winds aloft swirled thick masses and the dome glowed russet for a long, long period. The coverlet, made of the same material used in the construction of the dome, her sleeprack and the one chair that completed the furnishings of the chamber, bunched up and exposed the lower segment of her nude body. Her feet kicked aimlessly, contacted the warm, soft, smooth wall. She flexed her legs and her body inched toward the edge of the rack. Her brain registered the sensations: shifting light, smoothness on the soles of her feet, warmth, comfort, the flex of the coverlet under her fingers. She lifted her head on a wobbly neck, made the pleasure sounds. Time was meaningless.

As her movements jostled her full stomach she burped wetly. A trickle ran from her full lips down her wide chin. Overhead the cooling masses of polar air caused condensed moisture to fall in huge, fat drops to splatter on the dome. She clucked in delight. One long arm lifted, reached up as if to touch the *splat-splat* sounds. The light purpled, changing the shadows on her face. Her mood changed with the light, her face twisting. She made an explosive, complaining sound between her lips, her brain now registering discomfort. She needed. Her entire consciousness sent out the need and it was urgent. To avoid a messy task, Red Earth the Far Seer left his contemplation in the adjoining chamber to tend her.

She was momentarily distracted from her need in an amusing effort to stand, supported by Red Earth. Her legs were rubbery in spite of their firm tone. He held her and sent soothing things to her as he positioned her, held her there, listened, although his smooth knob of a head had no ears, as she completed the basic function and then tried to thrust one of her long-fingered, graceful hands between her spread legs to feel the results.

"Negative, negative," he sent, slapping her hand lightly. He gave no pain. Giving pain was not in his nature. Had it been, the giving of it would have taught no lesson,

would have registered as a meaningless hurt having no connection with her innocent desire to experience sensation by thrusting her hand into warmth.

He cleaned her, feeling pleasure. She was rounded, full. Deepsoft. Her name.

Had he not been roused from deep contemplation he would have stayed with her.

He put her into the sleeprack, raised the protective siding. Night was near. The siding was of the smooth, transparent material of the dome and her hands felt it, flexed it. His own hands partook of pleasure as they caressed her, touched her white, rounded face. She made little pleasure sounds and reached for his hand with uncoordinated fingers. Her body moved. In contrast to the awkwardness of her legs, her hands, her body made a sultry entity. Her mid-section lifted in inviting rhythm. Undecided, he examined her. His bulky, tough-skinned, bare knob did not move—he had no eyes to follow her length, no ears to hear her sounds. But his hands knew her long, firm legs, round and white. His hands caressed the firmness of her chest bulges. His senses traced her and measured her, and she stopped her movements as his hand teased, pressed. Her pink eyes moved with the shifting light patterns, but her body was frozen by sensation as his fingers pleased her. Then the momentary diversion was over and he was gone. Her eyes, wide to gather the fading light, rolled erratically.

MOVEMENTS of great cloud masses in the end-of-the-sun-circle storms isolated the half-globe of the establishment of Red Earth the Far Seer. Stagnant gases made the dim distances seem vast as visibility was reduced. Light-sensing organs could not penetrate even as far to the north as the beginnings of the plains of glass. Only the senses of one such as Red Earth could detect the great river to the west, the high escarpment. Only Red Earth, in his establishment, could read the density of concentrated gases in the rift valley to the south, could penetrate the toxic denseness to see the motionless, heavy, oozing, misshapen vegetation on the valley floor. He saw all. He saw the shift of frequency, but Deepsoft's inferior light-sensing organs saw the shift of color.

Red Earth mused in his sanctuary. He measured idly, read the survival factor outside, found it at its usual end-of-the-sun-circle low. He could feel the shift of breathable air, mourn the stagnant poison buildup. He could feel the rise in temperature when a particular denseness passed and the far sun sent its dying rays through the eternal haze; he could shiver internally as the cooler polar masses

continued to move south and east.

In his moment of idle musing he was not totally idle, for he searched his area of responsibility—it registered normal. In scattered establishments his people were shut away from the toxic storms, comfortable with their carefully nurtured hoards of air-making Breathers.

During his rounds he passed a casual greeting with his coresponsor, Growing Tree, who did not pause, using only a small amount of energy to answer, as he tended a colony of Juicers at the Eastern Group Establishment.

It was a moment of peace, if one could ignore the storm, the steadily lessening purity of the outside. It was thus and ever thus, and those who cried disaster when the storms blew had cried disaster before.

A Power Giver soared high above the roiling clouds. Red Earth did not bother to establish contact or to ascertain identity. Power Givers were notoriously capricious. The flight, of course, was a shameful waste, but it was her own energies and substance the Power Giver was consuming. If one fulfilled one's responsibilities, one's actions were one's own. The law covered even Power Givers.

Yet he was vaguely disturbed by the waste and sought to forget, sending his attentions elsewhere to watch two young Healers at the mid-point of their learning. They were moving outside, using stored life for long periods, unable to utilize the air with its high toxic content, lungs holding, gills pumping out poisons. A Webber had escaped an establishment adjacent to the Eastern Group Establishment. Red Earth watched anxiously until the two youngsters, moving slowly but efficiently, not wasting life or force, herded the weakening Webber back to her kind in the enclosure. She would survive.

NEAR the sea the process of food-making continued with pleasing steadiness. And—more exciting—a rare joining was in process. Without prying openly, Red Earth took satisfaction in the beautiful act. He lifted his feelings to the toxic sky and, although there was no movement of his bare knob of a head, the effect was a nod of blessing and pleasure. A new life was being created.

Mixed thoughts. Burdens. Pleasures. Far Seers were accustomed to the burdens, having long since become resigned to responsibility. Pleasure was always welcome. Deepsoft. The burdens were not without their rewards. Deepsoft. That he himself would never know the crowning glory of the act—creation—was unimportant. He felt no jealousy for the Healer engaged in joining, in the creation of life. It was the nature of things. In return, Healers and Power Givers held no envy for his ability to achieve the

pleasure of the act repeatedly, rather than the once—or at the most, twice—allowed the breeding classes. Nature simply gave him pleasure to compensate for his inability to create life—that she limited the fertile ones was beautifully logical. A dying planet was capable of supporting only so many—and that mysterious force which governed life allowed the Healers and the Power Givers one or two unions. During those, given the proper conditions, a new individual was created.

In a way he could pity them. Deepsoft. They accepted his valor without scorn but thought it fearful indulgence. The situation was amusing. . .sort of. Power Givers could squander their precious substance in meaningless soarings above the toxic clouds, seeking the simple joys of seeing without being hampered by clouds of dense gases and of breathing the thin wisps of pure air. Healers could ramble aimlessly. Each had his duty and if it were performed Red Earth and Growing Tree and others like them would see to the survival of all. The storms would pass. Noxious, heavy gases would settle into the valleys. Then even one so fragile as Deepsoft could bask in the glow of the filtered sun. Life would go on under the high clouds of summer. The new joining on the eastern sea would produce—what? Hopefully, a Far Seer. Growing Tree's logically anticipated sun circles made a shorter and shorter picture. Would it be a Far Seer? Red Earth swept his area. Power Giver? Perhaps. Always useful. Healer? Keeper? Ah, or—perhaps, just perhaps—the long awaited New One.

That hope, Red Earth knew, was pure indulgence. Nature and nature alone could anticipate the need for a New One. He, in his limited wisdom, could not dare to imagine the needs. The need was dictated by the planet and by the elemental but mysterious necessity to seed and maintain life. Still, he allowed himself the indulgence. The New One. Would he eat the poisonous leafy things? Breathe the toxic vapors? Be warmed rather than damaged by the projectiles shot down through the perpetual haze by the sun? Only nature would know. Only that force could measure and tell, but when it happened, as it inevitably would, then he, the Far Seer, he and all the rest—the Keepers, the Power Givers and the Healers—would be the Old Ones and life would continue even as the timeless movements of the planet brought new sun circles and the globe spun and swam and the giant flares of the sun—itself deadly and of unbelievable magnitude—tried their worst to return the planet to primordial emptiness.

It was a comfort to believe. He still was not idle, despite his roaming thoughts. He recorded the rise of the planet's satellite to the

east, his sense bouncing there and back with a noticeable lag. He felt the solidity there, probed the depth of the craters. He tried—unsuccessfully, of course—to measure the breathable air there, to search for life-giving water and symbiotic Breathers. Failing, he sensed the sister worlds circling the sun, other planets unseen by any save the Far Seers—he probed, sensed, measured, recorded.

FOR his records, Red Earth sent his mind into the adjoining chamber, and the plucking fingers of the female, Deepsoft, became still. Into the vast storehouse of her brain went his observations: the rise of the satellite, the noted moment of the eastern joining, the positions of the sister worlds, the flare activity of the sun. All was sent, recorded, read back. Deepsoft lay very still. He was pleased. This far to go—he recorded a picture, a concept—in the sun circle and then would come the movement of air masses from the south and a time of beginning, a time of renewed hope.

He had seen beginnings. He had never failed to anticipate each new one. Moreover, he had never lost hope even when his measurements and the readings of other Far Seers had given no hope. He had soared on the force of a Power Giver to hover over the vast waters of the south, had seen the sea of slime, had measured the hope that grew there in the natural breeding ground of the Breathers. Once—and he checked the store of knowledge in his Keeper's brain to study the concept of many sun circles past—he had actually measured an increase. The green slime of the next sun circle had been dense, but it had been long ago. Now there was again that terrible decline and the murky, heavy seas were vast, stretching far away from the tiny area in the south where currents, winds—something—allowed a frighteningly small colony of Breathers to survive. To think end was defeat. Nature would not allow defeat. A world could not exist just to exist. A world was solidity, reality, and to comprehend the solidity and the reality a thinking brain was required. To envision a world without life was to ignore the basic purpose of all creation. No, the Breathers would adapt, would live atop the thick, heavy water. Life would go on. And some day the New One would be born and then this dying, depleted planet would be squeezed of its last remaining resources and dynamic life would spring exuberantly upward.

So thought Red Earth the Far Seer, slumped into his rack, huge chest moving only occasionally, red gills lying idle, since the pure air of the establishment offered no poison. Around him he sensed the small movements of the Breathers in their enclosures lining the walls

—eating, growing, breeding, using their small, strange bodies, half plant, half insect, to return to the air the life-giving particles which, in turn, found their way into Red Earth's system.

In the night no star shone. The satellite, unseen by light-sensing organs, climbed, moving in Red Earth's senses. He did not stir until the satellite was at the zenith. When he moved his huge chest cavity swelled. He advanced to Deepsoft's chamber on thin, short legs which extended from small hips below a flat belly and the huge, bulbous mass of his chest. His hide was thick, deep gray. His shoulders tapered upward, neckless, to his fat-tipped, cone-shaped bare head in which there were two orifices, the small, rounded feeding mouth and the hairy maw of his breather. On the side of the cone, low, next to his tapering shoulders, his gill slits opened, exhaled the last of his body poison, cleansing his lungs for the extended period of nonbreathing.

Deepsoft fed on the broth of life, the universal energy concentrate distilled at the Eastern Group Establishment from the green slime source of the sea. Fed, she seized one of Red Earth's fingers. He lowered the protective railing, joined her. She made sounds of pleasure and Red Earth blanked his thoughts, yielding to enjoyment as she cooed to his givings of sensation.

II

AS CHANCE would have it, Rack the Healer was given his free time as the end-of-the-sun-circle storms moved down from the cool north. Growing Tree the Far Seer, as was his responsibility, assigned a Power Giver to transport Rack to his home area. The trip was made mostly in courteous silence, back to back. In preparation Rack breathed deeply, voided his gill sacks of rejected vapors, closed off and used stored air until, high, high, the roiling, perpetual clouds a blanket of color below them, the Power Giver sent a thoughtful picture and Rack was allowed the rare pleasure of seeking nontoxic air.

His huge chest heaved as his lungs breathed the thin but delicious mixture. His pleasure communicated to the Power Giver and she laughed.

Above them the sun was a deadly furnace, taking its toll. Rack's large scales tingled, made an audible clattering noise as they rose to form small deflection areas. He knew that the hide of the Power Giver was being penetrated and he was momentarily saddened. Yet it was the nature of things. He would be the last to suggest to the freedom-loving Power Giver that she confine her flight to lower levels, where the thick atmosphere would shield her relatively fragile

body from the deadly projectiles. Had he been born differently he would have done as she, for the exultation of being able to soar above the heavy gases, of being able to see and to smell the thin, pure air, was, he suspected, ample compensation. All life was eventually ended, all life was relative and the price of pleasure was death. Still he had always found it sobering, in his rare transports inside the power field of one of these fragile, beautiful beings, to feel her depleting her very substance to obtain the energy needed to lock her unique abilities into the planet's magnetic field and negate the pull from below, to rise without sound and soar far above the curve of the planet.

Grateful, he bowed as she landed him near his establishment in the area of Red Earth the Far Seer. She was away with a joyous leap, relieved of his mass, fading quickly into the purpling air. She would need to seek rest and protection soon, for the yellow haze of toxicity was on the move.

Inside his establishment he found things as he had left them at the beginning of the summer when he had gone to consummate his duty as a gatherer of the slime source, the pulpy plants growing on the floor of the shallow, inshore seas. He vented the accumulated poisons from his gills and breathed the clean, rich air. In his absence the Breathers had literally overloaded the dome with good air and it was sheer luxury to fall heavily into his rack and feel life being pumped into all his storage cells as he worked his huge chest like a bellows, breathing with sheer extravagance. He slept long and peacefully and awoke to take his fill of the broth. He stretched his long, agile legs, gaped, took in huge lungfuls of his rich air, made an audible sound of pleasure.

HIS Breathers were healthy and producing happily. In his absence, of course, they had been regularly monitored by Red Earth the Far Seer, but Rack made the check anyhow. He found the feeding channels to the outside to be slightly corroded and cleaned them carefully. Finished with that task, he carefully cleaned the entry port and lock and was immediately bored when his housecleaning was done.

Healers were, in general, a restless lot. As a youth Rack had caused considerable concern among his teachers by exhibiting a startling lack of direction, ambition. It had taken him long to outgrow the derogatory connotations of his name, a picture assigned to him by his mother because he had seemed content to spend all his time in the sleeprack, his mind in contact with any available Keeper, idly probing into the accumulated lore of the race. If he had been interested in

knowledge for the sake of learning rather than for its entertainment value, his teachers had argued, his constant Keeper contact would have been justified. But he had been unimpressed by dry facts about the positions of the sister worlds, about survival factors, about the state of the native Breather population in the southern seas. Instead he had delved deeply into the mind banks of the oldest Keepers, wanting to hear the ancient lore regarding the origin of the race, asking stupid questions about the Old Ones. Once he had precipitated a crisis by tying up the minds of three Keepers at once with questions regarding reported findings of hard-material nuggets. Red Earth had discovered himself unable to record observations because Rack had been monopolizing the Far Seer's personal Keeper and, monitoring the contact, Red Earth had been chagrined to discover the young Healer seriously interested in trying to gather enough information to make it possible for him to amass a personal hoard of hard-material nuggets.

To Red Earth, this was the foulest waste of time. Hard-material nuggets were interesting and had often led to speculative, idle discussions regarding the talents and abilities of the Old Ones. But the nugget stuff was totally useless.

It was true that in the lands across the eastern sea hard-material nuggets were used as rewards for services rendered gladly on the western continent by duty-driven citizens. But there were many strange things about those who inhabited the land beyond the sea. Since contact was rare, the trip across the vast waters being too long and strenuous for even the strongest Power Giver to make without suffering serious bodily damage, Red Earth didn't care what the strange-minded citizens across the sea did. He simply did not want to see his area become involved in useless accumulations of valueless objects. He had reprimanded Rack the Healer severely, had recommended an educational period of gathering fresh slime-source plants from the chill waters of the far north—and had been pleased to find that Rack was matured when he returned.

On only one other occasion had Rack incurred the displeasure of the Far Seers. In his first tour out of the Eastern Group Establishment, his work output had been seriously low on certain days. Red Earth had discovered that once again Rack had been asking questions—using the storage mind of Growing Tree's Keeper—about the Old Ones and in particular about the sunken city of Nar. Where Rack had found that particular bit of folk legend had been a puzzle to Red Earth, for all such useless bits of pseudoinformation had long before been

erased from the mind banks. Perhaps Rack had discovered it hidden in some Keeper's mind where it had been filed out of context—and he had searched for the nonexistent sunken city to the detriment of his slime-source quota.

DURING a long session Red Earth had tried to impress Rack with concepts of responsibility, duty to the race, the sacred value of life and the need to bend every effort toward survival. Too long had the Far Seers been alone in the knowledge that life on the planet was precarious at best.

At first Red Earth had thought that Rack's inquiring mind was receptive. Rack had listened carefully to Red Earth's summary of conditions, had agreed that one should not waste one's energies in chasing the ghosts of the Old Ones but should, instead, send his intelligence searching for ways, however small, of improving conditions.

"We are the results of—" a picture of sun circles so numerous that Rack's Healer's mind had not been capable of seeing the whole—"of evolution," Red Earth had told him. "We, Healers, Keepers, Far Seers, Power Givers, are the logical results of life, the end results to this time. Nature, in her wisdom, has created in us the ability to cope with the problems of a dying planet, but she has not made the task an easy one. It is up to us, all of us, to help as we await her next move."

Such talk did indeed interest Rack. He was, after all, involved with life. But something in him continued to question. Was the ultimate pleasure service to one's race? If so, why did every Far Seer have at least one Keeper? Not solely for the purpose of using the blank portion of the Keeper's mind to store information. No. One could spy and see the Far Seers lost in their own pleasure, using the bodies of the Keepers. It was a pleasure alien to the nature of a Healer, of course, but it was pleasure and it was indulged with an amusing regularity.

To a Keeper curiosity was the source of pleasure and, as he matured and grew older, Rack reasoned—correctly, for he was never reprimanded when he did his duty and saved the satisfaction of his curiosity for his free time—that he was as much entitled to pleasure as Red Earth was. So he filled his mind with the dim legends of the Old Ones. During his free periods he engaged in what the Far Seers looked on as Healer weakness, rambling on his long, mobile legs over the wide, empty space of the area. His ability to heal the damage he suffered from the hard projectiles and the toxic gases gave him mobility. His curiosity and his wanderlust sent him to the thin frost of the far north,

to the steamy heat of the middle regions, to the waters of the west. He scaled mountains on the way, crossed a great river and climbed the broken face of the rift to the west of the river. In a box made of The Material, treasured, hoarded, were the results of his travels—two hard-material nuggets, one the size of his thumb ball, the other tiny. The large one was heavy in his palm, irregularly shaped. It could be scratched with a sharp, extra hard piece of The Material and it held an endless fascination for Rack. The smaller nugget was fast being eaten—even in the protective atmosphere of the establishment it accumulated brown waste on itself from time to time and, when cleaned, became smaller.

But Red Earth was mistaken in thinking that Rack's interest in the hard-material nuggets was to be judged simply as a desire to accumulate objects possessing a certain rarity. To Rack the nuggets did not represent riches, as they did to citizens of the eastern lands. For Rack the nuggets held a dark mystery.

RACK felt constantly frustrated in his pursuit of knowledge regarding the Old Ones. There were the dim old legends, retained for their esthetic values, looked upon by the Far Seers as a part of the culture, saved for the picturesque beauty of the early thoughts of the first Healers. The thoughts of Rose the Healer had been preserved from deep antiquity. Ah, how they rang, coming from the still, peaceful, childlike mind of an aging Keeper in the moist, steamy land beside the southern sea:

And when the sun flared up, searing the Old Ones, vast clouds of smoke and particles covered the sky. And the Old Ones died, fornicating even in death, to give birth to the New Ones who had scales.

"Negative, negative," sent his teachers.

"It is the thought of Rose the Healer," Rack protested.

"He speaks in symbols," said the teachers, "for the process of evolution moved on minute legs, crawling forward through—" a vast series of sun cycles—"to meet the slowly deteriorating conditions."

"And yet," Rack argued, "Rose the Healer said that the sun flared up and killed the Old Ones suddenly."

"It is against logic," said the teachers. "For have we not observed the sun for—" another of those bewildering, long series of sun circle pictures—"and has it not been stable?"

"How do you explain this, then?"

And there were others which had tails and died birthing, and those with malformed features and stomachs without vital organs.

"We know little," they admitted, "for the Old Ones had no Keepers and all their store of knowledge, however insignificant, has been

lost. We can only presume that such a race, with none of the advantages of civilization, with no kept records, existed on the plenty of a youthful planet, feeding and breathing the bounty of nature. There are also legends of other things, living things. And yet we find no proof. Surely, had the Old Ones built we would find remnants of their achievements, for is not The Material everlasting, resisting the acids of the air, the smoke of the burning earth of the southern lands?"

"Could they have built of the hard materials?"

"Negative, negative," they sent. "You have traveled far. You have talked with many Healers who have nuggets—and yet, have you found the source of the hard material? Is it conceivable that there was once a life form on the planet capable of producing such a lifeless material? Could you possibly think that enough of the hard material could be amassed to construct even one establishment?"

"But there is more than one type," Rack said. "I have seen yellow and white, dark and light. Some nuggets feed on themselves with dark waste while others, such as my large one, grow only a white, powdery waste when exposed to the yellow of the air."

"Another proof," said the teachers, for the hard material was indeed fragile. "It feeds on itself. In—" a short span of sun circles—"an establishment made of your hard material would be reduced."

"Perhaps," Rack said, his heart beating with excitement, for he was being daring, "the hard material came from the bowels of the planet."

He received warning vibrations, for he was treading on dangerous ground. But he plunged on. "Perhaps the Old Ones penetrated the surface?"

There was sadness in the answer, not anger. "It is conceivable. For the Old Ones died, did they not?"

In truth, the Old Ones had died and left behind old legends and nothing more.

In the final days, said Rose the Healer, *the bodies of the Old Ones covered the Earth.*

So were the thoughts of Rose the Healer marred by impossible statements, making the total credence of his thoughts less than reliable, for no planet, however young and fruitful, could support so much life.

IF ONLY, Rack thought, the Far Seers had not erased the old thoughts. If only they had been saved, not just the beautiful thoughts of Rose the Healer—and what a delightful concept was just his name, evoking a confused mental image of something delicate and bright and beautiful. But only Rose was whole in the minds of

the Keepers, along with an occasional misfiled tidbit which, when discovered, excited Rack wildly. He had found mention of a sunken city in the mind of a northern Keeper, a city in the eastern sea, huge, tall, towering to the sky. The reference had been filed—listing an unknown Healer as the source far back in antiquity—with the readings of air purity at the tops of various mountains. A Far Seer of the past had been speculating on the amount of The Material it would take to build a tower to project above the eternal toxicity, to reach into pure, thin air. And to the west, on the western sea, a group of Healers told of another city of the Old Ones—source of the information again unknown—a city that spread over what was now the plains of glass in Red Earth's area beside the great river. There was even a name for the lost city, a name difficult to see, for it suggested no known image.

"Could it be," Rack had asked, upon hearing the name, "that the Old Ones truly knew civilization and constructed establishments?"

"I think," said a young, visionary Healer, "that question is answered by the picture of city."

He had not considered the possibility. City. A group of establishments. Nothing existed on the whole continent to keep the picture in the language, yet it persisted, appearing in the mind of a northern Keeper, appearing again in the conversation of these Healers, who had picked it up from older Healers, who had received it from some Keeper. On all the continent the Eastern Group Establishment was the largest concentration of The Material known and at peak production periods in the summer it was peopled by—the picture showed Power Givers in a grouping equal to the number of Rack's left hand digits, a paired group of Far Seers, Healers swimming and diving, rock-weighted to sink into the thick water, all making a group comparable to all the digits on his hands and horny feet.

The word, the picture, *city,* was Old One language. It had meaning. The name of the lost city on the huge river had no meaning, gave no image. It was an abstract thing, difficult to grasp. Another Old One word?

IN his learning, the teachers had brushed past the Old Ones. Ancient man was primitive, living on the fat of the young planet. He was ignorant of the process of combining the products of the Juicers and the Webbers to form The Material, thus uncivilized. Ancient man had no recorded history because of his lack of Keepers. Ancient man lacked the ability of the Power Givers and was thus immobile, confined to the distances he could cover with his feet and

legs. In short, ancient man was joined to the race, the ultimate product of evolution, by a weak racial link and his achievements could not have been great. Ancient man, said the teachers, was probably less intelligent than a Webber, but perhaps more intelligent than the front mind of a Keeper, who was unable to experience anything save basic sensations. To think that ancient man had built was folly. To attribute the hard materials to ancient man was incredible, for without tools of The Material, how could ancient man work the hard materials into any form? No. The hard materials, used by some mystics in the Healer ranks to form a mystery about ancient man, were of natural origin. Perhaps, since they were of such scarcity, they had fallen from the sky, for Far Seer probes indicated the presence of small bodies of solid material—other than the satellite, the sun and the sister planets and the far suns—which, to the most sensitive Far Seer appeared as tiny motes in a vast area.

"Be content," said the teachers, "with the wisdom of the race, for we are old. Be proud of our achievements, for we have conquered a hostile world with only the weapons given us by nature, our minds. Contemplate the wonder of the invention of The Material by Dawn Eye the Far Seer. For is it not astounding that he could envision the domestication of the vicious Webber with her sting of death? Is it not wonderful that he could milk the fiery Juicer and, working at the risk of death, fiery pain, disfigurement, combine the liquid fire of the Juicer with the film of the Webber to protect us from the hostile elements? Wonder at the power of evolution, that it produces four distinct human forms to live in peace together, to work mind in mind to ensure the survival of life. For none could live alone. Be proud of your ability to heal, to spend extended periods in the vapors and the corrosive sea. Without them, without your ability to gather the slime source, what would be our nourishment? Be thankful for the Keepers, who store our knowledge and make us civilized. Praise the Power Givers who turn the vats that brew the broth, separating the deadly substances from the life-giving ones."

Modestly the teachers did not praise themselves, the Far Seers, the accumulators of knowledge, the overseers of society, the backbone of reason. The Far Seers, who were sterile, never seeing the beauty of a swirling purple storm, who watched over the lower life forms, measured the Breathers, milked the deadly Juicers, tamed the fierce Webber.

TRULY it was an arrangement to give wonder. It proved the wisdom of nature, the infallibility of her scheme to sustain life in an

atmosphere that ate a nugget of hard metal in less than a sun circle. Rack was not discontent. After he gained maturity he took pride in his ability to gather more slime source than any other young Healer. He gloried in his strength, his huge, billowing lungs which could store enough air to outlast the most severe end-of-circle storm, his wonderful healing cells which replaced themselves when damaged by hard projectiles or acid gases. There was much in his world to arouse his curiosity and he made his contributions to the knowledge of the race by feeding his observations into the blank mind of a Keeper after his free-time exploration trips. He was recognized as an authority on the uninhabited vastness of the area of responsibility of Red Earth the Far Seer and was often consulted. He had come a long way from being the feckless young rack-lover who had caused frowns of concern among his teachers. In the prime of his physical strength he was tall and had a chest thickness equal to half his height. His scales were healthy, showing no damage from all his wanderings. When he raised his protective eyefilms in the safety of his establishment his pupils glowed with a bright blue light and glittered with a love of life that was contagious. He was considerate, never venting his gills in the vicinity of an establishment, much less when in view of another being. He was generous with his time, always willing to use his strength to venture out for an extended period in the service of anyone who needed such service. He asked no return save, at times, a period of conversation, lying on his rack, breathing his sweet, Breather-produced air, comparing knowledge with a Far Seer, gossiping with a fellow Healer, being polite and respectful to a friendly Power Giver. At such times he projected over the distances between establishments a completely relaxed and totally likable personality. There were those among the young Power Givers who contacted him regularly, with an eye toward detecting a hint that Rack was being readied by nature for a joining. They were continually disappointed and Power Giver after Power Giver, feeling the approach of her own time, had to search elsewhere, for Rack's gray scale covering on his lower abdomen remained rigid, showing no tint of the tell-tale red that spoke of readiness.

III

"YOU are, I see," said Red Earth the Far Seer from his sanctuary, his mind engaged with Rack's, "preparing."

"Affirmative."

"A group of Breathers is overworking."

"I have seen and am content

with what I have stored," Rack said. "They will have ample time to recover in my absence."

"Is it polite to inquire?"

Laughter. Red Earth was an old friend and teacher. "When were you concerned about being polite?"

He had spent the time storing. His body weight was up. His chest was expanded to bursting. All his cells were alive, fattened with precious air.

"West," he sent to Red Earth. "To the river and the rift."

"In search of hard-material nuggets?"

"In search." He sensed a regret on Red Earth's part and knew that it was caused by the frugal nature of the Far Seer, begrudging him the waste of his energies in his own pursuits. He sent a hint of reproach, with a vivid picture of Red Earth with his Keeper, and got a chuckle in return.

"Beautiful Wings the Power Giver will be alert to your needs."

"I thank you." He liked the picture Red Earth sent, but was not familiar with the subject.

"She is newly mature, assigned to the west of the area."

"Daughter of old Northern Ice the Healer? I knew her when she was a child."

"The same. She is no longer a child." Chuckle. "And speaking of maturity, I note that your tint is the same." Rack did not like speaking of such matters. He closed his mind. "Could it be arranged, a joining there would be a propitious event."

Joining was a matter of nature's design and of personal choice. Rack told Red Earth so and was acknowledged, but the hurt in the Far Seer's mind softened Rack and he sent soothing things, along with the rational conclusion that if Beautiful Wings were indeed newly mature his readiness would probably not match hers. Red Earth agreed with a sigh.

"I will, of course, check." Red Earth said.

"For that I am grateful."

End.

INTO the end-of-circle storms he moved, freshly charged, walking with a distance-eating gait over the bare bones of the planet, hard rock underfoot, scales tingling as the low spots sent projectiles against him, cells dying and reforming even as he went, lungs closed as heavy clouds passed, gills venting poison, lungs taking only the scattered particles of life from the noxious mixture. He knew long periods of nonbreathing between high spots, which held a hint of life in the air to help him keep from utilizing his vital store in the cells of his body.

There was a wild beauty in the outside. The constant swirl of heavy gases, the changes of light. The feeling of being alone. Far off he could sense an establishment,

closed tightly, inhabited by an old Healer whose venturesome soul was now confined to a body unable to withstand the rigors of the outside. Ahead of Rack stretched wilderness, vast, empty. He alone was life, moving through sterile spaces, the clouds eddying about him, the sun filtering down, now a glow, now only a hint of color, never visible as a spot, a round source of heat as he knew it to be—only a diffuse feeling under the hothouse clouds with the rocks hot under his feet.

He skirted a sinkhole, feeling the corrosive strength of its deadly air on his scales. A small shower wet him. The nearness of the sinkhole added to the moisture and his scales crackled as acids sizzled and boiled. A swirl of the thick cloud gave him a dim view of the rank growth of the low spot, tangled, pulpy mass. He picked his way carefully. A slip would have been fatal, for not even his healing abilities, not even his tough protective scales, would have saved him had he fallen into that hellhole.

The land sloped upward gradually and the going became easier. He walked again with long, strong strides, the weight of his pack light on his back. On the plains of glass the wind was a steady force in his face. Billowing clouds moved overhead, but the heat of the smooth plain seemed to form a pocket of fairly decent air immediately above it, so he breathed more easily, not using his stored life.

He camped in the center of the plain, coverlet over him, the heat and emissions of the smooth, glassy earth tingling his scales, his cells working. He awoke with the first glow of day, fed, strapped on his pack and set off at a swift pace, eager to put the plains behind him before another night overtook him. His jogging pace ate up his reserves, but there would, hopefully, be good air near the great river.

He could smell the river from afar and it urged him on. To his disappointment a heavy accumulation of gases hung over it, hiding it from his view until, pushing through the low growth of vegetation lining its banks, he stood with his feet wet, vainly trying to see the tall, broken rocks of the escarpment on the other side.

The water was clean. It was, of course, lifeless, but it made a pleasant contrast to the heaviness of the sea, where he spent his working hours. He waded in, felt the coolness cover his scales, wash away the accumulated ash of corrosion. He found a few inches of good air at the surface, gulped it, gills pumping out wastes, before closing his outer lids and ducking his head. He swam, his natural buoyancy keeping him just below the surface. He opened his outer lids to find that visibility was good, although there was nothing to see. He walked the last short distance on slippery rocks

tumbled into the water at the edge of the escarpment. He breathed air at the surface of the water before starting his climb and then made the ascent slowly, examining the exposed bones of the planet as he went.

HALFWAY up he became bemused by brown streaks making erratic patterns in the rock wall. The discoloration reminded him of the waste formed on his precious small nugget of hard material. He had seen such evidence before in his travels and had once asked his teachers an oblique question regarding them. There was, of course, no real proof, but still he could not keep his mind from speculating. Could the hard materials have been natural deposits within the forbidden depths of the soil? In places where the forces of nature had bared the subsurface rock the ground took on a new look.

He spent much of the remaining light climbing the escarpment, searching in vain. At the top, picking his way through boulders that dwarfed him, he felt the effects of the strenuous climb and quickly found a sheltered place. He cocooned himself within his protective sheet of The Material, fed and was sleeping before the darkness of the night closed over him.

He awoke to a feeling of delicious aloneness. A storm was raging. Wet rocks poured moisture as the yellowish rain fell, formed rivulets over low-worn areas, dripped, ran, splashed down the near wall of the escarpment. He lay inside his shelter, hearing the hiss of the acid rain on the impregnable Material. The storm, he knew, would have the effect of washing the air, leaving behind, hopefully, workable conditions. The rain would have another effect—a heavy downpour often found pockets of loose material atop the hard rocks and washed them clean, leaving behind newly exposed areas. He had hoped for just such a storm and it was fortunate that it had occurred during his first night on the plateau. The hunting would be interesting.

He walked the steaming rocks, his pack in place, for he would not return the same way. The high plateau extended roughly north and south along the western bank of the river. In spots of irregular formation rock dams backed up lakes of dull water. However, it was not the river's edge that interested him, but the central portions of the plateau where endless sun circles of time had allowed the rain to wash the rocks clean, leaving behind an accumulation of various sizes of stone. He walked with his eyes down. He saw only earth stuff. The going was slow, since he had to pick his way carefully. Now and then a loose stone rolled under his foot, causing him to struggle for balance.

To add to his splendid isolation,

he had closed off his mind. He asked for no contact. He could summon help in the event of dire emergency, for Red Earth's mind was far reaching and a Power Giver was in the western area. But he envisioned no such emergency and remained calmly confident in his ability.

DURING the first two days he covered ground with which he was partly familiar. Then he moved southward. The bleak landscape was unchanged. It was a world of exposed rocks, long since eroded clean by the storms. He was the only life, save for some thin air-feeders growing on the protected side of the largest boulders. Nothing moved—only the air, heavy, laden with poisons lifted from the rank low areas, shifted by the vast movements of the atmosphere.

His broth supply was holding out well and he was finding enough air to conserve the vital stores within his body. A lull in the storms allowed him to cover—his mind pictured a distance based on comparing his progress with the well-known image of the distance around the planet. He rested.

During the night the winds increased and new clouds of forbidding density moved over the plateau. He spent the day in his protective cover, unable to breathe, using his life stores sparingly, allowing his body to lapse into a state of sluggishness during which his heart thudded only rarely. Although slowed, his mind was able to work, to take coenesthesiac stock of his condition. He was satisfied.

The new storm blew through the day, into the night, calmed, began anew at dawn. The inactivity galled him, set his mind to speculating to escape boredom. He reviewed all his knowledge and wished for a contact with a Keeper to double-check, but did nothing, since the distances and energies involved would have been a drain.

He would not admit, even in the privacy of his mind, that he was indeed looking for a fabled lost city. Yet there was some connection between his being here and in his having once heard an unconfirmed legend regarding a lost city beside the river. To indulge himself, give his mind occupation while the storm blew and there was no breathable air, he speculated on the Old Ones. If it were true that the land had once been rich with growing things, the waters sweet, then the Old Ones would have sought locations such as this, near water. The city, if there had been one, could have been on either side of the river, but the legend repeated by the western Healers had specified the western bank. That meant the plateau. And since the plateau was a fairly recent development on the scale of time extending so many sun circles back that his mind could not

hold the picture, the city would have been lifted with the upheaval of the earth, tumbled, broken.

The rains would long since have washed away any trace of it. Except, perhaps, for the hard materials, which were heavy, heavier than the stones, heavier than the deadly soft soil of the low areas. It was his vague hope that particles of the hard material had become lodged in the broken fields of stone atop the plateau.

The hope might indeed prove a foolish one. There was still no connection, except in his imagination, between the Old Ones and the hard materials, but he was on his free time and he would not have been content to spend it in the confinement of his establishment. It was his feet that tingled from the walking, his scales that sizzled when the acid rain struck them, his cells that were being used as he lived on his stored air. If he spent the rest of his life span using his free time to walk the desolate places—it was his life. And even if he never found another nugget of hard material he would be rewarded by the mere seeking, the experiencing—the knowledge that he, Rack the Healer, had come to know vast stretches of his own world with his own feet.

WHEN at last the storm abated enough for him to find some air he moved on. He came upon the sinkhole near the midpoint of the sun's day cycle and looked down, expecting to see the usual rank growth, the poison accumulation of heavy gases, and was amazed to find that not only could he see to the bottom of the rather large depression in the solid surface of the plateau; he could smell the goodness of clean air. There was vegetation on the floor of the depression, true, but it was not made up of the misshapen things of other sinkholes. It was more like the harmless stuff that grew along the river bank. It was sparse. He squatted to examine his find, his senses straining. He could hear running water. He moved tentatively down the sloping face of the depression, taking stock as he went, finding no deadly stuff, only an improvement in the air he breathed. Encouraged, he went down, down, until he stood on the floor of the small valley and confirmed that the vegetation was not the deadly sort. The air was even cleaner than he had found it during his descent. A rising current in it lifted the heavy, noxious gases and dispersed them into the overhanging clouds.

He advanced across the valley floor, feeling the unfamiliar softness of soil under his feet. He walked gingerly, for only a fool trod freely on the deadliness of soft earth. This soil, however, was surprisingly free of the hard particles that destroyed cells more

rapidly than the most healthy healer could replace them.

He made his way toward the sound of running water and came upon a wonderfully clear outpouring. It came from the rocks underlying the soft earth, bubbling up with a cheery sound, so translucent that he could see small soil particles circulating in it. He tested it gingerly and found it to be scalding hot. He knew then why the small valley, shaped much like the navel on a young Power Giver, was not like the usual low spot. In the relative coolness of the air that lay over the plateau the water was making vapor. Even in the heat of the summer it would still be much hotter than the surrounding air, thus creating upcurrents and discouraging the growth of the noxious weeds of the sinkholes.

He was squatting on the edge of the basin into which the astoundingly clean water flowed from its source within the rocks of the valley wall. The soft earth under his feet sent out particles, true, but even if the quantity were more than the emission of solid rock, it was still less than the quantity encountered in a dense cloud. It was well below the level of danger for a Healer and therefore ceased to concern him.

His interest was drawn by the movement of the water as it swirled into the basin. Pebbles, disturbed by the fall, made little bell sounds. The water seemed about waist deep. The flow was strong. Seeking an outlet from the basin, the stream had cut through the soft earth to bedrock and loose stone. It wandered, as he followed it, from the side of the valley toward the center, making loops and swirls and lined with harmless vegetation. The water, incredibly, remained clean. The bed of the stream was covered with loose, rounded pebbles. He had never seen anything quite like it.

Fascinated, he continued to follow the stream until it formed a small lake near the far wall, the wall closest to the edge of the escarpment and the river, and from that lake there was no outlet, leading Rack to think that it must be seeping down through the earth at the bottom of the lake, as water seeps through rocks, to find the level of the river below.

The most pleasing thing about the valley, however, was not the meandering stream and its miraculously clean water, but the relative purity of the air. When a cloud passed, hanging low, noxious vapors filled the valley for only short periods of time before they were lifted by the rising currents. It was almost as if the valley generated its own clean air. He did not understand, but neither did he question. He walked on the strange-feeling softness, examined green, slick, harmless growths

alongside the creek, left the water reluctantly to explore the remainder of the valley. By then, having located nothing as exciting as the water, he was tired and it was growing dark. He slept with the sound of running water in his ear.

IN THE light of morning, invigorated by sleep and good air, he examined the stream with closer attention. He knew the erosive effect of moving water and accepted the fact that the stream had cut through the thick layer of softness, a layer fully as deep as the distance between his outstretched thumb and finger, to the rocky underlayer. He put his hands into the water and handled the smooth, rounded pebbles. He could feel the heat through his protective hide—the water was hotter than the hottest day in the southern regions. He was bemused by the smoothness of the pebbles, fingered them with pleasure, sorted them to size, arranging them on the green covered bank. It was pleasing to start with the larger pebbles, stack smaller ones on top to form a small mound. He was for the moment a child, playing children's games. His mind was idle. At first he did not note the difference in weight as he fingered a small, rounded pebble and lifted it. Then the shift of a cloud allowed a glow of sunlight and the pebble in his fingers glowed with a life of its own, yellow and rich. He made an explosive sound through his small lips. Hard material. Of much the same heft as his treasured nugget of gray hard material, but yellow, unbelievably rich and beautiful.

Feverishly he stirred the pebbles of the stream, roiling the water with the accumulation of silt in the stones until he was unable to see. He berated himself for greed. Many a Healer went through life without finding a single nugget of hard material. He now owned three—and the last was by far the most wonderful.

He spent a long period contemplating it. Wonderful as it was, it showed no signs of having been crafted. It was irregular in shape, but smoothed by the action of the stream. It showed no hint of corrosion. It stayed yellow even in the tainted air.

When he was filled with the sensation of seeing, touching, feeling it, he began to speculate on its origin. It had been lodged in the pebbles when he found it, at the bottom, being heavier than the pebbles. Would not the heavy materials naturally sink into the earth? No. The earth was solid. Yet it had been there at the bottom. Perhaps it had been formed by nature under the soil's surface. He shuddered. Seated on the softness of the strange ground he could more fully comprehend the meaning of below the surface. Walking on solid stone or on the smooth-

ness of the plains of glass, one often forgot that there was a subsurface. Here subsurface had meaning—one could imagine it below the soft earth.

He placed a careful hand on the bank of the stream, down low, near the surface of the water. The hard projectiles tingled his small finger scales, but the increase was insignificant. Had the action of the running water cleansed the soil itself?

An entirely new concept thundered into his brain. He loved life, revered it, as did every member of the race. He would not have considered breaking the most ancient of laws, lest he harm prematurely the precious gift with which he was entrusted. Yet he had held his hand below the surface, next to the exposed soft soil of the creek bank and he had lived, had not even been endangered. This valley, he thought, was different, unlike any other spot on the planet, at least any spot he had seen. The air was cleaner. The water was incredibly pure. The running water cut through the soft surface and exposed pebbles and beautiful nuggets of hard material.

He walked to the basin, watched the rushing water emerge from the rocks. Experimentally he moved stones, placing them where the water gurgled from the confining basin. He made a guilty search of the area and found only solitude. He told himself he was not breaking the law. He was merely shifting rocks—and this was permissible as long as the rocks were lying free on the surface.

The pile of rocks grew. Water ran around and between the stones, undeterred. He filled chinks with small pebbles, scooped the coarse, gritty small particles from the floor of the basin and the creek. The basin level rose, kept rising. The flow of water was slowed.

His tough feet dislodged green, slick material from the banks of the creek and he picked up a piece, seeing that a certain amount of the soft earth clung to it. He was shocked. He dropped the offending bit of green, picked it up again. It was lying free, wasn't it? He was stretching logic, true, for his feet had freed it. But it was free and it had a wet, spongy feeling. He placed it in the chinks between the rocks of his dam and it impeded the flow of water so well that he recklessly trod up and down the banks of the creek to loosen more of the green material to be used to close the chinks.

A trickle of water began to run from the far edge of the basin. At first it was soaked up by the soft surface soil. Then it puddled, ran. He watched, fascinated, waiting for it to begin to do its work, to cut into the loose dirt and expose the rocks underneath.

BY NIGHTFALL his diverted stream was running all the

way down the valley to join the old stream a short distance below the basin. The water running over the new earth was made dingy by its passage, yet the cutting away of the soft material had not begun. He spent an uneasy, guilt-ridden night. His curiosity of the morning overcame his guilt, for the work of the night-running water had, indeed, begun to loosen more of the soft particles of earth. There was a noticeable depression in the new stream bed and here and there rocks showed through. Moreover, the hard projectiles were no more frequent then before.

It was to be a very slow process. He determined that some days later. The bed of his diverted stream was still composed of softened mud.

He left the valley reluctantly. He was caught in a fresh storm and weathered it inside his protective covering of The Material. He wandered and explored, but nowhere did he find anything as interesting as his valley. He found only bleak, barren rocks, the river, the western slope of the giant upheaval, tumbled, broken, yielding nothing.

During a lull in the storms he jogged to the east, coming on his valley just as he began to eat seriously into his reserves. He breathed his air, watched his stream work, noted that more and more rocks and pebbles were showing in the new stream bed.

He slept beside the heated water of the basin for nights and nights, spent his days searching the old stream bed for more hard-material nuggets, found none. Impatient, as his time grew short, he began to search the new stream bed, first removing his dam so that the water sought its original channel. He found only mud and bare, unpolished pebbles. He worked feverishly, the technique familiar now, to create a new dam and to build up the low area on the side of the basin where his first artificial creek had overflowed. The new channel was cut with maddening slowness. As his time grew shorter and shorter he lessened his daily ration of broth and watched the storms worsen, the sun circle drew toward its end.

He found the object on his last day in the valley. The timing seemed to have significance. It was as if nature had withheld her bombshell to the last possible instant before revealing it casually to his hands as they sorted through rocks and pebbles in his second stream bed. He knew when he picked it up that something exciting was happening. The object was smooth, oblong, rounded on the ends. It was darkened and pitted. And it was strangely light in his hands, having neither the weight of natural stone nor the heavier feel of the hard materials.

He cleaned it in the running water, rubbing the accumulated

mud from it, heedless of the fact that in fingering the mud he was technically digging. The mud was from below the surface. But his excitement allowed no moralizing. The object was different. It had the look, the feel of being crafted. He cleaned it and saw that it was transparent and was at first deflated. It was, he felt with a sinking heart, merely an abandoned piece of The Material, but further examination and comparison proved his conclusion wrong. Like The Material in transparency, it was not as light, had not the feel of life possessed by the smooth, flexible Material of the Far Seers, was definitely artificial and totally alien. It was obviously not a product of his civilization. That left two choices. Either it had fallen from the sky, as suggested by some Far Seers in connection with the hard materials, or it had been made by some inhabitant of the planet.

He prepared his arguments as he packed and left the valley. He was convinced that he had a thunderclap to toss into the minds of Red Earth and all the other doubters. For if the object in his pack had not been made by his civilization and if it had not fallen from the sky—then there was only one other explanation. It was a relic of the Old Ones. And to have evidence that the Old Ones could have fabricated something of that nature, so like The Material, would force a revision in the thinking of the entire race.

IV

HIS pack, almost empty of broth, was light on his back. But it became evident even before he had gained the eastern bank of the river that he had underestimated the severity of the weather conditions. In a short picture of days the new circle would begin and time—pictures of changes in the face of the satellite, which he himself could not see, but for which he had an inner feel—would bring the abatement of the winter storms. Meanwhile the outside atmosphere was chilled to slightly above his own body temperature and the southeasterly movements of the masses of polar air were violent enough to cause waves of concern to wash through Rack's self-confidence. He had already been afield longer than ever before, thanks to the store of relatively good air in his valley. However, good as the air had been, he had been gradually using his reserve stores and now, with the plains of glass stretching endlessly ahead of him, he tried coenesthesis and projected and found that he did indeed have cause for concern. The air was totally unbreathable. Not a particle of it was allowed below the lock above his lungs. He tested it and his gills pumped violently, sending condensed clouds of pure

poison swirling out from his neck.

He scouted up and down the river in a vain effort to add to his stores. Not even at water level could he find clean air. Nothing was left for him to do but strike out across the plains and hope for a break in the solid overcast. He moved at a steady slow pace, designed for maximum distance at minimum cost. Fresh, he made it across the plains in—a double picture of a day. Now he would be lucky to be able to set foot on the rocky soil of the eastern side in—a question, followed by a discouraging picture of days.

He did not fear for his life. Should his being become endangered, he would call for aid. But only as a last resort. His pride would push him on. His regard for others would cause him to expend his own life force rather than call a relatively fragile Power Giver out of her safe retreat into the deadly storms.

At the end of the day he had made discouragingly small progress, so he pushed on in the darkness of night, guided by instinctive sense of direction. He paused long enough to finish his broth supply, overeating in an effort to accumulate quick energy for a dash. Refreshed, he jogged, burning himself, until the first light of dawn glowed weakly through the solid curtain of gases that lay over the plains. Where the plains dipped he would bend to explore the air near the surface, but the conditions were total.

He rested under his sheet of The Material and measured. He had as far to go as he had come—and beyond the plains the rugged, broken land stretched for more than that distance again before he approached the nearest establishment. It would be a breach of politeness to break in unannounced on another individual's privacy, but life was the important thing and no one would turn him away. Thus he set as his goal the establishment nearest the badlands on the east of the plains of glass and prepared himself for the unpleasant task of imposing his needs on another. Remembering the importance of the piece of material he carried in his pack, he was consoled.

HE COULD feel the strain as he moved out with long strides, but more slowly than he would have wished. His scales registered a high amount of projectile emission from the heavy atmosphere. His feet were beginning to know a certain soreness. He did not waste energy in trying to heal them, but saved even that small portion of his force for fueling his giant pump, the vital organ within him that sent blood swirling through his body to pick the particles of good air from storage cells and carry strength

to where it was needed. The discomfort he felt was his just punishment for having overstayed his capacity.

Another night found him exhausted and still on the plains. His senses had dulled. He no longer had an exact picture of the remaining distance. Endless plains flowed under his feet. He was isolated within a circle of vision extending scarcely beyond his outstretched arm, closed in by the densest clouds he had ever experienced. It would be interesting, he thought, to compare notes with Red Earth's Keeper and learn how many sun circles one would have to look back to find a storm of equal toxicity. He would have, he thought, a great tale for his offspring.

The thought, he realized with a start, was strange for a Healer who had shown no signs of readiness. Perhaps the knowledge of his own mortality had prompted the wayward speculation. For he was indeed threatened. For the first time in his life he was in a situation from which he could not, even with his vast endurance, his strength, his own resources, extricate himself. He admitted it now. He was in beyond his own abilities and it was only a question of time before he would have to open his mind and admit his failure.

His pride pushed him forward. Each step used up his reserves. He was slowed to a crawl, but he was determined to make it to the rocks. There, with any luck at all, he would be able to find pockets of usable air. Calling a Power Giver into the thick of the stagnant storm would rob her of a portion of her life and, Power Givers being the most short-lived, fragile beings of the race, he refused to ask such a sacrifice.

He was moving slowly, pain signals telling him of far-reaching waste of his body, when his feet encountered a roughness instead of the hopeless smoothness of the plains and, for a moment, his spirit was lifted. He made respectable time into an expanse of boulders, his sensitive nose seeking air, finding only unusable gases. At his pace he was still more than a day's march from the nearest establishment.

Over him the stagnant masses of gas began to shift. He could feel the movement on his scales and was given one last hope. If the storm began to blow out—behind it might come cool air of a usable purity. He wrapped himself, slowed his metabolism, went into a state of nearly suspended animation. His heart moved only occasionally and his mind darkened and slowed. A few good lungfuls of air would give him enough strength to make the establishment.

But the movement of the air masses ceased—the blow was only a local, temporary thing. He measured. He could, he estimated,

safely wait the coming of a new day. He dropped his heartbeat to the minimum level and, in a state of quasi-death, waited through the long night. His mind held only a token of awareness—a spark of life lay there, banked, waiting to rouse him, waiting to open the gates and send out that last desperate admission of foolishness.

Dimly, the rising sun lighted the rocks, the stark desolation. Awareness of the day seeped through the protective layers of his mind. He stirred. The conditions were still total. A feeling of overwhelming sadness swept him as he opened, sent.

The sadness was replaced by horror as he realized the weakness of his signal. He burned the last of his reserve cells, converting the energy into a truly desperate call now—and knowing even as he lapsed into darkness that he had waited too long. His last awareness was not fear of death, but shocked horror at his miscalculation. His mistake would take one unit of life—it simply happened to be his own personal unit—from the pitifully small store of life on the planet. He was not mourning his own loss, but the loss his carelessness had inflicted on the whole.

His brain was numb, dark. His extremities were beginning to lose the flexibility of life. He was unaware as nature, sometimes kind, sometimes cruel, spared him the knowledge of his dying.

V

HE knew when he felt the caress of good air in his lungs that he was still alive. He lay on an unfamiliar rack, his huge chest pumping at a fast rate, his depleted cells drinking thirstily, his lungs sucking air at a tremendous rate. He stopped breathing immediately, rolled back his outer lids. He found himself establishment-safe and opened his inner eyes to see in the semidarkness.

"Thank you," the thoughts of a Power Giver said. "I was afraid you were going to bankrupt me of air before you awoke."

He was covered. The coverlet was unnecessary in the comfort of the establishment, felt rather warm, in fact. He threw it off and sat up. She, the Power Giver, was in the chair. As he swung his legs off the rack she averted her eyes and this was strange. He sent abject shame. She negated.

"You heard, then?" he asked.

"No. Red Earth the Far Seer sent me. You were out so long. He was searching."

"To Red Earth, too, I owe my expressions of shame," he said.

She would not look at him. He couldn't blame her. His seemingly foolish behavior had sent her out into the storm. Moreover, he had been unconscious upon entering and, as he had encountered the good, Breather-manufactured air of her establishment, he apparently

had voided his gills. A small cloud of heavy, poisonous stuff was shifting wispily in the small currents of air created by his movement. It had accumulated on the floor. He bent, breathed it, stored it inside his gill sack. He would void it later outside. Meantime he was deeply in her debt. In cases of dire emergency the niceties were sometimes forgotten, but Rack could not forgive himself for having soiled her private air, for having used an unforgivable amount of it. She would be on short rations until the overworked Breathers made up the deficit.

"There was a reason," he said.

"Yes, I'm sure of that." Her eyes were down, her inner lids closed.

"You're Beautiful Wings the Power Giver?"

"Yes."

"Would a small gift repay you even in part for your sacrifice?" He had seen his pack on the floor. He opened it, brought out the precious nugget of hard material. He stepped in front of her, hand extended. Astoundingly, her face began to glow through the delicate covering of tiny, bejeweled scales. Even more astoundingly he found himself looking at her as he had never looked at a Power Giver before, noting her delicate proportions. She was a small girl as Power Givers went, with long, delightfully curved limbs, a slender waist, a graceful chest on which, flattened, protected by silvery scales, her bulges were quite pronounced. He had always been an admirer of the grace of the Power Givers, but never before had he been so smitten with any one individual. He was suddenly speechless.

"It is not necessary," she sent.

"I want you to have it. It is material of a certain scarcity. It would adorn you." He pictured a mounting of The Material with the beautiful yellow hard material framed on her rounded chest. The glow of her face became even more pronounced. It was certainly strange behavior for a sensible Power Giver. But he himself was feeling strange. Because of his near brush with death? Even now he could feel the depletion of his resources. His body weight was down massively.

"May I ask how much it cost you?" He waited politely for her answer.

She sent a picture of her condition. He was pleased. She was vibrantly healthy. Apparently her excursion into the storms had cost little. "Fortunately," she sent, "you moved within—" a measurement in picture form—"of my establishment."

"Then I am pleased and insist on your having this." He pressed the nugget into her hand and the touch electrified him, sent a surge of pure goodness through his body. Alarmed, he stepped back,

his gaze falling, his suspicions growing. He read himself and now it was his face that glowed through his scales, for in the bulge over his pelvic area the large, protective scales were tinted a dull russet. He knew then why she had covered him, knew why he was looking at her with an interest he had never felt before. He fell back, seized the coverlet in agitated haste, draped it over his middle. He sent waves of shame and atonement.

"It is merely nature," she sent. "It's just—it's just—" She went blank.

HE HAD exposed himself shamelessly. His state of confusion following his rescue from death was no excuse. When entering the state of readiness one secluded oneself from polite society, bore the change in solitude until, fully readied, one went in search of a mate. To expose one's first tint to the opposite sex, especially to one who was not, herself, going through the change, was unforgivable. He could only send regret, ask for forgiveness.

"You were unaware," she said. "I understand."

He closed off, unable to bear his shame. She fingered the nugget of hard material, her inner lids open to see. "It is truly beautiful. Is this the justification for your trip?"

"Beautiful as it is—no." He opened his pack, showed her the strange object. She examined it with wondering hands and eyes, glanced at him fully for the first time.

"What is it?" she asked.

"Truthfully, I don't know," he said. "But my not knowing helps to explain its importance. As you can see, it is not The Material, nor is it anything with which we are familiar in our high state of civilization."

"Is it a thing fallen from the space outside?" she asked.

"That again I do not know." He looked at her. She once more held her eyes down and he knew a strange, sweet feeling of peace. And in her concentration she forgot to hide her own feelings, let her nature express itself with a flowering of scales on the delicate bulges of her chest, opening them slightly, as the flower of the slime source opened under the thick, salty, mineralized waters of the sea. His heart pounded. She was incredibly young. The change should have been sun circles in her future, yet here was the unmistakable sign. The flowering of her chest bulges was revealed only momentarily before she became aware of the erotic sensation and closed them, glowing furiously.

"Beautiful, Beautiful Wings," he sent, searing her with his emotion. Then, as she recoiled, he eased. "I knew your father, Northern Ice the Healer. In my travels I talked with him—and I knew you as a child."

"He is dead these—several sun circles."

A warmth swept through his body. Emotions surged, flooded him, made his interior go soft and flowing. "I am not mistaken?" he asked, sending a replay of the sweet, unconscious flowering of her chest bulges. She answered in a warm affirmative. But she reached for an opaque sheet of The Material and covered herself before looking at him. Wild, warm thoughts flooded out of him, thoughts about nature, fate, luck, bringing them together, amazement that she should begin her change so young, pleasure in his eyes' picture of her.

"Am I truly?" she sent. "Am I truly beautiful?"

"Affirmative, affirmative, affirmative." Repeating the picture of pleasure in his eyes, standing before her, tall, strong, manly.

"There are many others," she said.

"They do not matter."

"I have heard that a Healer is prone to love the first Power Giver changeling he encounters, but that this love is illusionary and not necessarily the indication of a wise choice," she said.

"It is true. Our custom will require that I seek."

She closed. He sent one last beautiful picture into her closing mind and got a febrile, grandly complimentary, girlish picture in return. The moment was gone.

"You are to seek Red Earth's establishment as soon as you are able."

"True," he said. "I have much to report."

"He was fretful."

"I little doubt that."

"Will you be reprimanded?"

"I don't think so. Not when I show him this." He took the strange object from her hand. "Red Earth's mind, although he won't admit it, is as curious as that of any Healer's."

He read the state of the air in the establishment, monitored the activity of her Breathers, who were working overly hard because of the drain of two sets of lungs.

"I have taken enough of your air. I have ample stores to reach Red Earth's establishment."

"I will transport you."

"No!" He was emphatic. He would not allow her to go out into the deadly storm again on his behalf.

"I have been so instructed."

"Then we shall disobey," he said. He allowed himself one breath of her air, bowed. As he went out into the lock he sent a picture of his returning. He felt a warm glow in answer.

HIS own establishment was nearer than Red Earth's. He jogged through the barren stretches joyously, feeling a renewed strength. He vented his gills

in his own lock, entered to find a huge store of air so rich it made him giddy. He breathed furiously, causing much agitation among his Breathers, felt his weight build, his chest expand, his tired, empty cells fatten. Thus enriched, he ran swiftly through the dark, thick storm, feeling an exaltation he had never known before, dressed now in the loin cloth of readiness. Beautiful Wings' coverlet, used during the trip from her establishment to his, was cleaned and ready, back in his establishment, to be returned to her—as return it he would.

He made the march in short time, feeling only a slight drain on his reserves, so fat was he with air. He announced his arrival, was admitted to the lock, vented his gills, shook the ash of the outside from his scales, sneaked one look at the russet bulge in his loins. Inside, Red Earth was lounging on his rack. Rack greeted him cordially, holding back the sensational information.

"You are fat and refreshed, I see," Red Earth sent grumpily.

"I will use none of your air," said Rack.

"A pleasant change," Red Earth said, an oblique reference to Rack's hungry breathing of Beautiful Wings' air. "A nugget of hard material is scant exchange for life."

"If you were observing so closely," Rack said, "did you also see the valley of the hot water?"

"I have more to do than follow the ramblings of an irresponsible Healer," Red Earth sent.

"Then I have much to tell."

"I am interested only in the breakdown of your coenesthesis and the reasons for your being stranded in the wilderness. And in those solely with a view to preventing such happenings in the future. Perhaps your punishment will inspire other Healers to use more caution."

"I do indeed deserve punishment," Rack admitted. "However, I think other considerations also deserve attention."

"Your state of coming readiness is noted and will be considered." Red Earth sent a noncommittal image. "We cannot, even in an event such as this, neglect the possibility of creating a new unit of life." He let slip his foolish hopes and Rack grinned inwardly as he saw pictures of speculation. It would indeed be ironic if Rack, in disgrace, should sire the New One.

"I am not speaking merely of that," Rack said. He slowly produced the object, holding it on the palm of his hand, moving to stand directly in front of Red Earth. The bald, bare dome of Red Earth's head did not move, but Rack could feel the push and probe of the Far Seer's senses. He extended the object, gave it over to Red Earth's hand. For long moments the Far Seer examined it, then with an explosion of emotion threw it from him.

It hit the soft, yielding wall and fell to the floor.

"From the subsurface!" Red Earth flared unbelievingly.

"True," Rack admitted.

He underwent a blast of anger and shock. He stood his ground.

"You dug," Red Earth accused him.

"Not true."

"I sensed the taint of soft earth, the deadliness of the earth." Waves of anger, fear, sorrow.

Rack began to be seriously concerned. He was well aware of the law against digging. It was a law so absolute that the mind of the oldest Keeper held no record of its having been broken.

"If you will listen—"

"Not I," Red Earth sent sadly. "No, I will not listen. There will be a council. Then we will listen."

"That will take time," Rack sent desperately, remembering the soft flowering of the delicate scales on Beautiful Wings' chest bulges. He sent a powerful picture of his need, his love for Beautiful Wings, the pull of nature, the necessity of proper timing. His russet tint would deepen, become flame red. The flowering of Beautiful Wings' chest bulges would become involuntary and expose the soft flesh underneath her scales. And there would be other changes, changes that left him weak merely to contemplate them.

His desperate plea was rejected coldly. Red Earth was tightly closed. In the whole of civilization there were only—a small picture of unbreakable laws—and Rack had broken the most severely enforced one. It was unthinkable. Yet it had happened. No other considerations could stand against that fact. Even the chance for new life, the most desired event in the life of man, was unimportant.

"Please, you must listen. I myself did not dig."

"I will keep the evidence of your folly," Red Earth said sternly. "You will not be given the opportunity to cleanse it further, although you have, obviously, already tried to erase the traces of the subsurface from it. You will return to your establishment. There you will stay until a council can be arranged." A picture of time, extending past the time of storms into the new beginning, too late, too late. By then Rack's tint would have long since faded. The moment would have passed.

"You will not listen?" he asked.

"I am but one. The serious nature of this crime demands a council."

"And my readiness?" Rack asked.

"Wasted." And over Red Earth's anger and shock and fear hung a shroud of sadness. "Go."

HE LEFT. He picked his way slowly to his establishment, paying no heed to the waste of his

energies and forces. Inside, he fell into his rack. He felt unjustly used. He had not dug. The water had dug, not he. And his lack of guilt was proven by the fact that he had suffered no ill effects from his experiment—and had been rewarded by the discovery of an amazing object which, to his astonishment, had not aroused Red Earth's deepest curiosity. Even a Power Giver—*Beautiful Wings, oh, Beautiful Wings*—had been impressed. Any Healer would have been beside himself with excitement. But to a cold-blooded Far Seer the suspected breaking of an ancient law was the issue, not the mind-boggling mysteries of the obviously crafted object. The situation was completely without logic.

Rack's world was an orderly one. It ran on age-old principles proven by time. In his orderly world such misunderstanding was not possible. It was unbelievable to him that he was to be robbed of his chance to add a spark of life to the scant life force of the planet. Who indeed was breaking the law? Not he. The law-breaker was clearly Red Earth the Far Seer, who was trying to impose his will on nature to negate one of her most elemental forces.

Beautiful Wings. Ah. . .

He opened, sent. The distance was far too great. But in his state of openness he intercepted Red Earth's message, directed over Rack's establishment to a northern Far Seer—the call for council. And the urgency in Red Earth's thoughts made a cold chill run down Rack's spine. Upon absorbing Red Earth's charges he began to realize the seriousness of his predicament. In a world that revered life he did not fear death as a punishment, but in outlining the crime Red Earth touched on possible punishments that chilled Rack's mind. Banishment. To the far southland with its burning earth and choking gases belched up from the planet's bowels? Or to a lonely station at the far north where the frost sheet never melted, to live out his days cold and alone?

He closed and considered. In all fairness he was due to be questioned, for his actions in the small, pure valley had been out of the ordinary. His use of running water to cut through the shallow layer of soft earth was, at best, a daring innovation—and Far Seers were affected strongly by any hint of innovation. Life's balance was so precarious that experimentation was to be carefully considered before being undertaken.

But he had done no harm. Not in the valley. His only crime had been in his having stayed too long and having had to waste some of the life force of Beautiful Wings to extricate himself out of his self-created crisis. For these sins he would gladly accept a punishment

tour in the far north, a tour of limited duration, beginning after his joining. But could a guilty one select his own punishment? No—still, such sentences had been handed down in the past.

He would not—could not—accept the punishments being suggested in advance by Red Earth, for they meant more than death. Not only his own death after a long, agonizing loneliness, but the death of his unborn, unconceived offspring. The planet would be deprived of two life units. Could not the Far Seers understand that? If he had indeed dug in the earth—then he would have expected the most severe punishment, now would accept it. Deserve it. . .

Or would he?

An entirely new line of thought. If he had dug in his valley by hand he would have, according to his measurements, suffered no bodily damage. So where was the crime?

RACK prowled his establishment, striding, breathing carelessly. He slept little, awoke to find his russet loins turning a pinker, brighter shade. He pictured Beautiful Wings the Power Giver and the image was unbearably sweet. He remembered her welcoming of his suggestion that he would return and he contemplated the loss of his only readiness—for to have more than one change in life was rare. He was young. He felt that he was in the right.

"If I am a law-breaker," he told himself, "then I am lost—but the sins of the father should not be extended to obviate his seed." Thinking in such terms, with his loins pink and bright, seemed natural. Nature moved in him, making chemical changes in his body, sending delicate urges into his brain.

He made his decision in the midpoint of the sun's day cycle. Red Earth, in his intercepted thoughts, had indicated contact with every Far Seer east of the river. Completion of such a roundup would take time and energy and would, Rack estimated, cover the period of this day, another day and possibly still another. The establishment of Beautiful Wings the Power Giver was a quick jog away. And if he were indeed a criminal he was not responsible for his actions. Moreover, he could be punished only once. And once implanted in Beautiful Wings' body, his seed would be life—and thus sacred.

His decision made, he stored a maximum quantity of air, packed his winter's supply of broth, packed in addition a sealed container of closely crowded Breathers to add to Beautiful Wings' colonies. He marched swiftly, heavily burdened, not able to breathe in the fierce storms which had now reached their peak of

deadliness. She was waiting, sensing his coming from afar, meeting his mind and discussing the situation with him as he jogged through the bleak, atmosphere-darkened emptiness. At first she was shocked and reluctant about his coming, but his emotion-filled thoughts swept her objections aside. The feelings of a Power Giver at joining time were nature's strongest force. And she had seen Rack's beginning tint, had felt the strength and power of his personality, had seen the beauty of his body.

She stood inside the establishment, unable to control the flowering of her chest scales as he entered. They opened out delicately, flaring in a curling sheet, forming a ring around delicate pinkness, the flesh of motherhood, the flesh from which the offspring would feed. Rack, on seeing her, felt his own scales stir and move. He sent beauty, beauty, love. And she answered with a sweetness that made his knees weak.

Quickly he joined his container of Breathers with her colonies, making the number sufficient for two. Then, his gills having been vented in the lock, he loosed stored air from his huge body and felt his storage cells give gladly to share with his love. In a sweet, rich plenty of air they stood, looking, inner lids wide, Rack's vibrant blue gaze sparkling with his energies. He could see far into Beautiful Wings' brown eyes. Her soul was open to him.

"You, too, may be punished," he sent.

"No punishment could take away the memory of this."

"We have"—he sent a picture of the time remaining before Red Earth could complete his contact with the eastern Far Seers. "Then he will check and find that I am not in my establishment."

"When I first saw you—when I was a child—I dreamed of this day," she sent.

"Our time could be shortened if he discovers me here."

"But we will have created life."

The picture of incredible beauty and passion made him tremble.

"Before I throw aside my covering," he sent, "be sure, Beautiful Wings."

"I will be content with one night, if nature will allow. My only fear, my only regret, is for you. For, as you know, the mind of a Far Seer is powerful."

"In all of history there has been no record of its being used fatally."

"But he is agitated. In all of recorded history no one has dug." She sent the last picture regretfully.

"I think not of myself," he sent. "But of you."

"For me the mere throwing aside of your covering will open a world of delight—"

Slowly he drew aside his opaque

covering. She made an audible purr of pleasure and, in return, drew aside the belt of fashioned Material to show that she, too, was at the height of her readiness. He learned then the full picture of her name—it came from a historic picture of a soaring thing, fragile, brightly colored, delicate. He had never seen such loveliness and his entire being vibrated as she moved languidly toward him.

His eyes caressed the pink, exposed breast buds, his fingers trembled as he touched them and felt her body heat and her softness. The red tint of his maleness covered his lower body, scales folding back.

"Now we will join," he whispered, leading her to the rack. She sat down, legs crossed, and he duplicated the position. Looking deep into her eyes, he let his mind merge with hers. He knew the fullness of her mind; he let his own lose its individuality, lock with hers. He knew her most basic thought as she knew his and a rapture lifted them out of time and space. Their limbs, bent under their bodies, felt strain but did not register discomfort as the night fell and the planet spun on its axis and swam toward the new beginning.

They required neither food nor air. They fed on themselves and on each other. Throughout the long, dreamy night, as the storm raged and the survival factor reached its lowest sun-circle point, they caressed minds—and when at last the sun glowed through the yellow and purple poisons of the outside a state of pure ecstasy linked them and not even the force of Red Earth's anger could have broken their locked emotions.

She came to him with the sinking sun. Her exposed feminity drew him and the union began, sweet and true and of such a totality that the Breathers, half-life that they were, stirred uneasily in their colonies. Softness met softness—his penetration sundered her and the day passed without their notice and another night found them poised on the brink of the ultimate experience. When it happened she cried out, vocally, her expelled breath sweet.

VI

IN RARE cases, when love was strong, the joining urge was not satisfied with one experience. Thus it was with Rack and Beautiful Wings. So perfect had been the preliminary union of their minds, so sweet was the seed planting, so devastating the pleasure that his tint become only more fiery and her ruby femininity did not fade when they separated. True, her chest buds were covered, his scales folded, but the strong emotions continued to rage.

Had they not been in the grip of nature's most powerful force

neither of them would have considered the desperate measure suggested, at the height of their joining, by their combined minds. Time, they knew in their separate minds, was now running out—time required for the scales to open again, for her to flower. Time they did not have, for Red Earth would be checking and his powerful probe would soon find Rack. They had no idea what then would happen. They knew only that they would be separated and the thought was intolerable to each.

The survival factor outside was fearfully low. To elude Red Earth meant going out into that hell of poison. To Rack a brief exposure was not serious, but to a fragile Power Giver even a short time outside, with the atmosphere giving off potent projectiles, was folly. It would be subtracted from her life. But Beautiful Wings was in love and filled with the glory of having, perhaps, a new life in her.

"I will not be robbed," she sent.

He protested, but he, too, was in love. He, too, felt the great biological, chemical and emotional stresses. He could breathe for her, they both knew, give her air from his lungs, but he could not shield her from the deadly projectiles.

"It is my life, love, and I will gladly spend part of it."

"I cannot allow it," he sent.

"For I will not live long if you are sent to the south."

He could feel the power behind the statement and he believed, for in rare cases the union produced a lifetime of love, an ability to blend minds even when nature forbade the joining of bodies.

"I would hate myself—I myself would die if your life were shortened."

"Then we die together."

TOGETHER they packed the broth, a supply sufficient to last them through the winter. Together they loaded the Breathers into travel containers of The Material. He winced as he measured the load she would have to carry. But they were now committed, for a tentative probe from Red Earth's mind had located the two. Red Earth's powerful forces were grouping, would come thundering in to—Rack had no idea of what the shocked Far Seer would do. Immobilization was the least he could expect. He quickly depleted the establishment, storing its last remaining air in his huge lungs.

As she lifted he wept, for he could feel the drain, the using up of her force. And she, not blessed with his Healing powers, could not repair the damage. He held her tightly in his arms, giving her air from his mouth, protecting all of her that he could with his superior armor. The ascent took its toll and above the clouds she breathed furiously of

his stored air, trying to regain some of the loss. The soaring was not as strenuous, but the descent, later, again through the roiling clouds, caused waves of pain to sweep through her as she fought the pull of the planet. His mind shared the agony in hers and his entire being cried out at the injustice of it. He should have been the one who was sacrificing for their love.

On the permanent icy frost of the far north he held her, gave her a lungful of his good air, entered the closed establishment of Northern Ice the Healer, her late father, set the Breathers working, emptied his store to replenish the empty establishment.

She lay weakly on the rack, breathing with difficulty. He wept openly. Once again he had been criminally foolish, acting not against himself, but against the one he loved. Both he and she had underestimated the cost of her load and she was now paying it. Her very substance had been used. She looked thin, drawn-out. But she smiled at him and directed his attention to her breasts, which were being exposed slowly as she flowered, as the ruby tint spread and her lower scales opened and those delicate, soft buds swelled with nature's bounty.

"Poor Rack," she sent. "Don't suffer more than I—for I gave myself gladly and would do it again."

Twice blessed by nature, they were alone in the far north, beyond the full stength of Red Earth's punitive measures. No Far Seer was near enough to intrude upon their privacy. The hard-working Breathers expelled good air, made the long unused establishment comfortable. The unaccustomed chill served merely to invite body closeness.

He held her, saving her remaining strength. More than anything in his world he wanted to lift the suffering from her, to put it into his body, where it rightfully belonged, for the entire situation was of his making. The soft tendrils of her mind pressed at his shame points, caressed his pain and sorrow.

"I will live to give birth," she told him, inside him. Her body anticipated and Rack learned the wonder of growth, the swelling of life. He learned the movements of labor and the emergence of a new life. He could not help but exult. He and she moved into oneness and a fierce pride of achievement sent strong radiations reverberating around the domed establishment. Their new ecstasy mounted until, facing each other, seated lock-legged on the rack, the beauty of their communication became all. In Rack a bewilderingly powerful sadness mixed with the most complete happiness he had known —for he was loved beyond the most basic value, the regard for life.

The joining began and extended into time without end, without thought.

JOININGS were routinely monitored by Far Seers and this far-north joining was noted and measured. The northern Far Seer nearest to it recorded that he was awed by its force, intensity and duration.

He recorded more.

A Healer knows the flesh of a Power Giver once, rarely twice. The observing Far Seer noted that Rack, the fortunate one, knew more. He knew flesh and total love and even in complete union kept his awareness of his Power Giver's depleted condition and of the fact that he and he alone was responsible for it. Neither Rack nor Beautiful Wings considered, the Far Seer recorded, that the very uniqueness, the desperation, the strains, the aspects of doom of the union were adding to the depth of their emotions, but that obvious conclusion was made by the Far Seer before he, awed and made tinglingly envious, withdrew to seek his sterile consolation with his personal Keeper.

And so missed what followed.

Rack knew only that he would forsake the fight and die if his actions resulted in the death of Beautiful Wings.

She was very weak. When the seed planting began she sank to the depths, overwhelmed by her joy. Rack's mind filled with panic, even as his body rejoiced. He roared, making an animal sound without meaning, and willed his body and being into her. His healing cells screamed out to her to fight, not to give in to the specter that had suddenly thrust itself into their moment of joy. What he sent was not a mere hope or a plea—it was a command: *Be well.* And it was repeated by every cell of his being. His whole body thundered the order, striving to impart to hers the beneficence of his healing.

Yet she sank.

He felt the darkness boding death. His mind heated, threatened to join hers in blankness, but in that last, wildly emotional moment he felt astonishing change roar through him. It caused unheard-of things to happen in their joining. His flesh was becoming her flesh. Cell bonded to cell and where there had been lubricious friction there was a bond—and movement ceased. He felt a strange swelling and a sensation he could not identify until he felt, in his body, the feeble beat of her heart and the flow of her blood joining his. He became aware of the damaged cells of her blood and then he was sending his powerful Healer's forces to battle the darkness, cell by cell. His substance was her substance and he was strong,

equal to the task of mending her frail body. At last he felt life spring up in her, saw her eyes open in wonder and look into his. He was too busy to pause to analyze the miracle. His Healer's blood flowed in her veins—his cells were her cells and his healing ability worked for both of them, using up his stored substance, voiding poisons through his gills —and not at all concerned by this breach of politeness.

"Rack, Rack," she sent.

The extent of her weakness frightened him, but he was equal to the task. It cost him, but he was giving joyously, praising nature for this chance to redeem himself, to give of himself as she had given of herself for him. He flowed in her, was part of her, knew the intimate processes of her body, healed, threw off the accumulated poisons, found the inherent weakness of the Power Givers in organs that could not reject the deadly things in the environment. He knew his Power Giver as no Healer had ever known his love. He made her whole again.

He did not stop until he was exhausted.

She laughed suddenly in glorious health and began to question him furiously.

As strangely as it had begun, the process ceased. The flesh parted and they were lying together, both aware of his seed in her. And Rack told her what he knew, for he had been able to see more than she. She was in the process of conceiving. He could no longer watch, but they talked of the mechanics of birth and tried to pinpoint the exact moment and laughed joyously and clung to each other.

Later she fed him. Her being radiated health. He felt his strength returning as he consumed broth and filled his storage cells with air. Then it was time to wonder and be awed by the miracle.

THE last tints of russet left Rack's pelvic region. Beautiful Wings' scales folded into place and covered the soft flesh. But there was life within her. The sun, only a puny force in the far north, stayed below the horizon for a picture of normal days and in the cool dark they found it beautiful to sink into a mind-blend. Pictures of days became pictures of satellite changes and they were not aware of the swift passage of time. They had achieved the rare union that lasted past the creation of life—and were drawn closer by the new and exciting knowledge that once, for a time, Rack's blood had flowed in her veins, that he had known her down to the minutest cell level, that he had felt and seen what she could never feel or see, the beginnings of new life within her body.

Responsibility intruded, after satellite changes of pure happiness,

in the form of the mind of a Far Seer.

"Rack the Healer, will you voluntarily attend the meeting of the council of Far Seers, Healers and Power Givers?"

"I will inform you," Rack sent, sinking to depths of sadness.

"Now you have how added other crimes," Beautiful Wings told him. "They will cite your disobedience."

"And add the crime of endangering the life of a Power Giver in unlawful flight," Rack agreed.

"I will lose you."

"Negative, negative," he sent angrily. For it necessarily followed that if she lost him he would lose her and he could envision no worse fate.

"I will go with you to the death lands of the far south," she promised.

"Negative, negative," he sent, thinking furiously.

"Perhaps, by some miracle of nature, you can heal me even in the death lands."

"There I cannot, for any picture of time, heal even myself," he sent.

"Then we die together."

"Much as I revere my own life —and life as an abstract goodness —I revere yours more." He caressed her. "To think of you dead is the most terrible pain."

"Then we'll flee once more. We will go to the lands across the eastern sea."

"Negative," he sent, adding pictures of the distance, the load she would carry, the drain on her system. She was in perfect health, but even the most healthy Power Giver would be seriously drained by such a trip.

"But you forget," she chided. "You can heal me. You can join your power to mine."

Hope sprang up in him. Then he sent a negation. "In the heat of the union I fleshed with you. I have no feel for it now. I don't think I could do it again, not without the emotional stimulus of the joining."

"We could try."

THE problem was that without the flowering of scales that accompanied the physical union there were no flesh areas to bring into contact. Armored hand on armored hand gave a heady and pleasant sensation, but produced not even one spark of that strange power Rack had felt during the union. Rack considered. Every portion of Beautiful Wings' body was protected by her small, decorative and flexible scales, save for the inside of her small mouth and the inner lids of her eyes. He examined her small, protected lips, used his finger to open them, looked into the pink, toothless maw. Her vestigial tongue was small and pink. His own tongue barely extended past his armored lips.

"We can only try," he sent,

placing his lips on hers, thrusting out his tongue to feel the fleshy interior of her mouth.

She giggled.

"A sensation not to be despised, dear Rack."

"Quiet, I am thinking."

Flesh on flesh. A remembering. The glory of union, the softness of her body, the feel of her cells were implanted in his mind. It was, he found, surprisingly simple. He had only to will it and his tongue welded flesh to flesh, melted into her, knew her. Through that small contact of united flesh he sensed the processes of her body, made minor healings. He closed off the contact, knowing a wild elation. He would never have to be without her and his healing abilities would make her as long-lived as he. Only the ruin of his system would bring death to both of them and that would be many, many sun circles away. He knew the feeling of complete victory, and then it was tinged with regret.

"I know," she sent. "Responsibility is a heavy thing." She touched him, sending a warm glow through the scales of his arm. "But we can contribute. The people to the east, it is said, are much like us."

"But they are not our people."

He had, however, no choice. Had he not loved her he would have gone to the council, would have faced his punishment, would have used the forum to try to convince the Far Seers of the importance of his find—that strange object from the valley of the hot waters. But knowing that his own banishment would abandon Beautiful Wings to the sure fate of Power Givers, early death—and that he could save her—he had to take the chance.

THEY practiced soaring. The position made for some difficulty. Mouth to mouth with Rack, flesh welded to flesh, Beautiful Wings drawing not only on Rack's substance, but also utilizing his power of mind to reinforce her own push against the magnetic field of the planet, she had difficulty seeing where she was going. But flying became effortless and without cost to her substance and they worked out a system of mind signals. Sometimes, too, they seemed to share joint vision—and this was a distinct advantage.

Having become proficient in joint flight, Rack guided their soaring movement to a position over Red Earth's establishment.

"I am Rack the Healer, bringer of new and startling developments," he sent.

"You are Rack the Healer, madman," Red Earth sent angrily, adding astonishment and shock that Rack was once again recklessly using the very life substance of a Power Giver for wasteful and illegal soaring.

"I ask only a hearing," Rack sent, "a fair and impartial forum

composed of equal numbers of Far Seers and Power Givers and Healers."

"The law," Red Earth sent, "is the law. Your new and startling developments have been judged, after careful study, to be the result of unexplained forces in the depths of space."

"The Far Seers err and dream dreams of the unimaginative mind," Rack sent, himself becoming a bit angry. "Much has happened since we last spoke and I showed you the hard new object I brought from my travels and on which you judge me. The object is clearly crafted and must, therefore, be the work of the Old Ones. As such, it should not only receive the attentions of the scholars among the Far Seers, but should also be subjected to the speculations of the scientific Healers. And I demand a trial."

"It is the will of nature that the Far Seers hand down the law," Red Earth said. "Tell me, Healer, your justification for continued defiance."

"In the interest of the race," Rack said. "In that interest I have traveled far. In that interest I risked death and disgrace and in return I am scorned and judged without a hearing."

"In your absence a hearing has taken place," Red Earth said pointedly. "Your flight from justice was your testimony."

"If the Old Ones were capable of crafting so unique a material," Rack said stubbornly, "what else could they accomplish? Of how much more than we have shown are we capable? In view of new evidence, I demand a renewed effort to rethink our position. We must learn the lessons of the past for the sake of the future."

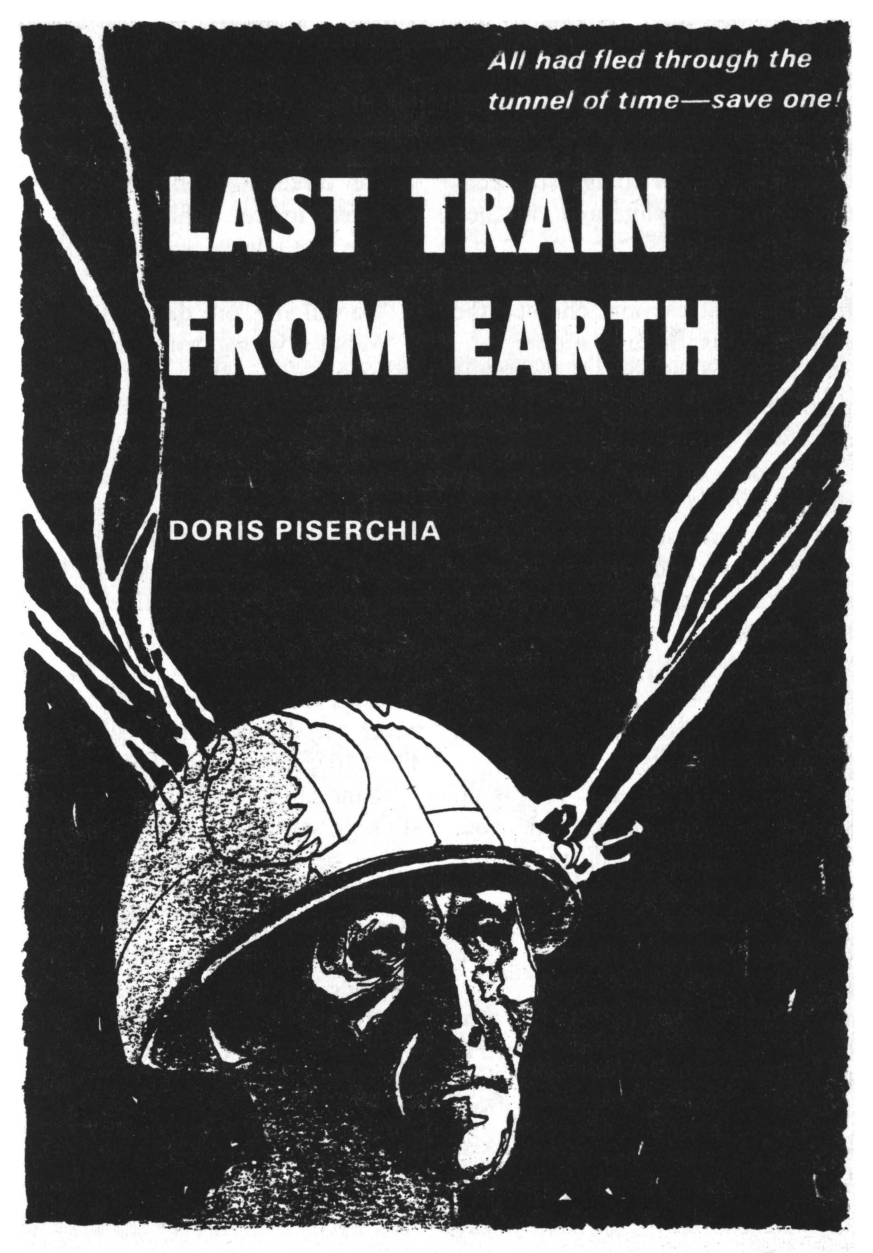
"You seek to dig in the earth and release death," Red Earth said sadly, seeing behind his words a picture of the valley of hot waters. "This we will not allow. I have been empowered to my sorrow to—"

But Rack was prepared. As the Far Seer gathered his energies Beautiful Wings sent Rack and herself soaring high into the purpling sky, into the regions of non-air, into the coldness of the upper reaches. Yet the bolt from Red Earth's mind found Rack and momentarily dulled his senses.

Shocked, he realized that it had been meant to be a killing blow. Had he not anticipated it and removed himself from the range of Red Earth's lethal reach, he would have been a lifeless form clinging inside Beautiful Wings' field of power, draining her, leaving her without his healing protection.

"So be it," he said. Body to body, they accelerated, leaving the zone of the sun for the darkness to the east, sensing the rolling sea beneath them, seeking the land of the east, fleeing those who would kill.

TO BE CONCLUDED


All had fled through the tunnel of time—save one!
LAST TRAIN FROM EARTH
DORIS PISERCHIA

THE old man refused to get aboard. He was still in the house as the last few stragglers climbed the car steps. They could see him peering through the window, his face bristling with contempt, his fists white and clenched against the sill.

One of the monitors jumped from the last car and climbed the cracked steps, three at a time.

"Come out of there," he yelled when he entered the house. "We can't wait any longer."

"Nobody asked you to wait," said Ben from the other room. "I told you, I'm not going."

The man swore. "That front section has been underway for two hours. She'll go any minute."

"Good, by golly, and it can't be too soon."

"You old fool, this is no time to pull childish stunts."

Ben came out then. "This is no stunt. I'm not going with you. You'd better hustle your tail before you're stuck here with me."

The monitor stood in angry indecision for a long moment. Then he hurried out to the train.

The old man moved to the window and watched them argue. He knew what was coming next. Taking the gun from behind the books in the bookcase, he checked the load.

They came across the road three abreast, pounded up the steps, pushed in through the open door.

He stood in the middle of the room with his gun aimed at the first man. "That's far enough."

The three stopped and shifted their feet, looked at him uneasily.

"We can't leave you all alone," said the oldest. "You'll die."

"So will you, one day," said Ben.

"What's wrong with you? Why are you doing this?"

He answered quietly. "I've got five or six years left, maybe, and I'm not going to spend them looking at some damned horizon no human ever laid eyes on."

"That doesn't make sense. Is it the train? Are you afraid it won't take us through?"

Ben knew he was wasting his breath but he said it anyway. "I've never cared much how I died, but I'm particular about where."

"You can't want to stay on this stinking sewer of a world."

The old man's fingers tightened on the gun. "Get out," he said. "Get out of my house. Get off my Earth. Go jump on your kiddy car and ride."

"You have to come with us."

"The gun says different. I bought it when this scheme was first cooked up and I didn't buy it for fun. I'll shoot the first man who tries to drag me out. That includes you."

They took turns speaking:

"We can't wait any longer."

"Better come, old man."

"You'll die all alone."

"You'll never see another human."

"You'll never hear another voice."

"You'll wish you were dead."

"You'll end up killing yourself."

"Go to hell," said Ben.

They left then. He watched through the window as they boarded the train. Everybody looked back. He saw their faces clearly. No one wept, no one looked regretful.

Suddenly the train shuddered. In the next instant it was gone. Without a sound it had fled into the tunnel of time.

HE FELT a hard thrust of pain and a sob leaked from his throat. Steadying himself against the window he dropped the gun on the floor and blinked his eyes. Numbly he rubbed his palms on his shirt. He cocked his head to listen for sounds. The clock in the kitchen gave a little ping. Somewhere a wall squeaked. A faucet in the bathroom dripped and the hot-water tank in the basement hummed. He heard his own breathing. He stood there and knew that these were the sounds he would hear for the rest of his life. He was the only human being in the world.

He sat on the porch swing and played his harmonica, and while the sweet tones of *Clementine* lifted along the avenue he rocked and let his thoughts sift through the lost years and the dead dreams of his lifetime.

Presently he dozed. The wind whispered between houses and the sun sneaked through the smog to warm pavements and roofs, to glint upon handlebars and shiny surfaces of bicycles and automobiles.

At dusk he awakened. He could see the trees in the park across the boulevard and he thought that in the morning he would go there and live where it was cool and Earthy.

He had his dinner and went to bed.

At dawn he tied a few cans of food in a sweater, placed his hat on his head and walked out of the house he had lived in for fifty years.

There were twelve cabins in the park and he chose the smallest. It contained a kitchen, a bedroom, a tiny bath and a shower stall. After he checked the fridge and bathroom to make sure that everything worked he stood in the doorway and looked out across the grassy clearing. The end of his

love affair with the sod upon which he had been born was not far away. He couldn't live long, alone this way. He was old and accident-prone and one day soon he would forget what he was doing or miscount his steps, and that would be that.

He wished that he were young again, with the Earth all his, so that he might stride out upon her scarred surface and begin to heal her wounds. He would beg her forgiveness for crimes that had never been his but the race's from which he had sprung and together they would survive, each fulfilling the measure of his existence until at last death came to them both in the same instant. But it wouldn't be like this. He would die without healing anything and the Earth would be a spaceship that carried his corpse through billions of miles of dark universe until one day she herself staggered and died. And then there would be nothing.

He crossed the clearing and slumped onto a bench. With the sun warm on his shoulders he closed his eyes and played *Old Black Joe* on his harmonica. The words beat through his brain, revived old memories.

Gone were the days when a boy took his first good look at the world about him and knew with an exultant thrill that he was a powerful creature in an environment of beauty, glory and danger.

Gone were his friends, but he wasn't sure he wanted to call them friends. There surely had been one close to him. Could a man live for so long in the same world with so many others without finding one kindred spirit? No, there had been one. But weren't a man's sons his friends? Had there never been a trace of Willa in those angry young men who had cursed him yesterday and forced him to drive them away with a gun?

Now they were gone from the Earth, they and all the rest. To a better land? But he knew there was no better land. No matter where they were now it wasn't Earth.

A static wail came from the harmonica and he dropped it and buried his face in his hands.

He sat on the bench all day and watched the sun drift across the sky. As it was setting he dragged the cot from the cabin, placed it in the clearing and lay down and covered himself.

THE sky was unusually clear and as the stars winked into view he began to count them. He was past fifty when he saw the flashing light in the east. He watched it and tried to remember if there was a satellite in that area, but so many had been tossed into

the sky that he couldn't keep track any more.

The last thing he saw as he closed his eyes to sleep was the flashing light moving across the heavens.

Dawn woke him. Rubbing the sleep from his eyes he look drowsily at the sky and then sat up in surprise. The brilliant orb that was the sun lifted over the horizon and moving along beside it, small but vivid, was a streaking comet.

He went into the cabin long enough to wash and eat his breakfast. Then he took his place on the bench once more to watch the sky. By mid-morning he suspected that it wasn't a comet at all. By eleven he was certain of it. The streaking thing could only be a spaceship.

Just as the sun reached the center of the sky the ship cracked through the atmosphere and thundered toward the ground.

The vessel was a tongue of orange flame, monstrous in length and in girth. Ben placed its origin as somewhere in Europe or Asia. He knew America had never made so large a ship.

Heat fanned his face and he threw his hands over his eyes.

Still far away from him, the ship's jets cut off and the missile flew silently toward him, floated effortlessly to the ground and landed on its finned tail.

A man dressed in brown came out of a door and jumped to the ground. He raised a hand to wave and Ben walked to meet him. He was a slender young man with dark eyes and a thin face. Ben carefully looked him over. He wasn't European or Asiatic. It was impossible to place him. Several other people stepped out of the ship and stood looking around. They all resembled the first man and it was impossible to place any of them.

"You're too late," Ben said bluntly. "They're all gone."

The stranger pushed his hair out of his eyes and smiled. "So we discovered when we were coming in."

"They said they called everyone back. You must have been a far piece. Jupiter, maybe? Too bad you didn't come two days earlier. It would have saved you some trouble."

The man looked about the clearing as he spoke. "We couldn't get here sooner, but it's no trouble."

Ben stared at him. Here was no evasive, ineffectual coward. He thought of the whining creatures who had scrambled at the chance to get away from the foulness they had created. A trembling began behind his knees. How did a man find a needle in a haystack? By what talent did a pilot pick out the spot where the only man in the world stood?

"Where you headed?" he croaked.

"Earth."

"There's nobody here but me. Where do you aim to go now?"

The man gave him a keen look. "Why do you ask? Do you want to go someplace else with us?"

Ben felt the heat rising up his neck. "I never said that."

"You sound as if you want something."

Turning his back, Ben spat on the ground. "I got something. Right there."

The stranger laughed. "You might say this is new territory for us. Why don't you bring me up to date on what happened here."

"Doesn't matter how long you've been gone. The world hasn't changed, not for the better, for fifty years."

"Maybe I just want to hear you tell it."

"Maybe you just think I'm a lonely old fool and you're feeling big-hearted."

THE man was silent and Ben turned to get a look at his face. Ben saw no pity. What he saw was deep preoccupation with things not concerned with him. He began to relax. Looking at the mountain that rose beyond the park, he said, "I could tell it better if we were up there. We could see the mess."

"Then let's go up."

"I'm no goat."

The man walked away. "I'll give you a hand," he said over his shoulder.

With a scowl Ben eyed the retreating back. He wasn't a kid to tag after the first big man he saw. But he followed.

They made it to the first high ledge before his legs quit on him. "I can't go any farther," he said and refused the other's hand.

"We don't need to." The stranger stood and gazed out at the shattered plateau.

"I reckon not," said Ben and winced. "What do you think of it?"

"What's that smoke rising from the lake?"

"Fumes from garbage and chemicals. You'd be gassed in a minute if you got within a thousand yards of the shore. Right now you're breathing the stuff and you'll be lucky if it doesn't kill you. They're all like that, every lake in the world, every river and sizeable stream."

"How do you get water?"

"From the oceans, but they're pretty foul too. Most of the fish are dead. Most of everything is dead. There are bugs and rodents, but that's about all. It took a long time to kill Earth but they finally did it."

"Where are the forests?"

"They took the timber long ago. This park is the only one left in the country."

The man shook his head. "What about those holes?"

"Strip mines. It's like that everywhere. They cut right into Earth's guts and cleaned her out like a turkey and left the wounds just like you see them. They took it all."

"Why?"

"Why did they every do anything?"

"I wish you would pretend I know nothing about it and tell me."

Ben watched a sparrow's flight across the barren hill. "Well, about twenty years ago a fellow named Swanson was fooling around with an atomic converter and blew himself and Pittsburgh sky high. At least that's what everyone thought. After the air cleared, the government sent in a team to look the place over, maybe rebuild the city. The team couldn't find anything—not so much as a stray brick. There was nothing there, just fifty square miles of smooth ground. Mountains, rivers, buildings, machinery, all gone. It looked as if there had never been anything there. It took nearly ten years to find where Pittsburgh went, and it wasn't up in pieces. It went through a tunnel."

"What do you mean?"

"They called it the tunnel of time," said Ben. "When Swanson blew up the converter he sheared off a piece of space and Pittsburgh went sailing through the hole and landed in another time dimension. I never understood. I don't think anyone else did, either. No two people had the same theory, but that didn't stop them from going in to see what was in that hole. They found Pittsburgh on an uninhabited planet they said was Earth a million years in the past.

"The team sent back word that the place was perfect for colonization so the government ordered Earth stripped of everything she had that was worth anything. They took out the rest of the metals and shipped it through. The world is a hollow shell now. I figure she's worth about fifty dollars, moneywise."

"Then what?"

"Everyone got ready to move out. They opened up tunnels in every big city and pretty soon they were building time trains and shipping people out. They went city by city."

"How about you?"

"My town was the last to go."

"But you didn't."

BEN kept his eyes on the ruined landscape. He couldn't answer

the question he saw in the man's eyes. What sense would it make if he said he had never learned how to be a sardine, had never learned how to lie immobile in the position in which others tried to place him? How could he recount his years of watching people behave like ants, how describe his attempts at comprehending their purposes? It would sound weird if he said that his need to discover greatness, to find something to admire, had led him to look beyond men or beneath them. He had chosen his world as an ideal because its responses corresponded to what a man did with it, because it possessed beauty not as an abstract but as a reality that could be enjoyed with every human sense, because Earth let its abused parts wither and die and didn't construct cheap masks to conceal the scars.

He looked at the man and slammed his mind shut upon his secrets. They were his and that fact would always be enough.

"I didn't go because I didn't want to," he said. "That's the only reason I had. I'll never leave, so don't ask me if I want to go somewhere with you. If you're going, go ahead but it'll be without me."

The man gave him a thoughtful look. "We'd like to stay here and live. We came from the other side of the galaxy for just that purpose."

"I don't think I like your sense of humor."

The stranger made no reply. Instead he kneeled and picked up a handful of dirt.

Ben stared down at the brown neck and blowing hair. "What are you doing?"

The man stood up and held out his hand and the wind carried the dirt away. "Wondering how long it will take to make her new again. Which way is the time tunnel?"

"There," said Ben and pointed.

"We'll have to close it up. We'll have to close them all up. They're not human any more."

Uneasy, Ben said, "Take it easy. You've come a long way."

"We're accustomed to long journeys. But let's go back down now. This is all part of the past. Only the future is meaningful."

Hastily Ben started down the slope. He slipped and slid over the stones in his hurry to get away from this loony who was going further out of his mind with every word he spoke.

As he reached the clearing a hand pressed on his shoulder.

"We'll give her new life. She'll blossom like a rose and never grow old again."

Immediately Ben was engulfed in old grief. "Sure you will," he mumbled.

Standing in the clearing with the

wind sifting through his hair he had the sudden wish that the strangers would get in their ship and go. He would rather be by himself than spend the rest of his life with a bunch of loonies. But it was only a half-wish. They were comforting loonies, or at least the one he had been talking to was comforting. In some strange way the man had made all the mess seem soft and vague.

A light breath of perfume reached him. He stiffened and turned toward the nearest cabin. A woman stood in the doorway. She was young and she stared back at him with a little smile on her face. All of a sudden Ben felt his face redden. The way she was looking him up and down with that speculative gleam in her eye—by damn, it was ridiculous—but if he were forty years younger. . .

Turning away he walked over to a bench and sat down with his back to the cabins.

The people going in and out of the ship seemed to be busy. The ship itself—his thoughts shied away from that and touched on other things. The sun warmed his head and made him drowsy.

He would have to keep an eye on the ship. Crazy foreigners with crazy ideas, there was no telling what they had in mind to do. Settling himself more comfortably, he began to brood. How many people were in that bunch? They were all young, not a gray-headed one among them. He felt a slow spurt of resentment. These men and women were out of place on a beatup world with no one in it but a beatup old man.

He'd have to keep an eye on them.

He intended to, but the sun on his back made him change his mind. His head tilted toward one shoulder and a soft snore startled him. He jerked erect. A moment later his body wilted down onto the bench and he slept.

Later it seemed that hands were touching him but his subconscious mind gave no warning of danger. Fingers moved over his skull. Then something capped his head. Somewhere in the distance he heard voices.

"Careful with that thing. He must be pushing ninety."

"Right. Let's hope this softens the shock for him."

Ben was dreaming that he was in a fishbowl. A silvery, wire-thin trout swam into his ear and on into his brain. He began the other dream at once.

He saw a planet adrift in the black of space. Though he had never seen any world other than Earth, something was familiar

about this one. And he knew things about it. It was old, terribly aged, and soon it was going to die. As he swam in the sky over the doomed planet he was stricken with grief. This crippled globe was home. Here was the real home. It was where a man went when he was tired of wandering. It was the place of returning.

His face wet with tears, Ben mourned for the end of life. As he grieved he saw fiery tendrils lift from the dying world to soar up in space. Hundreds of ships filled with Man sped outward into the cosmos in search of new homes. They scattered in every direction and were lost to one another.

Ben followed one of the ships. It landed on an uninhabited planet and the men stayed there to live. They built cities and a long period of time passed. During this period the people found a beautiful bird which they freed in their sky. Wherever the bird flew it showered down glowing drops that fell on the land and transformed it to loveliness. No matter how ugly the land had been before, it became beautiful after the bird flew over it.

By and by the people built more ships and went into space. They took the bird with them. They found many planets on which their brothers lived but none were as beautiful as their own. Some of their brothers were savage and hostile, some were peaceful, but they all wanted to borrow the bird. It was released and flew over each of the planets and made them perfect.

That was the dream.

Ben opened his eyes to the gray evening of Earth. For a moment he was lost and he cocked his head to listen for the sound of beating wings. It wasn't until he stood up from the bench that he let the dream fade. This was reality. This was dying Earth. Here was the birthplace of mankind; here was the only place where men grew.

HIS gaze was fixed on the sky as he walked across the clearing. From the corner of his eye he saw the woman standing in the doorway of the cabin. He wouldn't look at her.

He came to a stop. "I had a dream. It was about a big bird."

"What did it do?"

"It made ugly things beautiful." He turned and gave her a hard stare. "You and your friends know nothing about ugliness and being lonely."

She laughed and the lightness of the sound made him angry. She raised one hand and idly twirled something around on her fingers. It was a metal cap with thin wires

dangling from it. Ben gave it a glance and turned away.

"See?" he said and pointed at the ship. "Funny looking, isn't it? I've been thinking about that. Maybe you don't think it's funny looking. Maybe no one but an Earthman would see anything out of sorts about it."

He heard her take a step toward him.

"What do you want?" he said.

"To live on this planet."

His eyes were misty and he had to blink to see. "What am I thinking?" he said. "Am I dead—or just crazy?"

A hand touched his arm. He jerked free, then turned. "Do you make dreams, too?" he said. "Did you bring the bird with you?"

"Yes."

One word. He hadn't expected it and it rocked him. He couldn't bear to stay there and look at her. She was watching him again with that speculative gleam in her eye. It made no sense. She wasn't wondering about his reaction to anything except herself. Why did it hurt so much when she looked at him that way?

He walked away a few paces, pushed his face into the wind. To hell with all of them. He was an Earthman to the core of his soul. They would drive him batty with their weird talk and strange behavior. Let them think or do whatever they pleased. He didn't have to stay here.

Knowing he would never see trees like this again, he gave a last long look around. Then he started

toward the ship. The young man stood beside the door. The woman had joined him and they were quietly discussing something.

"I'm moving on," Ben said as he stopped in front of them. "Been thinking about Arizona. It'll be good for my health."

"You don't want to go there," the man said.

"I just said I did. Free country, isn't it? I can go where I please."

The woman spoke. "Don't you want to see the bird before you go?"

He heard the laughter in her tone and anger again rose in him. "Sure," he said coldly. "Let me see it make something beautiful. Some little spot. Can you do that?"

"I think so." The man climbed into the ship.

That was the moment when Ben began to be afraid. The man hadn't smiled or looked puzzled. He had simply said, *I think so,* and then he had gone inside the ship.

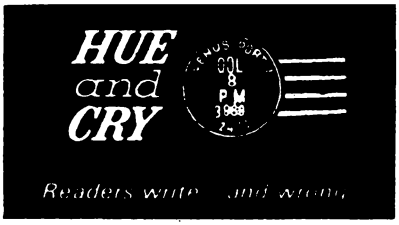
His fists clenched at his sides, Ben began backing away. The woman smiled and he walked faster. He couldn't make his body stop trembling, couldn't make his lungs work. It seemed that the man coming out of the ship with the strange contraption was moving in slow motion. The thing he carried was a tube of silver with three legs. He set it up on the ground and raised his head to look at Ben.

"Where's the bird?" Ben whispered. Suddenly he gasped because the silver tube was bending and now it was aimed straight across the clearing. It was aimed at him. They had tricked him. They were going to kill him.

Rage filled his mind and without thinking or caring he began to run toward the man who reached out and touched the silver tube. A ray of light shot from the bore and hit Ben on the chest. He felt nothing but he gave a cry of fury and tried to run faster. All at once he tripped over a root and fell sprawling. Sobbing and cursing, he started to crawl to his feet. It was then that he saw his hands on the grass. The world was abruptly out of focus and he stared at his hands and waited for the moment to pass. It never did.

He looked at his right arm. With frozen fingers he rolled up his shirt sleeve and saw the corded muscles. His other arm was the same. He felt his cheeks, his neck, his forehead. The skin was soft and smooth. He wasn't old any more. His dream had been symbolic. The sweet bird of youth had no wings.

He scooped up handfuls of his world, gently squeezed the dirt in his fists, turned his head and looked toward the spot where the last train from Earth had fled into the tunnel of time. ●



How would you like to invest in your future by investing in Man's vastest dream? Reader James S. Burns wants to push what may be the soundest plan yet for saving the Space Program:

Dear Mr. Jakobsson:

I am sure you have received the news of the cancellation of several major NASA projects with the same mixed emotions I have.

Cancer research is vital and domestic transportation is a thing often improved upon only in science fiction. Today's system is obviously inadequate.

But some of us are interested in the exploration and development of space for other reasons than to beat the Russians. Early in the century cars seemed an unnecessary luxury, but today they are an economic necessity. While many people today think of space exploration and development as a totally meaningless waste, a few can see the potential of that small (think about it!—ed.) portion of matter in the universe that has not yet fallen to Earth.

The cancellation of the NERVA (Nuclear Engine for Rocket Vehicle Application) project means there will be no manned landing on Mars before I die.

The cancellation of the Grand Tour of the Planets is not quite so dismaying, but it is a tragedy nonetheless.

The reusable shuttle would possibly have meant trips to the moon for my generation.

After having glimpsed the possibility of all these things, it is now hard to give them up forever. Unless we do something very few of your readers will ever live to see anything but a manned orbital laboratory signal our planet's attempt to understand this universe.

The only chance I see to save any of these projects is to let Congress know we want them—and want them badly enough to finance them. The Space Bonds program outlined in my letter to my Congressman (and Senator—copy enclosed) is one way to ensure the survival of some of these programs. It would ensure that the money we citizens want to see used for space is used correctly and the funds would not tempt every social organization in need of a handout.

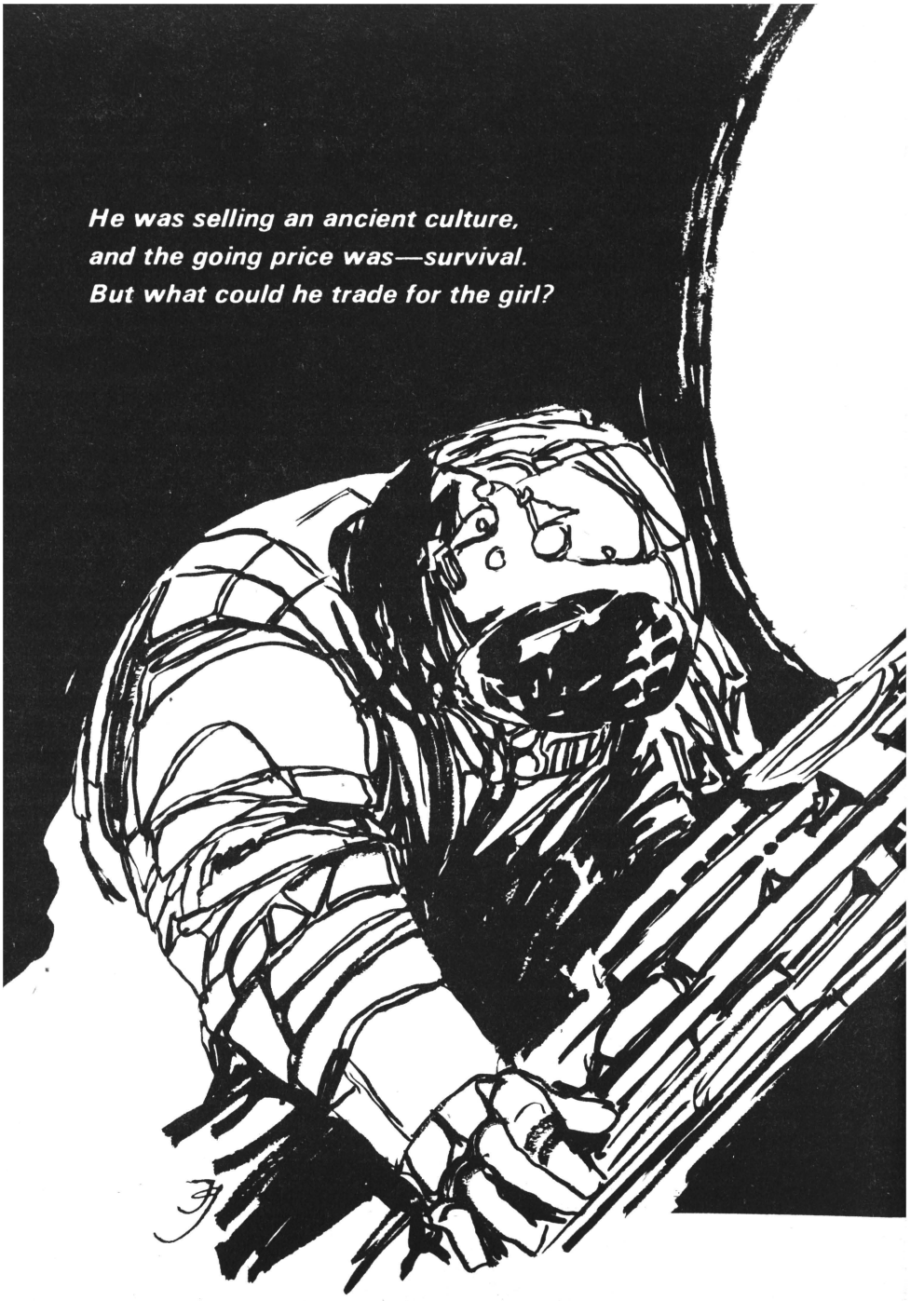
Please think about this. If you want space travel to become a reality, act now.

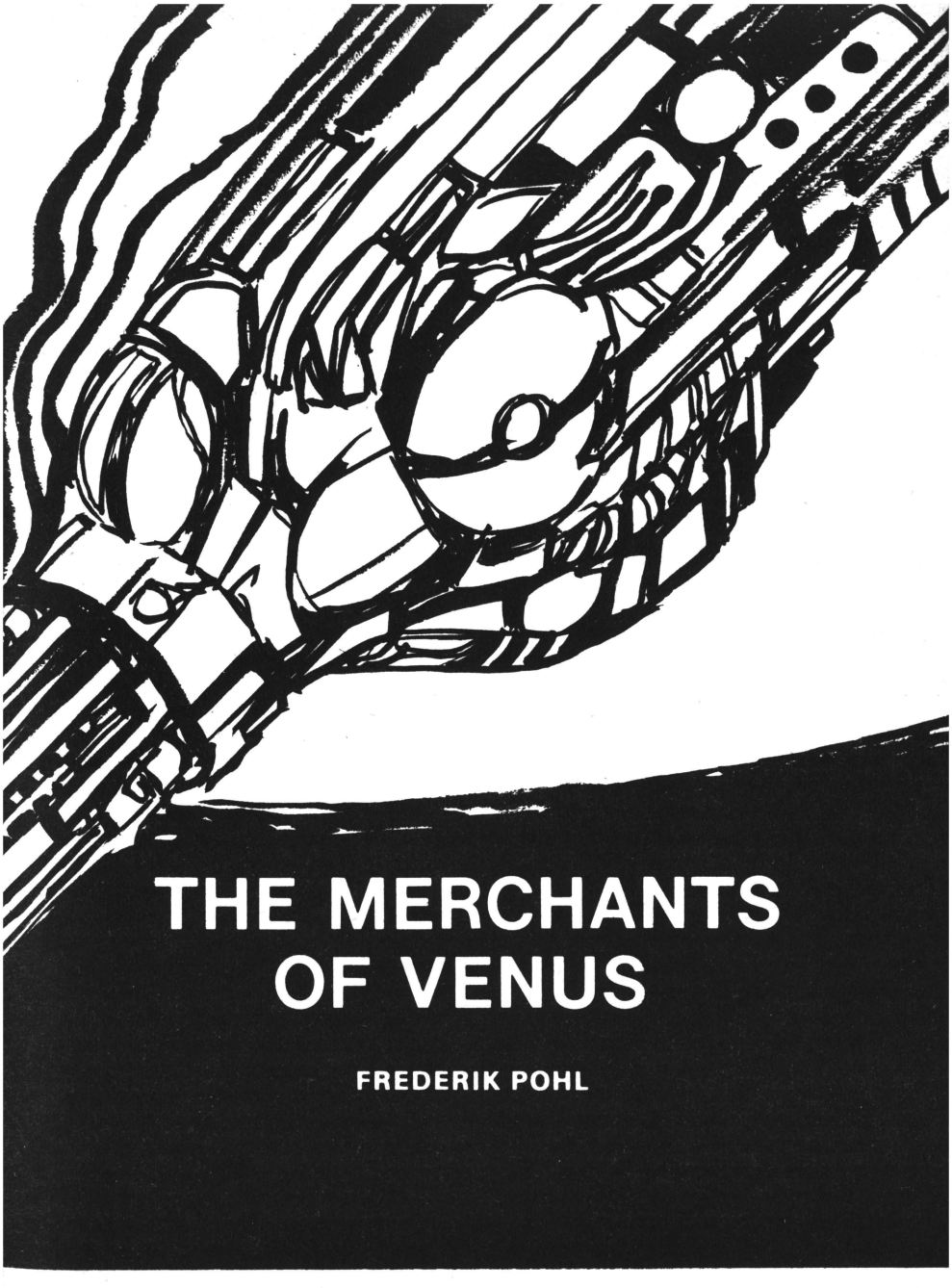
Contact me and/or your Senator and ask for further thoughts on this subject.

James D. Burns
1606 W. 14th Avenue
Pine Bluff, Ark. 71601

Please note that Mr. Burns is speaking of *investment*, not just about making noise. His letter to his Senator suggests a "Space Bonds program similar to the current U. S. Savings Bonds program, with the proceeds to be used solely on those projects NASA has had to drop because of lack of funds."

(Please turn to page 176)


He was selling an ancient culture,
and the going price was—survival.
But what could he trade for the girl?



THE MERCHANTS OF VENUS

FREDERIK POHL

I

MY NAME, Audee Walthers. My job, airbody driver. My home, on Venus, in a Heechee hut most of the time—wherever I happen to be other times when I feel sleepy.

Until I was twenty-five I lived on Earth, in Amarillo Central mostly. My father was a deputy governor of Texas. He died when I was still in college, but he left me enough dependency benefits to finish school, get a master's in business administration and pass the journeyman examination for clerk-typist. So I was set up for life.

After I tried it for a few years I discovered I didn't like the life I was set up for. Not so much for the conventional reasons. I don't mind smog suits and I can get along with neighbors even when there are eight hundred of them to the square mile. I tolerate noise and am able to defend myself against hoodlums. It wasn't Earth itself as much as what I was doing on Earth that I didn't like, so I sold my UOPWA journeyman's card, mortgaged my pension accrual and bought a one-way ticket to Venus. Nothing strange about that. What every kid tells himself he's going to do, really. But I did it.

I suppose all would have been different if I had had a chance at Real Money. If my father had been full governor instead of civil-service. If the dependency benefits had included Unlimited Medicare. If I had been at the top instead of in the middle, squeezed both ways. Reality ran otherwise, so I opted out by the pioneer route and wound up hunting Terry marks at the Spindle.

Everybody has seen pictures of the Spindle, the Colosseum and Niagara Falls. Like everything worth looking at on Venus, the Spindle was a Heechee leftover. Nobody had ever figured out what the Heechee wanted with an underground chamber three hundred meters long and spindle-shaped, but it was there, so we used it. It was the closest thing Venus had to a Times Square or a Champs Elysees. All Terry tourists headed for it first. That was where we fleeced them.

My airbody-rental business was and is reasonably legitimate if you ignore the fact that there really isn't much worth seeing on Venus that wasn't left there, below the surface, by the Heechee. The other tourists traps in the Spindle are reasonably crooked. Terries don't mind. They load up on Heechee prayer fans and doll heads and those paperweights of transparent plastic in which a contoured globe of Venus swims in a kind of orange-brown snowstorm of make-believe fly ash, blood-diamonds and fire-pearls. These items aren't worth the cost of their mass-charge back to Earth, but to a tourist who can get up the money or credit for his passage I don't suppose that matters.

To people like me the tourist traps matter a lot. We live on them. I don't mean we draw our disposable income from them. I mean that they are how we make our bed and board, or we die. There aren't too many ways of earning

money on Venus. The ones that might produce Real Money—winning a lottery, striking it rich in the Heechee diggings, blundering into a well-paying job—are all long shots. For bread and butter everybody on Venus depends on Terry tourists, and if we don't milk them dry we've had it.

Of course, there are tourists and tourists. They come in three varieties. The difference among them is dictated by celestial mechanics.

There's the quick-and-dirty kind. On Earth they're just well-to-do. They come every twenty-six months with the Hohmann orbit, riding the minimum-energy circuit from Earth. Because of the critical times of a Hohmann orbit they never can stay more than three weeks on Venus. So they come on the guided tours, determined to get the most out of the quarter-million dollar minimum cabin fare their rich grandparents had given them for a graduation present or they had saved up for a second honeymoon or whatever. The bad thing about them was that they didn't have much money after paying the fare. The nice thing about them was that there were a lot of them. While they were on Venus all the rental rooms were filled. Sometimes six couples shared a single partitioned cubicle, two pairs at a time, hot-bedding eight-hour shifts around the clock. Then people like me would hole up in Heechee huts on the surface and rent out our own below-ground rooms and maybe make enough money to live a few months.

But not enough to live until the next Hohmann-orbit time, so when the Class II tourists came along we cut each other's throats to get at them.

They were medium-rich. What you might call the poor millionaires—the ones whose annual income was barely in seven figures. They could afford to come in powered orbits, taking a hundred days or so for the run instead of using the long, slow Hohmann drift. The price ran a million dollars and up, so there weren't nearly as many Class IIs as there were of the QADs, but they came every month or so at the times of reasonably favorable orbital conjunctions. And they had more money to spend. So did the other medium-rich ones who hit us four or five times in a decade, when the ballistics of the planets had sorted themselves out into a low-energy configuration that allowed three planets to come into an orbit that didn't have much higher energy cost than the straight Earth-Venus run. These last would hit us first, if we were lucky, then go on to Mars. If they ran the other way around we got the leavings. The leavings were never very much.

But the very rich—ah, the very rich! They came as they liked, in orbital season or out.

WHEN my tipster on the landing pad reported the *Yuri Gagarin*, under private charter, my money nose began to quiver. The arrival was out of season for everybody except the very rich—the only question on my mind was how many of my competitors would be trying to cut my throat for the

Gagarin's passengers while I was cutting theirs.

Airbody rental takes a lot more capital then opening a prayer-fan booth. I had been lucky—I bought my airbody cheap when the fellow I worked for died. On Earth it might have been a steal, but on Venus the record was straight. I didn't have too many competitors and a couple of them were U/S for repairs, a couple more had kited off on Heechee diggings of their own.

So, actually, I had the *Gagarin's* passengers, whoever they were, pretty much to myself. Assuming they would be interested in taking a trip outside the Heechee tunnels.

I had to assume they would be interested, because I needed the money very much. I had this little liver condition, you see. It was getting pretty close to total failure. As the doctors explained it to me I had three choices. I could go back to Earth and linger a while on external prosthesis or I could get up the money for a transplant. Or I could die.

II

THE name of the fellow who had chartered the *Gagarin* was Boyce Cochenour. Age, apparently forty. Height, two meters. Ancestry, Irish-American French.

He was used to command. I watched him come into the Spindle as though it belonged to him and he was getting ready to sell it. He sat down in Sub Vastra's imitation Paris Boulevard-Heechee sidewalk cafe. "Scotch," he said and Vastra hurried to pour John Begg over super-cooled ice and hand it to him, all crackling with cold and numbing to the lips. "Smoke," he said and the girl who was traveling with him instantly lit a cigarette and passed it to him. "Crummy-looking joint," he said and Vastra fell all over himself to agree.

I sat down next to them—well, not at the same table. I didn't even look at them. But I could hear what they said. Vastra didn't look at me either—I had to let his number-three wife take my order. Vastra wasn't going to waste any time on me with a charter-ship Terry at his table.

"The usual," I said to her, meaning straight alcohol in a tumbler of soft drink. "And a copy of your briefing," I added more softly. Her eyes twinkled at me over her flirtation veil. Cute little vixen. I patted her hand in a friendly way and left a rolled-up bill in it. She left.

The Terry was inspecting his surroundings, including me. I looked back at him politely but distantly and he gave me a sort of quarter-nod and turned back to Subhash Vastra.

"Since I'm here," he said, "I might as well go along with whatever action there is. What's to do here?"

Sub's wide grin gave him the charm of a tall, skinny frog. "Ah, whatever you wish, sah! Entertainment? In our private rooms we have the finest artists of three planets, nautch dancers, music, fine comedians—"

"We've got plenty of that in Cin-

cinnati. I didn't come to Venus for a night-club act." He wouldn't have known it, of course, but he was making a good move. Sub's private rooms were well down the list of night spots on Venus, and the top of the list wasn't much.

"Of course, sah! Then perhaps you would like to consider a tour?"

"Aw." Cochenour shook his head. "What's the point? Does any of it look any different from the scene where we landed? And that's right over our heads?"

Vastra hesitated. I could see him calculating second-order consequences, measuring his chances of selling the Terry on a surface tour against what he might get from me as commission. He didn't look my way. Honesty won out—that is, honesty reinforced by a quick appraisal of Cochenour's gullibility.

"Not much different, sah," he admitted. "At least for the next thousand kilometers in any direction. But I wasn't thinking of the surface."

"What then?"

"Ah, the Heechee warrens, sah! There are many miles of them just below this settlement. A guide could be found—"

"Not interested," Cochenour growled. "Not in anything that close."

"Sah?"

"If a guide can lead us through them," Cochenour explained, "they've all been explored. Which means they've been looted. What's the fun of that?"

"Of course," said Vastra immediately. "I see what you're driving at, sah." He looked happier. I could feel his radar reaching out to make sure I was listening, though he didn't look in my direction at all. "To be sure," he said, "there is always the chance of finding new digs, sah, provided one knows where to look. Am I correct in assuming that this would interest you?"

The third of Vastra's house brought me my drink and a thin powderfaxed slip of paper. "Thirty per cent," I whispered to her. "Tell Sub. Only no bargaining, no getting anybody else to bid—" She nodded and winked. She had been listening, too, and she was as sure as I that this Terry was firmly on the hook. It had been my intention to nurse the drink as long as I could, but prosperity loomed before me. I was ready to celebrate. I took a long happy swallow.

But the hook didn't have a barb. Unaccountably the Terry shrugged. "Waste of time, I bet," he grumbled. "I mean, really. If you knew where to look—why wouldn't you have looked there already?"

"Ah, mister," cried Subhash Vastra, "but there are hundreds of tunnels not explored! Thousands! And in them, who knows? Treasures beyond price!"

Cochenour shook his head. "Skip it," he said. "Bring us another drink. And see if you can't get the ice cold this time."

SOMEWHAT shaken, I put down my drink and looked at the facsimile copy of Sub's report on them to see if it could tell me why Cochenour had lost interest.

It couldn't. It did tell me a lot,

though. The girl with Cochenour was named Dorotha Keefer. She had been traveling with him for a couple of years. This was their first time off Earth. There was no indication that they were married or intended to marry. She was in her early twenties—real age, not simulated by drugs and transplants. Cochenour was well over ninety.

He did not, of course, look anywhere near that. He moved lightly and easily for a big man. His money came from land and petrofoods—according to the synoptic on him, he had been one of the first oil millionaires to switch from fossil fuels to food production, growing algae in the crude that came out of his wells and selling the algae in processed form for human consumption. So he had stopped being a mere millionaire and turned into something much bigger.

And that accounted for the way he looked. He had been on Full Medical, with extras. The report said his heart was titanium and plastic. His lungs had been transplanted from a twenty-year-old killed in a copter crash. His skin, muscles and fats—not to mention his various glandular systems—were sustained by hormones and cell-builders at what had to be a cost well over a thousand dollars a day. To judge by the way he stroked the girl sitting next to him, he was getting his money's worth. He looked and acted no more than forty at most—except perhaps for the expression in his pale-blue, diamond-bright, weary and disillusioned eyes.

What a lovely mark! I swallowed the rest of my drink and nodded to the third for another. There had to be a way to get him to charter my airbody.

All I had to do was some figuring.

Outside the rail of Vastra's cafe, of course, half the Spindle was thinking exactly the same thoughts. This was the worst of the low season—the Hohmann crowd was still three months in the future and all of us were beginning to run low on money. My liver transplant was just a little extra incentive. Of the hundred maze runners I could see out of the corner of my eye ninety-nine needed to cut in on this rich tourist's money as much as I did—just to stay alive.

We couldn't all do it. Two of us, three, maybe even a half-dozen could score enough to make a real difference. No more than that. And I had to be one of those few.

I took a deep swallow of my second drink, tipped Vastra's third lavishly—and conspicuously—and turned idly until I was facing Cochenour and his woman dead on.

The girl was talking with a knot of souvenir vendors, looking interested and uncertain. "Boyce?" she asked over her shoulder.

"Yeah?"

"What's this thing for?"

He bent over the rail and peered. "Looks like a fan," he said.

"Heechee prayer fan, right," cried the dealer. I knew him, Booker Allemang, an old-timer in the Spindle. "Found it myself, miss. It will grant your every wish. I get letters every day from people

reporting miraculous results—"

"Sucker bait," grumbled Cochenour. "Buy it if you want."

"But what does it do?"

He laughed raucously. "What any fan does. It cools you off." And he looked at me, grinning.

I FINISHED my drink, nodded, stood up and walked over to the table. "Welcome to Venus," I said. "May I help you?"

The girl looked at Cochenour for approval before she said, "I thought this was very pretty."

"Very pretty," I agreed. "Are you familiar with the story of the Heechees?"

Cochenour pointed to a chair. I sat and went on. "They built these tunnels about a quarter-million years ago. They lived here for a couple of centuries, give or take a lot. Then they went away again. They left a lot of junk behind and some stuff that isn't junk. Among the things they left are a lot of these fans. Some local conman like Bee-Gee here got the idea of calling them 'prayer fans' and selling them to tourists to make wishes with."

Allemang had been hanging on my every word, trying to guess where I was going. "You know it's right," he said.

"You two are too smart for that kind of come-on," I told the Terrans. "Still, look at the things. They're pretty enough to be worth having even without the story."

"Absolutely!" cried Allemang. "See how this one sparkles, miss! And the black and gray crystal, how nice it looks with your fair hair!"

The girl unfurled the crystalline one. It came rolled like a diploma, only cone-shaped. The slightest pressure of the thumb kept it open and it really was very pretty as she waved it gently. Like all the Heechee fans, it weighed only about ten grams, and its lattice caught the lights from the luminous Heechee walls and from the fluorescents and gas tubes and tossed them back in iridescent sparks.

"This fellow's name is Booker Garey Allemang," I said. "He'll sell you the same goods as any of the others, but he won't cheat you as much as most of them."

Cochenour looked at me dourly, then beckoned Sub Vastra for another round of drinks. "All right," he said. "If we buy we'll buy from you, Booker Garey Allemang. But not now." He turned to me. "And what do you want to sell me?"

"Myself and my airbody, if you want to go looking for new tunnels. We're both as good as you can get."

"How much?"

"One million dollars," I said immediately. "All found."

He didn't answer at once, though it gave me come pleasure to notice that the price didn't seem to scare him. He looked as pleasant—or anyway as unangrily bored as ever. "Drink up," he said as Vastra and his third served us. Cochenour gestured with his glass at the Spindle. "Know what this was for?"

"You mean why the Heechees built it? No. They were pretty small, so it wasn't for headroom. And it was entirely empty when it was found."

He gazed tolerantly at the busy scene, alcoves cut into the sloping sides of the Spindle featured eating and drinking places like Vastra's or souvenir booths, most of them empty at this idle season. But there were a couple of hundred maze rats around—their number had been quietly growing all the while Cochenour and the girl had been sitting there.

He said, "Not much to see here, huh? A hole in the ground and a lot of people trying to take my money away from me."

I shrugged.

He grinned again. "So why did I come? Well, that's a good question, but since you didn't ask it I don't have to answer it. You want a million dollars. Let's see. A hundred K to charter an airbody. A hundred and eighty or so to rent equipment, per week. Ten days minimum, three weeks a safer guess. Food, supplies, permits, another fifty K. So we're up to close to seven hundred thousand, not counting your own salary and what you give our host here as his cut for not throwing you off the premises. Right, Walthers?"

So he even knew my name. I had a little difficulty swallowing the drink I had been holding to my mouth, but I managed to say, "Close enough, Mr. Cochenour." I didn't see any point in telling him that I already owned the equipment as well as the airbody—I wouldn't have been in the least surprised to find out that he knew that, too.

"You've got a deal, then. And I want to leave as soon as possible, which sould be about this time tomorrow."

"Fair enough," I said and stood up, avoiding Sub Vastra's thunderstricken expression. I had some work to do and a little thinking. He had caught me off base, which is a bad place to be unless you can afford mistakes.

My having called him by name had been all right—he would have known in any case that I had checked him out before the *Gagarin* had set down. But it was a little surprising that he had known mine.

III

THE first thing I had to do was double-check my equipment. The second was to go to the local, validate a contract and settle up with Sub Vastra. The third was to see my doctor. The liver hadn't been giving me much trouble for a while, but then I hadn't been drinking grain alcohol for a while.

It took about an hour to make sure that everything we would need for the expedition was i.s., with all the spare parts I could reasonably fear I might need. The Quackery was on my way to the union office, so I stopped there first. The checkout didn't take long. The news was no worse than I had been ready for. Dr. Morius studied the readout from his instruments carefully and sold me a hundred and fifty dollars' worth of guarded hope that I would survive three weeks away from his office, provided I took all the stuff he gave me and wandered no more than usual from his dietary restrictions.

"And when I get back?" I asked.

"About the same, Audee," he said

cheerily. "Total collapse in—ah—oh, maybe ninety more days." He patted his fingertips. "I hear you've got a live one. Want me to book you for a transplant?"

"How live did you hear he was?" I asked.

"Oh, the price is the same in any case," he told me good-humoredly. "Two hundred K, plus the hospital, anesthesiologist, pre-op psychiatrist, pharmaceuticals—you've already got the figures."

I did have them and knew that with what I might make from Cochenour, plus what I had put away, plus a small loan on the airbody, I could just about meet the total. To do so left me broke but, of course, alive.

"Go ahead," I said. "Three weeks from tomorrow." And I left him looking mildly pleased, like a Burmese hydro-rice man watching another crop being harvested. Dear daddy. Why hadn't he sent me through medical school instead of giving me an education?

IT WOULD have been nice if the Heechee had been the same size as human beings, instead of being about forty per cent shorter. In the smaller tunnels, like the one that led to the Local 88 office, I had to crouch all the way.

The deputy organizer was waiting for me. He had one of the few good jobs that didn't depend on the tourists, at least not directly. He said, "Subhash Vastra's been on the line. He says you agreed to thirty per cent—and besides, you forgot to pay your bar bill to the third of his house."

"Admitted, both ways."

"And you owe me a little, too, Audee. Three hundred for a powderfax copy of my report on your pigeon. A hundred for validating your contract with Vastra. And if you want guide's papers, sixteen hundred for that."

I gave him my credit card and he checked the total out of my account into the local's. Then I signed and card-stamped the contract he had drawn up. Vastra's percentage would not be on the whole million-dollar gross, but on my net—even so, he might make as much out of the deal as I would, as least in liquid cash, because I'd have to pay off all the outstanding balances on equipment and loans. The factors would carry a man until he scored, but then they wanted to get paid. They knew how long it might be before he scored again.

"Thanks, Audee," said the deputy, nodding over the signed contract. "Anything else I can do for you?"

"Not at your prices," I told him.

"Ah, you're putting me on. 'Boyce Cochenour and Dorotha Keefer, Earth-Ohio, traveling *S. V. Yuri Gagarin*, Odessa registry, chartered. No other passengers.' No other passengers," he repeated, quoting from the synoptic report he'd furnished. "Why, you'll be a rich man, Audee, if you work this pigeon right."

"That's more than I ask," I told him. "All I want is to be a living one."

That was not entirely true. I did have some little hope—not much, not enough to talk about and, in

fact, I had never said a word about it to anyone—that I might be coming out of this rather better than merely alive.

There was, however, a problem.

In the standard guide's contract and airbody leasing terms it says I get my money and that's all. If we take a mark like Cochenour on a hunt for new Heechee tunnels and he finds something valuable—marks have scored you know; not often, but enough times to keep them hopeful the prize is his. We just work for him.

On the other hand, I could go out prospecting by myself at any time and anything I found would be all mine.

Obviously anybody with any sense would go by himself if he thought he was really going to find anything. But in my case, that wasn't such a good idea. If I staked myself to a trip and lost I hadn't just wasted time and maybe fifty K in supplies and wear and tear. If I lost I was dead.

I needed what I would make out of Cochenour to stay alive. Whether we found anything interesting or not, my fee would take care of the transplant.

Unfortunately for my peace of mind I had a notion that I knew where something very interesting might be found—and my problem was that as long as I had an all-rights contract with Cochenour I couldn't afford to find it.

THE next stop I made was in my sleeping room. Under the bed, keystoned into the rock, was a guaranteed break-proof safe that held some papers I wanted to have in my pocket from then on.

When I had first come down on Venus I had not been interested in the scenery. I had wanted to make my fortune.

I didn't see much of the surface of Venus then—or for nearly two years after that. You don't see much in the kind of spacecraft that can land on Venus—a 20,000-millibar surface pressure means you need something a little more rugged than the bubble ships that go to the Moon or Mars or farther out. There's not much tolerance in the design for putting unnecessary windows into the hull. It didn't matter much, because everything worth seeing on Venus is *in* Venus—and all of it once belonged to the Heechees.

Not that we know much about the Heechees. We don't even rightly know their name—*heechee* is how somebody once wrote down the sound that a fire-pearl makes when you stroke it. That has remained the only sound connected with the Venusian diggers that anybody knows.

The Hesperologists don't know where the Heechees came from, although there are some markings on scraps of stuff that the Heechees used for paper that seem to be a star chart, faded, incomplete, pretty much unrecognizable—if we knew the exact position of every star in the galaxy 250,000 years ago we might be able to locate them from that, I suppose. Assuming they originated in this galaxy. There are no traces of them anywhere else in the solar system,

except maybe in Phobos. Experts still fight about whether the honeycomb cells inside the Martian moon are natural or artifacts—if they're artifacts they're, no doubt Heechee. But they don't look much like ours.

I wonder sometimes what drove the Heechees. Had they escaped some dying planet? Or come to Venus as political refugees? Had they been tourists whose transportation had broken down between somewhere and somewhere and who had hung around on Venus just long enough to make whatever they had to make to get themselves going again? I used to think that maybe they had come by to watch human beings evolving on Earth, sort of stepfathers beaming over the growing young race—but we couldn't have been much to watch during their stay in the neighborhood. halfway between the Australopithecines and the Cro-Magnards.

They had packed up nearly everything upon leaving Venus, except for a few scraps here and there that either hadn't been worth taking along or had been overlooked. All those "prayer fans"—enough empty containers of one kind or another to look like a picnic ground at the end of a hard summer—some trinkets and trifles. I guess the best known of the "trifles" was the anisokinetic punch, the carbon crystal that transmitted a blow at a ninety-degree angle and made somebody a few billion. All the rest of us have ever found is junk.

Did they take all of the good stuff with them? I didn't know, but I did think I knew something that could have a bearing on the answer.

I thought I knew where the last Heechee ship had taken off from—and the spot wasn't near any of the explored diggings. The knowledge wasn't a guarantee of anything, but it was something to go on. Maybe they had been impatient at the end and not so thorough about cleaning up behind themselves.

And that was what my staying on Venus was all about. What other possible reason was there for my being here? The life of a maze rat was marginal at best. It took fifty thousand a year to stay alive. If you had less than that you couldn't pay air tax, capitation tax, water assessment or even buy subsistence-level food. If you wanted to eat meat more than once a week and demanded a cubicle of your own to sleep in you needed more.

Guide's papers cost a week's life—when any of us bought them, we were gambling that week's cost of living against the chance of a big enough strike to make it possible for us to get back to Earth in the style every maze rat had set as his goal—with money enough to live the full life of a human being on Full Medical.

That was what I wanted. The big score.

NOT by accident, the last thing I did that night was visit the Hall of Discoveries.

The third of Vastra's house winked at me over her flirtation veil and turned to her companion, who looked around and nodded.

I joined them. "Hello, Mr. Walthers," she said.

"I thought I might find you

here," I said, which was no more than the truth, since Vastra's third had promised to guide her this way. I didn't know what to call her. *Miss Keefer* would have been accurate, *Mrs. Cochenour*, diplomatic. I got around both by asking, "Since we'll be seeing a lot of each other, how about getting on to first names?"

"Audee, is it?"

I gave her a twelve-tooth smile. "Swede on my mother's side, old Texan on my father's. Name's been in his family a long time, I guess."

The Hall of Discoveries was meant to get Terry prospects hotted up. It held a little of everything from charts of the worked diggings and a full-scale Mercator map of Venus to samples of all the principal finds. I showed her the copy of the anisokinetic punch and the original solid-state piezophone that had made its discoverer almost as permanently rich as the guy who found the punch. Also displayed were about a dozen fire-pearls, quarter-inch jobbies, behind armor glass, on cushions, blazing away with their cold milky light.

"They're pretty," she said. "But why all the protection? I saw bigger ones lying on a counter in the Spindle without anybody even watching them."

"That's a little different, Dorotha," I told her. "These are real."

She laughed out loud. It was a very nice laugh. No girl is beautiful when she's laughing hard and girls who worry about looking beautiful don't do it. Dorotha Keefer looked like a healthy, pretty girl having a good time, which is about the best way for a pretty girl to look.

She did not, however, look good enough to come between me and a new liver, so I took my mind off that aspect of her and put it on business. "The little red marbles over there are blood-diamonds," I told her. "They're radioactive and stay warm. Which is one way you can tell the real from the fake—also anything over about three centimeters is a fake. A real one that big generates too much heat—square-cube law, you know—and melts."

"So the ones your friend was trying to sell me—"

"—are fakes. Right."

She nodded, still smiling. "What about what you were trying to sell us, Audee? Real or fake?"

The third of Vastra's house had discreetly vanished. Dorotha and I stood alone in the Hall of Discoveries. I took a deep breath and told her the truth. Not the whole truth, maybe—but nothing but the truth.

"All this stuff," I said, "is what came from a hundred years of digging. And it's not much. The punch, the piezophone and two or three other gadgets that we can make work, a few busted pieces of things that they're still studying, some trinkets. That's all."

She said, "That was how I heard it. And one more thing. None of the discovery dates on these things is less than fifty years old."

She was smart and better informed than I had expected. "And the conclusion," I agreed, "is that the planet has been mined dry. You're right—on the evidence. The first diggers found everything there was to be found—so far."

"You think there's more?"

"I hope there's more. Look. Item: the tunnels. You can see they're all alike. The blue walls are perfectly smooth. The light coming from them never varies. Their hardness is consistent. How do you suppose they were made?"

"Why, I don't know."

"Neither do I. Or anybody else. But every Heechee tunnel is the same and if you dig into any one of them from the outside you find the basic substrate rock, then a boundary layer that's sort of half wall-stuff and half substrate, then the wall. Conclusion: the Heechees didn't dig the tunnels and then line them—they had something that crawled around underground like an earthworm, leaving these tunnels behind. And one other thing—they overdug. That's to say they dug tunnels they didn't need, lots of them, going nowhere, never used for anything. Does that suggest anything to you?"

"The process must have been cheap and easy?" she guessed.

I nodded. "So it was probably done by a machine—and there really ought to be at least one of their machines left somewhere on this planet. Next item: the air. They breathed oxygen as we do and they must have gotten it from somewhere. Where?"

"Why, there's oxygen in the atmosphere—"

"Sure. About a half of one per cent. And better than ninety-five per cent carbon dioxide. Somehow they managed to get that half of one per cent out of the mixture cheaply and easily—remember those extra tunnels they filled—along with enough nitrogen or some other inert gas to make a breathing mixture. If there's a machine that did it I'd like to find that machine. Next item: aircraft. The Heechee flew around the surface of Venus at will."

"So do you, Audee. Aren't you a pilot?"

"Sure, but look at what it takes. The surface temperature is two-seventy C and there's not enough oxygen to keep a cigarette going. So my airbody has two fuel tanks, one for hydrocarbons, one for oxidants. And—did you ever hear of a fellow named Carnot?"

"Old-time scientist, was he? The Carnot cycle?"

"Right again." That was the third time she'd surprised me, I noted cautiously. "The Carnot efficiency of an engine is expressed by its maximum temperature—the heat of combustion, let's say—over the temperature of its exhaust. Well, but the temperature of the exhaust can't be less than the temperature of what it flows into—otherwise you're not running an engine, you're running a refrigerator. And you've got that two-seventy ambient air temperature—so you have basically a lousy engine. *Any* heat engine on Venus is lousy. Did you ever wonder why there are so few airbodies around? I don't mind—it helps to have something close to a monopoly. But the reason is they're so damn expensive to run."

"And the Heechees flew more efficiently?"

"I think they did."

She laughed again, unexpectedly

and once more very attractively. "Why, you poor fellow," she said in good humor. "You're hooked on the stuff you sell, aren't you? You think that some day you're going to find the mother tunnel and pick up all this stuff."

I wasn't too pleased with the way things were going. I had arranged with Vastra's third to bring the girl here, away from her boy friend, so I could pick her brains in private. It hadn't worked out my way. She was making me aware of her as a person, which was a bad development in itself. But even worse, she was making me take a good look at myself.

I said after a minute, "You may be right. But I'm sure going to give it a good try."

"You're angry, aren't you?"

"No," I said, lying. "But maybe a little tired. And we've got a long trip tomorrow, so I'd better take you home. Miss Keefer."

IV

MY AIRBODY lay on the spacepad. It was reached by elevator to the surface lock, a tractor-cab to carry us across the dry, tortured surface of Venus, peeling under the three hundred kmh wind. Normally I kept the ship under a foam housing. You don't leave anything free and exposed on the surface of Venus if you want to keep it intact, not even if it's made of chrome steel. I had had the foam stripped free when I checked out the machine and loaded supplies that morning. Now it was ready. I could see it from the bull's-eye ports of the crawler, through the green-yellow murk outside. Cochenour and the girl could have seen it, too, if they had known where to look, but they might not have recognized it.

Cochenour screamed in my ear, "You and Dorrie have a fight?"

"No fight," I screamed back.

"Don't care if you did. You don't have to like each other, just do what I want you to do." He was silent a moment, resting his throat. "Jesus. What a wind."

"Zephyr," I told him. I didn't say any more—he would find out for himself. Around the spacepad is a sort of natural calm area—by Venusian standards. Orographic lift throws the meanest winds up over the pad and all we get is a sort of confused back eddy. The good part is that taking off and landing are relatively easy. The bad part is that some of the heavy metal compounds in the atmosphere settle on the pad. What passes for air on Venus has layers of red mercuric sulfide and mercurous chloride in the lower reaches, and when you get above them to those pretty fluffy clouds you find some of them are hydrochloric and hydrofluoric acid.

Navigation over Venus is 3-D. It's easy enough to proceed from point to point; your transponders will link you to the radio range and map your position continuously onto the charts. What's hard is to find the right altitude—and that was why my airbody and I were worth a million dollars to Cochenour.

We were at the airbody, and the

telescoping snout from the crawler was poking out to its lock. Cochenour was staring through the bull's-eye.

"No wings?" he shouted, as though I were cheating him.

"No sails or snow chains either," I shouted back. "Get aboard if you want to talk. It's easier in the airbody."

We climbed through the little snout. I unlocked the entrance and we got aboard without much trouble.

We didn't even have the kind of trouble that I might have made. You see, an airbody is a big thing on Venus. I was damn lucky to have been able to acquire one and—well, I won't beat about the bush: you could say I loved it. Mine could have held ten people, without equipment. With what Sub Vastra's purchasing department had sold us and Local 88 had certified as essential aboard, it was crowded with just the three of us. I was prepared for sarcasm, at least. But Cochenour merely looked around long enough to find the best bunk, strode over to it and declared it his. The girl was a good sport and there I was, left with my glands all charged up for an argument and no argument.

It was a lot quieter inside the airbody. You could hear the noise of the wind right enough, but it was only annoying. I passed out earplugs and with them in place the noise was hardly even annoying.

"Sit down and strap up," I ordered and when they were stowed away I took off.

At twenty thousand millibars wings aren't just useless—they're poison. My airbody had all the lift it needed built into the seashell-shaped hull. I fed the double fuels into the thermojets—we bounced across the reasonably flat ground around the spacepad (it was bulldozed once a week) and we were zooming off into the wild yellow-green yonder, an instant later the wild brown-gray yonder, after a run of no more than fifty meters.

Cochenour had fastened his harness loosely for comfort. I enjoyed hearing him yell as he was thrown about. That fun didn't last. At the thousand-meter level I found Venus's semi-permanent atmospheric inversion, and the turbulence dropped to where I could take off my belt and stand.

I took the plugs out of my ears and motioned to Cochenour and the girl to do the same.

He was grinning a little and rubbing his head where he'd bounced into an overhead chart rack. "Pretty exciting," he conceded, fumbling in his pocket. Then he remembered to ask. "Is it all right if I smoke?"

"They're your lungs."

He grinned more widely. "They are now," he agreed and lit up. "Say. Why didn't you give us those plugs while we were in the tractor?"

THERE is, you might say, a tide in the affairs of guides—they can ride it or be swamped. I could either let my tourists flood me with questions and spend the whole time explaining what that funny little dial means or I could go on to do my work and enjoy as

much as I could. It had come to this: was I or was I not going to like Cochenour and his girl friend?

For the three of us to live for three weeks in a space about as big as an apartment kitchenette meant everybody would have to work real hard at being nice to everybody else—and since I was the one who was being paid to be nice I should be the one to set an example. On the other hand, the Cochenours of the worlds are sometimes just not likeable. If that was going to be the case, the less talk the better—I ought to slide off questions like that with something like, *I forgot.*

But he hadn't actually been unpleasant and the girl friend had tried to be friendly. I said, "Well, that's an interesting thing. You see, you hear by differences in pressure. While we were taking off, the plugs filtered out part of the sound—the pressure waves—but when I yelled at you to belt up the plugs passed the overpressure of my voice and you understood it. However, there's a limit. Past about a hundred and twenty decibels—that's a unit of sound—"

Cochenour growled, "I know what a decibel is."

"Right. Past a hundred and twenty the eardrum just doesn't respond any more. So in the crawler it was too loud—with the plugs on you wouldn't have heard anything."

Dorotha had been listening while she repaired her eye makeup. "What was to hear?"

"Oh," I said, "nothing, really. Except, well—" Then I voted to think of them as friends, at least for the time being. "Except in the case of an accident. If we'd had a gust, you know, that crawler could have flipped right over. Or sometimes solid objects come flying over the hills and into you before you know it. Or—"

She was shaking her head. "I understand. Lovely place we're visiting, Boyce."

"Yeah. Look," he said, "who's flying this thing?"

I got up and activated the virtual globe. "That's what I was just coming to. Right now it's on autopilot, heading in the general direction of this quadrant down here. We have to pick out a specific destination."

"That's Venus?" the girl asked. "It doesn't look like much."

"Those lines are radio-range markers—you won't see them through the window. Venus doesn't have any oceans and it isn't cut up into nations, so a map of it isn't like Earth's. That bright spot is us. Now look." I overlaid the radio-range grid and the contour colors with mascon markings. "Those blobby circles are mascons. You know what a mascon is?"

"A concentration of mass. A lump of heavy stuff," offered the girl.

"Fine. Now look at the known Heechee digs." I phased them in as golden patterns.

"They're all in the mascons," Dorothea said at once. Cochenour gave her a look of tolerant approval.

"Not all. Look over here—this little one isn't, nor is this one. But damn near all. Why? I don't know.

Nobody knows. The mass concentrations are mostly older, denser rock—basalt and so on. Maybe the Heechee found it easier to dig in. Or maybe they just liked it." In my correspondence with Professor Hegramet back on Earth—in the days when I didn't have a dying liver in my gut and took an interest in abstract knowledge—he and I had kicked around the possibility that the Heechee digging machines would only work in dense rock or rock of a certain chemical composition. But I wasn't prepared to discuss that with Cochenour.

"See over here, where we are now —" I rotated the virtual globe slightly by turning a dial—"that's the big dig we just came out of. You can see the shape of the Spindle. It's a common shape, by the way. You can see it in some of the others if you look—and there are digs where it doesn' show on these tracings but it's there if you're on the spot. That particular mascon where the Spindle lies is called Serendip. It was discovered by accident by a Hesperological—"

"Hesperological?"

"—a geological team operating on Venus, which makes it a Hesperological team. They were drilling out core samples and hit the Heechee digs. Now these other digs in the northern high-latitudes you see are all in one bunch of associated mascons. They connect through interventions of less dense rock, but only where absolutely necessary."

Cochenour said sharply, "They're north and we're going south. Why?"

It was interesting that he could read the navigation instruments, but I didn't say so. I only said, "They're no good. They've been probed."

"They look even bigger than the Spindle."

"Hell of a lot bigger, right. But there's nothing much in them, or anyway not much chance that anything in them is in good enough shape to bother with. Subsurface fluids filled them up a hundred thousand years ago, maybe more. A lot of good men have gone broke trying to pump and excavate them without finding anything. Ask me. I was one of them."

"I didn't know there was any liquid water on Venus or under it," Cochenour objected.

"I didn't say water, did I? But as a matter of fact some of it was water—or anyway a sort of oozy mud. Apparently water cooks out of the rocks and has a transit time to the surface of some thousands of years before it seeps out, boils off and cracks to hydrogen and oxygen and gets lost. In case you didn't know it, there's some under the Spindle. It's what you were drinking and what you were breathing."

The girl said, "Boyce, this is all very interesting, but I'm hot and dirty. Can I change the subject for a minute?"

Cochenour barked—it wasn't really a laugh. "Subliminal prompting, Walthers, you agree? And a little old-fashioned prudery, too, I expect. What she really wants to do is go to the bathroom."

Given a little encouragement

from the girl, I would have been mildly embarrassed for her, but she only said, "If we're going to live in this thing for three weeks I'd like to know what it offers."

I said, "Certainly, Dorotha."

"Dorrie, if you like it better."

"Sure, Dorrie. Well, you see what we've got. Five bunks—they partition to sleep ten if wanted, but we don't want. Two shower stalls. They don't look big enough to soap yourself in, but they are if you work at it. Three chemical toilets. Kitchen over there—well. Pick the bunk you like, Dorrie. There's a screen arrangement that comes down when you want it for changing clothes and so on—or just if you don't want to look at the rest of us for a while."

Cochenour said, "Go on, Dorrie, do what you want to do. I want Walthers to show me how to fly this thing."

IT WASN'T a bad start. I've had some traumatic times with parties that came aboard drunk and steadily got drunker, couples who fought every waking minute and got together only to hassle me. This one didn't look bad at all, even apart from the fact that it was going to save my life for me.

There's not much to flying an airbody, at least as far as making it move the way you want it to is concerned. On Venus the atmosphere has lift to spare. You don't worry about things like stalling out—and anyway the autonomic controls do most of your thinking for you.

Cochenour learned fast. It turned out he had flown everything that moved on Earth and had also operated one-man submersibles. He understood as soon as I mentioned it to him that the hard part of pilotage was selecting the right flying level and anticipating when you'd have to change it, but he also understood that he wasn't going to learn that in one day. Or even in three weeks.

"What the hell, Walthers," he said cheerfully enough. "At least I can make it go where I have to, in case you get caught in a tunnel or shot by a jealous husband."

I gave him the smile his pleasantry was worth, which wasn't much. "The other thing I can do," he said, "is cook. Unless you're really good at it? No, I thought not. Well, I paid too much for this stomach to fill it with hash, so I'll make the meals. That's a little skill Dorrie never got around to learning. Same with her grandmother. Most beautiful woman in the world, but had the idea that was all there was to it."

I put that aside to sort out later. He was full of little unexpected things, this ninety-year-old young athlete. He said, "All right, now while Dorrie's using up all the water in the shower—"

"Not to worry—it all recycles."

"Anyway. While she's cleaning up, finish your little lecture on where we're going."

"Right." I spun the virtual globe a little. The bright spot that was us had already moved a dozen degrees. "See that cluster where our track intersects those grid marks?"

"Yeah. Five big mascons close together and no diggings indicated. Is that where we're going?"

"In a general sense, yes."

"Why in a general sense?"

"Well," I said, "there's one little thing I didn't tell you. I'm assuming you won't jump salty over it, because then I'll have to get salty, too, and tell you you should have taken the trouble to learn more about Venus before you decided to explore it."

He studied me appraisingly for a moment. Dorrie came quietly out of the shower in a long robe, her hair in a towel, and stood near him, watching.

"It depends on what you didn't tell me," he said.

"There's a no-trespassing sign on most of those mascons," I said. I activated the pilotage chart overlay and bright, cherry-red warning lines sprang up all around the cluster.

"That's the south polar security area," I said. "That's where the Defense boys keep the missile range and the biggest part of their weapons development areas. And we're not allowed to enter."

He said harshly, "But there's only a little piece of one mascon that isn't off limits."

"And that's where we're going," I said.

V

FOR a man more than ninety years old Boyce Cochenour was spry. I don't mean just healthy looking. Full Medical will do a lot for you—you simply replace whatever wears out or begins to look shopworn and tatty. You cannot, however, very well replace the brain, so what you usually see in the very rich old ones is a bronzed, strong body that shakes and hesitates and drops things and stumbles. About that Cochenour had been very lucky.

He was going to be wearing company for three weeks. He had insisted I show him how to pilot the airbody. When I decided to use a little flight time to give the cooling system a somewhat premature thousand-hour check, he helped me pull the covers, check the refrigerant levels and clean the filters. Then he decided to cook us lunch.

The girl took over as my helper while I restowed some of the supplies to get out the autosonic probes. At the steady noise level of the inside of an airbody our normal conversational voices wouldn't carry to Cochenour, less than three meters away, and I thought of pumping her about him. I decided against it. What I didn't know bothered only my curiosity. I already knew he was paying me the price of a new liver. I didn't need to know what he and the girl thought about when they thought about each other.

So our conversation was along the lines of how the probes would fire charges and time the echoes and what the chances were of finding something really good ("Well, what are the chances of winning a sweepstakes? Bad for any individual who buys a ticket—but there's always one winner somewhere—") and what had

made me come to Venus in the first place. I mentioned my father's name, but she had never heard of him. Too young, for one thing, no doubt. And she was born and bred in Southern Ohio, where Cochenour had worked as a kid and where he had returned as a billionaire. He had been building a new processing center there and it had been a lot of headaches—trouble with the unions, trouble with the banks, trouble, bad trouble, with the government—so he had decided to take a few months off and loaf.

I looked over to where he was stirring up a sauce and said, "He loafs harder than anybody else I ever saw."

"He's a work addict. I imagine that's how he got rich in the first place—"

The airbody lurched and I dropped everything to jump for the controls. I heard Cochenour howl behind me, but I was busy locating the right transit level. By the time I had climbed a thousand meters and reset the autopilot he was rubbing his wrist and glowering at me.

"Sorry," I said.

He said dourly, "I don't mind your scalding the skin off my arm—I can always buy more skin—but you nearly made me spill the gravy."

I checked the virtual globe. The bright marker was two-thirds of the way to our destination. "Is it about ready?" I asked. "We'll be there in an hour?"

For the first time he looked startled. "So soon? I thought you said this thing was subsonic."

"I did. You're on Venus, Mr. Cochenour. At this level the speed of sound is maybe five thousand kilometers an hour."

He looked thoughtful, but all he said was, "Well, we can eat any minute." Later, while we were finishing up, he said, "I think maybe I don't know as much about this planet as I might. If you want to give us the usual guide's lecture, we'll listen."

I said, "Well, you pretty much know the outlines. Say, you're a great cook, Mr. Cochenour. I packed all these provisions, but I don't even know what I'm eating."

"If you come to my office in Cincinatti," he said, "you can ask for Mr. Cochenour, but while we're living in each other's armpits you might as well call me Boyce. And if you like it, why aren't you eating it?"

The answer was: *Because it might kill me* . . . but I didn't want to get into a discussion that might lead to why I needed his fee so badly. I said, "Doctor's orders—have to lay off the fats pretty much for a while. I think he thinks I'm putting on too much weight."

Cochenour looked at me appraisingly, but only said, "The lecture?"

"Well, let's start with the most important part," I said, carefully pouring coffee, "While we're in the airbody you can do what you like, walk around, eat, drink, smoke if you got 'em, whatever. The cooling system is built for more than three times as many people, plus their cooking and appliance loads, with a safety

factor of two. Air and water, more than we'd need for two months. Fuel, enough for three round trips and some maneuvering. If anything went wrong we'd yell for help and somebody would come and get us in a couple of hours at most—probably the Defense boys and they have supersonic bodies. The worst thing would be if the hull breached and the whole Venusian atmosphere tried to come in. If it happened fast we'd be dead. It never happens fast, though. We'd have time to get into suits and we can live in them for thirty hours. Long before that we'd be picked up."

"Assuming, of course, that nothing went wrong with the radio at the same time," said Cochenour.

"Right. You can get killed anywhere if enough accidents happen at once."

He poured himself another cup of coffee, tipped a little brandy into it and said, "Go on."

"Well, outside the airbody it's a little more tricky. You've only got the suit and its useful life, as I say, is only thirty hours. It's a question of refrigeration. You can carry all the air and water you want, and you don't have to worry about food, but it takes a lot of compact energy to get rid of the diffuse energy all around you. It takes fuel for the cooling systems and when that's gone you'd better be back in the airbody. Heat isn't the worst way to die. You pass out before you begin to hurt. But the end result is you're dead.

"The other thing is—you want to check your suit every time you put it on. Pressure it up and watch the gauge for leaks. I'll check it too, but don't rely on me. It's your life. And the faceplates are pretty strong—you can drive nails with them without breaking them—but they can be broken if hit hard enough. That way you're dead, too."

Dorrie said quietly, "One question. Have you ever lost a tourist?"

"No." But then I added: "Others have. Five or six get killed every year."

"I don't mind odds like that," said Cochenour. "Actually that wasn't the lecture I was asking for, Audee. I certainly want to hear how to stay alive, but I assume you would have told us all this before we left the ship anyway. What I really wanted to know was how come you picked this particular mascon to prospect."

This old geezer with the muscle-beach body was beginning to bother me. He had a disturbing habit of asking the questions I didn't want to answer. There was a reason why I had picked this site—it had to do with about five years of study, a lot of digging and about a quarter of a million dollars' worth of correspondence, at space-mail rates, with people like Professor Hegramet back on Earth.

But I didn't want to tell him all of my reasons. There were about a dozen sites that I really wanted to explore. If this happened to be one of the payoff places he would come out of it richer than I would—the contracts specify 40% to the charterer, 25% to the guide, the rest

to the government—and that should be enough for him. If it happened not to pay off, I didn't want him taking some other guide to one of the others I had marked.

So I only said, "Call it an informed guess. I promised you a good shot at a tunnel that's never been opened and I hope to keep my promise. And now let's get the food put away. We're within ten minutes of where we're going."

WITH everything strapped down and ourselves belted up, we dropped out of the relatively calm layers into the big winds again.

We were over the big south-central massif, about the same elevation as the lands surrounding the Spindle. That's the elevation where most of the action is on Venus. Down in the lowlands and the deep rift valleys the pressures run fifty thousand millibars and up. My airbody wouldn't take any of that for very long and neither would anybody else's, except for a few of the special research and military types. Fortunately the Heechee hadn't cared for the lowlands either. Nothing of theirs has ever been located much below twenty-bar. Doesn't mean it isn't there, of course.

Anyway, I verified our position on the virtual globe and on the detail charts and deployed the autosonic probes. The winds threw them all over the place as soon as they dropped free. It didn't much matter where they went, within broad limits, which was a good thing. They dropped like javelins at first, then flew around like straws until the little rockets cut in and the ground-seeking controls fired them to the ground.

Every one embedded itself properly. It was a good start.

I checked the position of the probes on the detail charts—the formation was close enough to an equilateral triangle, which was about how we wanted them. Then I opened the scanning range and began circling around.

"Now what?" bellowed Cochenour. I noticed the girl had put the earplugs back on, but he wasn't willing to miss a thing.

"Now we wait for the probes to feel around for Heechee tunnels. It'll take a couple of hours." While I was talking I brought the airbody down through the surface layers. Now we were being thrown around. The buffeting got pretty bad and so did the noise.

But I found what I was looking for—a surface formation like a blind arroyo—and tucked us into it with only one or two bad moments. Cochenour was watching carefully and I grinned to myself. This was where pilotage counted, not en route or at the prepared pads around the Spindle.

Our position looked all right, so I fired four hold-downs, tethered stakes with explosive heads that opened out in the ground. I winched them tight and all of them held.

That was also a good sign. Reasonably pleased with myself, I opened the belt catches and stood up. "We're here for at least a day or two," I said. "More if we're lucky. How did you like the ride?"

The girl was taking out the earplugs now that the protecting walls of the arroyo had cut the thundering down to a mere constant scream. "I'm glad I don't get airsick," she said.

Cochenour was thinking, not talking. He was studying the control board while he lit another cigarette.

Dorotha said, "One question, Audee. Why couldn't we stay up where it's quieter?"

"Fuel. I carry about thirty hours, full thrust, but that's it. Is the noise bothering you."

She made a face.

"You'll get used to it. It's like living next to a spaceport. At first you wonder how anybody stands the noise for a single hour. After you've been there a week you miss it if it stops."

She moved over to the bull's-eye and gazed pensively out at the landscape. We'd crossed into the night portion and there wasn't much to see but dust and small objects whirling through our external light beams. "It's that first week that I'm worrying about," she said.

I flicked on the probe readout. The little percussive heads were firing their slap-charges and measuring each other's sounds, but it was too early to see anything. The screen was barely beginning to build up a shadowy pattern, more holes than detail.

Cochenour finally spoke. "How long until you can make some sense out of that?"

Another point: he didn't ask what "that" was.

"Depends on how close and how big anything is. You can make a guess in an hour or so, but I like all the data I can get. Six or eight hours, I'd say. There's no hurry."

He growled, "I'm in a hurry, Walthers. Keep that in mind."

The girl cut in. "What should we do, Audee? Play three-handed bridge?"

"Whatever you want, but I'd advise some sleep. I've got pills if you want them. If we do find anything—and remember, if we hit on the first try it's just hundred-to-one luck—we'll want to be wide awake for a while."

"All right," said Dorotha, reaching out for the spansules, but Cochenour demanded:

"What about you?"

"Pretty soon. I'm waiting for something." He didn't ask what. Probably, I thought, because he already knew. I decided that when I did hit my bunk I wouldn't take a sleepy pill right away. This Cochenour was not only the richest tourist I had ever guided, he was one of the best informed. I wanted to think about that for a while.

WHAT I was waiting for took almost an hour to come. The boys were getting a little sloppy—they should have been after us before this.

The radio buzzed and then blared: "Unidentified vessel at one three five, zero seven, four eight and seven two, five one, five four. Please identify yourself and state your purpose."

Cochenour looked up inquiringly

from his gin game with the girl. I smiled reassuringly. "As long as they're saying 'please' there's no problem," I told him and opened the transmitter.

"This is Pilot Audee Walthers, airbody Poppa Tare Nine One, out of the Spindle. We are licensed and have filed approved flight plans. I have two Terry tourists aboard—purpose, recreational exploration."

"Acknowledge. Please wait," blared the radio. The military always broadcasts at maximum gain. Hangover from drill-sergeant days, no doubt.

I turned off the microphone and told my passengers, "They're checking our flight plan. Nothing to worry about."

In a moment the Defense communicator came back, loud as ever. "You are eleven point four kilometers bearing one eight three degrees from terminator of a restricted area. Proceed with caution. Under Military Regulations One Seven and One Eight, Sections—"

I cut in, "I know the drill. I have my guide's license and have explained the restrictions to the passengers."

"Acknowledged," blared the radio. "We will keep you under surveillance. If you observe vessels or parties on the surface they are our perimeter teams. Do not interfere with them in any way. Respond at once to any request for identification or information." The carrier buzz cut off.

Cochenour said, "They act nervous."

"No. They're used to seeing us around. They've got nothing else to do, that's all."

Dorrie said hesitantly, "Audee, you told them you'd explained the restrictions to us. I don't remember that part."

"Oh, I explained them all right. We stay out of the restricted area, because if we don't they'll start shooting. That is the Whole of the Law."

IV

I SET a wake-up for four hours and the others heard me moving around and got up, too. Dorrie fetched us coffee from the warmer and we stood drinking it and looking at the patterns the computer had traced.

I took several minutes to study them, although they were clear enough at first look. There were eight major anomalies that could have been Heechee warrens. One was almost right outside our door. We wouldn't even have to move the airbody to dig for it.

I showed them the anomalies, one by one. Cochenour just looked at them thoughtfully. Dorotha asked after a moment, "You mean all of these are unexplored tunnels?"

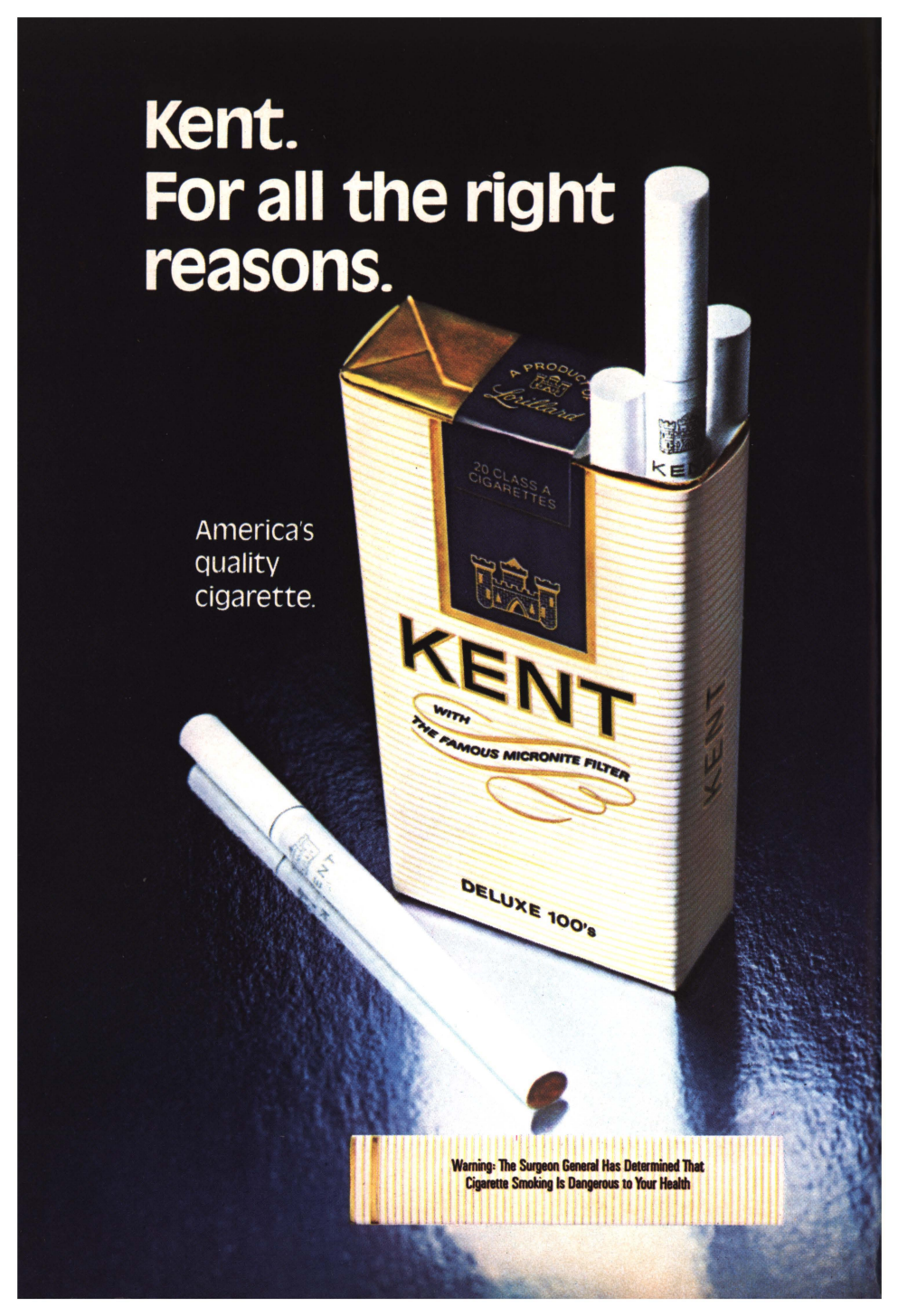
"No. Wish they were. But one, any or all of them could have been explored by someone who didn't go to the trouble of recording it. Two, they don't have to be tunnels. They might be fracture faults or dikes or little rivers of some kind of molten material that ran out of somewhere and hardened and got covered more than a billion years

Kent.
Mild, smooth taste.
Micronite filter.

King size or
Deluxe 100's.

Kings: 17 mg. "tar", 1.0 mg. nicotine,
100's: 19 mg. "tar", 1.2 mg. nicotine
av. per cigarette, FTC Report Aug. '71.

Kent.
For all the right reasons.



ago. The only thing we know for sure so far is that there probably aren't any unexplored tunnels in this area *except* in those eight places."

"So what do we do?"

"We dig. And then we see what we've got."

Cochenour said, "Where do we dig?"

I pointed right next to the bright delta of our airbody. "Right here."

"Because it's the best bet?"

"Well, not necessarily." I considered what to tell him and decided the truth was the best. "There are three that look like better bets than the others—here, I'll mark them." I keyed the chart controls and the best looking traces immediately displayed letters *A*, *B* and *C*. "*A* runs right under the arroyo here, so we'll dig it first."

"Those three because they're the brightest?"

I nodded, somewhat annoyed at his quickness, although the conclusion was obvious enough.

"But *C* over here is the brightest of the lot. Why don't we dig that first?"

I chose my words carefully. "Because we would have to move the airbody—and because it's on the outside perimeter of the survey area. That means the results aren't as reliable as they are for this one right under us. But those aren't the most important reasons. The most important reason is that *C* is on the edge of the line our itchy-fingered friends are telling us to stay away from."

Cochenour laughed incredulously. "You mean you're telling me that if you find a real untouched Heechee tunnel you'll stay out of it just because some soldier tells you it's a no-no?"

I said, "The problem doesn't arise just yet—we have seven anomalies to look at that are legal. Also the military will be checking us from time to time, particularly in the next day or two."

Cochenour insisted, "All right, suppose we check them and find nothing. What do we do then?"

I shook my head. "I never borrow trouble. Let's check the legal ones."

"But suppose."

"Damn it, Boyce! How do I know?"

He gave it up then, but winked at Dorrie and chuckled. "What did I tell you, honey? He's a bigger bandit than I am."

FOR the next couple of hours we didn't have much time to talk about theoretical possibilities. We were too busy with concrete facts.

The biggest fact was an awful lot of hot, high-speed gas that we had to keep from killing us. My own hotsuit was custom made, of course, and only needed the fittings and tanks to be checked. Boyce and the girl had rental units. They'd paid top dollar for them and they were good, but good isn't perfect. I had them in and out of them a dozen times, checking the fit and varying tensions until they were as right as I could get them. There's a lot of heat and pressure to keep out when you go about the surface

of Venus. The suits were laminated twelve-ply, with nine degrees of freedom at the essential joints. They wouldn't fail—that wasn't what I was worried about. What I was worried about was comfort, because a small itch or rub can become serious when there's no way to stop it.

But finally they were good enough for a first trial and we all huddled in the lock and exited onto the surface of Venus.

We were still darkside, but there was so much scatter from the sun that it didn't get really dark more than a quarter of the time. I let them practice walking around the airbody, leaning into the wind, bracing themselves against the hold-downs and the side of the ship, while I got ready to dig.

I hauled out our first instant igloo, dragged it into position and ignited it. As it smoldered it puffed up like the children's toy that used to be called a Pharaohs' Serpent, producing a light, tough ash that grew up around the digging site and joined in a seamless dome at the top. I had already emplaced the digging torch and the crawl-through lock. As the ash grew I manhandled the lock to get a close union and got a perfect join first time.

Dorrie and Cochenour stayed out of the way when they caught sight of my waving arm, but hung together, watching through their triple vision plugs. I keyed on the radio. "You want to come in and watch as we start it up?" I shouted.

Inside the helmets they both nodded. "Come on, then," I yelled and wiggled through the crawl lock. I signaled them to leave it open as they followed me in.

With the three of us and the digging equipment in it the igloo was even more crowded than the airbody. They backed away as far as they could get, bent against the arc of the igloo wall, while I started up the augers, checked that they were vertical and watched the first castings spiral out.

The foam igloo absorbs more sound than it reflects. Even so, the din inside the igloo was a lot worse than in the howling winds outside. When I thought they had seen enough to satisfy them for the moment, I waved them out of the crawl-through, followed, sealed it behind us and led them back into the airbody.

"So far so good," I said, twisting off the helmet and loosening the suit. "We've got about forty meters to go, I think. Might as well wait in here as out there."

"How long is that?"

"Maybe an hour. You can do what you like. What I'm going to do is take a shower. Then we'll see how far we've gotten."

That was one of the nice things about having only three people aboard—we didn't have to worry about water discipline very much. It's astonishing how a quick wet-down revives you after you've come out of a hotsuit. When I had finished with mine I felt ready for anything.

I was even prepared to eat some of Boyce Cochenour's gourmet cookery, but fortunately it wasn't

necessary. The girl had taken over the kitchen and what she laid out was simple, light and reasonably non-toxic. On cooking like hers, I figured, I might be able to survive long enough to collect my charter fee. It crossed my mind for a moment to wonder what made her do it and then I thought, of course, she'd had a lot of practice. With all the spare parts in Cochenour no doubt he had dietary problems far worse than mine.

Well, not worse, exactly, in one sense. I didn't think he was quite as likely to die of them.

ACCORDING to the autosonic probes the highest point of tunnel *A* was close to the little blind valley in which I had tied down.

That was lucky. It meant that we might possibly be right over the Heechee's own entrance. Not that we would be able to use it as the Heechee had used it. There wasn't much chance that its mechanisms would have survived a quarter of a million years, exposed much of that time to surface wind, ablation and chemical corrosion. The good part was that if the tunnel had surfaced here it would be relatively easy to bore down to it. Even a quarter of a million years doesn't produce really hard rock, especially without surface water to dissolve out solids and produce compact sediments.

Up to a point the drilling turned out pretty much the way I had hoped. What was on the surface was little more than ashy sand and the augers chewed it out very rapidly. Too rapidly—when I went back into the igloo it was filled almost solid with castings and I had a devil of a job getting to the machines to switch the auger over to pumping the castings out through the crawl lock.

This was a dull, dirty part of the job, but it didn't take long.

I didn't bother to go back into the airbody. I reported what was happening over the radio to Boyce and the girl, who were staring through the ports at me. I told them I thought we were getting close.

But I didn't tell them exactly how close. Actually we were only a meter or two from the indicated depth of the anomaly, so close that I didn't bother to pump out all of the castings. I just made enough room to maneuver around, then redirected the augers. And in five minutes the castings were beginning to come up with the pale blue glimmer that was the sign of a Heechee tunnel.

VII

ABOUT ten minutes after that I keyed on my helmet transmitter and shouted: "Boyce, Dorrie —we've hit a tunnel."

Either they had been sitting around in their suits or they dressed faster than any maze rat. I unsealed the crawl-through and wiggled out to help them, but they were already coming out of the airbody, staggering against the wind over to me.

They were both yelling questions and congratulations, but I stopped

them. "Inside," I ordered. "See for yourself." As a matter of fact, they didn't have to go that far. They could see the color as soon as they kneeled to enter the crawl-through.

I followed and sealed the lock behind me. The reason was simple enough. As long as the tunnel wasn't breached, it didn't matter about the lock seal. But the interior of a Heechee tunnel that has remained inviolate is at a pressure only slightly above Earth-normal. Without the sealed dome, the minute we cracked the casing we would let the whole 20,000-millibar atmosphere of Venus pour in, heat and ablation and all. If the tunnel were empty or if what was in it were simple, sturdy stuff, no damage might be done. But if we had hit the jackpot we could have destroyed in a half-second what had waited a quarter-million years.

We gathered around the shaft and I pointed down. The auger had left a clean shaft, about seventy centimeters by a little over a hundred, with rounded ends. At the bottom you could see the cold blue glow of the outside of the tunnel, only pocked and blotched by the loose castings I hadn't bothered to get out.

"Now what?" demanded Boyce. His voice was hoarse with excitement, which was, I guessed, natural enough.

"Now we burn our way in."

I backed my clients away as far as they could get, pressed against the remaining heap of castings and unlimbered the firejets. I had already hung sheer-legs over the shaft and they went right down on their cable with no trouble until they were a few centimeters above the round of the tunnel. Then I fired them up.

You wouldn't think that anything a human being might do would change the temperature of the surface of Venus, but those fire-drills were something special. In the small space of the igloo the heat flamed up and around us and our hotsuit cooling systems were overloaded in seconds.

Dorrie gasped, "Oh! I—I think I'm going to—"

Cochenour grabbed her. "Faint if you want to," he said fiercely, "but don't get sick. Walthers! How long does this go on?"

It was as hard for me as it was for them. Practice doesn't get you used to standing in front of a blast furnace with the doors off the hinges. "Maybe a minute," I gasped. "Hold on—it's all right."

It actually took a little more than that, maybe ninety seconds—my suit telltales were shouting alarm for more than half of the time. But the systems were built for these overloads and as long as we didn't cook, the suits wouldn't take any permanent harm.

Then we were through. A half-meter circular section sagged, fell at one side and hung there.

I turned off the firejets and we all breathed hard for a couple of minutes while the suit coolers gradually caught up with the load.

"Wow," said Dorotha. "That was pretty rough."

I looked at Cochenour. In the light that splashed up out of the

shaft I could see he was frowning. I didn't say anything. I just gave the jets another five-second burn to cut away the rest of the circular section. It fell free into the tunnel. We could hear it clatter against the floor.

Then I turned on my helmet radio. "There's no pressure differential," I said.

The frown didn't change, nor did he speak.

"Which means this one has been breached," I went on. "Let's go back to the airbody and take a break before we do anything else."

Dorotha shrieked, "Audee! What's the matter with you? I want to go down there and see what's inside!"

Cochenour said bitterly, "Shut up, Dorrie. Don't you hear what he's saying? This one's a dud."

THERE'S always the chance that a breached tunnel opened to a seismological invasion, not to a maze rat with a cutting torch. If so there might be something worthwhile in it anyway. I didn't have the heart to kill all Dorotha's enthusiasm with one blow.

So we did swing down the cable, one by one, into the Heechee dig and look around.

It was wholly bare, as most of them are, as far as we could see. That wasn't actually very far, for the other thing wrong with a breached tunnel is that you need pretty good equipment to explore it. After the overloads our suits were all right for a couple hours but not much more and when we had tramped about a half-mile down the tunnel without finding a thing all of us were willing to tramp back and return to the airbody.

We cleaned up and made ourselves something to drink. Even squandering more of the water reserves on showers didn't do much for our spirits. We had to eat, but Cochenour didn't bother with his gourmet exhibition. Dorotha silently threw tabs into the radar oven and we fed gloomily on emergency rations.

"Well, that's only the first one," she said at last, determined to be sunny about it. "And it's only our second day."

Cochenour said, "Shut up, Dorrie. The one thing I'm not is a good loser." He was staring at the probe trace. "Walthers, how many tunnels are unmarked but empty, like this one?"

"How can I answer a question like that? If they're unmarked there's no record of them."

"So those traces don't mean anything. We might dig one a day for the next three weeks and find every one a dud."

I nodded. "We surely might, Boyce."

He looked at me alertly. "And?"

"And that's not the worst part of it. I've taken parties out to dig who would have gone mad with joy to have opened even a breached tunnel. It's perfectly possible to dig every day for weeks and never hit a real Heechee tunnel at all. Don't knock it—at least you got some action for your money."

"I told you, Walthers, I'm not

a loser. Second place is no good." He thought for a minute, then barked: "You picked this spot. Did you know what you were doing?"

Did I? I could have told him about my months of studying records from the first landings on. I could have mentioned how much trouble I went to—and how many regulations I broke—to get the military survey reports, how far I had traveled to talk to the Defense crews who had been on those early digs. I might have let him know how hard it had been to locate old Jorolemon Hegramet, now teaching exotic archeology back in Tennessee and how many times he and I had corresponded.

All I said was, "The fact that we found one tunnel shows I knew my business as a guide. That was all you paid for. It's up to you if we keep looking or not."

He looked at his thumbnail, considering.

The girl said cheerfully, "Buck up, Boyce. Look at all the other chances we've got—and even if we miss, it'll still be fun telling everybody about it back in Cincinnati."

He didn't even look at her. "Isn't there any way to tell whether a tunnel has been breached or not without going inside?"

"Sure," I said. "You can tell by tapping the outside shell. You can hear the difference in the sound."

"But you have to dig down to it first?"

"Right."

We left it at that. I got back into my hotsuit to strip away the now useless igloo so that we could move the drills.

I didn't really want to discuss it any more, because I didn't want him to ask a question that I might want to lie about. I try the best I can to tell the truth—makes it easier to remember what you've said.

On the other hand, I'm not fanatic about it and I didn't see that it was any of my business to correct a mistaken impression. For instance, obviously Cochenour and the girl had the impression that I hadn't bothered to sound the tunnel casing because we had already dug down to it and it was just as easy to cut in.

But, of course, I had tested it. That had been the first thing I did as soon as the drill had reached down that far. And the high-pressure *thunk* had broken my heart. I had had to wait a couple of minutes before I had managed to call out to them that we had reached the outer casing.

At that time, I had not quite faced up to the question of just what I would have done if it had turned out that the tunnel had not been breached.

VIII

COCHENOUR and Dorrie Keefer were maybe the fiftieth or sixtieth party I had taken to a Heechee dig and I wasn't surprised that they were willing to work like coolies. I don't care how lazy and bored they start out, by the time people actually come close to finding something that belonged to

an almost completely unknown alien race—left there when the closest thing to a human being on Earth was a slope-browed furry little beast killing other beasts with antelope bones—they begin to burn with exploration fever.

My current clients worked hard and drove me hard—and I was as eager as they. Maybe more so. As the days went past I found myself rubbing my right side, just under the short ribs, more and more often.

The military boys overflew us a half-dozen times in the first few days. They didn't say much, just made formal requests for identification which they already well knew. Regulations say if you find anything you're supposed to report it right away. Over Cochenour's objections I reported finding that first breached tunnel, which surprised them a little, I think.

Site *B* was a pegmatite dike. The other two fairly bright ones that I had called *D* and *E* showed nothing at all when we dug, meaning that the sound reflections had probably been caused by nothing more than invisible interfaces in layers of rock or ash or gravel. I vetoed trying to dig *C*, the best looking of the bunch. Cochenour gave me a hell of an argument about it, but I held out. The military were still looking in on us every now and then and I didn't want to get any closer to their perimeter than we already were. I half-promised that if we didn't have any luck elsewhere in the mascons we'd sneak back to *C* for a quick dig before returning to the Spindle. We left it at that.

We lifted the airbody, moved to a new position and set out a new pattern of probes.

By the end of the second week we had dug nine times and come up empty every time. We were getting low on igloos and probes. We had completely run out of tolerance for each other.

Cochenour had turned sullen and savage. I hadn't planned on liking the man much when I first met him, but I hadn't expected him to be as bad as turned out. Considering that this whole deal had to be only a game with him—with all his money the extra fortune he might pick up by discovering some new Heechee artifacts couldn't have meant anything but extra points on a score pad—he was playing for blood.

I wasn't particularly graceful myself, for the matter. The plain fact was that the pills from the Quackery weren't helping as much as they should have. My mouth tasted as if rats had nested in it. I was getting headaches and I was beginning to knock things over. The thing about the liver is that it sort of regulates your internal diet. It filters out poisons, converts some of the carbohydrates into other carbohydrates that you can use—it patches together amino acids into proteins. If it isn't working you die. The doctor had been over all of it with me and I could visualize what was going on inside me, the mahogany-red cells dying and being replaced by clusters of fat and yellowish

matter. It was an ugly kind of picture. The ugliest part was that there wasn't anything I could do about it. Only go on taking pills—and they wouldn't work past a matter of a few days more. Liver, bye-bye—hepatic failure, hello.

So we were a bad bunch. Cochenour was a bastard because it was his nature to be a bastard and I was a bastard because I was sick and desperate. The only decent human being aboard was the girl.

She did her best. She really did. She was sometimes sweet and often even pretty and she was always ready to meet the power people—Cochenour and me—more than halfway. The situation was clearly tough on her. She was only a kid. No matter how grownup she acted, she just hadn't been alive long enough to grow a defense against concentrated meanness. Add the fact that we were all beginning to hate the sight and sound and smell of each other—and in an airbody you got to know a lot about how people smelled. There wasn't much joy on Venus for Dorrie Keefer.

Or for any of us, especially after I broke the news that we were down to our last igloo.

Cochenour cleared his throat. He sounded like a fighter-plane jockey blowing the covers off his guns in preparation for combat. Dorrie attempted to divert him.

"Audee," she said brightly, "you know what I think we could do? We could go back to that site that looked good near the military reservation."

It was the wrong diversion. I shook my head. "No."

"What the hell do you mean?" rumbled Cochenour, revving up for battle.

"What I said. No. That's a desperation trick and I'm not that desperate."

"Walthers," he snarled, "you'll be desperate when I tell you to be desperate. I can still stop payment on that check."

"No, you can't. The union won't let you. The regulations are very clear about that. You pay up unless I disobey a lawful directive. You can't make me do anything against the law—and going inside the military reservation is extremely against the law."

He shifted over to cold war. "No," he said softly, "you're wrong about that. It's only against the law if a court says it is—after we do it. You're only right if your lawyers are smarter than my lawyers. Honestly, Walthers, I pay my lawyers to be the smartest there are."

THE difficult part was that he was even more right than he knew—my liver was on his side. I couldn't spare time for arbitration because without his money and my transplant I wouldn't live that long.

Dorrie, listening with her bird-like look of friendly interest, got between us again. "Well, then, how about this? We just put down here. Why don't we wait and see what the probes show? Maybe we'll hit something even better than that trace *C*—"

"There isn't going to be anything good here," he said without looking at her.

"Why, Boyce, how do you know that? We haven't even finished the soundings."

He said, "Look, Dorotha, listen close one time and then shut up. Walthers is playing games. You see where we are now?"

He brushed past me and tapped out the program for a full map display. His action surprised me somewhat because I hadn't known he knew how. The charts sprang up with virtual images of our position—the shafts we had already cut, the great irregular edge of the military reservation overlaid on the plot of mascons and navigation aids.

"You see? We're not even in the high-density mass areas now. Is that true, Walthers? We've tried all the good locations and come up dry?"

I said, "You're partly right, Boyce, but I'm not playing games. This site is a good possibility. You can see it on the map. We're not over any mascon, that's true, but we're right between two of them that are located pretty close together. Sometimes you find a dig that connects two complexes—and it has happened that the connecting passage was closer to the surface than any other part of the system. I can't guarantee we'll hit anything here, but it's not impossible that we might."

"Just damn unlikely?"

"Well, no more unlikely than anywhere else. I told you a week ago—you got your money's worth the first day, just finding any Heechee tunnel at all, even a spoiled one. There are maze rats in the Spindle who went five years without seeing that much." I thought for a minute. "I'll make a deal with you," I said.

"I'm listening."

"We're down here and there's at least a chance we can hit something. Let's try. We'll deploy the probes and see what they turn up. If we get a good trace we'll dig it. If we don't—then I'll think about going back to trace *C*."

"Think about it!" he roared.

"Don't push me, Cochenour. You don't know what you're getting into. The military reservation is not to be fooled with. Those boys shoot first and ask later—and there aren't any policemen or courts on Venus even to ask them questions."

"I don't know," he said after a moment.

"No," I said, "you don't. And that's what you're paying me for. I do know."

"Yes," he agreed, "you probably do, but whether you're telling me the truth about what you know is another question. Hegramet never said anything about digging between mascons."

And then he looked at me with a completely opaque expression, waiting to see whether I would catch him up on what he had just said.

I didn't respond. I gave him back an opaque look. I didn't say a word, simply waited to see what would come next. I was pretty sure that it would not be any sort

of explanation of how he happened to know Hegramet's name or what dealings he had had with the greatest Earthside authority on Heechee diggings, and it wasn't.

"Put out your probes and we'll try it your way one more time," he said at last.

I PLOPPED out the probes, got good penetration on all of them, started firing the noise-makers. I sat watching the first buildup of lines on the scan as though I expected them to carry useful information. They couldn't, of course, but it was a good excuse to think privately for a moment.

Cochenour needed to be thought about. He hadn't come to Venus just for the ride—that was clear. He had known he was going to be sinking shafts after Heechee digs before he ever left Earth. He had briefed himself on the whole bit, even to handling the instruments on the airbody. My sales talk about Heechee treasures had been wasted on a customer whose mind had been made up to buy at least a half-year earlier and tens of millions of miles away.

All that I understood, but the more I understood the more I saw that I didn't understand. What I really wanted was to give Cochenour a quarter and send him to the movies for a while so I could talk privately to the girl. Unfortunately, there was nowhere to send him. I managed to force a yawn, complain about the boredom of waiting for the probe traces to build up and suggest a nap. Not that I would have been real confident he wasn't lying there with his ears flapping, listening to us. It didn't matter. Nobody acted sleepy but me. All I got out of it was an offer from Dorrie to watch the screen and wake me if anything interesting turned up.

So I said the hell with it and went to sleep myself.

It was not a good sleep, because lying there waiting for it gave me time to notice how truly lousy I felt and in how many ways. A sort of permanent taste of bile lived in the back of my mouth, as though I had just thrown up. My head ached and I was beginning to see ghost images wandering fuzzily around my field of vision. When I took my pills I didn't count the ones that were left. I didn't want to know.

I'd set my private alarm for three hours, thinking maybe that would give Cochenour time to get sleepy and turn in, leaving the girl up and about and perhaps conversational. But when I woke up there was Cochenour, cooking himself an herb omelette with the last of our sterile eggs.

"You were right, Walthers." He grinned. "I was sleepy. Had a nice little nap. Ready for anything now. Want some eggs?"

Actually I did want them, but of course I didn't dare eat them, so I glumly swallowed what the Quackery had allowed me to have and watched him stuff himself. It was unfair that a man of ninety could be so healthy that he didn't have to think about digestion, while I was—well, there wasn't any profit in that kind of thinking, so I

offered to play some music. Dorrie picked *Swan Lake* and I started it up.

And then I had an idea and headed for the tool lockers. They needed checking. The auger heads were about due for replacement and I knew we were low on spares. The other thing about the tool lockers was that they were as far from the galley as you could get and stay inside the airbody and I hoped Dorrie would follow me.

She did.

"Need any help, Audee?"

"Glad to have it," I said. "Here, hold these for me. Don't get the grease on your clothes." I didn't expect her to ask me why they had to be held. She didn't. She only laughed.

"Grease? I don't think I'd even notice it, dirty as I am. I guess we're all about ready to get back to civilization."

Cochenour was frowning over the probe trace and paying us no attention. I said, "Meaning which kind of civilization, the Spindle or Earth?"

What I had in mind was to start her talking about Earth, but she went the other way. "Oh, the Spindle, Audee. I thought it was fascinating and we really didn't get to see much of it. And the people. Like that Indian fellow who ran the cafe. The cashier was his wife, wasn't she?"

"One of them. She's the number-one wife. The waitress was number three and he has another one at home with the kids. There are five of those—all three wives involved." But I wanted to go in the other direction, so I said, "It's pretty much the same as on Earth. Vastra would be running a tourist trap in Benares if he wasn't running one here—and he wouldn't be here if he hadn't shipped out with the military and terminated here. I'd be guiding in Texas, I suppose. If there's any open country left to guide in, maybe up along the Canadian River. How about you?"

All the time I was picking up the same four or five tools, studying the serial numbers and putting them back. She didn't notice.

"How do you mean?"

"Well, what did you do before you came here?"

"Oh, I worked in Boyce's office for a while."

That information was encouraging. Maybe she'd remember something about his connection with Professor Hegramet. "What were you, a secretary?"

"Something like that. Boyce let me handle—oh, what's that?"

That was an incoming call on the radio.

"So go answer," snarled Cochenour across the airbody.

I took it on the earjack, since that was my nature. There wasn't any privacy to speak of in an airbody and I wanted what little crumbs of it I could find. It was the base calling, a comm sergeant I knew named Littleknees. I signed in irritably, regretting the chance to pump Dorotha about her boss.

"A private word for you, Audee," said Sergeant Littleknees. "Got your sahib around?"

Littleknees and I had exchanged radio chatter for a long time and there was something about the cheerfulness of her tone that bothered me. I didn't look at Cochenour, but I knew he was listening—only to my side, of course, because of the earjack. "In sight but not receiving," I said. "What have you got for me?"

"Just a little news bulletin," the sergeant purred. "It came over the synsat net a couple of minutes ago. Information only. That means we don't have to do anything about it, but maybe you do, honey."

"Standing by," I said, studying the plastic housing of the radio.

The sergeant chuckled. "Your sahib's charter captain would like to have a word with him when found. It's kind of urgent, 'cause the captain is righteously kissed off."

"Yes, base," I said. "Your signals received, strength ten."

The sergeant made an amused noise again, but this time it wasn't a chuckle, it was a downright giggle. "The thing is," she said, "his check for the charter fee bounced. Want to know what the bank said? You'd never guess. 'Insufficient funds,' that's what they said."

The pain under my right lower ribs was permanent, but right then it seemed to get a lot worse. I gritted my teeth. "Ah, Sergeant Littleknees," I croaked, "can you—ah—verify that estimate?"

"Sorry, honey," she buzzed sympathetically in my ear. "But there's no doubt in the world. Captain got a credit report on him and it turned up n.g. When your customer gets back to the Spindle there'll be a make-good warrant waiting for him."

"Thank you for the synoptic report." I said hollowly. "I will verify departure time before we take off."

And I turned off the radio and gazed at my rich billionaire client.

"What the hell's the matter with you, Walthers?" he growled.

But I wasn't hearing his voice. I was hearing what the happy fellow at the Quackery had told me. The equations were unforgettable. Cash = new liver + happy survival. No cash = total hepatic failure + death. And my cash supply had just dried up.

IX

WHEN you get a really big piece of news you have to let it trickle through your system and get thoroughly absorbed before you do anything about it. It isn't a matter of seeing the implications. I saw them right away—you bet. It's a matter of letting the system reach equilibrium. So I puttered for a minute. I listened to Tschaikowsky. I made sure the radio switch was off so as not to waste power. I checked the synoptic plot. It would have been nice if there had been something to show, but the way things were going there wouldn't be, of course, and there wasn't. A few pale echoes were building up. But nothing with the shape of a

Heechee dig and nothing very bright. The data were still coming in, but there was no way for those feeble plots to turn into the mother lode that could save us all, even broke bastard Cochenour. I looked out at as much of the sky as I could to see how the weather was. It didn't matter, of course, but some of the high white calomel clouds were scudding among the purples and yellows of the other mercury halides. It was beautiful and I hated it.

Cochenour had forgotten about his omelette and was watching me thoughtfully. So was Dorrie, still holding the augers in their grease-paper wrap. I grinned at her.

"Pretty," I said, referring to the music. The Auckland Philharmonic was just getting to the part where the little swans come out arm in arm and do a fast, bouncy *pas de quatre* across the stage. It has always been one of my favorite parts of *Swan Lake*. "We'll listen to the rest of it later," I said and snapped it off.

"All right," snarled Cochenour, "what's going on?"

I sat down on an igloo pack and lit a cigarette, because one of the adjustments my internal system had made had been to calculate that we didn't have to worry much about coddling our oxygen supply any more. I said, "There's a question that's bothering me, Cochenour. How did you get on to Professor Hegramet?"

He grinned and relaxed. "Is that all that's on your mind? I checked out the place before I came. Why not?"

"No reason, except that you let me think you didn't know a thing."

He shrugged. "If you had any brains you'd know I didn't get rich by being stupid. You think I'd come umpty-million miles without knowing what I was coming to?"

"No, you wouldn't, but you did your best to make me think you would. No matter. So you dug up somebody who could point you to whatever was worth stealing on Venus and somebody steered you to Hegramet. Then what? Did he tell you I was dumb enough to be your boy?"

Cochenour wasn't quite as relaxed, but he wasn't aggressive either. He said, "Hegramet told me you were the right guide to find a virgin tunnel. That's all—except briefing me on the Heechee and so on. If you hadn't come to us I would have come to you. You just saved me the trouble."

I said, a little surprised, "You know, I think you're telling me the truth. Except you left out one thing—it wasn't the fun of making more money that you were after, it was just money, right? Money that you needed." I turned to Dorotha, who was standing frozen with the augers in her hand. "How about it, Dorrie? Did you know the old man was broke?"

Putting it that way was not too smart. I saw what she was about to do just before she did it, and I jumped off the igloo. I was a little too late. She dropped the augers before I could get them from her, but fortunately they

landed flat and the blades weren't chipped. I picked them up and put them away.

She had answered the question well enough.

I said, "I see you didn't know. Tough on you, doll. His check to the captain of the *Gagarin* is still bouncing and I would imagine the one he gave me isn't going to be much better. I hope you got it in furs and jewels—and my advice to you is to hide them before the creditors want them back."

She didn't even look at me. She was only looking at Cochenour, whose expression was all the confirmation she needed.

I don't know what I expected from her, rage or reproaches or tears. What she did was whisper, "Oh, Boyce, I'm so sorry—" and she went over and put her arm around him.

I TURNED my back on them, because I didn't like looking at him. The strapping ninety-year-old buck on Full Medical had turned into a defeated old man. For the first time he looked all of his age and maybe a little more—the mouth half open and trembling, the straight back stooped, the bright blue eyes watering. She stroked him and crooned to him.

I looked at the synoptic web again for lack of anything better to do. It was about as clear as it was going to get and it was empty. We had nearly a fifty per cent overlap from our previous soundings, so I could tell that the interesting-looking scratches at one edge were nothing to get excited about. We had checked them out already. They were only ghosts.

No rescue there.

I felt oddly relaxed. There was something tranquilizing about the realization that I had nothing much left to lose. Matters had fallen into a different perspective. I had not given up completely. There were still things I could do. They might not have anything to do with prolonging my life, but the taste in my mouth and the pain in my gut weren't letting me enjoy life very much anyway. I could, for instance, write Audee Walthers off. And since only a miracle could keep me from dying in a matter of days I could use what time I had for something else. What else? Well, Dorrie was a nice kid. I could fly the airbody back to the Spindle, turn Cochenour over to the gendarmes and spend my last day or so introducing her around. Vastra or BeeGee would help her get organized. She might not even have to go into prostitution or the rackets. The high season wasn't that far off and she would do well with a little booth of prayer fans and Heechee lucky pieces for the Terry tourists. Maybe that wasn't much, even from her point of view, but it was something.

Or I could fling myself on the mercy of the Quackery. They might let me have the new liver on credit. The only reason I had for thinking they wouldn't was that they never had.

Or I could open the two-fuel valves and let them mix for ten minutes or so before hitting the igniter. The explosion wouldn't

leave much of the airbody or us—and nothing at all of our problems.

"Oh, hell," I said. "Buck up, Cochenour. We're not dead yet."

He looked at me for a minute. He patted Dorrie's shoulder and pushed her gently away. He said, "I will be, soon enough. I'm sorry about all this, Dorotha. And I'm sorry about your check, Walthers. I expect you needed the money."

"You have no idea."

He said with difficulty, "Do you want me to explain?"

"I don't see that it makes any difference, but—yes, out of curiosity I do."

I let him tell me and he did it steadily and succinctly. I could have guessed. A man his age is either very, very rich or dead. He was only quite rich. He had kept his industries going on what was left after he siphoned off the costs of transplant and treatment, calciphylaxis and prosthesis, protein regeneration here, cholesterol flushing there, a million for this, a hundred grand a week for that . . . oh, it went—I could see that.

"You just don't know," he said, "what it takes to keep a hundred-year-old man alive until you try it."

I corrected him automatically. "Ninety, you mean."

"No, not ninety—and not even a hundred. I think it's at least a hundred and ten and it could be more. Who counts? You pay the doctors and they patch you up for a month or two. You wouldn't know."

Oh, wouldn't I just, I said, but not out loud. I let him go on, telling about how the federal inspectors were closing in and he skipped Earth to make his fortune all over again on Venus.

But I wasn't listening any more, I was writing on the back of a navigation form. When I finished I passed the paper to Cochenour.

"Sign it," I said.

"What is it?"

"Does it matter? You don't have any choice, do you? But it's a release from the all-rights section of our charter agreement—you acknowledge you have no claim, that your check is rubber and that you voluntarily waive your ownership of anything we find in my favor."

He frowned. "What's this bit at the end?"

"That's where I give you ten per cent of anything we do find—if we do find anything."

"That's charity," he said, but he was signing. "I don't mind charity, especially since, as you point out, I don't have any choice. But I can read that web as well as you can, Walthers, and there's nothing on it to find."

"No," I said, folding the paper and putting it in my pocket. "But we're not going to dig here. That trace is as bare as your bank account. What we're going to do is dig trace *C*."

I LIT another cigarette and thought for a minute. I was wondering how much to tell them of what I had spent five years finding out and figuring out, schooling myself not even to hint at what I knew to anyone. I was

sure in my mind that nothing I said would make a difference, but the words didn't want to say themselves anyway.

I made myself speak.

"You remember Subhash Vastra, the fellow who ran the trap where I met you. He came to Venus with the military. He was a weapons specialist so he went into the cafe business when they terminated him, but he was pretty big at it in the service."

Dorrie said, "Do you mean there are Heechee weapons on the reservation?"

"No. Nobody has ever found a Heechee weapon. But they have found targets."

It was actually physically difficult for me to speak the next part, but I got it out. "Anyway, Sub Vastra says they were targets. The higher brass wasn't sure and I think the matter has been pigeonholed on the reservation by now. But they found triangular pieces of Heechee wall material—that blue, light-emitting stuff they lined the tunnels with. There were dozens of them and they all had a pattern of radiating lines—Sub said they looked like targets to him. And they had been drilled through by something that left the holes chalky as talc. Do you know anything that would do that to Heechee wall material?"

Dorrie was about to say she didn't but Cochenour interrupted her.

"That's impossible," he said flatly.

"Right. That's what the brass said. They decided it had to be done in the process of fabrication, for some Heechee purpose we'll never know. But Vastra says not. He says they looked exactly like the paper targets from the firing range under the reservation. The holes weren't all in the same place. The lines looked like scoring markers. That's evidence he's right. Not proof. But evidence."

"And you think you can find the gun that made those holes where we marked trace *C*?"

I hesitated. "I wouldn't put it that strongly. Call it hope. But there is one more thing.

"These targets were turned up by a prospector nearly forty years ago. He turned them in, reported his find, went out looking for more and got killed. That happened a lot in those days. No one paid much attention until some military types got a look at them—and that's how come the reservation is where it is. They spotted the site where he had reported finding them, staked out everything for a thousand kilometers around and labeled it all off limits. And they dug and dug, turned up about a dozen Heechee tunnels, but most of them bare and the rest cracked and spoiled."

"Then there's nothing there," growled Cochenour, looking perplexed.

"There's nothing they found," I corrected him. "But in those days prospectors lied a lot. He reported the wrong location for the find. At the time he was shacked up with a young lady who later married a man named Allemang and her son is a friend of mine. He

had a map. The right location, as near as I can figure—the navigation marks weren't what they are now—is right about where we are now, give or take some. I saw digging marks a couple of times and I think they were his." I slipped the little private magnetofiche out of my pocket and put it into the virtual map display; it showed a single mark, an orange *X*. "That's where I think we might find the weapon, somewhere near that *X*. And as you can see, the only undug indication there is good old trace *C*."

Silence for a minute. I listened to the distant outside howl of the wind, waiting for them to say something.

Dorrie was looking troubled. "I don't know if I like trying to find a new weapon," she said. "It's—it's like bringing back the bad old days again."

I shrugged. Cochenour, beginning to look more like himself again, said, "The point isn't whether we really want to find a weapon, is it? The point is that we want to find an untapped Heechee dig for whatever is in it—but the soldiers think there *might* be a weapon somewhere around, so they aren't going to let us dig, right? They'll shoot us first and ask questions later. Wasn't that what you said?"

"So how do you propose to get around that little problem?" he asked.

If I were a truthful man I would have said I wasn't sure I could. Looked at honestly, the odds were we would get caught and very likely shot. But we had so little to lose, Cochenour and I, that I didn't think that important enough to mention.

I said, "We try to fool them. We send the airbody off and you and I stay behind to do the digging. If they think we're gone they won't be keeping us under surveillance. All we have to worry about is being picked up on a routine perimeter search."

"Audee!" cried the girl. "If you and Boyce stay here— But that means I have to take the airbody and I can't fly this thing."

"No, you can't. But you can let it fly itself." I rushed on: "Oh, you'll waste fuel and you'll get bounced around a lot. But you'll get there on autopilot. It'll even land you at the Spindle." Not necessarily easily or well—I closed my mind to the thought of what an automatic landing might do to my one and only airbody. She would survive it, though, ninety-nine chances out of a hundred.

"Then what?" Cochenour demanded.

There were big holes in the plan at this point, but I closed my mind to them, too. "Dorrie looks up my friend BeeGee Allemang. I'll give you a note to give him with all the coordinates and so on and he'll come and pick us up. With extra tanks we'll have air and power for maybe forty-eight hours after you leave. That's plenty of time for you to get there, find BeeGee and give him the message, and for him to get back. If he's

late, of course, we're in trouble. If we don't find anything we've wasted our time. But if we do—" I shrugged. "I didn't say it was a guarantee—I only said it gave us a chance."

DORRIE was quite a nice person, considering her age and her circumstances, but one of the things she lacked was self-confidence. She had not been trained to it—she had been getting it as a prosthesis, from Cochenour most recently, I suppose before that from whoever preceded Cochenour in her life—at her age, maybe her father.

The biggest problem was persuading Dorrie she could do her part. "It won't work," she kept saying. "I'm sorry. It isn't that I don't want to help. I do, but I can't. It just won't work."

Well, it would have.

Or at least I think it would have.

In any event, we never got to try it. Between us, Cochenour and I did get Dorrie to agree to give it a try. We packed up what little gear we had put outside, flew back to the ravine, landed and began to set up for the dig. But I was feeling poorly—thick, headachy, clumsy—and I suppose Cochenour had his own problems. Between the two of us we managed to catch the casing of the drill in the exit port while we were off-loading it. And while I was jockeying it one way from above, Cochenour pulled the other way from beneath and the whole thing came down on top of him. It didn't kill him. But it gouged his suit and broke his leg and that took care of my idea of digging trace *C* with him.

X

THE suit leg had been ruptured through eight or ten plies, but there was enough left to keep the air out, if not the pressure.

The first thing I did was check the drill to make sure it wasn't damaged. It wasn't. The second thing was to fight Cochenour back into the lock. That took about everything I had, but I managed it.

Dorrie was great. No hysterics, no foolish questions. We got him out of his suit and looked him over. He was unconscious. The leg was compounded, with bone showing through. He was bleeding from the mouth and nose, and he had vomited inside his helmet. All in all he was about the worst-looking hundred-and-some-year-old man you'll ever see—live one, anyway. But he hadn't taken enough heat to cook his brain. His heart was still going—well, whosever heart it had been in the first place, I mean. It had been a good investment—it pumped right along. The bleeding stopped by itself except from the nasty business on the leg.

Dorrie called the military reservation for me, got Eve Littleknees, was put right through to the base surgeon. He told me what to do. At first he wanted me to pack up and bring Cochenour right over but I vetoed that—said I wasn't in shape to fly and it would be too rough a ride. Then he gave me step-by-steps and I followed them

easily enough: reduced the fracture, packed the gash, closed the wound with surgical Velcro and meat glue, sprayed a bandage all around and poured on a cast. It took about an hour. Cochenour would have come to while we were doing it except I gave him a sleepy needle.

Then it was just a matter of taking pulse and respiration and blood-pressure readings to satisfy the surgeon and promising to get him back to the Spindle shortly. When the surgeon was through, still annoyed at me for not bringing Cochenour over, Sergeant Littleknees came back on. I could tell what was on her mind.

"Uh, honey? How did it happen?"

"A great big Heechee came up out of the ground and bit him," I said. "I know what you're thinking and you've got an evil mind. It was just an accident."

"Sure," she said. "Okay. I just wanted you to know I don't blame you a bit." And she signed off.

Dorrie was cleaning Cochenour up as best she could, pretty profligate with the water reserves, I thought. I left her to it while I made myself some coffee, lit a cigarette and sat and thought.

By the time Dorrie had done what she could for Cochenour, then cleaned up the worst of the mess and begun to do such important tasks as repairing her eye makeup, I thought up a dandy.

I gave Cochenour a wake-up needle and Dorrie patted him and talked to him while he got his bearings. She was not a girl who carried a grudge. I did, a few. I got him up to try out his muscles faster than he really wanted to. His expression told me that they all ached. They worked all right, though.

He was able to grin. "Old bones," he said. "I knew I should have gone for the recalciphylaxis. That's what happens when you try to save a buck."

He sat down heavily, the leg stuck out in front of him. He wrinkled his nose. "Sorry to have messed up your nice clean airbody," he added.

"You want to clean yourself up?"

He looked surprised. "Well, I think I'd better pretty soon—"

"Do it now. I want to talk to you both."

He didn't argue, just held out his hand and Dorrie took it. He stumped, half-hopped toward the clean-up. Actually Dorrie had done the worst of it, but he splashed a little water on his face and swished some around in his mouth. He was pretty well recovered when he turned around to look at me.

"All right—what is it? Are we giving up?"

I said, "No. We'll do it a different way."

Dorrie cried, "He can't, Audee! Look at him. And the condition his suit's in he couldn't last outside an hour—much less help you dig."

"I know that, so we'll have to change the plan. I'll dig by myself. The two of you will slope off in the airbody."

"Oh, brave man," said Cochenour flatly. "Who are you kidding? It's a two-man job."

I hesitated. "Not necessarily. Lone prospectors have done it before, although the problems were a little different. I admit it'll be a tough forty-eight for me, but we'll have to try it. One reason: we don't have any alternative."

"Wrong," said Cochenour. He patted Dorrie's rump. "Solid muscle, that girl. She isn't big, but she's healthy. Takes after her grandmother. Don't argue, Walthers. Just think a little bit. It's as safe for Dorrie as it is for you—and with the two of you there's a chance we might luck in. By yourself, no chance at all."

For some reason his attitude put me in a bad temper. "You talk as though she didn't have anything to say about it."

"Well," said Dorrie, sweetly enough, "come to that, so do you. I appreciate your wanting to make things easy for me, Audee, but, honestly, I think I could help. I've learned a lot. And if you want the truth, you look a lot worse than I do."

I said with all the sneer I could get into my voice, "Forget it. You can both help me for an hour or so while I get set up. Then we'll do it my way. No arguments. Let's get going."

THAT made two mistakes. The first was that we didn't get set up in an hour. It took more than two and I was pouring sick, oily sweat before we finished. I really felt bad. I was past hurting or worrying about it. I just thought it a little surprising every time my heart beat. Dorrie did more muscle work than I did, strong and willing as promised. Cochenour checked over the instruments and asked a couple of questions when he had to to make sure he could handle his part of the job, flying the airbody. I took two cups of coffee heavily laced from my private supply of gin and smoked my last cigarette for a while, meanwhile checking out with the military reservation. Eve Littleknees was flirtatious but a little puzzled.

Then Dorrie and I tumbled out of the lock and closed it behind us, leaving Cochenour strapped in the pilot's seat.

Dorrie stood there for a moment, looking forlorn. Then she grabbed my hand and the two of us lumbered to the shelter of the igloo we had already ignited. I had impressed on her the importance of our being out of the wash of the twin-fuel jets. She was good about it—flung herself flat and didn't move.

I was less cautious. As soon as I could judge from the flare that the jets were angled away from us I stuck up my head and watched Cochenour take off in a sleet of heavy-metal ash. It wasn't a bad takeoff. In circumstances like that I define "bad" as total demolition of the airbody and the death or maiming of one or more persons. He avoided those, but the airbody skittered and slid wildly as the gusts caught it. It would be a rough ride for him for the few hundred kilometers north that would take him out of detection range.

I touched Dorrie with my toe and

she struggled up. I slipped the talk cord into the jack on her helmet—radio was out because of possible perimeter patrols that we wouldn't be able to see.

"Change your mind yet?" I asked.

It was a fairly obnoxious question, but she took it nicely. She giggled. I could tell that because we were faceplate to faceplate and I could see her face shadowed inside the helmet. But I couldn't hear what she was saying until she remembered to nudge the voice switch.

Then what I heard was: "—romantic, just the two of us."

Well, we didn't have time for that kind of chitchat. I said irritably, "Let's quit wasting time. Remember what I told you. We have air, water and power for forty-eight hours. Don't count on any margin. One or two of them might hold out a little longer, but you need all three to stay alive. Try not to work too hard. The less you metabolize, the less your waste system has to handle. Maybe we can eat some of those emergency rations over there if we find a tunnel and get in—provided it's unbreached and hasn't heated up too much in a quarter-million years. Otherwise don't even think about food. As for sleeping, forget—"

"Now who's wasting time? You told me all this before." She was still cheery.

So we climbed into the igloo and started work.

The first thing we had to do was clear out some of the tailings that had already begun to accumulate where we had left the drill going. The usual way, of course, is to reverse and redirect the augers. We couldn't do that. It would have meant taking them away from cutting the shaft. We had to do it the hard way, namely manually.

It was hard, all right. Hotsuits are uncomfortable to begin with. When you have to work in them, they're miserable. When the work is both very hard physically and complicated by the cramped space inside an igloo that already contains two people and a working drill, it's next to impossible.

We did it anyhow, having no choice.

Cochenour hadn't lied. Dorrie was as good as a man. The question was whether that was going to be good enough. The other question, which was bothering me more and more every minute, was whether I was as good as a man. The headache was really pounding at me and I found myself blacking out when I moved suddenly. The Quackery had promised me three weeks before acute hepatic failure, but the prognosis hadn't specified this kind of work. I had to figure I was on plus time already. That is a disconcerting way to figure.

Especially when ten hours went by and I realized that we were down lower than the soundings had shown the tunnel to be and no luminous blue tailings were in sight.

We were drilling a dry hole.

IF WE had had the airbody close by, a dry hole would have been

an annoyance. Maybe a big annoyance, but not a disaster. What I would have done was get back in the airbody, clean up, get a good night's sleep, eat a meal and recheck the trace. We were digging in the wrong place. All right, next step is to dig in the right place. Study the terrain, pick a spot, ignite another igloo, start up the drills and try, try again.

That was what we would have done. But we didn't have the airbody. We had no chance for sleep or food. We were out of igloos. We didn't have the trace to look at. And I was feeling lousier every minute.

I crawled out of the igloo, sat down in the next thing there was to the lee of the wind and stared at the scudding yellow-green sky.

There had to be something I could do. I ordered myself to think.

Well, let's see. Could I maybe uproot the igloo and move it to another spot?

No. I could break it loose, all right, with the augers, but the minute it was free the winds would catch it and it would be good-bye, Charlie. I would never see that igloo again. Plus there would be no way to make it gas-tight again.

Well, then, how about drilling without an igloo?

Possible, I judged. Pointless, though. Suppose we did hit lucky and hole in? Without an igloo to lock out those twenty thousand millibars of hot gas we would destroy the tunnel contents anyway.

I felt a nudge on my shoulder and discovered that Dorrie was sitting next to me. She asked no questions, didn't try to say anything at all. I guess it was all clear enough without talking about it.

By my suit chronometer fifteen hours were gone. That left thirty-some before Cochenour would come back and get us. I didn't see any point in spending it all sitting where we were. On the other hand, I didn't see any point in doing anything else.

Of course, I thought, I could always go to sleep for a while . . . and then I woke up and realized that that was what I had been doing.

DORRIE was asleep beside me. You may wonder how a person can sleep in the teeth of a south polar thermal gale. It isn't all that hard. All it takes is being wholly worn out and wholly despairing. Sleeping isn't just to knit the raveled sleeve; it is a good way to shut off the world when the world is too lousy to face. As ours was.

But Venus is the last refuge of the Puritan ethic. Crazy. I knew I was as good as dead, but I felt I had to be doing something. I eased away from Dorrie, made sure her suit was belted to the hold-tight ring at the base of the igloo and stood up. It took a great deal of concentration for me to be able to stand up. The effort was almost as good at keeping out care as sleep.

It occurred to me that there still might be eight or ten live Heechees in the tunnel and maybe they had heard us knocking and opened up the bottom of the shaft for us. So I crawled into the igloo to see.

I peered down the shaft to make

sure. No. They hadn't. It was still just a blind hole that disappeared into dirty dark invisibility at the end of the light from my head lamp. I swore at the Heechees who hadn't helped us out and kicked some tailings down the shaft on their nonexistent heads.

The Puritan ethic was itching me and I wondered what I ought to do. Die? Well, yes, but I was doing that fast enough. Something constructive?

I remembered that you always ought to leave a place the way you found it, so I hauled up the drills on the eight-to-one winch and stowed them neatly. I kicked some more tailings down the useless hole to make a place to sit. I sat down and thought.

I mused about what we had done wrong, as you might think about a chess problem.

I could still see the trace in my mind. It was bright and clear, so something was definitely there. It was just tough that we'd lucked out and missed it. But how?

After some time I thought I knew the answer to that.

People like Dorrie and Cochenour have an idea that a seismic trace is like one of those underground maps of downtown Dallas, with all the sewers and utility conduits and water pipes marked, so you just dig where it says and you find what you want.

It isn't exactly like that. The trace comes out as a sort of hazy approximation. It is built up, hour by hour, by measuring the echoes from the pinger. It looks like a band of spiderweb shadows, much wider than an actual tunnel and very fuzzy at the edges. When you look at it you know that somewhere in the shadows there is something that makes them. Maybe it's a rock interface or a pocket of gravel. Hopefully it's a Heechee dig. Whatever it is, it's there somewhere, but you don't just know exactly where. If a tunnel is twenty meters wide, which is a fair average for a Heechee connecting link, the shadow trace is sure to look like fifty and may be a hundred.

So where do you dig?

That's where the art of prospecting comes in. You have to make an informed guess.

Maybe you dig in the exact geometrical center—as far as it is given you to see where the center is. That's the easiest way. Maybe you dig where the shadows are densest, which is the way the half-smart prospectors do, and that works almost half the time. Or maybe you do what I did—try to think like a Heechee. You look at the trace as a whole and try to see what points they might have been trying to connect. Then you plot an imaginary course between them, where you would have put the tunnel if you had been the Heechee engineer in charge, and you dig somewhere along there.

That was what I had done, but evidently I had done wrong.

I visualized the trace. The right place to dig was where I had put down the airbody, but of course I had been unable to set up the igloo there because the airbody had been in the way. So I had set up about ten yards upslope.

I was convinced that ten yards was what had made us miss.

I was pleased with myself for figuring it out, although I couldn't see that it made a lot of practical difference. If I had had another igloo I would have been glad to try again, assuming I could hold out that long. But that didn't mean much, because I didn't have another igloo.

So I sat on the edge of the dark shaft, nodding sagaciously over the way I had solved the problem, dangling my legs and now and then sweeping in tailings. I think that was part of a kind of death wish, because I know I thought, now and then, that the nicest thing to do would be to jump in and pull the tailings down over me.

The Puritan ethic stopped me. Anyway, suicide would have solved only my own personal problem. It wouldn't have done anything for old Dorrie Keefer, snoring away outside in the thermal hurricane.

I then began to wonder why I was worrying about Dorrie. The subject was pleasant to be thinking about, but sort of sad.

I WENT back to considering about the tunnel.

The end of the shaft couldn't be more than a few yards away from where we had bottomed out empty. I thought of jumping down and scraping away with my bare gloves. It seemed like a good idea. I'm not sure how much was whimsy and how much the fantasy of a sick man, but I kept thinking how nice it would be if the Heechees were still in there and when I scratched into the blue wall material I could just knock politely and they would open up and let me in. I even had a picture of what they looked like: sort of friendly and godlike. It would have been very pleasant to meet a Heechee, a live one that could speak English. "Heechee, what did you really use those things we call prayer fans for?" I could ask him. Or: "Heechee, have you got anything that will keep me from dying in your medicine chest?" Or: "Heechee, I'm sorry we messed up your front yard. I'll try to clean it up."

I pushed more of the tailings back into the shaft. I had nothing better to do. After a while I had the hole half full and had run out of tailings, except for the ones that were pushed outside the igloo and I didn't have the strength to go after them. I looked for something else to do. I reset the augers, replaced the dull blades with the last sharp ones we had, pointed them in the general direction of a twenty-degree offset angle downslope and turned them on.

It wasn't until I noticed that Dorrie was standing next to me, helping me steady the augers for the first few yards of cut, that I realized I had made a plan.

Why not try an offset cut? Did we have a better chance?

We did not. We cut.

When the drills stopped bucking and settled down to chew into the rock and we could leave them, I cleared a space at the side of the igloo and shoved tailings out for a while. Then we just sat there and watched the drills spit rock chips into the old shaft. It was filling up

nicely. We didn't speak. Presently I fell asleep again.

I didn't wake up until Dorrie pounded on my head. We were buried in tailings, but they weren't just rock. They glowed blue, so bright they almost hurt my eyes.

The augers must have been scratching at the Heechee wall liner for hours. They had actually worn pits into it.

We looked down and we could see the round bright blue eye of the tunnel wall staring up at us. She was a beauty, all ours.

Even then we didn't speak.

Somehow I managed to kick and wriggle my way through the drift to the crawl-through. I got the lock closed and sealed, after kicking a couple of cubic meters of rock outside. Then I began fumbling through the pile of refuse for the flame drills. Ultimately I found them. Somehow. Ultimately I managed to get them shipped and primed. I fired them and watched the bright spot of light that bounced out of the shaft and made a pattern on the igloo roof.

Then there was a sudden short scream of gas and a clatter as the loose fragments at the bottom of the shaft dropped free.

We had cut into the Heechee tunnel. It was unbreached and waiting for us. Our beauty was a virgin. We took her maidenhead with all love and reverence and entered her.

XI

I MUST have blacked out again. When I realized where I was I was on the floor of the tunnel. My helmet was open. So were the side-zips of my hotsuit. I was breathing stale, foul air that had to be a quarter-million years old and smelled every minute of it. But it was air. It was denser than Earth normal and a lot more humid, but the partial pressure of oxygen was about the same. It was enough to live on, in any case. I was proving that by breathing it and not dying.

Next to me was Dorrie Keefer.

The blue Heechee wall light didn't flatter her complexion. At first I wasn't sure she was breathing. But in spite of the way she looked her pulse was going, her lungs were functioning and when she felt me poking at her she opened her eyes.

"We made it," she said.

We sat there grinning foolishly at each other, our faces Hallowe'en masks in the blue Heechee glow.

To do anything more than that, just then, was quite impossible. I had my hands full just comprehending the fact that I was alive. I didn't want to endanger that odds-against precarious fact by moving around. But I wasn't comfortable and after a moment I realized that I was very hot. I closed up my helmet to shut out some of the heat, but the smell inside was so bad that I opened it up again, figuring the heat was better.

Then it occurred to me to wonder why the heat was only unpleasant, instead of instantly fatal. Energy transport through a Heechee wall-material surface is very slow, but not a quarter of a million years slow. My sad old brain ruminated on that thought for a while and

came up with a conclusion: at least until quite recently, some centuries or thousands of years, maybe, this tunnel had been kept cool. Automatic machinery, of course, I thought sagely. Wow, that by itself was worth finding. Broken down or not, it would be worth a lot of fortunes.

And that made me remember why we were there in the first place. I looked up the corridor and down, to see what treasures were waiting there for us.

WHEN I was a school kid in Amarillo Central my favorite teacher was a crippled lady named Miss Stevenson. She used to tell us stories out of Bullfinch and Homer. She spoiled a whole weekend for me with the story of one Greek fellow who wanted to be a god. He was king of a little place in Lydia, but he wanted more. The gods let him come to Olympus and he had it made until he fouled up. I forget how—it had something to do with a dog and some nasty business about tricking the gods into eating his own son. Whatever it was, they gave him solitary confinement for eternity, standing neck deep in a cool lake in hell and unable to drink. The fellow's name was Tantalus, and in that Heechee tunnel I had a lot in common with him. The treasure trove was there all right, but we couldn't reach it. We hadn't hit the main tunnel but a sort of angled, Thielly-tube detour in it, and it was blocked at both ends. We could peer past half-closed gates into the main shaft. We could see Heechee machines and irregular mounds of things that might once have been containers, now rotted, their contents on the floor. But we hadn't the strength to get at them.

The suits made us clumsy. With them off we might have been able to slip through, but would we then have had the strength to put them back on again in time to meet Cochenour? I doubted it. I stood there with my helmet pressed to the gate, feeling like Alice peering into her garden without the bottle of drink-me—and then I thought about Cochenour again and checked the time.

It was forty-six hours and some odd minutes since he had left us. He was due back at any time.

And if he came back while we were here and opened the crawlthrough to look for us and was careless about the seal at both ends, twenty thousand millibars of poison gas would hammer in on us. It would kill us, of course, but besides that it would damage the virgin tunnel. The corrosive scouring of that implosion of gas might wreck everything.

"We have to go back," I told Dorrie, showing her the time. She smiled.

"Temporarily," she said and turned and led the way.

AFTER the cheerful blue glow of the Heechee tunnel the igloo was cramped and miserable—and what was worse was that we couldn't even stay inside it. Cochenour probably would remember to lock in and out of both ends of the crawlthrough. But he might not. I

couldn't take that chance. I tried to think of a way of plugging the shaft, maybe by pushing all the tailings back in again, but although my brain wasn't working very well I could see that was stupid.

So we had to wait outside in the breezy Venusian weather. The little watch dial next to my life-support meters, all running well into the red now, showed that Cochenour should in fact have arrived by now.

I pushed Dorrie into the crawl-through, squeezed in with her, locked us both through—and we waited.

We waited a long time. We could have talked, but I thought she was either unconscious or asleep from the way she didn't move—and anyway it seemed like an awful lot of work to plug in the phone jack.

We waited longer than that, and still Cochenour didn't come.

I tried to think things through.

There could have been a number of reasons for his being late. He could have crashed. He could have been challenged by the military. He could have gotten lost.

But there was another possibility that made more sense than all of them. The time dial told me he was nearly five hours late finally and the life-support meters told me we were right up against the upper maximum for power, near it for air, well past it for water. If it hadn't been for our having breathed the Heechee gases for a while we would have been dead by then.

He had said he was a bad loser. He had worked out an end-game maneuver so he wouldn't have to lose. I could see him as clearly as though I were in the airbody with him—watching his clocks, cooking himself a light lunch and playing music while he waited for us to die.

That was no frightening thought. I was close enough to dying anyway for the difference in methods to seem pretty much a technicality—and tired enough of being trapped in that foul hotsuit to be willing to accept almost any deliverance. But the girl was involved and the one tiny little rational thought that stayed in my half-poisoned brain was that it was unfair for Cochenour to kill us both. Me, yes. Her, no. I beat on her suit until she moved a little and after some time I managed to make her move back into the crawl-through.

There were two things Cochenour didn't know. He didn't know we had found breathable air and he didn't know we could tap the drill batteries for additional power.

In all the freaked-out fury of my head, I was still capable of that much consecutive thought. We could surprise him if he didn't wait much longer. We could stay alive for a few hours more—and when he came to find us dead and see what prize we had won for him he would find me waiting.

AND so he did.

It must have been a terrible shock to him when he entered the igloo with the monkey-wrench in his hand, leaned over me and found that I was still alive and able to move where he had expected only a well-done roast of meat. The drill caught him right in the chest. I

couldn't see his face, but I could guess at his expression.

Then it was only a matter of doing four or five impossible things. Things like getting Dorrie up out of the tunnel and into the airbody. Like getting myself in after her, sealing up and setting a course. All these impossible things—and one other that was harder than all of them, but very important to me.

I totaled the airbody when we landed, but we were strapped in and suited up and when the ground crews came to investigate Dorrie and I were still alive.

THEY had to patch me and rehydrate me for three days before they could even think about putting my new liver in. In the old days they would have kept me sedated the whole time—now they kept waking me up every couple of hours for some feedback training on monitoring my hepatic flows. I hated it, because it was all sickness and pain and nagging from Dr. Morius and the nurses. I could have wished for the old days back again, except, of course, that in the old days I would have died.

But by the fourth day I hardly hurt at all, except when I moved. And they were letting me take my fluids by mouth instead of the other way.

I realized I was going to be alive for a while and looked upon my surroundings and found them good.

There's no such thing as a season in the Spindle, but the Quackery is all sentimental about tradition and ties with the Mother Planet. They were playing scenes of fleecy white clouds on the wall panels and the air from the ventilator ducts smelled of green leaves and lilac.

"Happy spring," I said to Dr. Morius.

"Shut up," he said, shifting a couple of the needles that pincushioned my abdomen and watching the telltales. "Um." He pursed his lips, pulled out a couple of needles and said, "Well, let's see, Walthers. We've taken out the splenovenal shunt. Your new liver is functioning well, although you're not flushing wastes through as fast as you ought to. We've got your ion levels back up to something like a human being's and most of your tissues have a little moisture in them again. Altogether—" he scratched his head—"yes, in general I would say you're alive, so presumably the operation was a success."

"Don't be a funny doctor," I said. "When do I get out of here?"

"Like right now?" he asked thoughtfully. "We could use the bed. Got a lot of paying patients coming in."

Now, one of the advantages of having blood in my brain instead of the poison soup it had been living on was that I could think reasonably clearly. So I knew right away that he was kidding me—I wouldn't have been there if I hadn't been a paying patient, one way or another, and though I couldn't imagine how, I was willing to wait a while to find out.

Anyway, I was more interested in getting out. They packed me up in wetsheets and rolled me through

the Spindle to Sub Vastra's place. Dorrie was there before me and the third of Vastra's house fussed over us both, lamb broth and that flat hard bread they like, before tucking us in for a good long rest. There was only the one bed, but Dorrie didn't seem to mind—and anyway at that point the question was academic. Later on, not so academic. After a couple days of that I was up and as good as I ever was.

By then I had found out who paid my bill at the Quackery. For about a minute I had hoped it was me, quickly filthy rich from the spoils of our tunnel, but I knew that was impossible. We could have made money only on the sly and we were both too near dead when we got back to the Spindle to conceal anything.

So the military had moved in and taken everything, but they had shown they had a heart. Atrophied and flinty, but a heart. They had gone into the dig while I was still getting glucose enemas in my sleep. They had been pleased enough with what they found to decide that I was entitled to some sort of finder's fee. Not much, to be sure. But enough to save my life. It also turned out to be enough to pay off the loosely secured checks I had written to finance the expedition, the surgical fee and hospital costs—and just about enough left over to put a down payment on a Heechee hut of our own.

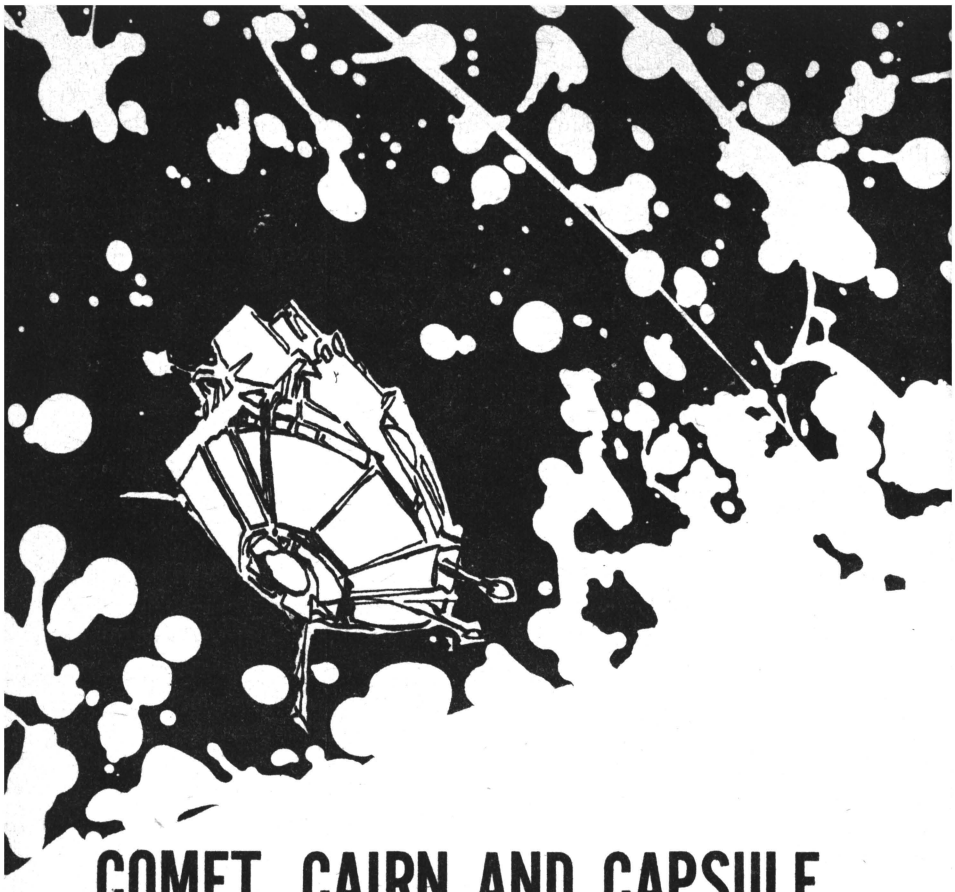
For a while it bothered me that they wouldn't tell me what they had found. I even tried to get Sergeant Littleknees drunk when she was in the Spindle on furlough. But Dorrie was right there and how drunk can you get one girl when another girl is right there watching you? Probably Eve Littleknees didn't know anyhow. Probably no one did except a few weapons specialists. But it had to be something, because of the cash award—and most of all because they didn't prosecute for trespass on the military reservation. And so we get along, the two of us. Or three of us.

Dorrie turned out to be good at selling fire-pearls to the Terry tourists, especially when her pregnancy began to show. She kept us in eating money until the high season started and by then I found I was a sort of celebrity, which I parlayed into a bank loan and a new airbody, so we're doing well enough.

And I've promised that I will marry her if our kid turns out to be a boy, but as a matter of fact I'm going to do it anyway. She was a great help, especially with my own private project back there at the dig. She couldn't have known what I wanted to bring back Cochenour's body for, but she didn't argue and, sick and wretched as she was, she helped me get it into the airbody lock.

Actually I wanted it very much.

It's not actually a *new* liver, of course. Probably it's not even second-hand. Heaven knows where Cochenour bought it, but I'm sure it wasn't original equipment with him. But it works. And bastard though he was, I kind of liked him in a way and I don't mind at all the fact that I've got a part of him with me always. ●



COMET, CAIRN AND CAPSULE

The wanderer carried word from the far stars: Do not destroy!

DUNCAN LUNAN

THREE was the magic number in the design of the spaceship *Newtonian*. At launch she had carried three reaction mass tanks side by side in what older designers still called a Titan III configuration. *A* and *B* tanks had given their all to rendezvous orbit insertion

and had been jettisoned, taking with them the auxiliary thrust chambers and large segments of radiation shielding. There remained the sustainer motor, pile, shielding, *C* tank—then the service module and crew sphere, flanked by two modified lunar shuttles. One was topped by a capsule (Penetration Module), the other by a winged Earth Lander. When the Lander was sunward and its shadow fell on the crew sphere it made the ship look like a ceremonial trident hanging in space.

Inside the ship, three was anything but a magic number. Paxton and Scherner had taken to sleeping in the Lander and Penetration Module, respectively, to get away from Sullivan and each other. It might be because, for the first time ever, they were traveling at a velocity that would take them out of the solar system unless diminished—the psychologists at Mission Control had no other explanation for the unforeseen development. But the clash of personalities had arisen three weeks out from Earth and escalated over the weeks following. In the last few days the men had been meeting only to collect their rations at feeding time and had spoken only during routine checks.

The trouble might, Scherner thought, have something to do with the visual aspect of what lay ahead. The comet was putting on its full display less than a week from perihelion and the *Newtonian* was now very close indeed. The awesome spectacle of the tail, millions of miles long and beginning to curve as the nucleus gained speed, was foreshortened out of existence—they saw only the shockwave of the coma, spraying out from the bright spot of the nucleus, then pushed back by solar wind into a great plume against the stars. The ship's slow rotation swept the head around the forward window like the sweep of a celestial radar, but from the side windows only a faint mist could be seen, fading off into invisibility. Something so big, but only seen from a distance was disturbing, as if the head, too, might vanish as they approached it.

By now, however, more detail was showing. They could see shells and smoky patterns in the gas coming off the nucleus, and the bright star of the nucleus itself had become a sunlike disk with spikes projecting from it. Behind the nucleus lay a tunnel of shadow, blurring away at its edges until it vanished into the glowing haze of the tail. Now the coma filled all the sky ahead and was beginning to move across the field of view—it was time for the *Newtonian* to match orbit. Hyperbolic orbit,

rare indeed—this comet was a stranger to our solar system and would never return.

The three astronauts strapped into their couches and got down to work with a minimum of conversation. Mission Control, too far off in any case to have much effect on the quarrels, was taking a business attitude—the mission had to go on, whatever the clash of personalities. The ship's rotation was halted. Last refinements were applied to the burn computations and the *Newtonian* turned away from the comet. The burn was a relatively short one at max chamber temperature, to boost the hydrogen jet past the comet altogether. If those superheated ions impinged on the coma, burning into those fragile shells, all the scientific objectives could be frustrated. There was no chance the crew would let that happen, would take out resentments on the celestial body each man's specialty was now in absolute priority as far as he was concerned.

They were much nearer the comet when Scherner saw it next from the observation turret on the crew sphere, as the ship turned back to face it. The fuming gases around it seemed motionless, but after some minutes changes could be detected. The dazzling spikes around the nucleus were no longer sharp, but still too blurred overall by intervening gas and ice crystals for the telescope to resolve them. Probing with radar and laser beams, Paxton could tell even less about them—he was getting a general reflection from a layer about double the size of the nucleus, which by visual estimate was six hundred miles across. Scherner suspected that the spikes were internal reflections in a cloud of ice fragments orbiting the nucleus, but the changing light patterns he detected might just be due to the movement of gases out and back.

"At any rate," he reported, "I can't see any obvious hazards to penetration."

"Radar seems to confirm that," Paxton broadcast. "The boundary layer I'm getting seems to be quite clearly defined. If we follow the programed approach we won't run suddenly into any problems."

THEY waited, still moving slowly toward the comet, for the signal to journey to Earth and the reply to amble back. A great deal of power was going into the *Newtonian* signal, to overcome their narrow separation from the sun. Interference had proved unexpectedly serious and Sullivan's clamp-down on personal messages had been the first source of friction

aboard. It wasn't as if they were overworking fuel cells, with power coming direct from the pile, and Scherner suspected that Sullivan, himself unmarried, was actively jealous of their daily hook-up to their homes. Mission Control should have realized that a man without a wife and children could be most homesick of all and should have arranged for someone to talk personally to the mission commander. But Scherner could hardly suggest that on open circuit with Sullivan right beside him. So Sullivan kept all radio time for business and Scherner and Paxton lost a valued link with home.

The Mission Control bleep sounded. "Roger, no visible hazards. We agree that you should prepare for penetration. Confirm launch readiness for final go/no go decision, over." *Bleep.*

"Okay, Dave," said Scherner, speaking directly to Paxton for the first time today. He didn't have much against Paxton, really, but he always felt he was talking across Sullivan when he addressed him. Perhaps the same feeling accounted for Paxton's incivility. "Why don't you move across into the PM and I'll follow you through." He put the lens caps back on the turret instruments and stowed them for the next deceleration, then pulled himself feet-first into the center section of the sphere. Sullivan didn't speak as he worked his way across, so neither did he.

Personnel selection had been almost wholly successful, he conceded as they checked out the Penetration Module. In space fiction (he'd never time to read any, but he knew just what it was like) at least one member of the crew had to be a maniac, an agoraphobe or something equally hard to detect, bent on aborting the mission five minutes after liftoff. But though the longest space flight yet had fallen down on compatibility, the conflict didn't even touch the mission program. After his unreasonable ruling on the signals Sullivan had found it necessary to impose his authority in a string of minor matters, probably because he knew he had been unreasonable. He, Paxton and Scherner had worked up a real dislike of one another, but they weren't thinking of curtailing the flight.

There was a way to curtail the flight, but it was intended for more serious difficulty than this. After perihelion they had an "abort window," a chance to fire the motor and drop right back, returning to Earth three months later. Otherwise, riding outward with the comet as they studied it, they

would make their separation burn not far from Earth's orbit and meet Earth itself nine months later. Fifteen months' voyage, or six—and they were going for fifteen without hesitation.

There could still be a scientific payoff if they had to abort. The Lander's cargo space contained payload at present, a much less sophisticated payload than the PM's. If manned penetration of the comet proved impossible they could launch a nuclear device which, hopefully sinking to the nucleus before detonation, would supply some of the data they hoped to get less violently from penetration. The experimental package—in effect, a complete space probe—they would leave behind.

THE checks went through without incident and they received a go for launch. They counted down the separation and Paxton turned the craft for Sullivan's visual inspection. Then they moved out laterally and Sullivan turned the *Newtonian* around once more. The final burn was gentle, the flaring gases missing the PM and the comet, bringing the spaceship to rest in the observation station it would hold for the next fourteen days. The PM traveled on with its original momentum, toward the hazed brilliance of the cometary nucleus.

There was no spectacle or sensation when they entered the coma. Like the end of the rainbow, the smoky plumes of gas receded and dissolved before them. But little by little the glow around the nucleus spread above them and below, waxing brighter and separating into bars and columns. Now the spikes were breaking up, visually, into discrete sources, tens, dozens, hundreds, each one brilliantly reflecting the sunlight along spikes of its own. By the time the streamers of haze completely surrounded the capsule the nucleus ahead was a lattice of light beams with what seemed to be a second sun at its heart.

"We're going to slow the ship," Paxton reported, activating fly-by-wire. "Much of what looked solid from outside is separating now. There's a huge shell of ice fragments, probably orbiting in clusters, though gravity's so low you can't detect it. If the nucleus itself were more massive we'd probably get a ring like Saturn's. As it is, I don't see any problems in continuing penetration—we can treat this stuff as weightless and stationary."

They burned their chemical motors to slow up—only briefly, for gravitational acceleration was

negligible. Making less than five hundred miles an hour, the PM traveled into the three-dimensional ice field.

The "descent" was okay—they could see the solid-appearing surface they were making for and bodies in their path separated visually and on radar in plenty of time to be avoided. Waves of sun-driven gas passed them from the huge bergs.

"By dead reckoning we're two hundred miles inside," Paxton radioed. The PM's signals were being relayed through the *Newtonian* to Earth (another reason for the ship's sunward position) and they had had loss-of-signal several times as they passed floating masses. "The concentration of material is increasing and we're cutting speed right now with another thirty-second burn. As well as ice masses we're now seeing dark, rocky fragments, from which all the gases must have sublimed away. They're all of considerable size, up to hundreds of feet across. Our micrometeor counters have not registered any significant increase in impacts—from which I'd deduce that the smaller rock fragments are being carried out into the tail by sunlight pressure and solar wind. This would seem to confirm the origin of meteors along cometary orbits."

"Roger, Dave," Mission Control said eventually. "We're happy with your fuel consumption, as indicated by Mike's last set of figures, but there's some anxiety here about your frequent use of vernier and braking engines. Your last burn should reduce the need for frequent restarts. Of course each engine should be able to take several hundred separate burns, but we'd like you to keep to fewer, longer burns if possible."

This was a problem they had foreseen. In a stronger gravity field, descending, they could have kept the motors burning steadily at low thrust—but for an approach to the comet, with the drawn-out penetration through the rock and ice field, they would have had to come in much too fast. Conversely, if they had started slowly enough to make the penetration on attitude control jets, entry would have taken far too long. But by now the situation had changed.

"We're nearing shoals—that's the best way I can put it," said Paxton. "There's a lot of loose stuff ahead, forming an inclined plane across our line of penetration. I'd say it's material that broke away from the nucleus in the first major solar heating, before the coma began to form and scatter the incident radiation. This ahead of us is the lighter stuff, beginning to drift

backward as the cloud of new fragments takes up a conical shape. Its transverse velocity is pretty well negligible and we should go through without trouble. We're going now to continuous vernier burn."

TAIL first, motors idling, they slid through the final barrier. Paxton held the ship confidently on fly-by-wire, turning the gimbaled verniers for brief bursts to avoid denser clouds of fragments. Visibility was poorer, with so many reflecting surfaces around that they were back to the lattice effect, softened now by the greater density of gases. Then, suddenly, the jeweled reefs were above them and they began their final braking.

"We're now in the lee of the true nucleus, starting our final approach. The body looks to be loosely compacted chunks of rock and ice. Gravity is very low. The streams of gas and pieces breaking away are all coming from the area under direct sunlight. The surface appears stable along a broad strip toward the terminator."

"I'm getting a really bright radar echo from about two-thirds of the way up the terminator," Scherner added. "We have enough fuel to select that for our touchdown."

Paxton began the course change. "If it's an anomaly we'll want a look at that."

The radar anomaly stayed conspicuous as the PM closed with it. "That's a bright echo," Scherner repeated. "It could almost be a metal outcrop."

"I'll land as close to it as I can. There's a promising site right next to the thing. I can see it now—it does look like metal. Put the radar into landing mode."

"Landing mode activated."

The icy horizon came up around them as Paxton throttled back. Ignoring the feeble attraction of the nucleus, he was flying the ship all the way to the surface. He shut off the braking engine and let the remnants of their approach velocity take them down. Scherner was calling off the approach figures, so he didn't see the anomaly come into view. Paxton did—and he interrupted the commentary.

"Control, the anomaly is artificial. I say again, the anomaly is an artificial object. We are go for touchdown, well within fuel reserves—contact light."

"Contact light is on," Scherner confirmed. "The PM has landed. Our inclination is three degrees, repeat three degrees. Fuel and oxidizer residuals as follows . . ."

THEY were through the landing checks and had given themselves go for a three-minute stay when the Earth reaction came

back. "We're getting pretty bad interference on your signal now, especially in the final stage of descent. Repeat description of the anomaly, repeat description of the anomaly." *Bleep.*

"I say again, the anomaly is an artificial object, repeat artificial. Now here we go for the details." Turning to the right, Paxton could just see the thing from his couch. "It looks like the bottom half of a totem pole. I'd say there are three distinct sections, one on top of the other. The bottom one is gold—or covered in gold foil—cylindrical, with heat radiator panels projecting. The one above that is roughly spherical, black and silver, with solar cell panels on the surface and projecting antennae. The top section is hexagonal for three-fourths of the way up—then it becomes a straight cylinder of lesser diameter. It, too, is gold and some of the panels of the hexagon have solar cells. There are connecting rods from it on one side, anchoring it to the bottom section —I don't think they touch the sphere at all."

"We have your landing status report," said Misson Control. "On the basis of that we'll give you go to stay for twelve hours. Let us have your computer readout and we'll assess status for the full mission." *Bleep.*

"Roger," said Scherner. "Secondary antenna is now deployed and locked on *Newtonian* for telemetry. Computer readout begins in three seconds, two, one, mark!" He pressed the switch and the transmission light went on.

The reply to Paxton's description came back. "We copy the appearance of the object, Dave. Can you estimate the function or purpose of the device?" *Bleep.*

Paxton was still staring to the right. "The more I look at it, the more I think it's not one device but three. The three sections certainly don't add up to a unit like the three segments of the PM. Nor, I think, is any one section a spacecraft in itself. I'd say each of them is a scientific package like the one in our cargo compartment, over."

"We have your computer readout," said Misson Control. "You are go to stay for the full mission." *Bleep.*

"Great. Now let me see this thing." Scherner pushed off his straps and sat up on his couch, then rose and turned to see out through the port. Paxton sat up more slowly. They both looked out in silence until Control came back on.

"Dave, we could accept that some other national group might have reached the comet some days ahead of us. But there hasn't been

time for three complete scientific payloads to be landed even if three ships the size of *Newtonian* could be launched in secret." *Bleep.*

"Roger, Control, that confirms our assessment," said Paxton. Scherner glanced at him in surprise. "We're looking at objects from outside the solar system altogether, like the comet itself. Some time in the past, when the nucleus swung past another sun, there was another landing here—maybe more than one."

"If that's true," said Scherner, "then the object might be millions of years old. This is a fast comet, but over interstellar distances—"

"Not less than a million years," Paxton agreed. "Well, let's eat."

"Huh? Oh, yes." Their program called for a meal and a sleep period. The discovery had knocked Scherner out of the routine, though he hadn't been thinking of going outside. The penetration descent had left him fatigued, but he could have looked at the object a long time yet. "Okay, you break out the food packs and I'll get some pictures through the window."

He even took some shots from the other windows—of the comet's surface composition and the bright columns of gas rising past the sun's disk from over the horizon. The sublimation mechanism was his speciality, was what he had come here to study, but it was taking second place in his thoughts.

WHEN they awoke they depressurized the module and Paxton made his way carefully down the side of the ship. Gravity was so low that effectively they were in free-fall, but the exhausts had softened the surface enough for the landing legs to grapple and hold. Scherner waited in the hatch while Paxton collected a contingency sample from the surface, sent it back up on his line—then he opened up the cargo section and began passing down the research tools. After he descended they were to start taking cores and putting down probes into the comet, but obviously that had to wait. Taking the cameras, they maneuvered on their jet packs toward the object.

It was roughly the same height as the Penetration Module, but all three sections were greater than it in diameter. Scherner had thought, in the capsule, that it was somewhat smaller, but sizes and distances were hard to judge. The irregular horizon was close everywhere, but there was a big outcrop of ice behind the object and light reflected from the crag lit up the side away from the sun, giving the structure a luminous, ethereal quality. Close up, they could see

that the bottom section was clear of the surface. In the shadow beneath it their torches found a great golden spike, anchored deep among the frozen gases of the comet.

"Whoever put down the first one meant it to hold," said Paxton to Earth. "From the taper on the length we can see, which is about four feet, I would estimate that the spike would hold through at least one stellar passage even on the sunward side of the comet. Maybe the makers knew where the comet was going next and decided to use it as an interstellar probe. These radiator panels imply that there was a big power plant in here, enough to carry a signal over interstellar distances—maybe beaming its accumulated data once it got well out from the star again. It could be storing information to do so again right now, but the panels are at exactly the temperature of our surroundings, so I'd guess the pile's wholly inert. It's had millions of years to cool right down."

"Better say tens of millions, or even hundreds," Scherner corrected from above. "Once the probe was beyond use to its makers, it served as an anchorage for other people's. The spheroid was welded to its top, covering the antenna unit."

"And the top section was added later still," said Paxton. "When I said the three didn't make anything in combination, I was wrong. What we have here is a cairn."

"Fantastic." Scherner was floatting by the upper unit, taking pictures. "These upper two could still be active, Dave, since they have solar cells. Maybe they're recording data on us right now."

"If the solar cells are still active after a million years in the interstellar dark they're pretty good," said Paxton. "But if they have omnidirectional antennae—maybe we'll pick up something when we're tracking our own instrument package."

"That would be fantastic! If we could compare their transmissions with our probe's we could maybe decode them. Then perhaps we could interrogate them about the planetary systems they originally passed through. It would be an interstellar probe for us—a time probe as well as a space one!"

"Great," said Paxton. "If we could get the second probe's recording of the third probe's system we'd get some actual data about the people who put the third probe here."

But closer examination proved these speculations mere dreams. All three probes were inert, so thoroughly frozen that the ice crystals frosting them could not be brushed off. Scherner and Paxton feared to apply any force, for the

whole structure might shatter—the metals had to be nightmarishly brittle. There didn't seem to be any prospect of taking the probes apart, not even of removing data recorders that might be slowly warmed and interrogated. They could find no access panels—not surprisingly. Their own probe was a sealed unit, almost all solid-state, so its power would last as long as possible on the outward swing from the sun. They had no burning or cutting tools to force a way into the cairn—like their predecessors, they could only leave their own instruments in turn.

THE work of studying the comet went on as intended. Scherner floated farther sunwards day by day, taking rock and ice samples, studying the gas flow from the surface and the effects of the coma on sunlight and solar wind. Using a one-man jet platform, he penetrated the region where fragments were splitting off the comet, even landing there as the violence of the outbursts diminished. The comet was receding swiftly from the sun now, preceded by the vast length of the tail which would soon contract.

They were coming up to activation time for the automatic station they would leave behind. One question remained to be settled, however. It seemed fitting to add the package to the top of the cairn, but the plan had been to anchor it to the ice. It had been designed to "listen" for tremors and shifts of components in the comet as the sunward face stabilized—obviously these would be affected by transmission through the cairn. It was also intended to measure the rate of "ice fall" as the coma gases froze and their crystals were drawn back to the nucleus. That was less of a problem, because the precipitation on the upper face of the probe could be corrected for the height of the cairn, to give the values for the comet's surface. However, Mission Control had been holding up the decision.

When they did return to the subject, they had something very different in mind. "From the dimensions you've given us for the cylinder atop the cairn, it would be possible to grip it with the landing legs of the PM."

Scherner and Paxton looked at each other. Paxton raised his eyebrows. "That would be possible, Control," he replied. "We could lower the PM to the top of the cairn on the attitude control jets and tighten up the landing legs. We might even get a weld, with two metal surfaces pressed together in vacuum—but I wouldn't expect the grip to hold if we tried to pull the cairn out of the ice."

"Surely that's not what they have in mind," Scherner said as they waited for the signals to course out and back.

"I can't think of what else they want," said Paxton. "We couldn't use the central engine, but the four verniers could be angled sufficiently to keep the flames from impinging on the cairn. Maybe they want us to bring back the top section—but we haven't enough fuel even for that."

Scherner nodded. Neither of them put his own feelings into words—by now they were of one mind concerning the cairn.

Mission Control replied. "As you may imagine, Dave, there's a big demand from scientists—and indeed from the public and their elected representatives—that the cairn be retrieved for study. The only way we can figure to do this involves sacrificing the back-up capability of the PM and the Lander, so the final decision will rest with Bob Sullivan as mission commander. What we plan is for Bob to come down to you in the Lander and set the nuclear device in the ice at the edge of the current break-up zone. We calculate that an explosion at that point has the best chance of blasting the cairn out of the nucleus. Then we hope that you'd be able to get remote control of the PM and slow up the cairn with the vernier engines. With your present fuel reserves, it should return to the vicinity of the sun within a hundred years. We'd like to know whether you have any additional comments before we go to Bob for his decision." ***Bleep.***

Paxton looked at Scherner. "You tell them," he said, looking sick. "I can't."

Scherner swallowed hard. "Nothing to add, Control. Over."

AFTER weighing up all the factors Sullivan accepted the plan—surprising neither Paxton nor Scherner. His solo penetration of the comet posed no real problems because he knew what to expect. Only the landing might be tricky and for that he would have a talk-down. In due course they saw the bright flare of the Lander motors descending through the inclined belt of debris (bigger fragments now, more widely spaced), and with Scherner on the PM radar and Paxton outside, they talked him down without trouble.

Atop its booster, identical to the PM's, the winged Lander made an equilateral triangle with the PM and the cairn. Sullivan went through the routine checks on his own, then suited up immediately for EVA.

Paxton helped him out and to-

gether they drifted across to the cairn. Scherner was already there, waiting for them. They floated slowly up the structure, both scientists trying to read the mission commander's mind.

At the top of the cairn Sullivan cut his jets and hung there, sinking imperciptibly in the gravity of the nucleus. "I thought it might be an anticlimax," he said at last, "but that thing is absolutely beautiful. Not just in itself, though it has a strange unity of its own, but in all that it stands for."

"So it's got to you as well," Scherner said inadequately.

"Yeah. Do you think it will survive disruption of the nucleus?"

"I doubt it." Paxton pointed to the ice bulk beyond. "That berg alone could crush it—just with the wallop it would pack tumbling over. That bomb is going to break loose everything. I don't think we'll even find the cairn again—there'll be nothing left of it to find."

"They only asked us whether it could be set up," Scherner said. "Not whether we thought it would work—or whether we should even try to retain the cairn. Earth wants and Earth grabs—they'd sooner smash the cairn than let it go—if they can't have it."

Sullivan shook his head. "Yeah. It's too bad."

"Come and see what Dave has been doing," Scherner said to him.

"What Dave has been doing?" Sullivan asked as they floated towards the PM. "Wait a minute —you fellows have been falling behind on the EVA program—"

"I've been doing most of that lately," Scherner said wearily. "Sure, it might have been a little risky for me to work far from the ship on my own, but I stayed high enough either with the platform or on the suit jets to be in touch with Dave, except when I dropped to take samples. If I hadn't called in every thirty minutes he would have come for me."

The PM was before them, the four panels folded down from the cargo hold like the armored ruff of some giant reptile. Paxton hung over the first of them, indicating his painstaking work on the interior of the panel.

"I brought down the rendezvous laser, unshipped from its housing, and refocused it," he said. "We can't use it to cut into the cairn because we don't have a long enough power line—but it can engrave these panels before we blow them clear. We were going to mount them around our station on top of the cairn. On this one I've put the sun, the Earth's orbit and the comet's—and the *Newtonian's* path to the comet and back. I put the moon beside the Earth so they

could identify Earth in this second diagram at the side." He had shown the planets of the solar system to scale, with their distances from the sun in astronomical units. "I've marked Earth *E* and the sun *S*, so *ES* is the astronomical unit, and I've put our numbers up to twenty-one along the bottom here so they can work them out. I couldn't figure any way to give them the actual distances, but at least they can chart the solar system to scale.

"The next two," he pointed, "are star charts, north and south. I haven't put much stress on constellation figures because it'll be who knows how long before the comet goes through another inhabited system, but I've shown the relative positions of the Milky Way, the Galactic Poles, M thirty-one, M thirteen and other globulars, the Hyades, the Pleiades and the Magellanic Clouds. With those points of reference people should be able to place where we were and when—even the open clusters should be good markers for a galactic year or so, provided they can be identified. That's for their scientists. The message is 'Here we are' and it doesn't matter that astronomical distances make it 'Here we were.'"

After drifting around the hull Sullivan met Paxton again at the fourth panel. "This one should give them the identification," Paxton said. "That's the Milky Way—the cross in it shows our position now. There are the Magellanics and there's Andromeda. I've started dotting in some globular clusters to show what they are. The Pleiades and the rest are obviously open clusters, by elimination. Down here I'm going to put a stylized man, woman and child, to show what we're like."

"Dave, those are incredible," said Sullivan at last.

"I've put a lot into them," said Paxton. "If you didn't feel as we do about the cairn I might not be showing them to you. We could have blown them off and you'd never have known."

"Nobody will ever know, if we blow up the comet," said Sullivan. "That's what you're trying to tell me. We have a chance to add to what other intelligent races have begun—" He fell silent for a moment. "Well, I've always heard that it was bad luck to break the chain. But at this stage, if we don't plant the bomb we'll obviously be defying Mission Control." Suddenly he grinned. "There's a way around that. Let's get moving—we'll mount the PM on the cairn, as ordered, and take pictures to prove it. While Dave finishes the fourth panel, we tell Control that

we're planting the bomb sunward, where they want it. Instead we'll take it up with us for the first stage of the ascent and cast it off when it has enough speed to leave the comet altogether. The excess fuel we use for that first burn will cancel the excess we didn't use planting the charge."

THEY moved the PM, instrument package and all, to hover above the cairn and this time Sullivan outside talked Paxton and Scherner down. With the leg grapples securely gripping the top cylinder, the PM looked entirely right sitting up there. The probe's antennae and instrument booms were extended and the package was activated. They were ready to contact Mission Control when they discovered they had lost touch with Earth. The *Newtonian's* high-gain antennae had drifted off the planet, the nucleus, or both. Probably the nucleus sensors had wandered off along the illusory spikes. The brilliant lattice overhead was opening now, beginning to separate into discrete objects reflecting the sunlight.,

Paxton and Scherner backed out of the capsule, bringing their few belongings. The men gathered at the Lander hatch, pulling themselves through it into the cabin. Sealing it up and pressurizing, they left ice and vacuum behind for the last time.

Central engine at low thrust, verniers flaring, the Lander made its way up through the inclined plane of fragments. Beyond it, coasting outward, Sullivan let the bomb go. It drew ahead on its own solid charge, fast enough to separate entirely from the comet. By the time the comet next came to a solar system the device would be too far away to be associated with it.

A floating iceberg was growing in the path of the Lander. Sullivan started the second burn. Threading a path through the satellites of the nucleus, the verniers fired again and again until one of them cracked.

A cluster of red lights came on, the warning buzzer sounded, and the ship was tumbled by the asymmetric thrust generated by the burn-out. Cut-off was automatic and fly-by-wire brought the ship back into the burn attitude.

"Rate of approach to nearest hazard," Sullivan demanded.

"Distance one point four miles —three minutes to impact," Scherner reported.

"Number three vernier has gone," said Sullivan. "We'll take a systems check on the others before we burn. Give it to me from item thirty-one, Dave."

Out of touch with Mission Control, they had to get themselves through the emergency. They completed the check with a minute and a half to spare and made the next burn on the central engine alone. The approaching ice cliff, spread with gemlike points, slid past.

Sullivan studied the reefs ahead. "We'll have to take some way off this thing," he declared. "Set up a twenty-second burn for the central engine, Dave." He drew back the hand-grip for a 180-degree rotation.

"We're going to be late back to the *Newtonian,*" said Scherner.

"Mission Control will sweat," Sullivan agreed. "They think an atom bomb's going off down here. But they won't tell your families until they do hear from us, I expect."

Depenetration was much harder now. With one vernier out of action, more work would fall on the central engine and the three verniers remaining. They could either angle the ship for each burn, loading work on to the central engine, or roll to bring the other verniers to bear when the missing one was needed. To conserve fuel in the attitude control thrusters, in fact, they must use the verniers as much as possible—but with all those roll maneuvers they could get off the *Newtonian* beam. And if they emerged low on fuel there was no-one to come and get them. Control had become a three-man job and the team clicked smoothly together.

Scherner, on radar and communications, kept them headed in the right direction. They emerged into the coma in approximately the right place and not long afterward the *Newtonian's* radio link locked onto them again. The Lander moved out toward clear space.

Control came on: "We were getting worried about you fellows for a while there, but you should get back to the *Newtonian* and move out some distance before the explosion." *Bleep.*

"Roger, Control," said Sullivan. "What will we tell them when there's no detonation?" he asked the others.

"No detonation," said Paxton.

"Right," said Sullivan and they all smiled, relaxed after the strain of the ascent.

Their hostility to one another was gone, Scherner realized—it hadn't reared its head during stress or even after. The discovery of the cairn had overshadowed it and dissolved it. That was the reason—though the message had not yet reached Earth—why the cairn had to remain intact, singing or silent, on its way among the stars. ●

Reading Room

LESTER DEL REY

FOR more than forty years, readers and writers have been unable to agree on a definition of science fiction that would separate it from the general field of pure fantasy. Most early attempts at a definition relied upon science as the essential element in science fiction. But that effort failed. Some of the best science-fiction stories involve almost no science, while C. P. Snow used a great deal of science in some of his mainstream novels. Speculation isn't the key word, because fantasy is also speculative. Extrapolation? No, because you can't extrapolate a galaxy of aliens—we don't know anything about aliens, so we can't honestly extrapolate from zero knowledge.

In effect we have been forced to fall back on a circular definition or no definition at all. Science fiction has often been considered to be simply what science-ficton readers like—and a science-fiction reader is one who likes science fiction. And around she goes. Most often we have simply assumed that everyone concerned with science fiction knows what the term means even if he can't define it.

If that idea was ever valid, it most certainly is not today.

I recently completed the editing of an anthology entitled *Best Science Fiction Stories of the Year*, to be published by Dutton. I had to read every piece of short (to 10,000 words) science fiction that was published during 1971

in the magazines and original anthologies.

I found some very good stories, but they were buried in a shocking mass of stuff that offered very little reason for its existence. I kept no records, yet at least half of what I read (particularly in the anthologies) was everything but science fiction. Much of it wasn't even fantasy. The writers had somehow learned enough of the field to locate the markets, but—if they ever read a science-fiction magazine—they didn't understand the basic nature of the medium.

It seemed to me that I must include a definition in the foreword to the book, so that readers would know what to expect. I spent a week trying to find such a definition and then had to start from scratch—to discover what science fiction is *not*.

Science fiction is not fantasy. It should not deal with what is known to be impossible. It need not involve high probabilities, but such things as shrinking the world to the atom won't work—we know too much of atomic structure and there are no electron "worlds." Magic won't work, unless fitted carefully into the structure of known science.

(There is a catch to the above, of course. Time travel and faster-than-light travel are pretty dubious possibilities and they are often used with no attempt to fit them into our known science. Convention, however, has accepted both as devices that facilitate the telling of certain stories. Telepathy and the psi powers have been similarly accepted.)

Rationality should be a requirement of all fiction—but science fiction especially must not be irrational. You can't set up a story of the sun about to explode and then solve the problem by sending out a fire rocket to spray the sun with water and quench the flame. You can't set up a projection into the future made possible only by science and then neglect science. You have to think out whatever probabilities you choose, attempt to see all the ramifications, build your world as completely as you can and then follow through within the limits you have given that world. *Item:* RATIONALITY.

I did come up with one positive. Science fiction is fiction—it deals in stories, not sketches or jottings. A story must feature a character who undergoes stress through inner or exterior conflict and creates a resolution, either happy or significantly unhappy. The common rules of fiction apply to science fiction—in fact, they apply even more strongly, since

the writer frequently must create acceptance or identification rather than find it in a commonly accepted background. *Item:* FICTION.

It took me several days to find the one factor that was still missing. Most of the above could apply to any good mainstream story. What made the difference? Suddenly I realized that science fiction never occurs in *the* past, *the* present, *the* future. In true science fiction something has to be different from what we know of the past or present—and no future is sure. We can project merely *a* future.

So science fiction deals with alternates. A story detailing our normal present—or actual past—set in the near future and moved to a geographic locale not on any map is still mainstream. But a story rationally developed out of racial riots in a present—and in which the South won the War between the States in science fiction. So is any honest attempt to write about *a* future. *Item:* ALTERNATE.

From the above we can combine certain elements into a fairly compact definition that seems to work fairly well for me: Science fiction is *fiction* that deals *rationally* with *alternate possibilities.*

Modern fantasy would deal rationally with alternate impossibilities, incidentally. The similarity in handling and attack probably explains why many readers have also been devoted to the better fantasy magazines. If there is such a thing as "speculative" fiction it probably differs from science fiction only when it omits the concept of the *alternate.* Thus the matter of relevance would properly belong to speculative fiction when the relevance was keyed tightly to the realities of *the* present—in other respects science fiction is also relevant, since all fiction should be relevant to the human condition.

This definition has nothing to do with value judgments. It says nothing about whether the result is good or bad—it simply determines for me whether the result is properly science fiction.

AND for the moment I'm going to suspend most of my own good-bad value judgments in reviewing an anthology that ties directly into the foregoing. The volume is titled *Clarion*, edited by Robin Scott Wilson (Signet, 95¢). It calls itself "an anthology of speculative fiction and criticism from the Clarion Writers' Workshop," and it might be free of the requirements of science fiction, but. . .

The cover labels it "A Signet Science Fiction" (sic). The copy

on the back cover mentions science fiction six times prominently and gives no mention at all to speculative fiction. And inside the front cover the puff quotes Damon Knight as saying, "This volume contains the work of 16 new science-fiction writers. . ."

I think it fair to decide that the volume is being marketed as science fiction and that it was edited to be sold as such.

Mostly it just plain ain't.

Oh, there are several rather interesting articles on science fiction by some of the professional writers featured on the cover—Joanna Russ, for one, discusses the place of science fiction and is in excellent form. Some of the professional articles, on the other hand, are little but puffs for Clarion. And if you expect to find much science fiction by those new writers, forget it.

There are twenty-one items inside, since some of the writers contributed more than one piece of work. Of these, three seem to be genuinely intended as science fiction by writers who know the field—and a few others have future dates or backgrounds that are intended to make them look like science fiction. There is also a genuine and rather pleasant fantasy at the end and a few other stories display elements of fantasy.

Altogether I estimated about 10,000 words of science fiction and fantasy in the whole book and perhaps an equal amount of wordage of simulated sf and fantasy. At least 32,000 words have nothing to do with anything outside the usual efforts of young writers to write *avant garde* or mainstream stories.

Anyone buying this book as science fiction is being robbed. But the unfortunate writers inside are being robbed even more. Apparently there is no effort at Clarion to teach the difference between science fiction and other branches of literature. That is hardly fair preparation for the type of writing that the market they hope to hit calls for.

Surely some of the lecturers from among the brilliant cast of visiting professional writers knew that the manuscripts they saw were not related in any way to science fiction. Or was the obviously happy time they had at Clarion enough to blur all judgment? Robin Scott Wilson, who headed Clarion, is himself a respected writer of science fiction. He should know the difference.

The writing in the book is often quite good of its kind. But it's the standard moody, experimental (make that pseudo-experimental, if you want to evaluate it honestly),

exhibitionist sort that is common to college courses where the emphasis is placed on write rather than right.

I've seen much better stories by Clarion students in the magazines, so I hope they will learn from the market what they didn't seem to get in the Workshop. After all, study of the magazines and of our classics is the best college for our writers.

THERE were no workshops when Ted White began planning to write science fiction. He had to do it all on his own, as most writers have found it best to do. He discovered science fiction in his school library, as I remember, and then found out about the magazines. His first writing was for the fan magazines, because science fiction was important to him. And after numerous battles in the pages of those journals he began to think he could write professional fiction.

By now he has written quite a bit of it, some as adult fiction and some for the teen-age market, to pay back the debt of his own discovery—perhaps.

I can't say that I've liked all he has written. In fact, I've disliked some of the fiction he considered his best. But when I've read one of his books, I've never been in the least doubt that I've been reading science fiction. He doesn't need dates and rocket ships and all the mechanical trappings to prove it's science fiction, because he has the whole field as his reading background.

His *Star Wolf* (Lancer, 95¢) is a simple story, stripped to the bare bones of adventure fiction. For most of the book, the cast of characters includes one man and a wolf-dog. Page after page goes by without a word of conversation (which is supposed to be needed to maintain interest). During the major part of the book, there are no enemies to be fought, no great conflicts to be met and endured—nothing except an endless trip across a cruel desert.

It's damned good!

In a way the book is a sequel to *Phoenix Prime*. It returns to the alternate world of Qar (pronounced Quahr by Ted, not with the Arabic stop I took the Q for). We find the hero of the first book has left a son to be brought up in squalor near the desert and to wonder at the legend of his father.

That father came from the desert, accompanied by a strange wolf-dog, then disappeared in the raids and wars of Qar. Markstarn, the son, wants to trace his sire. But he does nothing until one day a wolf-dog comes to him. Then he leaves

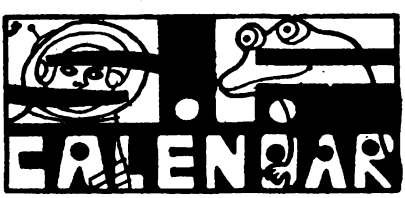
his tribe and heads for the deadly desert with the wolf.

A destination and a fate find him, eventually. Both are satisfactory and there are some excellent aliens and traces of vanished culture to pique the reader—yet more than half of the book is made up of nothing but the trek across the desert.

It's good because Ted has made it into two trips. One is the physical one. The other is the mental one inside Markstarn's head. The conflict comes from the nature of the boy's search for his father—he makes himself over into the image he seeks.

The book's merits are probably enhanced for me because I rather resented the death of the wolf-dog in the first book. In the sequel Ted has managed to give it all back to me and use it the way I hoped.

It's not great literature. As I said, it's an adventure story. But it's one of those rather rare adventure stories—and it's nice to see what can be done by sticking honestly to an idea.



July 7-9, 1972. PECON 3, Peoria, Illinois. Guest-of-Honor: Philip José Farmer. Membership: $3.00 in advance, $4.00 at the door. For information: Don Blyly, 170 Hopkins, URH, Champaign, Illinois 61820.

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July 12-16, 1972. EUROCON I: First European Science Fiction Convention with the Trieste SF Film Festival. Membership: $7.00, attending; $4.00, supporting. For information: Convention address: Eurocon I, Casella Postale 423, 30100, Venezia, Italy.

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August 3-6, 1972. DETROIT TRI-CON. At the Pick Fort Shelby Hotel. Registration: $4.00 in advance, $5.00 at the door. For information: Detroit Tri-Con, 9010 Westwood Avenue, Detroit, Michigan 48228.

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September 1-4, 1972. L. A. CON: 30th World Science Fiction Convention. At the International Hotel, 6211 West Century Blvd., Los Angeles, California 90045. Guest-of-Honor: Frederik Pohl. Fan Guests-of-Honor: Robert and Juanita Coulson. Membership: $8.00 attending, $6.00 supporting. For information: L. A. Con, P.O. Box 1, Santa Monica, California.

I WISH Edmund Cooper had stuck as honestly to his idea in *The Overman Culture* (Putnam, $5.95). He sets up a seemingly elaborate world where everything is disturbingly different and yet similar to the one we know—we have World War II and Queen Victoria and protective screens and robots. The story is told through the eyes of a small group of children who grow up under the care of odd parents to discover that the city they live in has no real exterior world and that most of what they are taught is a lie. In time they decide to upset their parents, to battle the robots and to seek their own destiny.

That's all promising enough. But the promise is never kept. The story collapses into a hoax—there was never any menace and a whole lot of the tension was totally needless. The reader is rather badly cheated. True, everything is explained and justified. But the letdown at the end makes all that went before seem rather silly.

FINALLY a brief mention of books that are not science fiction at all, but should be considered.

Ignition, by John D. Clark (Rutgers, $10.00), is science fact and gives the inside story of the development of our rocket fuels. Dr. Clark was very much on the inside and he tells the only clear story I've read of one of the high moments of scientific research. It's as good a job of reporting on a difficult field as I can remember and far funnier at times than most. He writes well; the events are fascinating; he makes the difficult clear—and this is how we got our rockets out into space. Some knowledge of chemistry is needed, but a good high-school course should be enough. I echo Isaac Asimov's Foreword in advising you to read the book.

Deryni Checkmate, by Katherine Kurtz (Ballantine, $1.25), is a superb historical adventure story of a fantasy world that relates somehow to our past. It is one of the best written and best conceived fantasy adventure novels I've seen for quite a while. The second of three novels, but worth reading now.

And Lancer Books has issued H. Rider Haggard's *She* and *The Return of She* in a single volume for $1.25. The first part is one of the great fantasy classics—the *Return* is just as good and much less known. I found myself enjoying it as much as I did three decades ago.

It is definitely not science fiction by any definition, however! ●

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"INTERPLANETARY call for Mr. Fisk Centers," the cute operator said.

Fisk almost dropped his sandwich. "There must be some mistake. I don't know anybody offplanet."

The girl looked at him with polite annoyance, as though nobody should be startled by such an event. "Are you Mr. Fisk Centers?"

"Yes, of course," he said. "But—"

Her face sifted out, smiling professionally. The screen bleeped, went blank and finally produced a man. He had handsome gray hair and wore the traditional Mars-resident uniform—a cross between a spacesuit and a tuxedo. He was seated behind a large plastifoam desk and a tremendous color map of classical Mars covered the wall beyond.

"Welcome to Mars, Mr. Centers," the man said, putting on a contagious grin. "I am Bondman, of Mars, Limited." Somehow he had managed to pronounce "Limited" the way it looked on the map on the office wall behind him—"Ltd."

Fisk was fifty and had been around, but he had never been treated to an interplanetary call before. The reason was not only the expense, though he knew that was extraordinary. He simply happened to be one of the several billion who had never had occasion to deal offplanet. Probably Mars, Ltd. was economizing by using OVTS—Open Volume Telephone Service—but the call was still impressive.

"Are you sure—"

"Now, Mr. Centers, let's not let modesty interfere with business," Bondman said, frowning briefly. "You're far too sensible a man for that. That's why you're one of the privileged few to be selected as eligible for this project."

"Project? I don't—"

The Marsman's brow wrinkled elegantly. "Naturally it isn't available to the common run. Mars is too fine a planet to ruin by indiscriminate development, don't you agree?"

Fisk found himself nodding to the persuasive tone before the meaning registered. "Development? I thought Mars was uninhabitable. Not enough water, air—"

"Most astute, Mr. Centers," Bondman said, bathing him with a glance of honest admiration. "Indeed there is not enough water or air. Not for every person who might want to settle. Selectivity is the key—the vital key—for what can be a very good life indeed. Mars, you see, has space—but what is space without air?"

"Right. There's no good life in a spacesuit. I—"

"Of course not, Mr. Centers. The ignorant person believes that man must live on Mars in a cumbersome suit and so he has a low regard for Mars realty. How fortunate that you and I know better." And before Fisk could protest Bondman continued: "You and I know that the new static domes conserve air, water and heat, utilizing the greenhouse effect to make an otherwise barren land burst into splendor. Within that invisible protective hemisphere it is completely Earth-like. Not Earth as it is today, but as it was a century ago. Think of it, Mr. Centers—pure clean air, gentle sunshine, fresh running water. Horses and carriages—automobiles, guns, hallucinogenic drugs and similar evils prohibited. A haven for retirement in absolute security and comfort."

SOMETHING was bothering Fisk, but the smooth sales patter distracted him and compelled his half-reluctant attention. He certainly was not going to Mars. "But they don't have such domes on Mars. That technique was developed only a few months ago and is still in the testing stage."

"Brilliant, Mr. Centers," Bondman exclaimed sincerely. "You certainly keep abreast of the times. Of course there are no domes on Mars now, as you so astutely point out. Why, it will be years before they are set up—perhaps even as long as a decade. This is what makes it such a superlative investment now—before the news gets out. Provided we restrict it to intelligent men such as yourself. I'm sure—"

"Investment? Now hold on," Fisk protested. "I'm not in the market for investment. I'm comfortably set up right now and—"

"I quite understand. Naturally you're not interested in a mediocre investment, Mr. Centers," Bondman said, frowning at his own failure in not having made the point clear.

"Do you think I would insult your intelligence by wasting your time? No, you have the discernment to identify the superior value when you encounter it, unlike the common—"

"What investment?" Fisk demanded, annoyed by the too-heavy flattery. The intrigue of the interplanetary call was wearing thin and the objection he couldn't quite formulate still nagged—and he wanted to finish his sandwich before it got stale.

The man leaned forward to whisper confidentially. "Marsland," he breathed, as though it

were the secret of the ages. His voice was so charged with excitement and rapture that Fisk had to struggle to maintain his emotional equilibrium. Could there be something in it?

After a pregnant pause Bondman resumed. "I see you understand. I was sure you would. You comprehend the phenomenal potential in Marsland realty, the incredible opportunity—"

"I don't comprehend it," Fisk snapped, gesturing with his neglected sandwich. "I have no use for land on Mars and I would consider it an extremely risky investment. That dome technique is still in the prototype stage—it may not even work on Mars. So if that's what you're—"

"Yes, of course you want to see the brochure," the salesman agreed irrelevantly. "And you shall have it, Mr. Centers. I will put it in the slot for you immediately, first class. I'm sure you will examine it most—"

Suddenly, facilitated by some devious mental process, Fisk's nagging question came into focus.

"You aren't on Mars," he said angrily. "Its orbit is fifty million miles outside Earth's. Even when Mars is closest it should take a good ten minutes to get an answer by phone."

"Congratulations!" Bondman cried jubilantly. "You have just qualified for our exclusive genius-intellect bonus certificate. Of course I'm not calling from that Mars you see in the sky—I'm here at the Mars, Limited promotion office. Mr. Centers, I'm so glad you were sharp enough to solve our little riddle within the time limit. You're the very kind of investor we prefer. I'll insert the certificate right now. And I'll be seeing you again soon. Bye-bye."

And while Fisk was marveling at the peculiarly childish "bye-bye" the image faded.

HE LIFTED his sandwich, a fine torula-steak on soyrye with enriched onion sauce, but found he was no longer hungry. He was sure this was a sales gimmick for something worthless, but Bondman's contagious excitement had gotten to him. Maybe there was a good investment on Mars.

Well, no harm in looking at the literature. He certainly didn't have to buy.

He didn't have long to wait, either. His mail receiver was already chiming with an arrival.

He picked up the bulky printing and spread it out. It was a first-class presentation, all right, with color photographs and glossy surfacing that must have cost dearly to transmit. If he had not been

present when it arrived he would have suspected a physical delivery rather than the normal mailfax. Mars, Ltd. must have oiled the right palms in the post office.

Well, he had to admit—he was intrigued. He probably would not buy, but he would enjoy looking.

First there was the bonus certificate, entitling him to a twenty percent reduction. Fair enough—but hardly sufficient to induce him to buy without his knowing the actual price. Then a spread on Mars—its discovery in prehistoric times, its variable distance from Earth (35-235 million miles), its long year (687 days—Earth days or Mars days, he wondered—or were they the same?), low surface gravity (one-third Earth's), pretty moons (ten-mile diameter Phobos, six-mile Deimos), scenic craters—all familiar material, but calculated to whet the appetite for investment and retirement.

Then down to paydirt. The proposed colony, Elysium Acres, was located on a map dramatically colored and named. An electrostatic dome a hundred miles in diameter, almost fifty miles high, enclosed a greenhouse atmosphere at Earth-normal pressure and temperature. The development was suitable for homesites, with carefully laid out horse trails and a delightful crater lake. Guaranteed weather, pollution-free atmosphere.

Fisk was middle-aged and cynical, but this gripped him. Earth was such a sweatbox now. He hated having to take weekly shots to protect his system against environmental contamination, and the constantly increasing restrictions invoked in the name of the growing pressure on worldly resources made him rage at times like a prisoned tiger. (What other kind of tiger was there today?) Perhaps if he had married, found someone to share his—but that was another entire dimension of frustration, hardly relevant now.

This Marsdome pitch catered to these very frustrations, he realized. There must be millions like himself, men well enough to do, intelligent and sick of their own lack of purpose. What a beacon it was, an escape to an unspoiled planet—in comfort.

But of course he was old enough to control his foolish fancies. He knew, intellectually, that no such development existed on Mars and probably never would exist. The sheer expense would be prohibitive. All that technology, all that shipment from Earth—why, passenger fare for one person one way would amount to twenty or thirty thousand dollars, assuming emigration could even be arranged. And for him it was out of the question.

Yet he could not help studying the brochure. Elysium Acres—such a suggestion of bliss! Could it possibly come true by the time he turned sixty? Why not, if they were able to finance it?

There was the real rub. Money. How much to establish the dome, stock it with good atmosphere, import vegetation, calculate and maintain a closed-system ecological balance, construct access highways, lakes, houses, service facilities? There would have to be hospitals, libraries, administrative buildings, emergency staffs—all the accouterments of civilization, in short. It would cost billions of dollars to maintain—perhaps trillions to construct. Naturally the brochure did not provide the price list.

But if it were affordable and if it were possible for him to go—what a temptation!

He punched his personal info number for his net worth, just checking. The totals flashed on the screen after he had provided his identification code—liquid assets just over fifty thousand dollars; investments at current quotations just under two hundred thousand; miscellaneous properties and options sixty to eighty thousand, pending urgency of sale. Grand total—a generous three hundred thousand.

Enough, with proper management, to tide him through the twenty-five years until his retirement annuities matured. He was hardly fool enough to jeopardize any of it by investing in pie-on-Mars. Still, it had been fun dreaming.

THE dream lingered next morning, a welcome guest staying beyond courteous hours. Fisk showered in the sonic booth, depilitated and dressed. As he arranged and set his graying locks he wondered irrelevantly whether he and the salesman, Bondman, used the same brand of hair tint. He studied his face in the mirror, picturing himself as a hard-sell agent, lifting his brow artfully to augment a pregnant pause. Yes, he did look the part—perhaps he would be good at it.

But then, subjectively, he saw the signs of what he knew was there—the circulatory malady that bound him to Earth for life. His quarterly medication kept it under control—but a trip to Mars, with the necessary accelerations and drugstates, was out of the question. That was why Mars would never be more than a dream for Fisk Centers, no matter how alluring the sales pitch. He would always be a portly, subdued Earthman.

So it was time to end it. He filed the Mars, Ltd. literature in the

recycle bin and watched it disintegrate. Then he punched breakfast. He felt lonely.

The phone lighted. "Yes?" he said automatically.

"Interplanetary call for Mr. Fisk Centers," the cute operator said. She had changed her hairdo, but she was the same one who had placed the call yesterday.

"Come off it, girl," he snapped, aware that there was nothing more useless than taking out a personal peeve on an impersonal employee. "It is not interplanetary."

Bondman of Mars phased into view. "Of course it is, Mr. Centers," he said genially. "The Mars, Limited office is legally Mars soil, you know. An enclave. We have to undergo quarantine before reporting for work, ha-ha! I trust you have studied our brochure—"

"Yes. I'm not buying."

Bondman looked hurt. "But you haven't even heard our price, Mr. Centers. I know a man as fair-minded as you—"

"I'll never go to Mars."

"Remember, you get a special bonus price because of your intelligence and judgment. I'm sure you'll recognize—"

"I have a circulatory disorder. Inoperable. Sorry."

Bondman laughed with a finely crafted lack of affectation. "You don't have to go to Mars, Mr. Centers. We're talking about investment."

"I told you I wasn't looking for—"

"You've studied the plans for Elysium Acres? The phenomenal hundred-mile dome, the luxurious facilities, the nineteenth-century atmosphere—literally—the scenic lots? Of course you have. Mr. Centers, you know values. What do you figure it will cost? I mean the entire setup on Mars, gross?"

"A trillion dollars," Fisk said, believing it. "Plus upkeep of billions per year."

"Would you believe three trillion? But you're remarkably close, Mr. Centers. You certainly understand investment. You merely underestimated the importance of this development to us—and to the world. We're putting everything into it, Mr. Centers. Another developer might do it for one trillion, but we put quality first. Three trillion—but we know we'll make a profit in the end and of course we have to consider profit, Mr. Centers. We're businessmen, like you—and believe me, sir, there is a demand. In ten years Earth will be a veritable nightmare and Elysium Acres will be an incredible bargain at any price." Bondman held up a hand to forestall Fisk's possible objection. "I'm not forgetting that you can't go, Mr. Centers. I'm

merely pointing out what an attractive investment this is going to be. Some will have the incalculable privilege of retiring to Elysium Acres—others will merely make a fortune from it. I—" here the voice dropped to its supercharged confidential tone—"hope to do both." Bondman paused long enough for that affirmation of faith to penetrate, but not long enough for Fisk to generate an interjection. "Now, we're subdividing E.A. into lots of one hundred feet square, give or take a foot—enough for a comfortable cottage and garden. Twenty million of them—yes, that's correct, Mr. Centers. That dome is a hundred miles across and there will be eight thousand square miles inside and two and a half thousand lots per mile—but I don't need to do elementary mathematics for you, Mr. Centers. Twenty million lots for three trillion dollars. That comes to a hundred and fifty thousand dollars per lot. A bit high for Earth, considering they're undeveloped—but this is Mars! Those lots are priceless, Mr. Centers, priceless—yet they will be put on the market at a price any successful man can afford." He held up his hand again, though Fisk had made no motion to interrupt. "But Mars, Limited needs operating capital, Mr. Centers, and we need it now. So we are offering for a limited time only a very, very special investment opportunity. You can buy these lots as investment real estate today for a tiny fraction of their actual value. Later—any time you wish—you may sell for a handsome profit. So although you may never have the privilege of going to Mars yourself—and please accept my heartfelt condolences, Mr. Centers, for I know how much you would have liked to retire to Elysium Acres—you can still benefit materially while advancing a noble cause through your investment."

FISK was more impressed by the emotive delivery than by the content. Salesmanship really was an art.

"How much?"

"Mr. Centers, we are offering these lots at—now listen carefully because this is hard to believe—at one-quarter price. Thir-ty sev-en thou-sand five hun-dred dollars for a property worth one hun-dred and fif-ty thou-sand dollars." Bondman spaced out the syllables to make the figures absolutely clear and emphatic.

"That's my bonus for nabbing your 'interplanetary call' gimmick?"

Bondman rolled his eyes expressively but did not take exception to Fisk's choice of words. "Of

course not, Mr. Centers. That's our one-time special-offer bargain price. For you alone we provide the bonus price. "Don't tell anyone else, because if word got out that anyone beat the bargain price there would be resentment. Even—" and a great rippling shrug bespoke consequences so vast that to invoke them by name would be foolhardy.

Bondman did not speak that mind-shattering figure. Instead he fed it into his mailfax. The full contract emerged from Fisk's slot. He paged through it while Bondman waited expectantly, anticipating the client's amazed pleasure.

Thirty thousand dollars. In other words, the straight twenty percent reduction the certificate had promised.

Yes, it did seem like a good buy. Still, Fisk had had some experience in such matters. He skimmed through until he found the small print—actually regular type buried in an otherwise innocuous paragraph.

Ownership remained with Mars, Ltd. until the stipulated amount had been paid in full. In the event of default, the property reverted to Mars, Ltd. without refund. The risk of capital was all with the purchaser, unless he bought outright for cash. Very interesting.

"Now you see the bargain we are offering you, Mr. Centers," Bondman said gravely. "Frankly, you are one of the very last to receive the thirty-seven fifty figure, let alone the bonus deal. Demand has been even greater than we anticipated, with many people buying multiple lots. Blocks of four—or even more. There will have to be a price increase. After all, the company needs capital—it is ridiculous for us to sell so low when our own clients are turning around and selling their lots for more. Why only last week a man sold five for two hundred thousand flat—and he'd only bought them last month. He made a twelve thousand profit on a three-week investment—and that's only the one we know about. Others—" here his shoulders rose in another eloquent shrug. "Where, Mr. Centers, is the limit?"

"Why didn't the second buyer come to you first?" Fisk inquired. Actually the described profit was only about six percent and normal fluctuation of the market could readily account for it. But it did seem to auger well for the growth prospects. Fisk could buy five lots for $150,000, not $187,500, and make that much more.

"Apparently he didn't realize our price was as low as it was," Bondman said sadly. "He thought he had information. The biggest sucker is the one who thinks he

knows it all—right, Mr. Centers? If he had only checked with us—but of course our price *won't* be lower after this week. So he has a good investment anyway—though not as good as it could have been. If our lots are going for forty thousand—well, we do need capital," he finished almost apologetically. "You understand."

Yes. Fisk was certainly interested now. Buy for thirty, sell for forty—but he knew better than to appear eager. "I might take a lot or two," he said. "But it's a lot of money. I'd have to liquidate some other investments and that would take time."

"I understand perfectly," Bondman agreed instantly. "I had to do the same when I invested in my own first Mars lot. It was well worth it, of course. Fortunately we have a time payment plan exactly suited to your situation. Ten-year term, so that it will be paid up when Elysium Acres opens and the real gold rush begins. Irrevocable six percent interest. Just three hundred and twenty-five dollars a month covers all, Mr. Centers—we absorb the cover charge. How does that suit you?"

FISK checked the figures quickly in his head. They were fair—six percent on a decreasing principal. No funny business there, no usury. And he would be able to liquidate his investments profitably within a year and pay off the rest, saving the interest. Some contracts had penalty clauses for early payment, but this one fortunately did not.

"Sounds good," he admitted.

"Good? Good?" Bondman demanded rhetorically. "Mr. Centers, how would you like to buy a cyclotron at the sheet metal price? That's how good it is! But that isn't all. What we are talking about is three-twenty-five a month—less than eleven dollars a day to control a genuine Marsland property now selling for—" He broke off, nodding significantly toward the contract with the secret figure. "And with values quadrupling—or more—in the period of agreement. Mr. Centers, you are actually investing a paltry three-twenty-five a month for a return of at least a hundred and fifty thousand in a mere decade."

Fisk knew. Thirty thousand dollars, plus nine thousand dollars accumulated interest for the ten-year span. For $150,000 value. A net profit of $111,000, or over eleven thousand per year—per lot. With just three lots he could triple his fortune.

"Still, it's a sizable amount. Are you sure it's safe? I mean, suppose something happens and the dome

doesn't get built. The lots would become almost worthless."

"Mr. Centers, it certainly is a pleasure to do business with you," Bondman exclaimed. "You don't miss a trick. Of course there is a nominal element of risk. Life itself is the biggest risk of all. But by buying on time you can eliminate even that one-in-a-thousand chance. Just consider. If something should happen to abort Elysium Acres tomorrow—and I assure nothing short of World War Four could squelch our plans—and you had bought today and paid your deposit premium, what would you have lost? Three hundred and twenty-five dollars. Why, Mr. Centers—you must blow more than that on one good suit."

Extremely sharp observation. Fisk *had* paid more than that for his dress suit.

Bondman followed up his advantage, knowing he had scored. "Considering the hundred and fifty thousand value—just what are you risking? One suit."

"But suppose something happens in two years. Or nine. I can't afford to lose a suit every month."

"Mr. Centers," Bondman said sternly. "I'm a busy man and this call is expensive. Don't waste my time and yours with inconsequentials. If you don't trust the stability of a fine new developer like Mars, Limited, don't invest. Or if you believe it will fail in two years, sell in one year. Your property will have increased in value at least ten percent—in fact, considering the coming price rise, twenty percent may be a more accurate estimate. But just keep it simple, let's call it ten percent. That's between three and four thousand dollars, right? And how much are you paying per year?"

"Between three and four thousand dollars," Fisk said.

"So if you sell then, your return on your actual investment will be just about one hundred percent. This is leverage, Mr. Centers—using a small amount of money to control a large amount of money. And the profit is yours even if, as you say, Mars Limited fails in two years. Or nine. Ha-ha." He leaned forward again, speaking intensely. "The dome may fail, Mr. Centers—but you won't."

Fisk laughed. "Very well, Mr. Bondman. You've sold me. Just give me a little time to check around—" This was a key ploy. If the salesman were out to take him he would do anything to prevent a fair investigation of the facts. And of course Fisk wouldn't buy without checking. That was the big advantage in being an experienced fifty. He couldn't be stampeded.

"Certainly, Mr. Centers. In fact I insist on it. If we were looking for foolish investors we never would have called you. I'll be happy to provide the government property report—"

"Thanks, no. I just want a few days to make some calls." He was hardly going to use Mars, Ltd. data to check out Mars, Ltd.

"By all means. I wouldn't have it otherwise." Bondman paused as though remembering something. "Of course, I can't guarantee your price, Mr. Centers. That increase is going to come through any day now—perhaps tomorrow. They never let us salesmen know in advance, of course, because some might—uh—profiteer at the expense of the customer. But I know it's soon. Your bonus will still apply, naturally, but five or six thousand per lot is a pretty hefty penalty for a day's time. Uh—do you think you could make it by this afternoon? Say, four o'clock? I don't want to rush you—and of course it might be as late as next week before the rise—but I would feel terrible if—"

Bondman would feel terrible if he lost his commmission because an irate customer balked at the higher price, Fisk thought. "I think I can make it by four." That would give him six hours—time enough.

"Excellent. I'll see you then. Bye-bye." And the screen faded.

FISK had not been bluffing. The Marslot investment seemed attractive indeed, but he never made snap decisions about money. It wasn't just a matter of checking—he wanted to appraise his own motives and inclinations. The best buy in the world—or Mars—was pointless if it failed to relate to his basic preferences and needs.

He punched an early lunch and ate it slowly. Then he began his calls.

First the library informational service for a summary of Mars, Ltd. operations. While that was being processed for faxing to him he read the sample contract carefully and completely. It was tight—he would not actually own the lot until it was completely paid for and he couldn't sell it until he owned it. Leverage? Ha!

But apart from that trap, it was straight. He could defang it by purchasing outright. Not to mention the interest he would save.

The rundown on Mars, Ltd. arrived. He settled down to his real homework.

Interesting—there was a cautionary note about that "Ltd." "Limited" meant that the developer's liability was limited to its investments on Earthsoil—of which

it had none. Its only Earthly enclave was, as Bondman had claimed, legally Mars soil. A nice device for impressive "interplanetary" calls to clients—but perhaps even nicer as a defense against lawsuit. An irate party might obtain a judgment for a million dollars—but unless he sued on Mars there was nothing for him to collect. What a beautiful foil against crackpots and opportunists.

The company was legitimate. In fact it was the largest of its kind, having sold billions of dollars worth of Marsland to speculators in the past few years. The Elysium Acres project was listed, too. A note read: SEE GOVERNMENT PROPERTY REPORT. Fisk sighed and punched for it—it had not been attached to the main commentary. He had a lot of dull reading to do.

The phone lighted. The hour was already four. He had meant to make some other checks—well, they hardly mattered. He had verified that Mars, Ltd. was no fly-by-night outfit.

"Did you come to a decision, Mr. Centers?" Bondman inquired, sounding like an old friend.

Fisk had decided—but a certain innate and cussed caution still restrained him. The deal seemed too good to be true and that was a suspicious sign. But aside from the "leverage" hoax he could find no fault in it. He decided not to query the salesman about the time payment trap—to do so would only bring a glib explanation and more superfluous compliments on his intelligence. Better to let Bondman think he was fooling the client.

"I might be interested in more than one lot," Fisk said.

"Absolutely no problem, Mr. Centers." Fisk was sure the salesman's warmth was genuine this time. "Simply enter the number of lots you are buying on the line on page three where it says 'quantity,' write your name on the line below, and make out a check to Mars, Limited for your first payment. That's all there is to it, since I have already countersigned. Fax a copy back to us and—"

Fisk's mail chime sounded. "Oh—the property report," he said. "Do you mind if I just glance at it first? A formality, of course."

"Oh, I thought you'd already read that. Didn't I send you one? By all means—"

A buzzer on Bondman's desk interrupted him. "I'm in conference," he snapped into his other phone. "Can't it wait?" Then his expression changed. "Oh, very well." He turned to Fisk. "I beg your pardon—a priority call has just signaled on my other line and—well, it's from my superior. Can't

say no to him, ha-ha, even if it is bad form to interrupt a sales conference. If you don't mind waiting a moment—"

"Not at all. I'll read the property report."

"Excellent. I'll wrap this up in a moment, I'm sure." Bondman faded, to be replaced by a dramatic artist's conception of Elysium Acres, buttressed by sweet music. The connection remained. This was merely Mars, Ltd.'s privacy shunt.

THERE was a *snap* as of a shifting connection and Bondman's voice was superimposed on the music. ". . . tell you I'm closing a sale for several lots. I can't just pull the rug out—he's signing the contract right now. . ." A pause, as he listened to a response that Fisk couldn't hear. Then: "To fifty thousand? As of this morning? Why didn't you call me before?

Fisk realized that Bondman's privacy switch hadn't locked properly. It wouldn't be ethical to listen and he did want to skim that property report. But the voice wrested his attention away from the printed material.

"Look, boss—I just can't do it. I quoted him the thirty-grand bonus. . . no, I can't withdraw it. He's sharp—and he's got the contract! He'd make a good Mars, Limited exec . . no, terms, I think . . . yes, if we could get him to default on the payments, so the reversion clause . . . hate to bilk him like that—I like him . . . no, I'm sure he wouldn't go for the new price. Not with the cancellation of the bonus and all. That's a twenty-grand jump just when he's about to sign . . . okay, okay, I'll try it—but listen, boss, you torpedo me in midsale again like this and I'm signing with Venus, Limited before you finish the call. . . I know they're a gyp outfit. But I promised this client the bonus price and now you're making a liar out of me and cheating him out of the finest investment of the century on a time-payment technicality. If I have to operate that way I might as well go whole Venus hog—"

There was a long pause. Fisk smiled, thinking of the tongue-lashing Bondman must be getting for putting integrity ahead of business.

Fisk knew it was unfair for him to take advantage of a slipped switch and private information—but he had been promised the bonus price and now someone was trying to wipe it out. If Mars, Ltd. were trying to con him out of his investment, he had a right to con himself back in.

". . . all right." Bondman's voice came again. "That's best. I'll try to

talk him out of it so nobody loses. But get those new quotations in the slot right away. Couple of other clients I have to call—they're going to be furious about that increase, but at least they were warned about delaying . . . yes . . . yes . . . okay. Sorry I blew up. Bye-bye."

The music faded. The picture vanished and Bondman reappeared, looking unsettled. "Sorry to keep you waiting so long, Mr. Centers," he said. "Bad news. The offer I was describing to you—well, I'm afraid we'll have to call it off."

"But I just signed the contract," Fisk protested innocently. "Are you telling me to tear it up already?"

Bondman's eyelids hardly flickered. "What I meant to say is that the conditions have changed. New government restrictions have forced up construction costs and the whole Elysium Acres project is in jeopardy. In fact, Mr. Centers, we now have no guarantee that there will even be a dome on Mars. Under the circumstances I don't see how I can recommend—"

So that was the pitch. "We all have to take chances, as you pointed out," Fisk said briefly. "I should think that if your expenses go up your prices would follow—to compensate. So I should buy now."

"Er—yes," Bondman admitted. "Still, it looks bad. I wouldn't want you to be left holding title to a worthless lot, Mr. Centers. Until this thing settles down—"

"One lot?" Fisk interjected with mock dismay. "Lots. I signed up for ten."

For a moment even the supersalesman was at a loss for words. "T-ten?"

"Why not, for such a good investment? Leverage, you know."

"Leverage! Let me tell you something—" Bondman caught himself. He sighed. He put on a smile of rueful admiration. "You certainly know your business, Mr. Centers. I only hope you aren't taking a terrible chance with a great deal of money. Are you sure?" But, observing Fisk's expression, he capitulated. "Well, then, just make out your first monthly payment for three thousand two hundred and fifty dollars and we'll—"

"Thanks, no. I'm paying cash."

Bondman looked so woebegone that Fisk felt sorry for him, though he knew the salesman would still receive a handsome commission along with his reprimand for letting so many underpriced lots go. "Cash? The entire amount?"

"Yes. Here is my check for three hundred thousand dollars, certified against the escrow liquidation of my total holdings. That saves you the annoyance of time payments

and gives you a good chunk of the working capital you need. Your boss should be well pleased, considering your rising expenses."

"Uh, yes," Bondman agreed faintly as Fisk faxed check and contract back to him. The originals remained with him for his records, but the faxes were legal, too. The deal was closed. He owned the lots outright and could not lose them by payments default. If he needed working capital himself, he could sell one at the fifty-thousand-dollar price tomorrow.

Bondman stared bleakly at the documents, then pulled himself together. "It has been a real pleasure doing business with you, Mr. Centers," he said with a brave smile. "I'm sure you'll never regret your purchase. Uh, bye-bye."

"Bye-bye!" Fisk returned cheerily as the connection broke.

BUT something about the salesman's expression just as the picture faded bothered him. It reminded him of what Bondman had said during the morning call: *The biggest sucker is the one who thinks he knows it all. . .*

The library information on Mars, Ltd. was general and, of course, bland. Any negative remarks would have made it vulnerable for a libel suit regardless of the truth. It had provided him with essentially the Mars, Ltd. publicity release, but added the cautionary note: SEE GOVERNMENT PROPERTY REPORT.

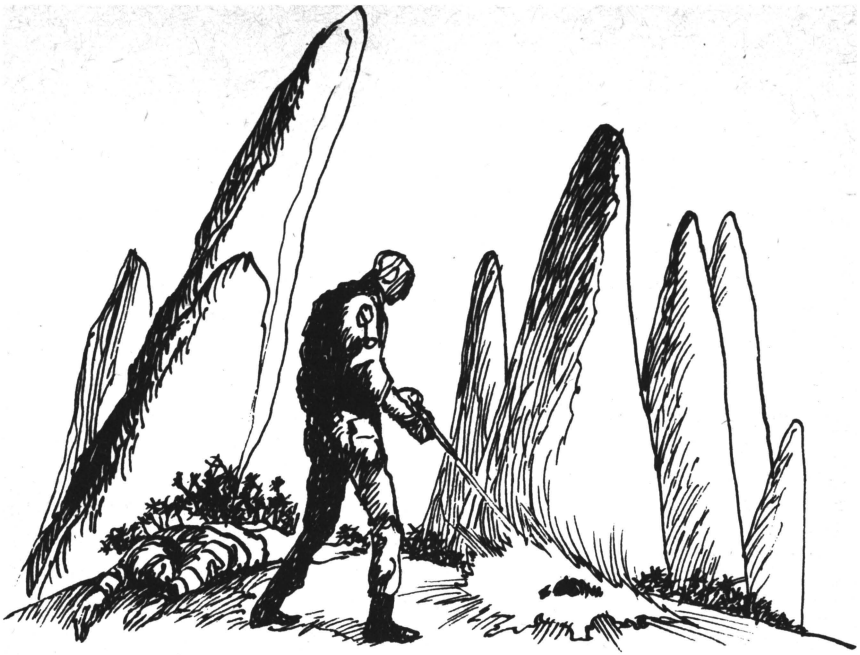
Fisk had been about to look at that report when Bondman's boss had interrupted and the privacy switch had coincidentally malfunctioned. Interesting timing.

After the price-increase call Bondman had been nervous and stuttery, hardly a supersalesman. His facade had disintegrated—yet he had known the word was coming. And salesman of that caliber should have been able to cover better than that. Unless the whole thing had been an act to puff up the confidence of a sucker who thought he knew it all.

Fisk's hand shook as he lifted the property report, for now he knew what he would find.

Plainly printed in red ink:

> This property is not adaptable for terraforming purposes. The lots are unimproved, unsurveyed and without roads, landing facilities or other improvements. Access is extremely poor. Site is subject to frequent ground tremors prohibiting construction of permanent buildings or erection of static-dome generators. Approximate value per lot is $300.00. . . ●



THE MEN AT KAPPA

They needed sustenance, and so did the voracious alien forms

WILLIAM LEE

THREE men were living in Kappa Dome and at the end of their first month together were getting along pretty well—this in spite of their considerable differences in character and the fact that each of them may have had something to hide.

Harvey Callan was a small man, wiry and energetic, an extrovert and an easy conversationalist. Within an hour after they had selected their sleeping quarters and unpacked their gear—following their arrival at Kappa Dome—he had been telling them about himself, his travels and his frequent and casual love affairs. He had no wife, no relatives, no

attachments. *Travel light,* he had said. *It's the only way to live. Don't get cluttered up with friends and possessions. Money, of course, is different. Every once in a while I collect a wad, but I can never keep it. . .*

Some of his talk about himself was undoubtedly true.

Nils Lundgren appeared to be Callan's opposite in most ways. He was big, slow moving and rarely talked, never about himself. His accent sounded Norwegian, but he neither confirmed nor denied this nationality. His speech was larded with limited profanities delivered without rancor. He bore more than his share of the work.

David Mallory's character seemed to lie somewhere between the other two. He was not talkative but was willing to answer Callan's questions about himself. He had been married, he said, but it hadn't worked out and had been ended by mutual consent. He had held a civil service job, something to do with cost accounting, but it had been neither interesting nor remunerative. Out of boredom he had applied for a year's contract on Midor III and, to his considerable surprise, had passed the physicals and been accepted. His story, too, may have been partly true.

The three of them, then, had settled into a casual colleague relationship while maintaining certain reticences. And honoring these in each other.

The company which, by right of discovery, would hold the mineral rights on Midor III for another twenty-odd years—and for which they all worked—was careful to keep its operations small. There were no useful minerals on the planet, only pebbles of crystalline alumina variously colored by impurities. Emeralds, rubies, topazes and sapphires were at best baubles and would lose most of their value if they became too plentiful. So there were ten domes only, scattered along the ridges that were easiest to harvest, and there were rarely more than forty men who lived and worked there.

Then Harvey Callan died during the night and there were only two of them to work Kappa until such time as a replacement might arrive. Callan died in a way to give you nightmares. A slug got him.

It was to be hoped that he never knew it. Those who spent time on Midor were in agreement that you lost consciousness instantly when a slug attached—or maybe when it just touched you. The agreement was wishful thinking, because how did anyone know? The victim never

moved or spoke or even screamed and in a few minutes after contact he was dead.

The slugs could digest their way through almost anything, boots, clothing or human skin, plastics or metals. But a shot of moderate voltage current would kill them fast. So would a laser or flame gun. The instruction manual provided by the company discussed nettles and slugs and other unpleasant surprises Midor could spring on the newcomer, but the advice given was simple. Keep clear of them. Stay out of valleys.

When Callan hadn't shown up in the galley for breakfast Mallory went to look for him. He was sprawled across the bed in his room. A slug was attached to his naked chest, its head buried, feeding. Automatically, preferring not to think about it, Mallory did what had to be done. He went to his room for his laser gun. The beam dispatched the slug fast enough and burned a small crease in Callan, too, but Callan was beyond caring. He may have been alive at that moment. His eyes were open but without expression.

CAREFUL to avoid contact with the slug, Mallory unstrapped the money belt from Callan's waist and, wasting no seconds, examined its contents. There was money, which Mallory ignored. Two sheets of foolscap covered with minute, rather sloppy script he removed and pocketed. He tossed the belt onto a chair with the rest of Callan's clothing and went to call Nils.

Nils stood and stared down at Callan for a minute, then turned away.

"You get breakfast," he said. "I'll clean up."

Mallory heated coffee and a can of hash and when Nils returned they ate without speaking.

"Where is he?" Mallory asked finally.

"Outside. That flat place off to the right."

"Wired up?"

"*Ja*, all ready."

Mallory sat and considered Nils's impassive face. The features were finely drawn, cast in a mold of scholarship, but Nils's speech was carefully untutored, his manner unfeeling. He seemed to care nothing about Callan's death. *But then,* thought Mallory, *I must give the same impression.* Methodically Nils cleared away the remains of their meal.

"We search the dome first, maybe," he said. "See how it got in."

While they had been eating, the shell of the dome had changed from black to cloudy gray, filtering in

as much daylight as would ever reach indoors. The day was only a little lighter outside under Midor's constant mantle of clouds. With all the dome lights on and with torches and guns in hand the men systematically explored the lounge, each sleeping compartment, the galley, the head and the sorting room. The base area of the dome had been blasted, leveled and fused. There could be no faults there. The plastic shell with its cobweb of wiring was fully charged. In any case, there were no breaks. The slight positive pressure maintained inside was holding steady.

In the sorting room Nils stared thoughtfully at the three sacks they had brought in the day before. Mallory nodded.

"That must have been it. You and I came in yesterday practically together and I put a charge on both our bags. Callan arrived later. He stopped for a minute in the galley, then came in here. He must have forgotten."

"Goddamn bad thing to forget," Nils muttered. "We take care of him now, eh? Before they get to him."

Callan's body was loosely wrapped in a tarpaulin, saturated with nitryl and circled with several turns of resistance wire. Nils picked up the connecting cable, glanced briefly at Mallory and closed the switch. The mortal remains of Harvey Callan erupted in white flame and a streamer of dark smoke went whipping down the wind. They stood for some minutes, each engrossed in his own thoughts, until the pyre had diminished to incandescent ash. When it was over they turned back to the dome.

"You want to call Iota?" Mallory asked.

Nils hesitated. "You do it."

MALLORY sat at the radio and jiggled the call key. Iota was the dome closest to them and the only one they could reach. They were limited to line-of-sight transmission and Midor's spiny topography provided very few clear channels even on the heights. It began to seem that everybody at Iota was out hunting gems, but at length Peter Amahandra answered. Mallory told him the story succinctly, with Nils sitting close by in the lounge, listening. Peter said that he would pass the word along to Alpha, so that the next of kin could be notified, and Mallory told him there weren't any.

He signed off and said to Nils; "You heard me suggest that since Alpha had five men they might like to send us a replacement right away. Amahandra didn't think so."

Nils shrugged. "You could bet on that. Want to go out—or sort first?"

"Sort first," Mallory decided. "We've got Callan's bag to do. Might as well get it over with."

In the sorting room they sat on opposite sides of the table with the screening box between them. A kilo of gems went into the box and a quarter of them fell through into the waste bin. Under strong lights they picked through the rest. Most of the stones were roughly spherical, but some of them were flattened, distorted or badly flawed. These also went to waste. It was a long way to the trading worlds, freight was costly and any gems under about three carats could only depress the market. The sorting went on and on.

At last Mallory stood and stretched. "We're caught up. Let's eat something and go."

It wasn't raining outside and the roiling clouds that looked so close over their heads showed patches of lighter gray. Even the moisture-laden air was more breathable than usual. The weather was good for Midor. Wordlessly the two men went their accustomed separate ways, Mallory westward along the ridge, Nils taking a long diagonal down to a lower level. Presently Mallory paused and looked around, his mind not seriously on gem hunting. Nils's diminished figure could still be seen, threading a zigzag path between points. It wasn't often you could see as far as today.

Except for the area that had been blasted around the dome, the points reared themselves in all directions. They were shaped like stalagmites but were larger—some immensely larger—than any limestone stalagmite could have grown. They were granite, hard black granite, left by millions of years of erosion of softer rocks. Usually, not always, there was room to move between them: a deposit of crumbled rock or silt that made a pathway where with caution you could set your feet. In these narrow gullies were the deposits where you found the gems, sometimes lying exposed, more often mixed with gravel. Here, too, you might find slugs, although, thank God, there weren't many of them on the heights. In the valleys were lush growths of stinging nettles, their chief food. Up here there was nothing to tempt the beasts. Nevertheless they came slithering up through the crevices.

It started to rain sometime after the men had left the dome, not heavily but enough to spoil the visibility. Mallory pivoted for a

habitual look around. There was too much local magnetism for a compass to be useful. It was wisest to extend the search pattern by only a little each day, memorizing the look of the terrain as you went. He might not be doing this much longer, but still.

IN SPITE of his preoccupation Mallory had a good day. He found one rich gully overlooked before, which, with the aid of the trenching shovel and rake, yielded half a sackful of sapphires and, close to the limit he had set himself for the day, another nearly as good. So he was back ahead of schedule. He shucked his outerwear and boots and searched Callan's room thoroughly, but with as little disturbance as possible. The money belt was lying as he had left it, across a chair. The money was still in it. It wasn't much—even as the accumulation of half a lifetime to traveling light.

He finished his search in ten minutes, mixed himself a drink and fed a tape into the viewer. But instead of watching he thought about Callan and Nils.

It was a half-hour or more before Nils stomped in. Mallory switched off the screen and said in response to the other's grunt that he would put together some dinner.

He swung open the door to the galley and jumped back with a yell. The place seemed to be swarming with slugs, all over the floor, the table, the oven. He shoved the door shut and put his shoulder against it, a meaningless reaction. The slugs couldn't push doors open.

"Is what?" Nils demanded.

"What the hell do you think? Slugs. All over."

"Where from?"

"Who cares? Let's burn 'em first and find out later."

Nils could move fast on occasion. He got to the supply room and was back with the flamethrower while Mallory was trying to remember where it was stowed. Nils set the dial for broad flame. Mallory swung the door wide. The slugs were even on the back of the door, three or four of them.

Living, they had an acrid, nauseating odor. Burned, they smelled indescribable. Still, there was no need for respirators. The men worked in turn, trying to hold their breaths. They left the galley a sooty mess—free, however, of living slugs—and retreated to the lounge. The noise of the air pump rose to a whine as the chemical sniffer reported massive contamination.

"You saw?" Mallory inquired grimly.

"*Ja.*"

"If they'd set out systematically to puncture every food can they couldn't have done it better."

"How the hell did they pull down the shelves?"

"Ate out the underpinnings, I figure." Mallory made another foray to the galley and kicked around the litter on the floor. "We have enough food for a week or so —if we don't mind eating the leavings from a bunch of slugs. Not for me. I'm going to call Iota and get them to send over a load. If they can't spare it, one of the other domes can."

With the work day over, the radio responded promptly.

"Who's that, Barton? Listen, Jake, we've got a mean situation here. You know about Harvey, of course. Yes, we think he forgot to sterilize his sack. Sure, we took care of it, but only after one of them got him. Well, he went into the galley and must have put it down there for a minute and one of them got out and laid eggs all over the place. Sure as hell they hatched. I don't know, fifty or a hundred maybe. We haven't made a body count. What's important is that we haven't any food left. Oh, nuts. You know they can dissolve their way or chew their way, whatever they do, through a metal can in nothing flat. Take a look in your garbage pit. Yeah, we'll find out as soon as the stink is gone, but so what? I'll bet there won't be twenty cans fit to use. The point is, you're going to have to send over some food. Maybe some extra cyanide. We're going to have to sterilize the whole dome. What?"

He listened and at length said, "I'll call you back."

"That does it," he told Nils. "You'd better get ready for a long walk. All three aircars are at Alpha Dome and they're all out of commission. Their current went off for a few minutes last night and by the time they got it fixed the little bastards had crawled over the repulsor plates and corroded them to the extent that they won't lift. They're grounded till the next ship arrives."

Nils stared at him expressionlessly and said nothing.

"Thirty-four days," Mallory added, "if it arrives on schedule."

AN HOUR later they had completed a partial cleanup and a count of the cans and foil packs of food that could be eaten safely—all told, enough for a week. So the trek to Iota was unavoidable.

Under any ordinary conditions thirty-three kilometers should have been no distance at all for the two men to cover but these

miles were figured as the crow would have flown, had there been any crows on Midor. On foot the course would be twisting and turning between points and, for all except the first few kilometers, it would be territory the men had seen only once and then from the air. Iota and Kappa lay on the same ridge. It, however, angled sharply between the two domes. To follow the peak would have taken the men far out of their way and a straight line march, if one had been possible, would have cut across the lowland swamps. The compromise route, the only feasible one, would descend the slopes nearly to the valley's edge, parallel it, then ascend again toward—if they were lucky—Iota Dome. At no point could they expect to see the dome until they were almost on it. They could expect to be as good as lost for two days, guided only by the general slope of the land.

It would be useless to leave at night and impossible to fumigate with cyanide without leaving the dome. In consequence Mallory at least spent a jumpy night imagining slugs. Nils appeared to have lapsed into apathy. He did put in some time poring over a virtually useless map. Then, an hour before dawn, he dressed for the trek, gathered his gear together and sat staring aimlessly at the floor.

Mallory rechecked the items he proposed to take along. The total was not too different from what they would carry on a usual day. Regulation wearing apparel: coveralls integrated with boots and gloves, neck cloths, hard hats with lamps attached—a few food packs stowed in pockets, enough for two or three days. If they weren't at Iota by then it probably wouldn't matter. No need to carry water on Midor. The rain tasted sour and metallic, but it was drinkable. Laser guns. Walkie-talkie, in the hope that it might pick up something when they got close enough to Iota. At the last minute Mallory returned to his room and collected a small handgun that fired anesthetic pellets. It fitted snugly into an inner pocket. He wondered what undeclared items Nils might be taking.

He made a last call to Iota to say that they were about to leave. Amahandra wished them luck and promised to be on the lookout. Light and power switches were flicked off. The door closed behind them and they turned their backs on five million stellars worth of gems.

Rain was falling heavily and the wind had picked up to eighty or ninety kilometers from yesterday's

relative calm. Without wanting to do so, Mallory glanced at the patch of blackened ash—all that remained of Callan. Most of it had washed away. Nils stepped past him and took the lead. For a while they would be traversing ground with which he was familiar. Mallory was glad to be following.

By their watches it was morning, but the sky still seemed quite black and here, close to the heights, the points reared upward fifty to a hundred or more meters. Some light was reaching them, though, and it was easier to find a footing without the headlamps. The rain drumming on their helmets drew slanting silvery lines that looked more like metal rods than discrete drops. Washes of diffuse lightning flickered among the clouds and occasional rumbles of thunder were audible over the rain.

At length it seemed to be getting lighter, not so much from the advancing day as from the shorter points—not that they were shorter in fact, but the rubble between them was increasing in depth and the tracks were wider. They came under the lee of a shallow cliff and by unspoken agreement stopped for a breather. It had been evident for some time that Nils was beyond the area he knew.

"Want me to go first?" Mallory shouted over the din.

Nils didn't bother to answer and after a minute moved on. They scrambled along the top of a scree slope, rocks sliding and rolling under their feet. Once Nils fell and rolled a little distance. The tumble must have been bruising, but he got up and went on without a limp.

Three or four kilometers a day was what they were used to walking. By the time they had used up a half-day the calves of Mallory's legs were beginning to knot. His boots had been drawn from general stock at Alpha and had never fitted well. Each change of angle was resisted by his muscles. He and Nils would have to find a place to stop before nightfall, likely less than halfway. Mallory wanted very much to call another brief halt, but he wanted still more not to reveal his fatigue to the phlegmatic Nils.

THE figure ahead of him disappeared suddenly. "What the hell?" Mallory growled. They weren't a dozen paces apart. He discovered Nils by tripping over him. Nils was apparently on hands and knees. "What the hell?" Mallory repeated.

"Foot caught."

"Grab my hand."

Nils grabbed and heaved and failed to budge. Mallory unshipped

the lamp from his helmet and surveyed the situation. Nils's right leg was down in a crevice as far as the knee. Water streamed into the crevice but found a channel below and drained away and Mallory could see the heavy boot jammed between rocks. The foot was twisted.

"We'll have to get your foot out first," Mallory said.

The boots were equipped with four quick-release buckles, but it was evident that Nils couldn't reach them. Mallory lay down with the lamp in one hand and maneuvered his arm into the hole. From this vantage he could see more and what he could see made his scalp crawl. Less than a hand's breadth from Nils's foot a giant slug was clinging to the rock. Its body was extended, interrupted in the act of rippling upward. The light had startled it into momentary immobility. It couldn't be touched with a laser beam without burning Nils. The gloves that would have given Mallory a few seconds' protection were lying on the ground behind him. He controlled the impulse to snatch back his arm, instead moved his hand slowly and carefully to touch the lowest buckle. It yielded with a snap. The white, translucent body quivered and extended forward. The black, button eyes seemed to be staring straight at Mallory. Each buckle gave in turn. Mallory's arm and Nils's foot came out simultaneously, and the empty boot slipped sideward. An instant later Mallory's laser sliced the slug in two.

Nils peered into the crevice, then turned to stare at Mallory, who was tugging on his gloves. "Be damned," he said. "You might have been killed. Trying to save my life. What was the sense in that?" He kneeled and extricated the boot from the crevice. "You're a damned fool, you know. Anyway, thanks."

"Sure," said Mallory. "No sweat. This is as good a place as any. Let's eat." He stooped and picked up a nearly perfect spherical emerald of twenty-odd carats, grimaced and tossed it away. Some day it might be found again, to give momentary pleasure to an unknown gem hunter.

Their backs propped against the nearest point, they unwrapped and ate a couple of cereal bars, then turned up their faces to wash them down with a drink of water. The rain was diminishing as they continued their descent with Mallory now in the lead and going slowly. Nils was limping and trying not to show it.

Their progress became an interminable business of putting one foot in front of the other, of

pausing only occasionally to hazard a new guess at their direction. Mallory was startled to realize that the day was nearly over and it would be fully dark soon. He switched on his light and waited for Nils to catch up.

"The points are nearly covered up. We must be right on the edge of the valley."

"Must be."

"We can get up on one of them. Some seem to have flat tops." Mallory turned and moved away, scanning the nearer points, and presently found one that looked promising. He climbed it and looked around. To the right—and very close—the gray foliage of the nettles spread uninterruptedly farther than the eye could see in the rain-washed twilight. The hills beyond, where Iota Dome should be, were invisible, although a play of lightning suggested their height.

The flat area where Mallory stood had room for one man only. Nils was waiting below, swinging his light back and forth along the ground.

"No room for two," he shouted down. "Go straight ahead about a hundred paces and turn right. Looks like a good one over there." He remained standing and extended the aerial of the walkie-talkie, knowing there was no reasonable chance of his picking up anything but hopeful of some radio freak. He pushed reception up to maximum and swung the aerial in a ninety degree arc. Not a thing. He looked toward the rock where Nils should now be standing or sitting. He wasn't there. The last light of the day was fading rapidly but there was enough for him to be sure. Mallory muttered an expletive and slid down off the point, aiming his light ahead.

THE rubble had become more silt-like as they approached the valley and he could see traces of footprints. They led at first toward the point Mallory had suggested, then turned sharply down the slope. In a minute he was standing at the edge of the nettles. Nils had gone on. The plants had been pushed apart, leaving an open *V* that was recovering slowly. Nils must have been mad to try to go through here and Mallory felt like an idiot to be following. He followed nevertheless and found the going less difficult than he had expected. The nettles grew head high, many of them topped by blossoms on which slugs were feeding, but the stems were bare of spines and could be bent aside with gloved hands. Nils's trail stayed clear.

In half a kilometer Mallory came upon a rocky knoll several meters across, the blunted summit of a point on which no plants had grown. He stepped up on it for a look ahead. Nils was using his light not far away. Mallory shouted and plunged down to renew the pursuit.

His heel slipped. With a contortion he avoided falling, but his face came into glancing contact with a nettle. It was like being hit in the face by a blowtorch. He let out a bellow of pain and brought up his hand to his face, which was the worst thing he could have done, since it pushed innumerable barbs deeper into his skin. Then he stood, rigid and shaking, commanding all the self-control he could to avoid dropping to the ground and rolling. With tears streaming from his closed eyes he about-faced, felt for the edge of the rock with his feet and scrambled up to momentary safety. There he collapsed in a huddle. Despite the agony of his face a thread of sane thought persisted. He knew that soon he would be in delirium. That was the second effect of the nettles. He knew that he couldn't stand and walk, couldn't see to find his way out of danger and couldn't protect himself from a slug. His only hope was that Nils might find him.

His left hand still gripped the lamp and from between squeezed eyelids he could see it was burning. He began to wave it and with that lost his tenuous hold on sanity. He cursed and whispered, shouted and sang in a voice that, at best, provided no excuse for singing. He thought he was running and his heels drummed on the rock. He thought he was being buried in glowing coals.

Nils found him. He was quiet by then, moaning a little and giving an occasional twitch. First Nils cleaned the rock of two slugs that were drawing purposeful paths toward a source of heat. Then he squatted on his heels and looked at Mallory's almost unrecognizable face. There wasn't much that could be done, but he got out a first-aid pack and sprayed the blistered skin with a mixture of anesthetic and antibiotic. He tied Mallory's hands to his belt with a length of bandage. Then he began an all-night vigil.

THE day, when it came at last, promised to be a good one, with rain only in squalls. Nils could catch glimpses of the distant ridge. Mallory started to rock his head back and forth.

"Can you hear me?" Nils asked. "No, you can't get your hands to your face. Don't try."

Mallory's eyelids flickered open. He made an abortive effort to sit up. "Need a shave," he said.

"Can you hear me?"

"Yes, sure."

"Can you understand what I'm saying?"

"Why not?"

"Blink your right eye." The eye quivered and closed.

"Very well. Your face is a mess, the lower half of it, but your eyes are all right. How do you feel?"

"Awful." He spoke with difficulty through cracked and swollen lips.

"Keep still. I'll spray your face again. Any feeling in your fingers?"

"Hands and feet feel dead."

"Yes. The numbness wears off gradually, they say. Until you feel up to walking I may as well tell you a story."

"Where's your Norwegian accent?" Mallory asked.

"Nils Lundgren was my mother's father. It seemed as good a name to take as any. Not uncommon over there and I could do the accent pretty well. At any rate, it got me off Earth and I thought I was away clear until Callan told me you—told me who you were."

Mallory rolled his head and watched as Nils drew his laser and picked off a slug that was making progress toward them. His vision was somewhat blurred and he squinted to focus on the speaker's face.

"I don't want to pretty the thing up. I knew, almost from the time I went to work for him, that Blain was an unscrupulous man and I later knew that staying with him was reprehensible, but I stayed, partly because he paid me very well indeed. I still tell myself that by the time I knew how thoroughly evil he was, I was too deeply involved to leave safely, but that's making excuses. He came to trust me up to a point. I knew five languages well enough to carry on his business negotiations. Some were legitimate. The man couldn't help being honest occasionally. Most of his operations made him money. But then came Asteroid four-oh-eight. Blain himself was played for a sucker. Shall I go on?"

"It's your story," Mallory said, "if you want to tell it." He flexed his gloved hands, trying to work some feeling into the fingers.

"Yes, I think I'd like to tell somebody why I killed Blain. Soon, I suppose, I'll be telling a lawyer in the hope that he'll figure out some kind of defense. I have no urge to become a martyr.

"It was pure luck, my getting to Midor," Nils went on. "How I got out of New York and how I negotiated a contract I won't tell you

because it involves somebody who helped me. It would have been fine to have gotten paid off here at the end of my year and to have gone to one of the trading planets. But then I learned that you were U.N. Police. I'm puzzled, by the way. Why United Nations? Did Blain wield so great an influence that his people could call on a world organization to avenge him?"

"Go on with your story," Mallory said. "We can come to your question later."

"VERY well. After Callan told me, I began to rack my brain for some way to get back to Alpha without you, to break my contract, to get on the next ship going anywhere. But I formed no plan, nothing that was acceptable. Then Callan died and the roof, figuratively, fell in on us. Last night, in pure panic, I set off through these damned nettles with the hope, the very faint hope of reaching Epsilon. It would have been about eighty kilometers in a straight line. I probably wouldn't have made it and I almost didn't care. You might still have come after me—or, if I could disable their radio for a while, you might assume that I'd died in the swamp and gone on home. You see how desperation robs a man of good sense.

"When I came back last night and found you the thought occurred to me—I admit it—that all I had to do was leave you here. You'd never have survived the night. But, damn you, you had saved my life at imminent peril to your own. You left me with the obligation to get you to Iota."

"Let's get back to Blain," Mallory prompted.

"Yes, of course. I'm being a bit disorganized about this. To go on back-end foremost, these are the facts that will be evident to the court and will probably convict me. I was Blain's secretary. I had keys to any door on the top floor of the building, including his private offices. I knew the combination to his private safe. As I told you, he trusted me up to a point.

"On that night he said that he would be entertaining at home. I went to his office. I opened the safe. Blain surprised me there and pulled a gun, an old-style pellet gun, but lethal. I jumped him and took the gun away. He wasn't very strong. Then I shot him. It wasn't an accident as the result of the struggle. I have no such defense. He was lying on the floor and I shot him through the head—because he had to die."

"Very clear," said Mallory dryly.

"Yes. The door of his office was then standing open, and within seconds two men, men who were

to have had an appointment with him, looked in at me. I was standing over him with the gun still in my hand. So there you are. There was a scuffle and I broke away, got out of the building and went into hiding. How I got here is, as I said, none of your business.

"Asteroid Four-oh-eight. Blain's foot slipped on that. He had been led to believe it was rich in transuranian elements. It was done subtly, but it was the age-old trick of salting. The man who perpetrated the fraud is believed to have committed suicide. That is not pertinent. In any case, when Four-oh-eight was in a favorable position Blain shipped heavy machinery there with supplies and a crew of sixty miners. It cost him in excess of a million stellars and there was nothing there to mine. Are you following me?"

Mallory nodded. He could move his fingers now inside the gloves, but his feet still felt like blocks of wood.

"So the operation was abandoned at a heavy loss. Very well, I learned—never mind how—that the flight of the freighter that was to have taken additional supplies to the asteroid had been canceled. Blain had given the order immediately on learning he had been cheated. Furthermore, he was issuing no order for the departure of the larger ship that would be needed to bring home the mining crew. Do you understand? There was enough food, enough water, enough power to carry them for perhaps several weeks, but their oxygen supply could be reckoned in hours. About ninety-six hours as I calculated it. And Asteroid Four-oh-eight was getting steadily farther from Earth. But Blain couldn't bring himself to throw good money after bad. He couldn't spend another quarter of a million, less than that actually, to save sixty lives. I tried to argue with him in terms he would understand. I told him that he would certainly be caught at it. He told me that the records would show there was an ample stock of oxygen. The disaster, when it was learned about, would be attributed to a leak in the system. He wouldn't have gotten away with it, of that I'm sure, but an investigation would have been too late. It wouldn't have helped those miners if Blain wound up in an insane asylum or in jail."

"But you didn't report to the authorities," Mallory interrupted.

"There wasn't time for process of law. A ship had to be dispatched immediately, within hours, or there would be nobody to save. Let me finish. I went to his office, opened the safe and got out the

code he used for his personal communications. There was a teletype machine in the next room. I teletyped Houston in his name and ordered out a ship, highest priority. I waited for acknowledgment and verified the order using the correct symbols. There was no hitch. I went back to his office to close the safe. I planned to be in South America by the time he discovered he had sent a 'rescue mission. Well, you know the rest of it."

"There was nothing in the news about the rescue of the men."

"Of course not. It was simply the last step of an unsuccessful industrial operation. It was ordered by Blain just before I killed him."

"You can't prove a damn thing, can you?"

"Nothing. But I thought I'd like you to know. Do you think you can walk?"

"Unstrap my hands."

"I will if you can remember not to touch your face."

WITH Nils's help Mallory made it to his feet and stood uncertainly.

"Good. Now put your hands on my shoulders and try to keep step. I'll go slowly and I'll take care of nettles and slugs. Just keep your mind on walking. We're going to get out of the valley the shortest way, the way we came in. Then we'll skirt it. Ready?"

There was a knack, Mallory discovered, to stumping along on feet that had no sensation. After a few stumbles they worked out a lockstep gait that made steady, slow progress. In a little while they were on higher ground. The pain in Mallory's face was subsiding to the degree that his thought processes seemed to realign themselves from time to time. The decision that had to be made had in fact been reached earlier, but he shied away from recognizing it and making it irrevocable.

They found a spot where, after Nils had scouted it for slugs, it seemed safe to sit and rest. Twice they halted to eat, a difficult business for Mallory. At midafternoon they agreed to start the trek upward.

Before they had gotten out of the area of low points Nils stopped abruptly and pointed to a spot where a circle of white light showed against the gray clouds. After a moment it could not be mistaken.

"They've used their heads," Nils said. "Rigged a search-light to play on the clouds. Can you hold up for another hour or so of walking?"

"With a couple of breaks, yes.

My feet are getting some feeling in them." He displayed the pellet gun. "When we get closer this will make a noise and may bring them to us. First, I've got some talking to do."

"Go ahead."

"Question. How well did you get to know Callan?"

"Not well at all—in spite of all his talk."

"Right. It was mostly fabrication. Callan was a professional thief, not a very important one. He held a long string of jobs and was reasonably competent at some of them, but they all ended the same way. He stole something, often trivial, and disappeared. On his last job he made a mistake. He stole something important."

Nils stared at him with an expression of shock.

"Are you saying that his last jobs was with United Nations?"

"Yes."

"And that he stole something from them?"

"That is correct. He was a messenger, cleared to carry classified documents up to confidential. One day he was handed an envelope containing currency, about ten thousand stellars, and told to deliver it to another office. The theft of the money was an embarrassment, no worse. Unfortunately, along with it was another envelope containing a long-hand draft of a resolution pertaining to relations between two of the nearer planets. The draft itself would have been no great loss, but the writer had added some marginal notes that would have been taken as offensive by one of the parties and could have seriously damaged the U.N. reputation. Callan didn't know what he had, but he was thought to have kept it. He was an opportunist. I was sent after him to recover or destroy it."

"And did you?"

"Yes."

Nils stood silent for a time. Then he asked quietly and flatly, "Now what?"

Mallory offered a silent farewell to principles that had guided him for two decades. "Now," he said, "we get on into Iota. For myself, I'm going to be reporting that I can't take much more of Midor. I'll break my contract and head for home on the earliest ship. I suppose that you, Nils, will finish out your year."

"What I told you—" Nils began.

"What you told me?" Mallory repeated. "You mean back there when I was out of my head? Seems to me you were telling me some long, involved story about some people I never heard of before. I couldn't make head or tail of it. ●

(Continued from page 63)

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Dear Mr. Jakobsson:

Just finished reading If *(February, 1972) and I thought I would comment on a great issue. I particularly liked* Patterns of Chaos, *by Colin Kapp. Kapp is masterful with his prose—and with his imagination!*

Gail Habbyshaw
Mercer, Pa.

Dear Mr. Jakobsson:

I've been reading Colin Kapp's serial, Patterns of Chaos, *and so far it has held my interest. One thing about the novel constantly disturbs me—the barrage of cliches in the characters' conversations. For instance, "Jet off, Jaycee—" or "Spool it, Bron—" or "Get off my back—" etc. The infighting between Bron, Doc, Jaycee and Ananias also tends to seem phony, mainly because it is overdone and too lengthy. I'd like to see a little more subtlety in the clash of emotions. Kapp gets carried away in these sections and the characters seem oblivious to what is happening around them. Still, it's a good story and I hope you have more as enjoyable.*

I think Lester del Rey may have been expecting a bit too much from Ursula K. LeGuin's new novel, The Lathe of Heaven. *From his review LeGuin's novel would seem much worse than Simak's* A Choice of Gods. *I've read both and I hardly think the LeGuin is inferior to the Simak work. Both actually depend a great deal on the emotional power they build up, a sort of rolling, flowing tide that peaks and ebbs at the story's climax. For me there was as much nostalgia in LeGuin's novel as there was in Simak's.*

Your comments on fantasy and your reply to Henry Bitman's thoughts on the purpose of fiction (in the February If*) were most just, I felt. But I am surprised that you never thought to connect them. Since, as you say, fiction simulates nothing but is valid within itself, then it doesn't really matter whether the fiction is fantasy, sf, mainstream, mystery or whatever. All are equally valid—they create a vivid reality of their own, or should if the story is well written. And, of course, every story has an emotional relevance to the real world—which is what I think you were referring to regarding* Arnten of Ultima Thule.

You may print my address.

Cy Chauvin
17829 Peters
Roseville, Mich. 48066

You're right on *Arnten of Ultima Thule.* The story also deals with the imagery of faiths and beliefs that have validity simply because people have believed—some still do—that all life as we know it has unity.

—JAKOBSSON

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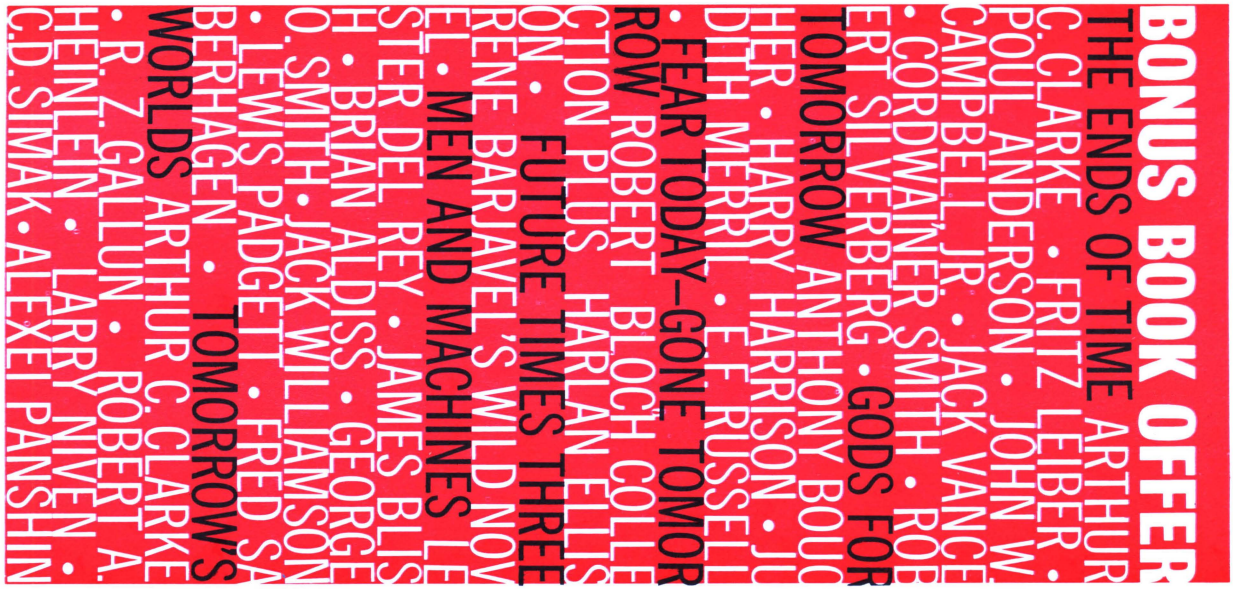

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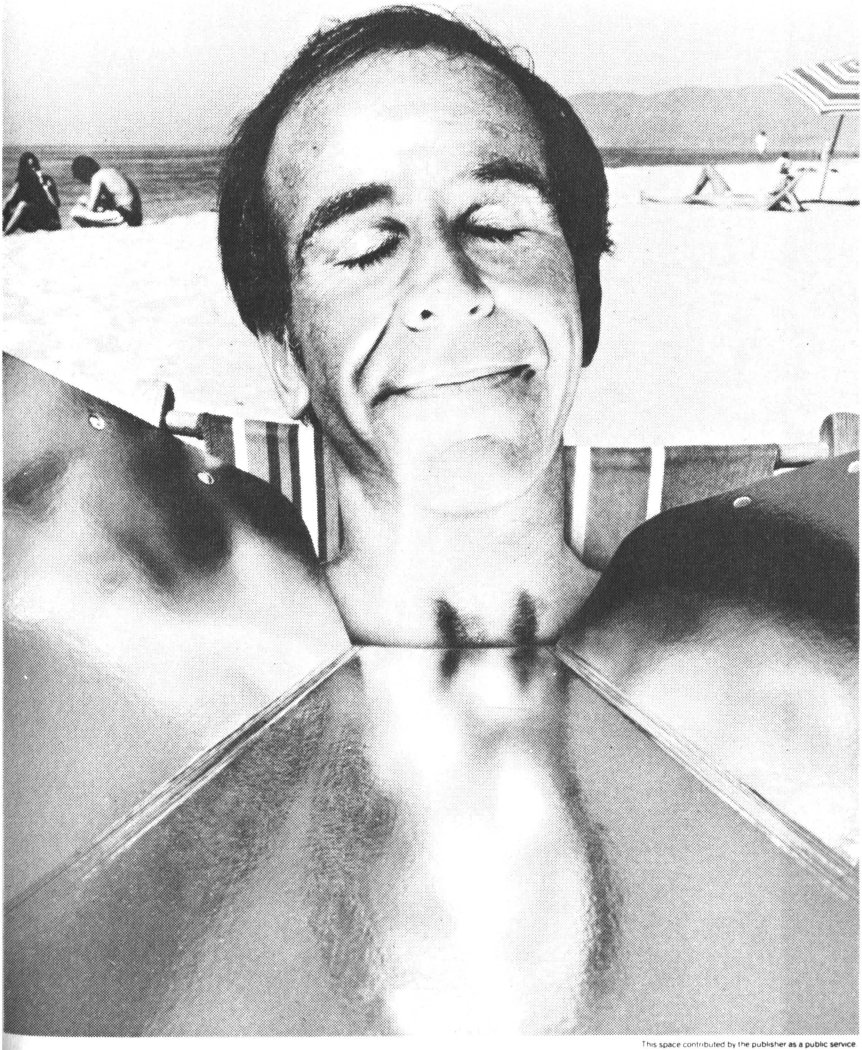

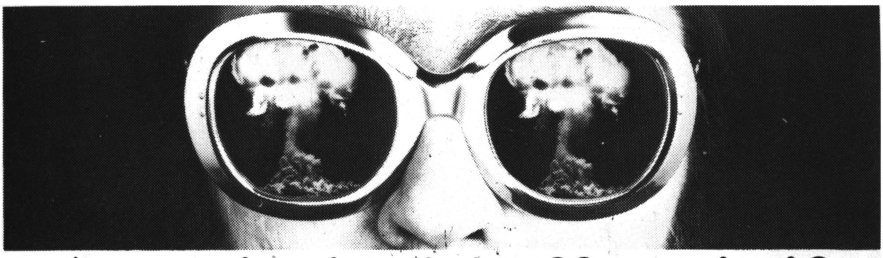

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