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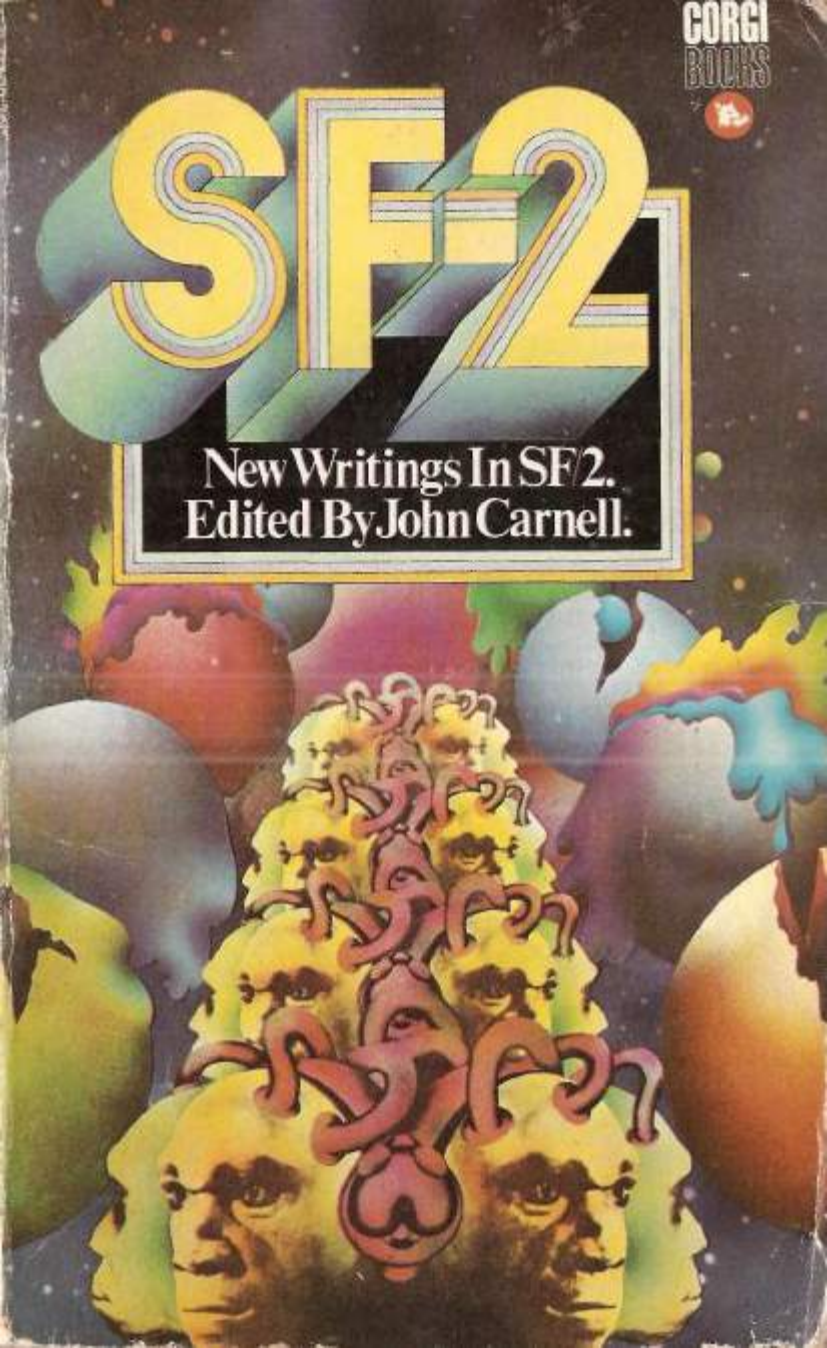
New Writings In SF/2.
Edited By John Carnell.



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FOREWORD

by JOHN CARNELL

RECENTLY I was asked to contribute a feature article on the history of science fiction for *The Publisher*, a new and vitally fresh journal launched specifically for the publishing trade. In the general outline of requirements, I was asked to give my definition of science fiction—no mean task, considering that many experts on both sides of the Atlantic have written thousands of words on the subject and few have agreed upon a concise explanation. How compress into a few words a general meaning for a subject which virtually has no boundaries?

My final summation stemmed from a remark I made in the Foreword to the first volume of *New Writings in S-F*: "Speculative fiction based upon known facts and extended into future possibilities."

This statement covers all the known plot variations except the fantasy story—a category which can be argued about indefinitely (for instance, does Ray Bradbury produce S-F or *fantasy?*)—and leaves out that ominous word "science" which has bamboozled so many people for years. Some schools of thought emphasise the need for more scientific theory in S-F literature while others say that they can obtain all the science they require from textbooks and scientific magazines. While the former idea held good for many years during the late 20s and early 30s (the Machine-age of S-F) when many authors were scientists in their own right, the trend in recent years has been to get away from the "sugar-coated pill" era as more and more non-scientific writers have contributed to the medium.

Today, S-F literature pays far more attention to Man as an individual and as a dominant factor controlling the machines he has invented, as will be seen in most of the

stories in this second volume of *New Writings in S-F.* Sometimes, as in John Rackham's "Hell-Planet", humanity does not shape up too well, although the author allows us to hope that, despite our shortcomings, there is some justification for our actions. Incidentally, the theme behind this story is one which has intrigued me for a long time—just what would the first alien visitors make of all our radio and TV broadcasts?

William Spencer's story, "The Eternal Machines", also points up Man's continual desire to register his mark upon the Universe while his own cleverness defeats him in G. L. Lack's "Rogue Leonardo" and Steve Hall's "A Round Billiard Table". However, it is in such stories as Colin Kapp's "The Night-Flame" and Joseph Green's "The Creators" that we find the better qualities triumphing over adversity—man against man in the former and man against a cosmic mystery in the latter. Both call for an enquiring mind. A faculty Man is fortunately endowed with....

As are most science fiction readers.

JOHN CARNELL

August 1964

HELL-PLANET

by

JOHN RACKHAM

Author John Rackham has been noted for many years as a British writer who produces novel ideas in the science-fiction field. In this new novelette he presents an alien's viewpoint to the barrage of radio and TV broadcasts put out from Earth every twenty-four hours.

HELL-PLANET

ONE

THE whole ship surged, gently and rhythmically, as the circuit-breakers fell out in sequence and the warp-field decayed by powers of ten. Collective man-power held its breath, all the way from the youngest battery-boy up to Captain Egla Forsaan himself. On the bridge, his eyes were as anxious, his ears as keenly cocked, as anyone's. He knew his aura was showing gut-chilling fear, despite all he could do to mask it, and the knowledge was a source of obscure anger. Apprehension on a drop-out into real space was a normal and expected thing, but this crouching fear was new, and nasty. Fear such as this was rarely encountered in Fah'een life anyway. Fah'een ships had traded between the far-flung stars for longer than there were records to measure, and trade was a way of life to them, not a desperate venture.

But this trip had gone awry right from the start. Its objective was reconnaisance, more than trade, and the ship was burdened with three high-status passengers. Other things had gone wrong, too. Terrible things.

The final warp-stage let go. There came that unmistakable, indescribable "sense" of real space, along with the faint pure chime of zero-clear. And nothing else. No sudden twists. No screaming alarms. Just a normal, straightforward drop-out. *Drendel* lay at rest, silent against the jewelled night of space. Egla Forsaan let out his long-held breath, eased the clamps on his emotions, and let them dissolve away in relief. It was all right, this time. He sensed the same let-down of tension all round him, and, perversely, his caution tempted him to call out against it. Let's not fall over backwards, he thought, not now.

But First-Officer Pinat was already taking care of that. Nils Pinat, stolid and reliable, had been space-faring almost

as long as Forsaan, and would be commanding his own ship soon, now that the Fah'een were expanding again. Respecting protocol, Forsaan sat still and observed as Pinat got on with it. Press and speak to engine-room.

"Finished with warp, Mr. Felder. Re-set and stand-by for planetary."

"Engine-room to bridge." That was Wistal Felder's gentle voice, mild and gentle, no matter what. "Report. No. 4 outer field-generator o/c. The core has gone. For good, this time. Am re-setting for reaction-mass."

Release and press to acknowledge. Turn to the sensor-board, to where old Arl Bovy ought to be sitting. But old Bovy was no more than a puff of molecules, now, spinning for ever round a distant sun. In his place there was Stam Hoppik, emergency promoted from assistant to full Sensor-Officer, and radiating his anxious determination to justify the leap. Tow-haired, startle-faced, but dogged.

"Bearings and fix, into the plot, as soon as you can, Mr. Hoppik."

"Figures coming up right away, sir," and a brisk thumb-salute. Pinat swivelled his chair to overlook the dark face of the plot, a great read-out disc as broad as a man might span with both arms outstretched. Forsaan spun his own chair, squinting at the patterns as they came up, and saw that his caution had been justified. The troubles were not over yet, by a long way. He met Pinat's eye, sensed the other man's quick concern, and agreed with it.

"That's not so good, is it?" he murmured. "Get Felder again. I'd—like him to see this." Pinat put his thumb back on the button.

"Mr. Felder? Would you overlook the plot, please?" He let go, eyed the plot-pattern again. "We had to make allowances for instrumental error, considering the boiling we got. . . ."

"Of course!" Forsaan dismissed the question of reasons. Past was past. This problem was now. A bleat from the group-board announced Felder in position to observe on remote.

"We're the devil of a long way out, Felder, as you can see. With one generator out of commission, and the others suspect, a short 'twist' is out of the question. So we must run on planetary. At a rough estimate, it will take us three complete cycles of watches, at quarter-drive. How will that leave us, for fuel?"

"We can do it." Felder's voice was milder than ever. "But only just. It'll run our charge pretty low, too."

"Hmm!" Forsaan mused a moment, then, to Hoppik, "Give us a read-out of the records on this system, Mister." The plot darkened then glowed again with a schematic of the planetary system. Forsaan put a finger on the plate. "This one, the fifth out, should provide what we need in the way of fuel-mass. That will still leave us well outside any reasonable plasma-density, so let's not be too heavy-handed with the batteries until we can recharge."

"Right!" Pinat nodded. "Course for the fifth planet, at quarter-drive, and ready-up for cometary-and-scoop. . . ."

"Time enough for that when we're closer in. We can use the interval to make a thorough structure-check. Get all the off-watch hands on it. You can do likewise with your department, Felder. Let me know how we stand with the rest of the generators." He got up, thumbed acknowledgement of Pinat's salute, and paused by Hoppik's board. The youngster's tension was almost tangible. Forsaan, understanding, did what he could to allay it.

"It'll be a long slow pull," he said. "Once you've got out the course-data and ETA you'll have your chance to check over all your circuits and get them clear. We want a full-spectrum analysis of this system, all the data we can get, and let's be sure that it's right, this time."

He went on, dismissing the memory-picture of old Bovy at that board, forcing himself to realise that grief for the passing of an old shipmate would achieve nothing. Into the quiet of the log-room, he settled at his desk, switched on the recorder, fed in the absolute time from the ship's chronometer, and began dictating. Routin phrases came easily.

'Drop-out achieved without incident. Due to allowance for possible instrumental inaccuracy, we are placed approximately twenty system-diameters distant from target-area. Running in at economical speed to conserve reaction-mass. One field-generator out of commission, crystallised core. . . ."

Below the level of habitual responses his mind was a turmoil of random thoughts. The long run-in, tedious and wasteful, had its good side. In the utterly unreal state of warp it was futile to attempt anything as concrete as structural repair, much as *Drendel* needed it. Urs alone knew just how badly the main fabric had been strained in those frantic moments at Troyarn. Forsaan checked the recording for a moment, as furious emotions welled up and threatened his control.

Troyarn! The mere recall of the name revived the fear all over again. For an awful moment Forsaan thought of his son, Janna, First-Officer of the *Maldex*. The ancestors forbid that Janna should run into anything like the inferno of Troyarn. Then, in the same breath, he cursed those other ancestors whose carelessness had made the Troyarn incident possible. The two senses of the term "ancestors" were quite clear-cut in his mind. His prayer, worn smooth by usage, was to those semi-legendary ursinoids who, in the dim mists of bygone time, had made the evolutionary leap into hominid form. From that distant moment, the Fah'een had begun, had taken over the worlds of their planetary system, in by the heart of the Galaxy, and had then, down the ages, become the accepted masters of commerce and trade throughout the Galaxy. Wherever man-like life grew to the point of uniting a planet, there the ships of the Fah'een came, bringing trade, culture, and social links with all the rest. It had gone on so long, and was so much a part of the scheme of things that no one really knew just how it had all started. Nor did anyone care much.

But those other, more recent ancestors, ah, that was a different set of feelings. In any trading empire, accurate and detailed records are the real wealth, and Forsaan had

such a set of records under his hand, as he sat. And they were false. Not deliberately so, but by carelessness. Some twenty generations ago, because of a temporary trade recession, provoked by short-sighted economics, the Fah'een had been compelled to pull in their outposts, abandon some of their routes, shut-down some of their step-stone bases. Troyarn had been one such. And now, with business once more on the up-swing, it was *Drendel*'s task to retrace one route, to visit the seven step-stone bases on the way to Sami, far out on the Rim. Troyarn had been the fourth. It was listed in these records as a fair planet, rich in ores, with good air and water, and plentiful vegetation. Its dock facilities had been left in good preservation order in readiness for those who would need them, later.

And so, unsuspectingly, *Drendel* had twisted out of warp, into a raving hell of swirling incandescence. Emergency trips and overloads had snatched her out again in split seconds, with her hull-sensors crippled, her main-spars wrenched and strained, and everyone aboard in shock and sickness. They had all taken massive doses of anti-radiation drugs, the crew had slaved like dogs, and they had got the battered ship into something like trim, the while they hung at a safe distance and watched a sun that had gone nova. That was when Bovy had died—from shock, overwork, old age—and, Forsaan knew, from irrational guilt. He was a good sensor-officer, one of the best. Somewhere, twenty generations or so in the past, another sensor-officer had been careless, had failed to record the instability of Troyarn's sun. Status-pride was non-rational, but none the less real, for all that. Forsaan had it himself. As a status-three executive, he had the responsibility of the ship on his shoulders, and it weighed heavy.

He felt a gentle touch at his attention, and looked up to see Pinat in the doorway.

"I've set watches, sir, and we're on course. The ETA is a shade more favourable than we'd hoped. I'm just about to take a squad forward, to start checking on bulkheads . . ."

"Good!" Forsaan got up. "Look," he said, "I suggest you

start with the passenger-space and get that over with. Our guests are not going to enjoy the coming cometary and I'll do what I can to prepare them for it, but let's not have anything falling apart where they can see it."

"Right!" Pinat flicked a thumb, and his amusement was obvious. Guests—passengers of any kind—were a novelty on *Drendel*. Forsaan carefully hid his own distaste. These were very important people and one had to make certain allowances.

"Anything more from the engine-room?"

"Yes, sir. Felder has made a rough check, estimates we will have to strip down all eight of the outers. The inners may be sound, but not sure yet. He's checking those."

"Hmm!" Forsaan led the way back on to the bridge. "We had better plan to do the job up right, I suppose. Mr. Hoppik, as soon as we are near enough to get hard data, look out a suitable body where we can set down for low-G repair. Inside the plasma-cloud, if possible. Check with Mr. Felder for the minimum parameters."

"I've just had a call from Professor Marn, sir, wanting to know if I had any data on the ringed-planet yet."

Damn Professor Marn, Forsaan thought—and his ringed-planet. I'm running this ship. But he kept the reaction decently private.

"Just take your orders from myself or Mr. Pinat," he said firmly. "We have a cometary to prepare for; batteries to recharge; massive repairs to do. In that order. Scientific curiosity can come later. Get on with it, mister, and be sure you call me, at once, in the event of anything irregular."

He thumbed, briskly, cast a sharp eye round the bridge space, then turned and went out, down and around the spiral ramp to his cabin-suite, silently consigning his V.I.P. guests to the swamp of perdition. Didn't he already have troubles enough, that he had to be stuck with, one, a high-power, free-thinking status-one cosmologist and savant, two, a low-power status-one ethnologist-anthropologist, female, and, three, a senior status-two technology expert. Truly, none of them had any official reason to be on board

and were along strictly for the ride, a kind of vacation. And Troyarn had given them far more thrill than they had bargained for. But Forsaan was still stuck with them and the fact that any one of them outranked him for status didn't make life any easier.

As he paused by the door to adjust his harness he could hear Marn's precise tones.

". . . not to formulate a new theory for ring-phenomena, at all. The aim is to obtain more data and then to examine the many existing theories in the light of the new facts."

"And to show how wrong they all are, of course!" That was Hoggar Buffil, gruff and disapproving, as always. Forsaan went in just as Marn was retorting, quite cheerfully, "But naturally. That's the whole point. A theory is only as strong as the data from which it is drawn, and there are, after all, only three other instances of ringed-planets. This one is bound to afford something new." He cocked a mischievous eye at Forsaan. "If it's still there, that is? After Troyarn, anything is possible." Dikamor Marn had a sense of humour all his own. Forsaan was not amused. He settled in a chair.

"This system seems stable enough, so far," he said. "But we will not be in a position to observe your rings—or your simians, Miss Caralen—for some time."

"There's something wrong?" Caralen Buffil asked, with a smile that rode over her mild anxiety. Forsaan couldn't help returning the smile any more than he could avoid sensing the anxiety and admiring its restraint. In this, his first close contact with high-status people, he was still being impressed by the mildness and purity of their emotional reactions.

"Not wrong, exactly. We have made a bad emergence . . ." and he went on to explain to them the prospect of a long run-in and the need for a cometary operation. All three listened intently and this was something else he had noticed, the way they listened with complete attention, their own emotions almost totally suspended. He directed his explanation to Caralen, finding her most in need of it.

For "official" purposes, her father had brought her along as his secretary-assistant. Hoggar Buffil, technologist, was the only one of the three who had anything like a valid reason for the trip, that being to inspect and pass judgment on the abandoned installations. It was a slim excuse, for Wistal Felder could have done the job just as efficiently. Caralen's excuse was even thinner, for she knew next to nothing of technology. Her interest was all with the account, brief and improbable, that the previous base-staff had seen "simian hominids" on this planet. For now, however, her interest was with what Forsaan was saying.

"This 'cometary run' sounds dangerous," she said. "Is it?"

"There's always some danger," he said honestly. "If our field-generators were reliable we could pick up reaction-mass in comfort and we usually do. A cometary is one of those things more done in theory than in practice and there isn't any easy way of doing it. The point is, I must ask all of you to keep to your cabins and strap down securely during the operation."

Buffil eased his bulk in his chair. "Then we'll proceed to target and put down, eh?"

"No. I plan to overhaul my generators first."

"Oh, but see here, we were looking forward to fresh air and sunshine, and some decent food! Can't we do the repairs on-planet?"

"My first consideration must be the safety of my ship and the people aboard." Forsaan let his determination stand open to them. "I'm not putting *Drendel* down anywhere unless I can be sure of being able to lift off again, fast."

"Isn't that a bit ultra-cautious, Captain?" Marn suggested. "We all remember Troyarn, of course. . . ." Forsaan gave him a hard look.

"I lost an old shipmate there, Professor. I'm not likely to forget that in a hurry. What is more to the point, my men are uneasy and on edge. We're traders, not devil-may-cares. I have to bear such things in mind."

"But . . ." Buffil spread his hands, appealingly,

". . . there's perfectly good assist-equipment already there, left by our predecessors. We've already checked it out on three previous bases."

"And the fourth?"

"That was a different matter entirely. That was nothing to do with base-equipment at all."

"It was an error in records. I am not about to take chances on another error. This planet's equipment may be in perfect order, and then again, it may not. For all I know, those simian hominids may have torn it down, ruined it—anything!"

Marn snorted, audibly. "Myths don't tear down material equipment."

Forsaan braced himself. He had managed to avoid a conflict of authority thus far, but now there was nothing else for it. "I am aware," he said, "that you are all superior to me in birth-endowment. That is as it should be and I would not have it otherwise. But I am in command of this ship. That is my field and function. So far as it concerns the safety of my ship and the people on it, I will make the decisions!" He let the statement hang there, sensing their responses, wondering how they would take it. To his relief, and chagrin, the over-riding impression was of mild amusement. All right, he thought, let them laugh. Just so long as they understand that I mean what I say.

Into the strained silence came an imperious beep from his wrist-speaker, and his emotions flattened, immediately. Touching the switch, he said, "Yes?"

"Hoppik, sir. I'm picking up radio-signals!"

"From . . . ?"

"The system ahead . . ." his tone added "Where else?"

"Thermal noise, or guide-beacons left by our ancestors?"

"No, sir!" Hoppik's voice was shrill. "These are modulated transmissions, all over the wave-bands."

"Can you identify any of them?"

"Not so far. It's a different system from any I know, and there's a hell of a lot of interference. But they *are* signals!"

Forsaan made a quick decision. He didn't care for the

sharp edge in Hoppik's voice. "I'll be right up. Inform Mr. Pinat. Keep tuned. . . ." Releasing the switch, he stood up abruptly.

"A moment, Captain . . ." Marn got up, too, and the change in his aura was startling. All the tension of the previous moment was gone now, submerged in curiosity. "This is odd, isn't it? Radio—here?"

"Odd? It's impossible. Hoppik has picked up some freak effect, or it's an instrumental error. Still, I shall have to attend to it."

"May I come along? I know a little of radio. I'm curious. . . ."

"As you wish," Forsaan shrugged. He'd made his point about authority. He could afford to relax a little now. He stood aside, courteously, to let Marn go ahead.

Two

THE atmosphere on the bridge was almost tangible. Pinat had already taken over command, with watch-officer Klegg hovering close-by. At his busy board, Hoppik held his head on one side, listening to the plug in his ear, the while his fingers felt over his controls. Before him, a screen glowed with jagged-edged light-streamers. Marn went to peer over his left shoulder, Forsaan followed on the other side.

"Is that it?" he asked, and Hoppik put up a warning finger, made a tiny adjustment, and nodded.

"I think I've got it, now. I can't cut out *all* the interference—but I've got it into audio. Listen to that!" He moved a toggle, and a wash of sound poured out of the panel-speaker. Over the spit and crackle, which faded as Hoppik manipulated dials, there came a voice. It was human, male, deliberate. Forsaan listened, and vestigial hairs lifted along his spine. In the course of his long career he had graduated all the way from fresh-faced cadet to mature command, had met superstitions and learned to discount them, but this—this wrongness—stirred up all the old forgotten things. He could sense the same chill in Marn, although to a lesser degree. For this thing was impossible.

This was a positive and prosaic human voice, reading from a script, by the sound of it. And it should not be, here in the middle of nowhere. What added the final touch of ice was the fact that the language was like nothing he had ever heard before. Like all Fah'een, Forsaan was an accomplished linguist. As a senior executive, he was better than most. He was fluent in all the forty-eight major tongues and could make himself understood in ten times that many minor ones. But this—for all it sounded hauntingly familiar, made no kind of sense whatever.

Marn said, "I never heard anything like that before."

"Nor me. Hoppik, can you pin that down to a source, a planet, yet?"

"No, sir. We're still too far out to get a separation. But that's not all. Listen to this . . ." and he twisted a dial. The voice faded, gave way to another. Again, it was human, male, but different. Incomprehensible, but obviously different from the first, in tone, cadence, phrasing. Then there was another, and yet another—and then a female and another male, a cackle of unmistakable laughter, the roar of a crowd. Forsaan winced in front of this barrage of impossibilities. It was as if all the diverse cultures of the Galaxy had come to a focus, just here, to shout at one another in gibberish.

Despite himself, he was reminded of one of the more spine-chilling favourites of mess-deck myth-spinning, the "greely" places, the regions of non-logic. In legend, those ships which failed to come out of "twist" were said to have blundered into a greely place, a nightmare region where the sane laws of space-time didn't apply, and anything could happen. The "anything" was always horrible and as no one ever came back to tell, the only limits were set by the imagination of the tale-teller. Forsaan shivered, thrust away the haunts with an effort, and realised that Marn was speaking.

"I must have recordings of this, for analysis. As soon as we know the planet of origin, we must investigate, and it will help enormously if we can understand. . . ."

"We're not going to investigate anything," Forsaan said flatly. "This is no time for research. Whatever those noises may mean, I am reading them as a danger, a threat!"

"And so . . . ?" Marn's smile was quick, and mocking.

"So we get away from here, just as quick as ever we can. The safety of my ship . . ." Forsaan caught himself. That phrase was beginning to sound worn, even in his own ears, and Marn was ahead of him, in any case, had seen in a flash what he was just catching now.

"We can't leave, not in safety, until you've fueled up—your cometary run, remember? And charged up the batteries. And repaired the generators. Isn't that so?"

"Yes, but as soon as ever we've done that. . . ."

"Of course. But, in the meantime, given a little co-operation, I would like to study this phenomenon. Is that too much to ask? Will it endanger your precious command at all?" Whatever retort Forsaan might have made was lost as Hoppik, still twisting the dials, brought in a great storm of music. Caught breathless, Forsaan listened, recognising various effects. There were plucked strings, hollow pipe-sounds, percussions, and riding over it all, a strident, insistent rhythm.

"Great Urs!" Marn breathed, his eyes shining. "This is fabulous. Note the high degree of skill, of sophisticated design, and yet the overall motif is positively primitive. It's as unlikely as Caralen's simian hominids, yet there it is."

"Very well, Professor . . ." Forsaan's voice was too loud against the fading music, and he softened it. "I see no reason why you shouldn't investigate whatever you wish, within reason. As for co-operation, what had you in mind? I can't spare Hoppik's section, or his equipment."

"That would be all right, sir. I'm getting this on a spare circuit. It isn't anything we would regularly use. I could box something up, make a portable unit . . ."

"Thank you, Mr. Hoppik," Forsaan interrupted, icily, and the young sensor-officer went pink. "Very well. Let Professor Marn have what he wants and be quick about it.

I see no reason why you shouldn't use the analyser and language-library, too. If you're to make any sense out of that babble, you'll need them. I hope you're successful. I shall be interested to learn what you discover, just so long as you don't interfere with ship's operations in any way!" With which, he swung away abruptly and went across to stand by Pinat.

"Proceed as planned," he growled, "but have all hands stand by, first-stage readiness to warp."

"To warp?"

"That's what I said. Judging by that gabble Hoppik has picked up, this system is swarming with something. Space knows what, but I want to be ready to warp out of here without notice." He fingered the engine-room button. "Mr. Felder? Cancel any generator investigations and start boxing-up. We may need to warp-out, in a hurry."

"I'm just finishing a capacity-check on the last of the inners," Felder sounded cheerfully unmoved. "They all test-out fine. It's only the outers we need to worry about." Nothing will ever worry that man, Forsaan thought, keeping his finger on the button.

"Good! Thank you. That means we can have a fifty per cent field, does it?"

"Any time you like."

"It will be the hell of a long pull to sixth base, on half-warp," Pinat said gloomily, "what with missing a break at Troyarn, and now here." Forsaan needed no reminding. No matter how well-found a ship might be, there was no real substitute for the refreshment of planetary air, food and water, and the tonic of escaping from confinement, with honest ground underfoot. The human system was geared for the process of interchange and reaction with a complex, living environment. Too much time in warp, in the artificial sameness of a ship, made for psychic unbalance, neurosis, and ultimate danger. On top of that, the men were already shaken by the disaster of Troyarn, but that insane chatter on the radio, where none should be, was just as much a danger of a different kind.

"We have very little choice," Forsaan said, grimly, "but at least we will know what we're dealing with, in warp. Urs alone knows what may lie at the other end of those voices. Marn's going to try decoding them. I hope he succeeds, but I'm not counting on it. Keep the men busy, Mr. Pinat."

There was plenty to be done, so Forsaan had little difficulty in arranging things so as to avoid anything but the most fleeting contact with his guests for the next few watches. Rumours abounded, but he knew enough to be able to discount most of them. The voices were still coming in, and Marn had roped in his colleagues to work on the problem of understanding. The rumours had nothing to say about what he had discovered, if anything. Marn was seemingly keeping his own counsel, but Hoppik had been steadily on the job and had reported nothing unusual. That, by itself, was odd, and the more Forsaan thought about it, the odder it seemed. No beacons, no challenges, no sign of ships flitting to and fro. By the time it came to the last quiet meal before the cometary operation, he was frankly curious.

Attending to business first, he gave his three guests warning of times and repeated his instructions about keeping clear of the crew. "There will be periods of quiet," he said, "as we bounce out of the gas-cloud and trim our tanks. Do not assume that it is all over. Be sure not to move until you hear the zero-clear chime."

"What a pity we won't be able to see anything," Caralen sighed. "It must be a tremendous spectacle. You are to be envied."

"On the contrary. There won't be anything to see except dark shadows, patches, and swirls of gas-particles. The spectacular part is now, as we approach, and afterwards as we go away. During the operation, none of us will 'see' anything, except meter readings on instruments." He paused, then turned to Marn. "On 'seeing', I gather you've identified some of those mysterious signals as visuals?"

"A conjecture, only," Marn's aura showed frustration.

"They have a distinct form, are obviously informative and are not audio. Perhaps, when your sensor-officer is less busy, we may be able to analyse the scanning system. I have only an amateur's knowledge in that field."

"And the languages—anything there?"

"Very little. Very little indeed. We have all struggled with the enigma. We have managed to eliminate certain redundancies, we've found a large number of regularities, but that's all."

"There are at least eight different tongues," Caralen said. "Yet all have certain similarities."

"You surprise me. What little I heard struck me as familiar and not nearly as foreign as some I've heard. Didn't the analyser give you anything? Or perhaps your samples were not . . ."

"Permit me to know how to use analytical processes, Captain," Marn was sharp. "I assure you, this chatter is not as simple as it sounds."

Forsaan made apologetic gestures. "Just the same, though," he murmured, "it sounded familiar. Except that I couldn't understand a word of it, it sounded very like our own native tongue. . . ."

Marn sat up, radiating sudden excitement. "You may have hit it, Captain. If you have, I deserve to be demoted to fourth-status ignominy for not seeing it myself. You see, I ran selected samples, by phrase and phoneme, against all the forty-eight major language forms, looking for matches. But it never occurred to me to run a comparison with our own!"

"Why should you? The analyser is designed to translate other tongues into ours. There's no reason to suppose that this stuff is a variant of . . ."

"No reason why not, either. It's a legitimate possibility and I've committed a scientific crime in making an unjustified hypothesis, an assumption—oh, never mind . . ." he was on his feet and moving, now. "I must try it, at once!"

"You've not finished your protein-concentrates!" Buffil called.

"Swamp take the concentrates!"

"Professor," Forsaan called, "don't get too involved. There isn't much time left!" Marn vanished, giving no sign of having heard.

"I'm worried about him," Caralen sighed, passing her platter into the disposal slot, and taking out a scribble-film from her pouch. "He doesn't seem to be able to think of anything else but this new mystery." Forsaan diagnosed a fine case of pique. During the earlier part of the trip, she and Marn had made no secret of their mutual attraction and no attractive young woman likes to play second fiddle to an abstract problem. But he was wrong. She doodled a line of fire on the film, then looked up.

"There are all sorts of wrongnesses here, aren't there?"

"Perhaps," Forsaan said cautiously. "What had you in mind?"

"Tell him the technical one, father."

"All right," Hoggar Buffil shifted, heavily. "I'm only status-two, and my brain-power isn't up to their level, but I do know my own field. Technology runs in fairly definite patterns, and it is right against the run to find radio-level on a multi-culture planet. There are all sorts of reasons why, the chief one being the nature of radio itself. A radio-level culture argues a planetary culture. If those odd signals Marn talks about really are visuals, then that makes it even more positive."

"You mean *all* those signals are coming from one planet?

"Oh yes. Definitely. From the third. Our base. Didn't you know?" Wryly, Forsaan recalled telling Hoppik, in anger, to get on with his duties and "let's hear no more about ghost signals, if you please!"

"A detail," he said lightly. "I've had other things, but, you know, this ties in with something from *my* field. We traders have axioms, too, and one is that only a fool tries to do business with a divided planet. There are good reasons for that, too. Where you mix in with two or more cultures, you find rivalry, jealousy, competition, and, sooner or

later, conflict. When that starts, you, the trader, are caught in the middle. You're an interloper and lucky if you get away with a whole skin. So, although we do observe up-and-coming cultures, from time to time, we never have anything to do with them until they have reached the united-planet stage. This is where your point comes in, because I can't recall ever finding a multi-culture planet with radio!"

"Ah!" Buffil nodded, and sat back.

"That's one paradox," Caralen made another fiery doodle, cancelled it with a tug at one corner. "The indecipherable language is a second. And there's a third. Those old records report simian hominids. That's really why I'm here. Dikamor will have it that a simian hominid origin is neither more nor less improbable than the ursinoid one of our tradition, and I am hoping to get some positive data, one way or the other. There were no qualified anthropologists among the staff, when those old records were made, so their observations are crude and suspect." Forsaan controlled his distaste and tried to be patient, although the very thought of monkey-things aping humans was unpleasant to him. Sensing his discomfort, she hurried on.

"The point is, they did observe something and they were quite sure that they saw—not one—but several simian types, all into the fire-and-tool stage. Now we find several high-level cultures. . . ."

"In twenty generations?" he interrupted. "But that's ridiculous. The very idea of a simian hominid with intelligence is straining things, but to believe that they could leap from primitive to this stage. . . ."

"With help?" he asked, softly, and he stared.

"Help? How do you mean? Who?"

"The records, such as we have, were brought home when the big trouble began, as you know. But they were brought by the first-wave evacuation party. The tail-end clear-up group never got home. Something happened to them. Suppose, just suppose, they never left at all. We're assuming they were lost in warp, but were they?"

Forsaan shivered. Cases had been known of base-staff amusing themselves by playing tricks on the primitive inhabitants. The practice was strictly forbidden, the punishment severe, and the results demoralising to both sides.

"It's too much for me, altogether," he growled. "Too many insanities. Just as soon as we're fit for it, I'm warping out of here and noting the system in my log as 'dangerous; keep clear'. I'll thank you to keep these speculations to yourselves, in the meanwhile."

"Naturally," Buffil sighed, and stared at the unappetising scraps on his platter. "But it's a pity, just the same. I was looking forward to some decent food. . . ."

"We could all do with a planet-break," Forsaan got up, "and the sooner we can get safely into warp, the sooner we'll have it. Now, time's getting on. I suggest you make yourselves comfortable, before the fun starts!"

THREE

THE ship buckjumped viciously through the whole of her fabric and the tooth-edged scream of strain from her gauss-screens hit a new high for a moment. Then it rapidly dwindled into silence, the shudders became a throb, then nothing more than a buzz. Captain Forsaan stretched himself wearily in his chair, aching in every bone and sinew. He had the bridge to himself, and was glad there was no one else there to see his weariness. "Clear-out for the fifth time," he muttered, leaning forward to tap the screen gauges. "Can't need many more. Can't *do* many more. The batteries are almost flat, now." Quick feet at the door snapped his head round. Here came Nils Pinat, on the run for his chair while the lull lasted. He looked weary, too, but still active.

"Forward hold is sprung," he reported. "The pressure is away down. It won't hurt, though. There's only jewellery and small ornaments in that section." Settling into his chair, he went on, "Surely we've got enough, by now? Or Felder's gang have been sleeping on it!"

Just the thought of sleeping through the lurching nightmare of the past two watch-cycles made Forsaan grin tiredly. He had been continuously on watch, all the time, because the business of tangenting through the boil of outer atmosphere called for a degree of delicacy, judgment, and "feel" that were too crucial to be delegated to any junior. Cometaries were not so common that there was a standard operating procedure for them. In all his space-faring career, Forsaan had known only a score, and not one of them as rigorous as this one. "Or am I getting old?" he wondered.

His wrist-speaker beeped cheerfully and then there was Felder's mild voice. "Engine-room to bridge. That's the lot. Mains and reserves up to capacity."

"Thank Urs for that. Any damage, casualties?"

"A bruise or two, a few burns. One compressor seized. Nothing very serious."

"All right. Thank you. We will proceed into parking orbit right away and run idle for two cycles. I want all hands to get a spell and a meal. That means you, too, Felder. We'll worry about repairs later." He let go the switch, stood up, and felt a new set of aches take hold of his body.

"You need that rest too, sir," Pinat said, gruffly, "I can take over here. Stable orbit and automatic alarms set up, and then general stand-off for two cycles?"

"That's it!" Forsaan thumbed, wearily, and went out and down to his cabin, feeling the ship surge and shudder gently in response to drive. On the edge of his bunk, he felt for his carefully-hidden flask of zinth, hoarded against just such a moment as this. Just a taste of the tangy-sharp fermented berry-juice from his own home orchard, enough to skin the fur from his mouth, then he replaced the stopper and hid the flask again. He kicked off his boots, stretched himself out luxuriously and could hear, through the fabric of the ship, the one-two-three buzz of "finished with engines". Fast and efficient, old Pinat. He let his eyelids droop when there came a sharp, peremptory rap at his door.

Smothering a curse, he sat up again. "Who's that?"

"Ah, there you are. I heard the zero-clear. . . ." It was Marn, all aflame with excitement, lugging a box of equipment. "I've got the languages—the major ones, anyway. And those *were* visuals, Captain. Would you like to see some of the pictures I have recorded? Fascinating stuff, completely non-rational. . . ."

"Not now, Professor," Forsaan growled. "I have put the whole ship into rest for two cycles. I'll see you at the end of that time."

"But—but this is the most fascinating thing you ever saw. These are humans, just like us, and completely insane, unbelievable. . . ."

"I believe you, readily. Now, will you go away and let me sleep?" Marn hesitated, then admitted the inevitable and withdrew. Forsaan shook his head, tiredly, stretched out again and was asleep in seconds.

"I am neither superstitious nor a fool," Hoggar Buffil's voice indicated determination. "I merely make the point that where there are so many contradictory features there is obvious reason to believe that we are trying to deal with something that is quite beyond us, and we should, therefore, not meddle."

"A typical technologist's outlook," Marn retorted. "I refuse to admit that anything is, of itself, beyond me. I have had individuals, in my classes, from every one of the major and minor cultures of the Galaxy. I have lectured to them, made myself understood to them and learned to understand them in consequence. I am not prepared, therefore, to admit that this gathering of strange cultures is in some way *beyond* understanding. . . ."

"Just that the answers you get are screamingly ridiculous," Buffil interrupted. "It amounts to the same thing." Forsaan, who had paused outside the door again, thought it a good moment to make an entrance. By the sound of it, this argument had been going on for some time. There was silence as he made his way to his seat at the head of the table and began eating.

"Captain!" Marn's voice and aura were a delicate blend of innocence and shrewdness. "What is our immediate programme?"

"Recharge batteries. Find a suitable small body and put down for generator-repair. . . ."

"Preferably within the plasma-cloud?"

"Naturally. Why."

"I have been studying the system-data. The solar-wind, of the density we need, extends only as far as the third planet and begins to tail off very rapidly beyond that. At the orbit of the fourth planet it is almost negligible." Forsaan stopped eating. In his mind's eye he could get a fairly accurate recall of the system and it was as Marn had said. He had been so busy thinking about the cometary and deliberately *not* thinking about the monkey-chatter, that the point had escaped him.

"Are you suggesting that we put down on our target-planet, after all. In spite of those crazy radio-signals?"

"No, no. Not at all. But our planet does have a satellite, a large one. It is almost a two-planet system, in fact. I have checked with your sensor-officer. The satellite is barren, airless. I have also checked with your engineer, and its mass is suitable for low-G operation."

"You've been busy," Forsaan growled. "So you think it would be quite safe to put down on this satellite, in full view of the 'simians'?"

Marn snorted violently. "We can dismiss *that* old myth, for a start," he said. "These people are no simians. They're every bit as human as we. And we would not be in their view at all. The satellite has no relative spin of its own. We could put down quite safely on the blind side. We could, in fact, make our approach within the shadow-cone cast by the body and thus be quite safe from detection."

"Safe?" Forsaan pounced on the word. "What have you found out that we should be afraid of, Professor?"

"Fear doesn't come into it," Marn denied, irritably. "My idea is to observe without being seen, that's all."

"Oh come, now!" Buffil could contain himself no longer.

"Caralen and I have seen your pictures and learned the languages, the major ones—and there is plenty to fear. Why not admit it? Captain, from the evidence of radio and visuals, we know quite a lot. For instance, we have identified cities, transport by land, sea and air, radio and visual communications linked by orbital relays, fission-stage atomics, and much more. Yet, on that planet, which is slightly smaller than our own home world, there are almost three billion people, at least five major cultures, Urs knows how many minor ones—and all in savage conflict with each other." Forsaan went cold as the bulky technologist elaborated.

"We have seen the picture-records, blatantly transmitted. They use, and are using, explosive devices, lethal gases, radiation and poisonous bacteria against each other on a massive scale. Worse still, they seem to rejoice in this hideous activity and award respect and status to those who show themselves skilled at it."

"But that's not possible, surely," Forsaan clung to as much commonsense as he could. "If they practise wholesale slaughter on that scale—how can so many survive?"

"They breed in proportion," Buffil growled. "Like animals. And they squander materials at an incredible rate. So far as one can judge, their one aim seems to be to consume as much as possible."

"But that doesn't make sense either," Forsaan frowned. "For one small planet to support such immense numbers, they would have to practise the most stringent economies. That must be obvious."

"Of course it is!" Marn broke in excitedly. "You see, Buffil, even Captain Forsaan can see, at once, the manifest contradictions. Our information must be wrong somewhere. That is why I insist we need to examine this whole thing much more closely. The data we have . . ."

"Is quite enough to convince me that we have no business here. Tell him about the breeding, Caralen. That's more your line."

"First, we had to adjust our time-scale," she said, "and

discover their terms for time-units. We have concentrated on one major culture for detail, but the general pattern is common to all. Like us, they are in rhythm with planetary revolution, active during illumination, sleeping during the dark, calling these 'day' and 'night'. They also use 'day' for one complete revolution and 'year' for one complete period of orbit. Taking that as a convenient unit, we have compared their year with our basic unit, which is a 'generation'. As you know, we have a double meaning, here, too. One generation is one individual's accepted life-span in social activity. Beyond that period, he is free to do just as he chooses with the rest of his life. So far as we can tell, these people have a similar pattern; a period of useful-to-the-community life and then freedom after that.

"Now, we also use 'generation' to denote one-tenth of a total revolution of our home system around the Hub. In round figures, it works out at one thousand of their years. More precisely, Dikamor is three hundred and thirty years old. My father is about seven hundred. You, Captain, are about seven hundred, too. And I am a little younger than Dikamor."

"These figures are meaningless," Forsaan said impatiently, "without some other reference."

"That's the point," she nodded. "You see, with these people we are studying, a life-span is, at the most, about eighty years!"

"What!?"

"That is what our studies show. Furthermore, they are plagued with a great number of mysterious afflictions which make their incredibly short lives miserable in the final stages. But what is even more fantastic, for all their undoubted sophistication, they seem to be completely insane in their breeding habits. Our figures are not quite as reliable, here, but it seems they are physically competent to reproduce at about the twentieth year and there seems to be no modifying ethic in this. They just go ahead and produce young, apparently at random and in any number they choose. I have run a sample extrapolation here. It is

probably in error, but not by much, and, on what we have seen, it would be possible for one couple, living to eighty years, to survive and know some thirty direct descendants!"

"That's beyond all reason!" Forsaan stifled his feelings of disgust. Very few Fah'een ever expected to become grandparents. A man mated when he was mature enough to have learned the ways of society. He fathered two cubs; in rare cases, a third. He gave them a good home, a sane upbringing, and saw them properly launched into society. At the same time, he had his own contribution to make. That was a full life for anyone. It was enough.

"Of course it's beyond reason!" Marn was still indignant. "Such figures do not make sense, forwards or backwards. See here, it is twenty generations since our people were last this way. In terms of this culture, that is something more than twenty thousand of their years. Run Caralen's figures in reverse for that period and you get negative values, which is nonsense. Run them forward for an equivalent period and there would be congestion in the Galaxy at such numbers. It's ridiculous!"

"I'm sorry," Forsaan muttered. "I'm afraid I don't see what you're getting at. Either your studies show what they show—or they don't. . . ."

"They show that we have caught hold of partial data," Marn declared. "We have a mass of contradiction. Their breedings, life-span, numbers, their trade and commerce—they seem unable to transact any business whatever without elaborate material symbols and safeguards, yet, in the same breath, they do everything they possibly can to evade the safeguards they have set up. No, it's so, I tell you . . ." as Forsaan grunted his disbelief. "They have a special class of people who do nothing else but handle such things. . . ."

"They have a term for 'trust', yet they seem utterly unable to trust anyone or anything," Caralen put in, puzzledly.

"You see? Another contradiction. And their technology,

as even Buffil will agree, is insane. They have power, just as we have, but the major part of their generation-system seems to be heat-exchange. They have a small back-up of fission-power, but even that is simply glorified heat-exchange. Power they have, but they seem to throw it away as fast as they make it. Now, any culture advanced enough to be able to generate power on such a scale simply must be sophisticated enough to practise conservation at the same time. The two things go together. But not here!"

"So I say this is a mad place, and we should have nothing to do with it," Buffil repeated. "I feel as if we were prodding at an unstable pile. This situation is explosive, I tell you."

"And I'm telling you," Marn retorted, "that our data must be wrong. We must be getting a false picture. We have to know more. And if we put down on their satellite we will be practically on top of them, able to see and hear much more than we are doing now."

"I'm prepared to leave it to Captain Forsaan," Buffil growled. "I'm pretty sure he'll see it our way."

But Forsaan, as much to his own dismay as anyone else's, was caught by the hard facts of the matter.

"I don't like it any more than you do," he said. "I doubt if anyone on the ship is going to like it, but Professor Marn has the right of it. We need power for our batteries, in order to do any heavy repairs at all. And we must repair or twist at half-warp for the next base. That's a long pull. We'd run short of food and water and air, without batteries to power our processing. We're caught with no choice. We must get into dense plasma—and that satellite seems to be the only suitable body. You'll excuse me, I want to check this with the charts. If there is any other possible way, I'll try it."

He found Pinat in the log-room, patiently coping with details of the ship's state and progress. A buzz brought Felder to join them in person, small, neat, easy-going Felder, who lavished affection on his engines like a mother on her cubs and was unable to get worked up over anything

else at all. Together they studied the charts, revised and corrected by Hoppik during the long run-in.

"It's the ideal spot," Felder declared. "See, the planet's magnetic field serves to bunch-up the plasma, which is all to the good, for us. And the surface-G is right, too."

"There's nowhere else," Pinat shook his head, "but it's too damn close to that mad place for my liking. The men aren't going to like it, sir."

"I know that," Forsaan snapped. "I don't like it myself. We shall just have to figure out some way of keeping them occupied. For the moment, there's the problem of a course. We want to strike the most favourable approach and hit that cone of silence just as far out as ever we can. What's our position, right now?"

FOUR

IN the watches which followed, Forsaan could sense the growing tension throughout the ship, feeding and growing on rumour and half-truth. It affected him to the point that he was unable to sleep properly. He knew he had to do something, or there would be a moment when the smoulder would burst into flame. He had seen men go space-sick and had no desire to see it again. But his brain refused to serve up any practical solution.

Drendel was swinging into the long slow curve that would bring her into intersection with the orbit of the third planet when a shrill alarm jerked Forsaan out of troubled sleep into his boots and up to the bridge before he was properly awake.

"All right, Klegg," he mumbled, "what is it?" Before the second-officer could say, Hoppik came stumbling in, knuckling sleep from his eyes, to displace his junior at the sensor-board.

"Something out there, sir. Too small to identify, but it's putting out signals of some kind," Klegg said, shivering.

"Let's have it on the plot, Mr. Hoppik," Forsaan ordered crisply and moved aside as Pinat came tramping in. Together they watched a pin-point of light slide and settle

into the centre. From the sensor-board came a shrill, irregular trilling.

"Sounds like a data-relay," Hoppik mumbled. "Distant three point eight light-seconds and coming closer."

"Collision course?"

"No, sir. On these readings, it should pass us at about two seconds."

"All right. Keep reading. Steady as we go, Mr. Klegg. What d'you make of it, Pinat? Can't be more than a pimple of a thing, surely? About half the size of one of our life-boats, eh?"

"Same sort of shape, too, so far as we can see. Would hardly be manned, this far out. Spy-station, d'you think?"

"We'll soon know. Keep monitoring those signals, Mr. Hoppik. Let me know if they show any significant change. If that thing *has* eyes to see us, there should be some appreciable modification. . . ."

They waited long breathless moments as the tiny thing came to its nearest point and then began to fall rapidly away again. The twittering from the speaker swiftly lost volume.

"Going away fast, sir. Orbit elliptical, focused on the primary. No significant change in signals. Nothing on optical or magnetic."

"Didn't see us, then," Forsaan scraped his chin, thoughtfully. "You were probably right, Hoppik. A data-relay. From the hell-planet . . ." he bit his lip as his own personal phrase slipped past his tongue. "Point is, why? Are they just being inquisitive, or is this the prelude to something else? How far are we from shadow, Mr. Klegg?"

"Practically on it. I was just about to call you, sir."

"All right, you can stand down. I'll take over. Mr. Pinat, turn out all hands, give them time for a snap-meal and then full alert stations."

Back in seconds, to take up his position, Pinat asked, "What are you expecting, sir?"

"Trouble, in one shape or another. If that data-relay was, as I suspect, a prologue to space-flight, then their next

logical step would be a short hop to their own satellite, wouldn't it? Our charts give it as airless, waterless, and barren, but that is not necessarily so, now. We've got to be ready for anything."

Half-way through the next watch, Marn came wandering up to the bridge, sleepy-eyed but curious, demanding to know what was going on. Forsaan told him, in brief words.

"A probe? Out here? I must see the records. . . ."

"Later, Professor. There's no time for that now. We're in shadow and beating up for planet-fall. You get back to your bunk and strap in. We may have to twist without warning." So Marn went grumbling away and tension grew and thickened on the bridge. The blind side of the satellite filled the plot-disc by now.

"We need to pick our spot very carefully," Forsaan mused, studying the screen. "Just safely inside the libration area—out of sight, but not too far away from the edge. No point in making it harder for Marn's instrument-party. About here. Let's have a blow-up and surface-scan. . . ." Hoppik manipulated controls and the picture ballooned, rushing the area into large scale. Blurs became yellow-red patches, hills lifted into jagged mounts, cold, bleak, and uninviting. The surface-probe chattered quietly, Hoppik translating.

"Dust-layer, then igneous-porous, solid under that—average about six-seven spans down—hah?" his voice choked off as the probe gave a quick "ping".

"Hold!" Forsaan snapped. "Get that again, Hoppik!"

"Small object, metal—got it—on the plot now. . . ."

Forsaan scowled at it. "Looks very like that other thing, the data-relay. Came down hard, by the look of it. Any intelligence from it?"

"Metal-echo is all," Hoppik mumbled. "Dead, otherwise." Forsaan spent one taut breath in gambling a dozen things all at once, in his mind.

"As you were. That thing isn't going to hurt us. Might do us a bit of good in fact. Mark its location. We might be able to take a closer look at it, later."

Gently, steadily, *Drendel* went down, to touch and settle into the dust and stop. Second checks were made. Then thirds, just to be sure. Then Forsaan pushed the switch for zero-clear and sighed.

"So far, so good. Stand-down all hands, Mr. Pinat. I shall have a general announcement to make, just as soon as I've had a discussion with my guests. So far, we have been doing all the work. It's time they did some."

In his cabin-suite, he waited until all three had answered the summons by his steward.

"We are down, safely," he said. "We've located another probe, on the surface this time, not far from where we are now."

"Space-flight, of course," Marn said promptly "Obviously."

"It's not at all obvious," Buffil contended. "The energy-technology needed for space-flight comes a long way after planetary unification. This is more in line with their profligacy of power and materials. . . ."

"Please!" Forsaan put up a hand. "We can argue such things later. For now, I have a proposition to make. You say you have studied one of these cultures in detail?"

"We chose by language that one which gave us maximum coverage. It appears to be a federation of similar cultures, calling itself the United Americas, or some such name."

"Good enough. Now, I would like you to keep concentrating on that one and to co-operate with me in supplying a basic vocabulary that I can pass on to the whole ship."

"Why?" Marn asked, curiously. "What are you up to?"

"I am taking a desperate remedy, to deal with a desperate situation. I do not like the state of mind of my crew. Rumours have been rife and all sorts of dangerous nonsense is being repeated, about this mysterious planet. Now we are sitting practically on top of it. I must do something to change the atmosphere. The position is difficult enough, just as it stands. You see, in space, a ship is functional and

every man has his job to do. On-planet, in the normal course of events, a different routine takes care of things. There are stores to check and move, there is business to be done, checks and repairs to make, and, above all, port-leave. Here, I can do very little, apart from repairs. Idle hands and idle minds find trouble just as surely as a wasp finds sugar. That, plus the superstitious rumours, adds up to a situation I cannot tolerate. So, I propose to use the mystery to defeat itself."

"I don't quite see. . . ." Marn shook his head.

"It is merely a switch on a routine device," Forsaan explained. "When we are about to enter a system, we take care to adopt the basic elements of the culture. We shift into their time-sequence, language, customs, dress—it helps us to deal with them, to 'think' the way they do. I propose to do the same thing here. With your data, plus relay broadcasts throughout the ship, once we have the observational complex set up, we will try to be as familiar with this culture as we are with so many others. We will speak as they speak, dress the way they do, stores permitting, and take up their rhythm of life as far as we possibly can. Fear is the product of ignorance. Once my men get to know this culture, they will no longer fear it."

"That's the craziest thing I ever heard!" Buffil exclaimed, but Marn was smiling to himself and Caralen was nodding, too.

"It would certainly be interesting," she said. "It's the next best thing to an on-the-spot investigation. What do you think, Dikamor?"

"I think," Marn said dryly, "that our good Captain is far more shrewd than he would have us believe. Don't you see it? Instead of just two or three of us struggling to resolve the enigmas of this culture, we will have—what—fifty? All participating, sharing, combining their observations. Fifty different points of view, all sparking off each other. I think it's a brilliant idea. I congratulate you, Captain."

"Thank you, Professor. I only hope it works as well as you think. Now, if you will get busy with those basics, I

have several projects to get in hand and I want to pass this thing on to the crew, myself, as soon as possible. Then Hoppik will go out with a gang, to set up observation-posts while the primary shadow is in our favour. I'll have a couple of men take the mobile hoist and bring in that crashed probe, too. . . ."

The "days" went by, became a "week", and Captain Forsaan was no longer so sure that it was a brilliant idea. Marn had said the culture was irrational, but he hadn't managed to convey the half of it. Possibly, he hadn't known the full extent of it himself. Almost from the beginning, sound radio had been abandoned in favour of the much more graphic "television", and there were screens on all mess-decks and recreation-spaces. And they were seldom quiet.

"There's too damn much of it!" Pinat declared. He had his broad back to the screen, which was silent, in any case. This was the senior executives' mess-room. Forsaan had been taking his meals here for some time, preferring to leave his guests to their own company, in his suite. He looked, guiltily, at the silent screen and nodded.

"It's certainly compulsive. Even now, I get the stupid feeling that I may be missing something."

"You've got to *do* something, sir. I can't get a thing done, can't turn my back for a moment but what my deck hands are all goggling. Felder is in the same fix. We'll never get those generators back at this rate. And I have a man laid off, injured."

"How did that happen?"

"Two of them, Mowry and Bok, thought they'd play one of those games we see such a lot of. You know, where two disputants stand face to face and strike, with 'fists'? Bok struck first, hitting Mowry in the face. He is suffering from mild concussion now, as well as various cuts and bruises. I've had to give him the 'quiet-cap'. Bok has a sprained hand. . . ."

"Yet, in the pictures, these people seem to suffer only

minor discomfort. You know, Pinat, this is all of a piece with the rest."

"How do you mean, sir?"

"That what we are seeing is illusion, in some way. It is not real. None of it is real. It is all a grand deception."

"Nothing deceptive about the way the work is being neglected. . . ."

"Yes. Well, we can deal with that very simply. Even these illusory Americans have some sort of concept of work-hours, haven't they? Nine till five, I think. Something like that. Right? Issue an order, Pinat, to that effect. Work will be done, between nine in the morning hours and five in the evening hours."

"How are you going to stop them watching the pictures?"

"Hoppik is to be responsible for switching off, at the master-set, at the right time. Where is he, by the way? And Felder?"

"They went out together, to look at the sensor-array. Some problem Hoppik has run into. Professor Marn isn't going to like this, sir. Cutting off the pictures, I mean. If we are to study this culture thoroughly. . . ."

"I'll have a word with him on that, right now!" Forsaan got up, grimly. "He will just have to be made to see it my way."

He found Marn and the Buffils, father and daughter, in an atmosphere of strain that made his stomach sag to feel it. Marn, looking up, had lost all his air of cheerfully confident superiority. Instead, he looked drawn and wearily resolute.

"I wanted to see you, Captain," he said. "Come and sit down." Forsaan took his seat, cast a quick glance round and realised that all three of them had their emotion-fields shut in. His own indignation fled. This was something far more serious than his problems of discipline.

"I must go down there, Captain. Down on to the surface of that planet and mix with the people, in person."

"Please tell him it is impossible!" Caralen cried. "We

have tried all the arguments we can think of, but we can't move him."

"But it *is* possible," Marn declared, flatly. "I have investigated that side of it. And I must go. It is the only way to be sure."

"Sure of a quick death, you mean. Respect to your status, Marn, but this carries scientific integrity to ridiculous lengths. And for what?"

"May I deal with the physical side of it first?" Forsaan said, and his voice was quite steady. The emotional side of this proposal hadn't begun to register yet. "It would be a simple, routine operation to put down a lifeboat and recall it. We usually do it from parking-orbit, when we have need to observe a developing culture. . . ."

"As I have already told you," Marn said wearily.

"But, in the name of all the ancestors, why?" Buffil roared. "What will you achieve? We have enough—too much—information, already!"

"I don't agree. We have copious information, yes. But it is biased, in some way that we cannot correct for. We are getting this planet all wrong, I tell you. On the information we have, this culture is a stark, raving impossibility. . . ."

"Or an illusion," Forsaan put in. "An elaborate pretence. . . ."

"Yes, that had occurred to me, too. But, whichever way, we are getting a false picture and answers which don't make sense. Contradictions leap out as soon as one probes beneath the surface for values and themes. For example, they extol thrift and waste in the same breath. They value honesty and deceit; peace and conflict; security and danger. Take their universal value-symbol, money. They expend constant effort to amass it and throw it away almost as fast as they get it. And there is something deeper than this. There is a pervading sense of 'drive', of insatiable restlessness, of pressure. Part of it, I believe, derives from their pitifully short life-span. Only by hard driving can an individual learn the patterns and modes of the culture in time

to make some worthwhile contribution before his speedy end. But there is more than that. Notice how they are incessantly seeking something 'new', reaching out all the time? It is not clear what they are looking for. I suspect they do not know themselves. But they go on. And that opens the basic questions of all. Why are they here? Where did they come from? Who or what is driving them and to what end? I must know. And the only way to find out is to go down there and see for myself. You agree it can be done. . . ."

"Wait!" Forsaan had got his mental breath back. "I said it was a physical possibility. But not here!"

"Ah!" Buffil sighed, and leaned back. Caralen's eyes opened wide. Marn looked thunderstruck.

"Not here," Forsaan repeated, marshalling his thoughts. "A pod carries three men, at the outside. We put it down and pick it up again by remote, from the ship. That part is fine. But that is not any primitive civilisation, down there, Professor. Their air is thick with radio-signals. The surface is networked with roads, transport, towns, and cities. They have weapons, as we have seen, and police, and a short and violent way with strangers."

"They also have extensive wilderness regions and tourists. . . ." Marn retorted. "Whatever you put up, I can contradict it."

"Suppose you were detected and taken, and they proceeded to check back on you and your transport?"

"All right, suppose they do? Then what? Would they believe my story? If they did, have they the technology to reach out as far as this and cause any embarrassment? You are as easy to read and as illogical, Captain, as an elderly 'she' with an ailing cub. Let me put it flatly. There is danger, yes, but it will be danger to me and to one of your lifeboats—nothing more."

"You take unfair advantage of your status, Professor," Forsaan bit back on his rage, compounded and multiplied by the strains of the past days. "I am still master of this ship. I was learning to curb my impulses before you were

able to walk. You may feel fit to behave like a spoiled cub among your peers, but it won't go with me. I do not propose to sacrifice a lifeboat, the time, and safety of my crew, the integrity of my ship, or your life—just to solve your academic problems, or to gratify your curiosity!"

Marn went as pale as death, and the beat of his anger was almost a visible thing. Forsaan set his jaw and matched him, rage for rage. The air of the small suite crackled in thick silence. Then, like the snapping of a wire, Marn laughed and leaned back.

"This is ridiculous," he said. "You force me to be heroic, against my will. Another contradiction, oddly. Because you are all quite right, and quite wrong. Let me explain. Truly, if this exploit was simply to gratify my curiosity, my academic curiosity, it would be madness. And you'd be quite right to oppose me. But it is more than that. How can I make you see it? There is danger here, grave danger. You have all sensed it, in one way or another. It's real and positive. But you are all trying to evade it, to ignore it, or you want to run away from it. And that's not the way!"

"You admit there's danger?" Buffil growled.

"Of course. More than you realise. Despite all the contradictions and confusions, one thing is clear. This is an explosive situation."

"And yet you insist on going down there," Caralen cried.

"Why are you all so blind? What would you have us do, run away?" Marn swept them with a scornful glance. "Buffil, if you have a power-plant which begins to behave dangerously, do you run away from it? Of course not. You try to find out what is wrong first. You cannot hope to deal with it intelligently until you know, exactly, what is wrong. Now, suppose we run from here, back to our homeworlds. And report—what? What would we tell them?" He paused, waited, but there was no answer. Forsaan felt his tongue thicken and stick as he tried to argue.

"We have very little positive information, certainly not enough to let us estimate the true nature of the danger.

And until we *have* positive data, we cannot act rationally. I propose to get that data, in the only way left to us. It is not a matter for argument, but a necessity."

Forsaan flogged his wits hard. The reasoning was solid and he could find no fault in it, but his every instinct screamed out against sending a man, in a pod, down there. It had to be stopped, somehow.

There came a rap at the door and he got up, went to answer it.

"Pinat! And you, Felder—Hoppik—what's wrong?"

"Something I think you ought to hear right away, sir."

"Not here. If it's urgent. . . ."

"I think it's urgent, sir." Pinat was being his impassive best. "And I think our guests ought to hear it, too."

"Oh! All right, come in, find seats." There was barely room round the table for all of them. Forsaan waited until they were settled.

"Now!" he said. "What's it all about? Hoppik?"

"That planet, sir," the young sensor-officer's aura was unsteady with surmise and fear. "It's shielded!"

"What in space do you mean, shielded?"

"It was the unusual interference, sir. I wanted to check up on it, just curious. So I set up a dish-detector. And then I got Mr. Felder to come and check my findings. There's a total belt of hard radiation all round the planet, sir. A shell!"

"A radiation-interaction zone, where the planetary magnetic field distorts the solar atmosphere," Marn suggested. "That's nothing new, is it?"

"Ah, no, sir," Felder corrected mildly. "Interaction-zones are common enough. I've seen plenty. They bunch up the plasma-field very handily, too. But this one is a brute. The particle-density is a hundred times greater than it has any right to be, and the energies involved are out of all reason." He pulled out a scribble-film, spread it on the table and touched the side at a "memory" spot, to restore a series of glowing figures. "Here's some of the flux-readings we got." Marn bent his head close, to study the figures, as Felder

pointed them out. Buffil craned over intently, too. Forsaan watched them curiously. Hoppik might be discounted, but Felder wasn't likely to make rash statements.

"You think it's artificial, then?"

"Can't think of any other way you'd get that concentration. I'd say there's been a massive injection of heavy, unstable particles, some time in the past. No way of telling just how long ago, but some considerable time."

"But these . . ." Marn pointed, ". . . are recent, surely?"

"They certainly look that way," Buffil agreed, twisting round to get a better view. "Different values altogether."

"Those other, older, figures are almost certainly thorium-230 and decay-products. This lot I can't account for at all." Felder shook his head.

"I think I can," Marn sat back, a curiously excited expression on his face. Forsaan coughed, catching their attention.

"Will somebody explain, please?"

"It's quite simple," Marn smiled wryly. "The planet is enclosed in a dense shell, or series of shells, of lethal radiation."

"And, I gather, you have reason to believe that it is artificial? Well, that seems to answer your original question about visiting the place, doesn't it?"

"Forget that, for the moment, Captain. What is bothering me, now, is why? Someone put that shield there. Now, was it to keep them in, or to keep us out? Not us, personally, you understand, but outsiders in general. I wonder which, and why?"

"The second answer is favourite," Felder replied easily. "That radiation-belt is lethal enough, as you say, but only if you don't know about it ahead of time. Presumably, the people down there don't."

"I think they may suspect," Marn murmured. "I think those irregular particles may be traces they've left. We know they have fusion-explosives. We know they are sending up probes, because we've examined one. We know they have crude methods for detecting such radiation. It's quite

possible that they may have exploded some such device within the radiation-concentration, in an attempt to destroy it, or affect it in some way. In short, they are trying to get out!"

"But there's nothing of this in their transmissions!" Pinat objected.

"I suspect those transmissions the more I think of them," Marn sighed. Then, to Felder, "Why did you say that radiation-belt would be lethal only if we didn't know about it?"

"Because we can screen against it. Remember Troyarn? The only reason we got such a bad dosage there was because we were running on minimum screens. Naturally. We weren't expecting anything like what we got!"

"Is that right, Captain? Does that mean that it is still possible to put down a manned lifeboat, with appropriate screening?"

Forsaan nodded, unwillingly. Pinat stiffened, staring. Even Felder was jolted for a moment out of his calm.

"You mean—you want to go down there, in a pod?" he demanded. He turned to Forsaan. "You're never going to agree to that, sir, surely? It's the craziest thing I ever heard. Respecting your status, Professor, but you can't mean it. You don't know what you're saying!"

Five

PERVERSELY enough, it was Felder's rare emotion which turned the scales in Forsaan's mind. Something of the Professor's argument was beginning to irritate his sense of reason.

"I think I *am* going to agree to it, Felder. Professor Marn has the right to make the attempt, and I think I can see why he wants to. Now wait a bit . . ." he put up a hand as Marn began to enthuse. "It's not as easy as all that. Let's treat this as a hypothesis and try our best to break it. That way we ought to be able to work out all the snags ahead of time. Pinat, give my steward a shout, will you? Have him brew us something to drink, and some snacks. This is going

to be a long job. Now, Felder, about the screen-generator for the lifeboat. . . . ?"

The arguments, pro and con, the suggestions and examinings, went on for a long time, until Hoppik made a trial estimate of the most favourable times for depart and recall and discovered they had less than three days of grace. Then the pressure became furious and Forsaan had reason to feel a touch of pride for his crew. Once the fact was established, everyone who could contribute anything at all to the success of the trip came forward eagerly.

"The pod will run herself, Professor. All you have to do is sit tight and watch for a good spot, at the last minute."

"Be sure and pick a place with trees, on a hill-top, if you can. . . ."

"Suppose somebody says to you 'a quarter', how much is that?"

"These things are 'necklaces', the metal is platinum, the stones are zircons. Don't try to hock too many of them in any one place. Spread them around."

"Let's just go over this road-map again, now. . . ."

"How about these for sandals, Professor, comfortable?"

"Suppose we run through the operation of this emotion-damper just once more, eh?"

The last-mentioned was a device quite new to Marn, although Caralen had met it before and was able to explain it to him.

"It's just a variation of the 'quiet cap'," she said. "You know about that, surely? It's a small unit, used extensively in therapy, which puts out a field to interfere with and damp-down emotional reactions before they reach sensation-level. In that way, the natural recovery mechanisms of the body can proceed without pain, distress, or interference from the patient."

Forsaan, standing by, said, "We gave it to old Bovy, remember? He was past recovery, of course, but it helped him pass away without distress and in conscious peace right up to the last."

"Now *this* version," Caralen resumed, "projects a field

out from the wearer, damping down emotional responses in any person within range. The subject will remain apparently normal, aware, and responsive, but he won't feel fear, hostility, or curiosity. He won't remember very clearly, afterwards, either."

"I hadn't realised," Marn said wryly, "that curiosity, too, is an emotion!"

Collectively, they worked on his pod, his equipment, his clothing and trade-good supplies, his speech, posture, and attitudes, everything they could think of. The crucial moment came all too soon. In spite of his reasoning, Forsaan couldn't repress the chill of apprehension he felt as he sat by the remote-control board and gave Marn his last words. A chronometer ticked away the last seconds.

"Remember, now, on landing and making sure all is well, close the red switch. That will be our only signal from you. Then, be sure to be back in the pod and secure, before the deadline moment. Reverse that switch, which will tell us all is well with you. And leave the rest to us. Good luck, and may the ancestors take care of you." He gestured to Caralen who stood by his side and she came close to the microphone.

"Good fortune, Dikamor. Take care, and come back safely."

"I will try my best," Marn's voice was steady. Relays clicked over, there was a subdued hiss and sigh of power and the capsule shot up and away in a slow curve, into the dark limb of shadow. Minutes later, Hoppik caught the bright dot in his detectors and held it until it was no longer distinguishable against the background "noise".

Four "days" later, Forsaan was able to dictate into his log, "Our batteries are fully charged and the ore-extraction plant and our essential needs are being supplied by direct induction from the plasma. The generator-overhaul proceeds with dispatch, and we should be space-worthy well before the recovery date. Today we will set up sheet-metal screens and dust them, as protection from the direct rays

of the primary. Television-watching has been cut to a few hours in the evening, although Hoppik's section is maintaining a constant radio-survey. There has been nothing to indicate that Marn has been discovered. Everyone on the ship is constantly thinking of him and wondering how he is faring. Oddly, this has had the effect of subduing the spirits of the men, but, at the same time, is inspiring them to work hard. Perhaps we, too, are susceptible to the influence of a hero-image, as these Earth-people seem to be. Their activities, as we observe them, seem as incomprehensible as ever, otherwise.

"Miss Caralen has been deeply affected by Marn's absence, but she is keeping busy and cheerful. She and her father are about some ploy of their own, just now. . . ."

On the thirteenth day, the "ploy" became a small bombshell under Forsaan's nose, when Caralen came to see him.

"I've been studying those old records again," she said. "They mention a 'platform-unit'. My father has explained this as a plasma-converter unit, mounted on a convenient satellite, for transmitting power down to the surface for base operations."

"That's so," Forsaan nodded, patiently. "It depends on local factors whether they use that method or another. We are using direct induction at the moment. The platform technique is all right, if you have a handy source for a base. In this system, now, there is a big asteroid belt, so that was probably the reason why our predecessors adopted that. . . ."

"Yes," she said. "I understand that much. But if there was a platform unit, as it says in the records, where is it now?"

Forsaan had his mouth open to answer, and had to close it again, and think. Because there was no ready answer, at all. The base had been shut down, put into preservation, yes, but there would be no sensible reason for doing away with the platform. In a stable orbit, it would stay where it was, swinging its silent vigil round the planet until required again. He looked at her, frowning.

"There have been so many things, it's not surprising we missed that one. But it certainly is odd. Did you ask your father about it?"

"He's just as baffled as you seem to be." She hesitated a moment, then, "I'm not qualified in such a field, but I keep seeing connections. That platform, so far as I can tell, was roughly where that radiation-belt is now."

"That's where they would locate it, yes."

"And now that belt is full of lethal particles, which should not be there. And the platform is missing. And the final clear-up party never returned from this base. And the surface of this satellite, especially on the planet-facing side, is heavily pock-marked with impact-craters!"

The more Forsaan thought about it, the less he liked the picture she had drawn for him. It was horribly plausible.

At last he said, "A moment. Let's have expert opinion on this," and he touched his wrist-speaker, got Felder on the second try. The grey old engineer heard the theory, impassively as always, and nodded.

"Could happen that way," he declared. "Planting a pick-up right in a bunched field, like that, is the quick way, but it's ticklish. Tolerances are a lot smaller, just as the power-gradient is steeper. Another thing in favour is that thorium-230 concentration. That's the main constituent of the pick-up elements they would have used. And there's a third point I can make a check on. Been bothering me, anyway."

"Oh. What's that?"

"We are ore-extracting, as you know. The percentage of heavy elements ought to be low, here. It is, for the most part, but every once in a while we get a pocket of heavy stuff. Now, I could have my gang take some sample cores from a crater or two . . ."

Forsaan, after Felder had gone away taking Caralen with him, sat for a long time, pondering this latest twist. What they had diagnosed as a "biological shield" and imputed to some deliberate and diabolical agency, was now going to turn out an accident! Unfortunate, certainly, but just as

certainly *not* ominous. Nothing to be afraid of. How many more, he mused, of the seemingly insane aspects of this planet would prove to have quite simple, rational explanations?

Next morning, the fourteenth day, with half of Marn's time gone, there came a shock of a different kind altogether, something to banish philosophy to the far corners of his mind and put urgent anxiety in its place. The news-reader's voice was held deliberately flat, his face impassive, as he said,

"The strictest news-blackout of a decade was lifted, early this morning, with the announcement, made simultaneously from NASA's spokesman in the White House, and Moscow's Kremlin, that the US and the USSR will co-operate fully on 'Project Moonloop', a shot that is intended to throw a highly sophisticated, heavily instrumented capsule as far as the Moon, there to make two, possibly three, controlled orbits, scanning the surface of the Moon at close range; then to recall the capsule, which, it is hoped, will make a safe re-entry, bringing its precious information back with it.

"So thoroughly and efficiently has this project been classified and protected that, with this, the first public announcement, we learn that the giant boosters are already in place and being checked out and that the shot itself is confidently expected to take place in fourteen days' time. . . ." The rest of the message washed past Forsaan's ears in a blur, with intermittent highlights. The date! That was the dagger in his mind. Fourteen days would place this co-operative "shot" at precisely the time pre-set for Marn's recovery.

He called an immediate conference. Hoppik, grey-faced, confirmed the times in a schematic, hastily drawn out of figures provided by the bridge course-computer. "If they blast-off on schedule, here," he indicated, "then orbit and aim, discharge their capsule—it will coast most of the way. And it will get here just about the same time that lifeboat will be triggering our controls. Neck and neck!"

"With every antenna and telescope down there watching us like eagles," Forsaan growled. "The moment we cancel his screens to take over control, they can't help seeing him!"

"But," Hoppik was suddenly excited, "even if they do see our lifeboat, they can't *do* anything about it. Can they?"

"Can't they?" Felder retorted, gently. "You've seen their transmissions, heard their talk. You know what they do with an experimental rocket that gets out of control, that could be dangerous. They explode it. They build-in that capacity, as a safety measure. And, as they hope to bring this one back after orbit, you can bet they will have thought of that angle. There will be a 'destruct' capacity there."

"But they wouldn't destroy their own capsule, just because of a strange sighting, would they?"

Nobody bothered to answer. Forsaan studied the fire-lines, grimly, seeking some way out.

"We could hope for bad weather down there," Pinat said heavily, "to put their schedule back a bit."

"If we break that shield earlier and then boost his drive. . . ." Forsaan muttered. "We will need a completely new set of flight-figures, just in case. Hoppik, you had better be working on that angle. Pinat, there's another thing. Just supposing that spy-rocket does make its orbits?"

"Yes," Pinat agreed, at once. "It can't miss seeing us here, the way we are. Camouflage! I'll get the men on it, right away."

"And, Felder—push the repairs. I want everything on first-order readiness. Everything! Just as soon as ever that lifeboat is aboard, we go!" If we get it aboard, he added to himself, when the others had gone. It was going to be a very close thing.

SIX

"THIS is Jupiter Control," the voice came, hard and steady, from the speaker by Forsaan's elbow. "Current reports

from Moonloop capsule are good. The seventy-two hour coasting period will be completed in two hours' time. At that moment we will endeavour to steer the capsule into lunar-orbital attitude. All signals are favourable at this time. . . ."

Hoppik crouched over his controls, striving to disentangle the all-important from the background mush. Forsaan, by the plot, was impatient.

"Come on, come on," he muttered. "We ought to be getting that lifeboat, by now."

"The shielding is against us," Pinat said softly. "It doesn't leave much trace to pick up. Not like that Moonloop thing . . ." the bright spot of the Earth capsule seemed to hang motionless on the screen.

"Got him!" Hoppik cried, and Forsaan saw the tiny spot at that same moment. As he watched, critically, it crept and brightened and his keen eyes guessed its path, estimated its relation to the other capsule, strained to arrive at probable values. And he waited.

"We ought to have enough data now. Let's have a course-projection, Mr. Pinat, on both of them." Seconds later, bright fire-lines drew curves on the plot, superimposed on the two bright points and all three men drew deep sighs of relief.

"Urs be thanked for that," Forsaan growled. "They are aiming at the opposite limb, see? Marn is coming up fast. He should be within our grasp just as that other capsule is jockeying into orbital attitude. There'll be more than the total diameter of the satellite between them. That's good enough for us. . . ."

"This is Jupiter Control. One hour to orbit-time and all information is still good. . . ."

"We'll cancel his shielding here," Forsaan put his finger on the plot. "Take control, whip him over the hump, around, down here, into the lock—on clamps, batten down, lift-off, and be well away before that lumbering spy-eye is a quarter the way round. I want two good men in that lock, Pinat. This is no time for fumblers."

"Control coming over to you—now!" Hoppik threw a switch and Forsaan wrapped his steady hands around the remote-control levers, eyes intent on the board in front of him. The lifeboat was swinging in at a great rate. He juggled it deftly, killing momentum, nudging it into true match with the guide-beam.

"Lock open and ready," Pinat reported, softly. "Coming down like a feather . . ."

"This is Jupiter Control. Orbit-attitude has been successfully achieved. Moonloop is now into the first stage of first orbit. We anticipate losing contact when the capsule passes into the shadow. . . ."

At precisely the right moment, there was a gentle shudder through the ship's fabric and a green indicator flared on the board. In the boat-lock, two men leaped forward, lugging the power-and-communication cable, to ram it home securely in its socket. Another green sprang up on the board. Forsaan touched a switch.

"Professor Marn—can you hear me—are you well?"

"Captain Forsaan—it's good to hear your voice again. Yes, I am well. Weary, but quite well."

"Good. Let's have you out of there as quick as you can, please. All other stations, stand-by to lift!"

"No! Wait!" Marn's voice crackled. "Wait!"

"We *can't* wait," Forsaan snarled. "If you shake it up, we can be up and away before that blasted spy-eye gets round here. . . ."

"But you can't do that. You must wait until you've heard. In the name of humanity, Captain, hold on!"

Forsaan mumbled awful things below his breath. Part of his mind wondered what "humanity" had to do with it. The rest of him froze in anguished indecision. Then, angrily, he slapped the "general stations" switch again.

"Belay the last order," he growled. "Belay. Take-off is postponed. The two hands in the boat-lock will secure and then restore camouflage. Be quick about it. Everybody else will stand-by!" He broke the connection again, swung round in his chair.

"This had better be good," he said to no one in particular. Seconds later the tramp of feet heralded Buffil and Caralen, hurrying into the bridge-space. And then, from the crew-side, came Marn, dusty and dragging his feet, weary, haggard, but with fire in his eyes and his aura bright with purpose.

"It's good to be back," he said, and stood there, looking round. As if gorging himself on impressions, Forsaan thought. "I feel as if I'd been away half a lifetime. If you only knew the temptation—but this will not do, at all. Captain, how quickly can that lifeboat be recharged, reset, or whatever it is, for a return trip?"

"Not long. An hour, possibly, depending on the state—you mean . . . ?"

"Yes. I'm going back. For good, this time. I only came now, to let you know that I was well and what I've found out. To collect an oddment or two. And to place these in your safe-keeping." He held out a set of record-cylinders, laid them on the plot-housing. "And then I'm going back. I must go back."

From the corner of his eye, Forsaan saw Caralen sink down miserably beside her father, on the bulkhead seat-cushions. His own feelings were too chaotic to register anything. He stood off from them, forced himself to be rational.

"I assume you have good reasons. I hope so. I shall want to hear them. In the meantime—Hoppik, where's that damned spy-eye, now?"

"Just coming up into our horizon now, sir."

"Keep track of it. Let me know if there's any sign that we're spotted. Mr. Pinat, get that lifeboat ready to turn round. Check with Felder on the drive-units. We are going to have to sit here until that thing has completed its three orbits, now. That should give you time enough, Professor."

"A drink—something to eat . . ." Marn shook himself, moved to sit by Caralen, to put his hand gently on her shoulder. "You and your simians," he gibed softly. "They *are* simians, you know. And so are we, for what difference it makes."

"You're out of your mind," Buffil said, not unkindly. "It must have been severe, down there."

"It was, but I am not babbling, I assure you. Quite the contrary. If anything, my senses are sharper than they have ever been. And what I said just now is absolutely true." He gave them all a hard stare. "Between twenty and twenty-five thousand years ago, at about the same time our predecessors left here, these people were pre-human simians, living in caves and making crude experiments with tools and fire. And now, this. Such tremendous psycho-social development, in such a short time, may well seem incredible to you. It did to me at first. Until I saw the evidence with my own eyes. You must realise that these people are so close, in time, to their primitive origins that the concrete traces, the records, the actual remains, are still there to mark the story. I have seen them myself. There can be no doubt about it at all. Nor can there be much doubt that we, too, were simians once. But it doesn't matter. It's a triviality beside the other things I found. Fabulous things—and dreadful ones, too."

A shrill twitter from the board interrupted him. Pinat moved, lifted his head to report. "Camouflage all in order, sir. Work in hand on the lifeboat. New batteries ought to take care of most of it."

"The Moonloop capsule almost overhead," Hoppik reported. "No sign of any irregularities."

"All right," Forsaan flicked his thumb, swung back grimly on Marn again. "That's my side of the business, Professor. Now, we are still waiting to hear yours. The important parts."

"There's so much." Marn paused to sip from the goblet a silent steward had set by his elbow. "It's all there, in detail, in those records. I'll give you the gist, though. Never mind the thousand and one alarms and frights I had, the silly mistakes I made. It would take as long to tell them as it took me to do them. Briefly, the boat landed exactly as planned, on a tree-covered hill-top near their cultural centre. From there on, it was a matter of walking, asking

my way, hitch-hiking, posing as a foreign tourist, just as we had planned. More by luck than skill I eventually reached the great city and found my way to their great centre of records, a museum. That, alone, was worth all the perils. There, all arranged and laid out, is their history, the whole story. There, too, I had my stroke of incredible good fortune." He paused again, took another sip and sat thinking. Forsaan saw his aura dwindle for a moment into gentle warmth.

"I made a friend," Marn said, and smiled. "It was the simplest thing. There I was, studying the preserved skulls of primitive men and this elderly man, noticing my interest, spoke to me. We fell into conversation and close understanding almost at once. I learned that he had, at one time, worked in this very institution, had done research, but was now retired. Had just called in to visit, to renew old associations. Too, he had been a teacher, in fact a Professor, like myself. We had—we have—much in common. Think of it, this total stranger, on the basis of an hour's enjoyable discussion, ranging from atomic structure to galaxies in collision, invited me home with him, has made me his house-guest . . ."

"And he doesn't suspect—anything?"

"I'm quite sure he does," Marn chuckled. "I'm sure he thinks that I am a fugitive from some other nation. Apparently, such things are not uncommon. And I know, too, that he is extracting all sorts of intriguing ideas and information from me. But I don't mind that in the least. I have not tried to tell him the real truth, because his guess is near enough anyway. What does matter is the wonderfully warm-hearted generosity and hospitality of these people—his wife, his two adult sons, and their children—all have made me welcome in the most natural, unassuming way."

"Then the impressions we got from their television are false?"

"No. They are quite true, in a different sense."

Forsaan snorted his disgust. "You haven't found anything, Professor, except additional contradictions. . . ."

"This is Jupiter Control. We have regained contact. . . ."

"Turn that damned thing down!" Forsaan roared. "Professor Marn, time is wasting. You haven't told us anything, so far, that gives reason for your insane desire to return."

"Captain Forsaan," Marn sat up, weary but determined. "Tell me, what is my emotional state at this moment? Oh, I know it is not considered proper, with us, to speak about such things, but I ask you, just this once, to break a convention. I have a very good reason!"

"You're tense," Forsaan groped for inadequate, faintly indecent words, feeling his face go red. "You are under pressure of some great urgency and you are controlling it. You are determined, strong—and clear without distortion —you know what I mean! There aren't any words. . . ."

"Precisely!" Marn's voice was like a whip. "You know what you mean. I know what you mean. Everyone here knows, and knows furthermore, whether you speak true or not, as far as is possible to speak such things. Because, of course, there are no adequate noises for 'feelings'. That is why we do not discuss them. We *know*. Now, think of this. Those people down there, the Earth-people, have no auras at all!"

"But that is ridiculous!" Caralen said at once. "Either they are people like us, in which case they must have auras, or they do not have them, and they are *not* like us and everything you have said becomes meaningless!"

"Not so quickly, my dear," Marn cautioned, and took out of his pocket a small thing they all recognised. "Remember this? I had to use it once or twice, unwillingly. It works on them exactly as it does on us. That's good evidence of relationship, by itself. But there's something else. Imagine a field somewhat similar to this, not stultifying emotional linkages in the brain itself, but creating interference and distortion outside the body. If I may put it this way, imagine how it would be if I was trying to whisper to you, in a thunderstorm of continuous noise!"

"I'm sorry—I don't quite get that," Forsaan mumbled.

Hoppik leaned forward. "That wouldn't be too difficult to do. . . ."

It was Caralen who first caught the full implication. "You are suggesting that these people are exposed, in some way, to such a field of interference?"

"Continuously," Marn said, grimly. "I have been submerged in it for twenty-eight days. I have learned to tolerate it, after a fashion. At first, though, it was hideous. I felt amputated, crippled, as if half my life had been cut off. I was frightened as I have never been frightened before. Then, when I realised that these people have lived like this, from the cradle to the grave, generation after generation, never knowing anything different, only half-alive, I didn't know whether to weep or to curse the infamous fiends responsible."

"Don't they have any emotions, then?" Hoppik asked, foolishly, and cringed at the blaze in Marn's glance.

"They are as emotionally sensitive as we, if not more so. I have had plenty of time to ponder this thing, to think about it very deeply. I am convinced that this one awful factor, by itself, accounts for almost all the seeming contradictions, the inconsistencies, of these people. Imagine how they have lived. Think of being completely cut off, walled up inside the shell of your own emotions, never able to know, to sense, to feel what anyone else is feeling. Your only contacts the pitifully inadequate interpretations of gesture, attitude, facial expression, and words. This, I tell you, is why their languages are so tortuous, so complex. This is why their values are so twisted, why they cannot trust or understand anyone, why they are hostile, suspicious, aggressive, and divided. They can never be sure of anyone else. And, by being driven in on themselves, they can never be sure of themselves, either.

"I am convinced, too, that this is why their lives are so pitifully short, hectic, and imperfect. Their medical science is almost the equal of ours, is superior in some ways, and yet they are plagued, bedevilled, and hag-ridden by the

products of their trapped and frustrated emotional needs. Just thinking of the incredible amount of suffering they must have known, all through their history, is enough to make one sick!"

"And yet you say you want to go back?" Pinat demanded. "Into that hell?"

"Yes, it is a hell, in some ways. Yet, in a back-handed sort of way, in spite of their handicap, or possibly because of it, they have won something wonderful, something we lack. They have a breathtaking determination and stubbornness, defiance, self-confidence, a sense that they can achieve *anything*. It's as if they knew, unconsciously, that they are being restrained, and are refusing point-blank to accept it. This very Moonloop project is a case in point. The more impossible an idea seems, the harder they go for it. It's a driving quality which makes us seem half-asleep by comparison."

"But they don't know," Buffil demanded. "They aren't aware of this interference?"

"How can they know? Does a fish know that water is wet? And yet, they do know, vaguely, that extra senses exist. Odd phenomena do manage to break through, from time to time."

"Have you any idea what's causing this 'interference' effect?" Forsaan asked, and Marn nodded, suddenly intense.

"Oh yes. That's the whole point. It's a by-product of those artificial radiation-bands. The whole planet is drowned in the effect. And that, you see, is why I must go back. See now, these people have come up tremendously fast. They are only a stumble away from so many things; warp-drive, climate-control, fusion-power; it needs only a calculated nudge in the right direction, that's all, and they will 'discover' our technique for tapping power from plasma, by induction. You see? They are hungry for power. They consume it at a tremendous rate. This, a new source, will be snatched at eagerly, and, once they put up their grids, and begin sucking down the power, the interference will dwindle. . . ."

"And then what?" Forsaan interrupted. "Granted you can do this, that the frequency is critical and that it will not take much to upset it—and that when it is reduced, these people will be able to—will be as we are, as you might say. Then what? I know it can be counted as a fine, humane gesture. I appreciate that. But is that justification enough? What of the consequences? Are we right to interfere?"

"We have already interfered!" Caralen burst out indignantly. She turned to Marn. "We know, now, how those bands were set up. We are to blame. Our ancestors, at any rate . . ." and she told him the story, the results of her researches and Felder's findings from the dust-samples. Forsaan, watching, saw the strain-grooves on Marn's face deepen as Caralen spoke. The savant-cosmologist seemed to age, visibly, and his aura was heavy with grief.

"I am not altogether surprised," he said, very quietly, when she had finished. "I had already guessed something of the kind, although the details were not clear. There were too many coincidences, you see. It had to be connected with us, in some way. Buffil, you've seen pictures on the television, of their 'pyramids', haven't you? They are the oldest known built structures. They are found, to the puzzlement of their archaeologists, in two widely separate regions. Doesn't that shape remind you. . . ."

"Of course! Now you mention it!" Buffil gasped. "That's the shape of an assist-grid scaffolding!"

"Quite! But we haven't answered Captain Forsaan's question. . . ."

"Moonloop is just swinging into her second time round, sir," Hoppik had a listen-plug in his ear and was struggling to pay adequate attention to two crucially interesting things at once.

"You are quite correct in pointing out that sentiment is not a proper basis," Marn said carefully. "A sense of guilt; kind intentions; my personal friendship and admiration for the people I have come to know, these are my personal concern and not valid here. So, I will put this to you. There are three billion people down there, in ferment. To use

their own expressive phrase, something has got to give, and soon. The alternatives are clear. Either they will utterly destroy themselves and their planet or they will be driven to make unitary agreements, out of sheer self-preservation. That capsule which is circling round us at this moment, is a straw in the wind. It is an indication that the two major powers down there have taken another hard step towards sinking their differences, towards agreement. Self-preservation is a powerful incentive.

"So, what will follow that? You've seen, on their television, what potential they have, what kind of people they are. You've seen one face, at least. I have seen another. But one thing is sure. They cannot stay still. They will, inevitably, explode out into the Galaxy. Think again of that capsule, and believe me when I say they are on the verge of discovering warp-theory. Soon now, they will be out, expanding, coming to confront us, face to face. The question you have to answer is this. Which do you want? Do you want a plague of savagely hostile, suspicious, aggressive, destructive and deadly mental-cripples swarming through our trade-routes, descending on our quiet, peaceful cultures? Or would you rather have them strong, sane, friendly, curious, inspiring, helpful—bringing a healthy injection of zest and excitement to our staid and sluggish ways? I tell you this much, positively. Only a hair divides one from the other. And one, or the other, you are going to get, like it or not!"

"You seem to think very highly of their potential for reformation," Forsaan said. "Isn't that a trifle optimistic, in view of their generations of deprivation? How can you be so sure that they are not hopelessly set in their irrational ways and values?"

Caralen sat forward, anxiously. "It does sound a little idealised, Dikamor," she agreed. "With such a history, it is hard to believe they can have preserved any ethical values at all, or even that they have ever really had any."

Marn shook his head at her. "You're not thinking, you know. Remember how we studied their language and found

it full of contradictions? How they have terms and values for things that, to the eye, didn't exist in their lives? The reason is quite simple, once you have the missing factor. Within the individual human, in his mind, is a knowledge of 'truth', 'honesty', 'integrity', and all the other abstract values which we respect. They try to put such things into effect, even though they lack the senses to carry them out. As one of their great poets has put it, 'To thine own self be true; thou canst not then be false to any man'. They try to do this, despite all the obstacles in the way. Not all of them, I grant you. But the really surprising thing is that so many of them achieve a certain measure of 'trust' on nothing more tangible than the burning desire to believe that it is so. They call it 'faith'. Professor North, and his family—yes, even the tiny grandchildren—have accepted me on nothing more tangible than their own, inner-felt values." He swung round on Forsaan. "Give me time—five years perhaps—to bleed off that deadly radiation . . ."

"Can you count on that long?"

"I can't count on anything. I can only try. I claim I have the right to do that much."

"All right," Forsaan yielded. "You've convinced me that you're sincere. And I can't see where it can do any great harm. I only wish it wasn't a matter of going off and leaving you all alone. That doesn't sit right."

"He will not be alone," Caralen said, quietly. "That lifeboat will take three, I understand? I am coming with you, Dikamor."

"I was half-afraid you'd say that," Marn sighed. "But it wouldn't be fair to let you. It's not—pleasant—being cut-off, not being able to feel what other people are feeling."

"I am not going to let you go away again, without me," she said flatly. "These past days have been empty without you. You know that. And you will never *need* to know how I feel!"

"That's true," he said, gently. "Just as there is no need for me to tell you how glad I am. I could never have asked you, of course, but if you want to face it, with me . . ."

"Room for three!" Buffil wheezed, sitting up. "It will be a bit of a pinch, but you're going to need me in there, Marn. You're never going to be able to teach these people the practical side of building plasma traps. The theory is all very well, but you need a technologist!"

Marn put out his hand, to clasp Buffil by the shoulder. "You'll be welcome," he said. "Thank you. And . . ." with a momentary recall of his old confident manner, ". . . I can promise you some first-class fishing. And these people can cook, too. . . ."

The Moonloop capsule drifted, as a dot of light, away to the edge of the plot, Forsaan watching it.

"While they're busy radioing their signals," he said, "we'll lift that boat up and around the other way. Sure they're all set, back there?"

"All ready," Pinat nodded. "Bit of a squeeze, what with the three of them and a package of scribble-films and those Omlik spices old Buffil asked for, but they're all secure enough."

"You reckon they're all crazy, sir?" Hoppik demanded, as he made last minute checks on the course-readings. "You wouldn't get me going down there, among that lot, for the rest of my life!"

"No, I can understand that," Forsaan muttered. "That's because we are status-three people. They don't think the same way we do. You do your job, Mr. Pinat does his and I do mine. And that's enough, for us. But those high-status people aren't like that. If they see that something needs doing, and they know what to do, then they just do it, naturally. It's the way they are and we'll never be able to understand that."

"Any minute now," Pinat warned and Hoppik concentrated on his job. The Earth-capsule reached its free-fall limit, there was a mumble from the radio and Forsaan took the controls of the lifeboat, sending it lifting and speeding across the face of the satellite and on its long, one-way trip.

THE NIGHT-FLAME

by

COLIN KAPP

With the publication of his first S-F story in 1958, Colin Kapp quickly showed that he was a bright new star in the British firmament, culminating with his first novel, The Dark Mind (*Corgi Books*), *a most unusual and complex story of the future. His latest story herewith is still in the tradition he has set.*

THE NIGHT-FLAME

SOMEWHERE in the valley a wakened bird voiced its plaintive, monotonous dissent. Its unaltering cry was only one of the blind night-noises raised in protest. Balchic sweated as he moved on his stomach through the long, dark grass. The frogs were awake, and the crickets, and all the lost nocturnal noises which the night had taken for its own.

Balchic was no stranger to the noises of the field. With country-bred perception he could place each tick and whisper and minute rustle. He knew the sound of vole and mouse and adder and the thousand things that lived and moved and breathed beneath the grasses. And he too was afraid. The microcosm which was the valley sloped around him, was a cauldron and a turmoil of complaint. Nothing which should have slept was sleeping, and even the heavy drone of wakened bees laboured the tense air.

Something was terribly wrong. Like an unseen vapour, fear was draining through the valley; a taut fear that preyed in the darkness under the eyeless sky. It was not the circumstantial terror which grips the minds of men, but a more basic dread, which sifted through the grasses like a tide, affecting every living thing therein. Balchic swore, his imagination strained against his iron will. Two things only, fire and flood, could cause such universal apprehension—and there was neither of them here.

He had passed this way in the morning, looking for signs of the night-flame's passage. Nothing was burnt or scorched or showed a sign—yet on the previous evening he had seen it through his glasses, shining in the valley; not fire, yet bright, not tangible, yet visible. And the creatures who lived in the valley had known it too, and been afraid.

Tonight Balchic had wanted a closer look at the phenomenon. The anxiety had gripped him as he entered the high pasture like a poacher: a nagging apprehension,

an instinct to beware, an unspelt, abstract warning. As the slope steepened so the feeling grew, chill upon his spine, moist upon his brow. It was irrational because there was nothing in the valley of which to be afraid—nothing except that yesterday the night-flame had danced in the darkness and left no sign of its passing.

Balchic chose his ground and settled down to wait, glancing at his watch. The luminescent figures, glowing with unaccustomed brightness, puzzled him, and he shielded the glow lest it betray his presence to whatever troubled the valley. The unconscious reaction caused him to smile at himself. For two years he had dwelt at the cottage on the ridge. He knew every line of slope and every rock and every tree. Cold reason chided him, told him there could be nothing to fear in such a place as this—yet here he was on his stomach sweating in the darkness, quaking like any nervy child at imagined bogeys in some moon-hazed churchyard. But the angry buzz of the creatures in the brush cautioned him that this was no ordinary night.

The night-flame. For a fleeting instant he thought he saw it, shadowy lilac against the night, like the phantom horizon of nowhere superimposed against the further hill. Then it was gone, extinguished before his eyes could focus. Somewhere the long-drawn whistle of a train reached out and touched him with a welcome sense of reality. Outside these tense fields the world moved on as it had always done, and nobody much cared about this patch of wasteland and its inbuilt apprehension. If he so wished he could go back up the slopes and over the twisted wire and away from the taut fear and the burrowing anxiety; he could forget—pretend he had not come. No, not forget. . . .

Then the night-flame burned, daubs of lilac fire painted on dark canvas, intangible pearls strung out on a non-existent string. It traced a line from the valley's head down through the pass and on towards the darkness of the sea, enigmatic, unexplained.

Fear engulfed Balchic like a wave and momentarily he choked, fighting intellect against blinding panic. He had

no idea what the night-flame was, and he had no logical reason to view it with such intense alarm—yet there was something unnatural about the quality and tone of the emotion which he felt, something out of place. In his own country Balchic had known enough of fear to be familiar with the cold clamp of its fingers, to know that it always had an object even if only of the mind's own devising. And it was specific. A fugitive may be hunted by his persecutors in a field, but the ant does not worry and the grasshopper does not care. Here the insects in the grasses mirrored his own fright and confusion with equal irrationality—yet how many of them could appreciate potential danger in a line of dotted fluorescence drawn down the valley?

Curiosity won. Balchic moved closer to the balls of fluorescence, trying to gauge their size and distance against a background which afforded no points of reference. Then he stopped. The balls were growing larger or nearer, and as they did so he felt the fear increasing. Fingers of ice were stalking up his backbone and the hair on his neck was rising sensibly. But that which gave him most cause for alarm was the glimpse of his watch dial in his sleeve emitting such a light that his hand was clearly illuminated by reflection.

Radiation! Data fell into place. This was no natural phenomenon. It took power to punch out radiation of such intensity over such distances. Just how much power it needed was known only to God and its designers—but Balchic was almost in the beam path! Its nature and its source were suddenly of secondary consideration. Now his fear had a tangible object and he was swift to react. The vicinity of a beam that could ionise air at atmospheric pressure was not a fit place for human flesh to be. He back-tracked in haste, wondering if he had already been exposed to sufficient radiation to do him some permanent harm.

Fortunately as he ran he glanced back over his shoulder and dropped to the ground instantly, seeing the beam was moving in his direction. He desperately hugged the ground,

partly crying to himself, partly praying, as the beam swung nearer. Then it was overhead, perhaps ten feet away, no more, the luminescent dots as large as footballs with an equal space between. Moths and motes and tiny flying insects, caught in the beam-path, dropped all around him, minute splints of flame; the beam traversing slowly onwards as though tracking some slight target unseen and very far away.

It formed a barrier now between him and the road, skirting so close to the contours of the hill that no space was left through which a man might pass. Balchic paused, uncertain whether to follow or to retreat down into the valley and up the farther slopes. But suddenly the fire was gone—a brief collapse, and the spectral balls of light went out as a flame goes out on a candle in a draught. The tension in the angry air died too, and all the creatures in the dark grass sensed its going and settled thankfully to rest, save for those of them more naturally nocturnal.

Balchic stood a long time in the dark field attempting to resolve the problem in his mind, pondering upon the implications. He was certain that what he had witnessed was a deliberate and man-made phenomenon. He was equally certain that it was dangerous. That raised the question of who had both the facilities and the need to generate a beam of such intense and lethal radiation, and why must it be beamed so low across the valley. He shrugged resignedly in the darkness. Whatever the nature of the answer it would have to wait until the morning.

As he broke out of the long field and turned under the trees to where the path began he paused for a moment, hearing in the distance the first of the dark trucks starting the long climb up the hill. The passing of the trucks was now an almost nightly occurrence and one to which he had not formerly attached any particular significance. Now suddenly he thought he knew where the great vehicles went, *sans* lights and *sans* identification, *sans* everything but the heavy rumble of their dark passage.

The light in the cottage window was burning when he arrived. His wife was still up, working in the kitchen. She came towards him, her face anxious.

"Karel, you're late. I thought something had happened to you."

Balchic scowled and looked at the tight lines of anxiety across her forehead and the tension around her eyes. Something nibbled inside him. He knew that look of old.

"Rest, Marie," he said gently. "I told you I would be late."

"I know, Karel, but . . ."

"Something is worrying you. I told you there is nothing over which to worry."

She looked up tearfully, grateful for his strength. "The army major was here again today."

"Again? I told him not to come. I told him this was my house and that I fought for it. I do not intend to move."

"He asked that you phone him when you returned. When I said that you would be late he said that you should phone anyway. I wrote the number on the pad. They can't make us leave here, can they, Karel?"

"No, Marie, they cannot do that. I have taken legal advice. There is nothing they can do. These soldiers are not like—the others."

In the hall the telephone was half hidden under the coats on the rack. He mis-dialled once and cursed the dim lamp, although he knew this was only an excuse for his own nervousness. Wherever the phone that he was calling, it took a long time to be answered.

"Command Control. Major Saunders speaking."

"My name is Balchic. You wanted to speak to me."

The major swore under his breath but the message carried audibly.

"Yes, Mr. Balchic. I wanted to speak to you urgently. Can I call on you first thing in the morning?"

"Can't we talk on the phone?"

"I'd prefer not to. I have a few things to say which were better not said over the telephone."

"If it's about my cottage then I think you will waste your time. I have seen my solicitor and he says . . ."

"I know damn well what your solicitor says. He happens to be correct, but there's more to this than the legal aspect. I have to talk to you alone."

"I don't care to listen to things which can't be said over the telephone," said Balchic.

The major swore again and the line went dead. Balchic looked at the phone speculatively for a moment or two, then called the operator and asked to send a telegram. This done, he went back to his wife.

"I think we must make allowances for the major. He gives the impression of a man who is living on borrowed time. I expect he will come here in the morning. Now we must go to bed, or we will not be fit to receive him."

His wife went first to bed. As was his custom Balchic tarried with the family bible, then followed after. Marie was in bed but not yet sleeping. The light from one small lamp between the beds illuminated the newspaper dropped tiredly on the coverlet. She caught at his fingers in quiet recognition, the old frown returning.

"Karel, I hear the trucks again."

"I know," said Balchic, "I can hear them too." At the window he drew back the curtain, but looked only at his wife's reflection in the dark glass, shadow against shadows.

"There are a lot of them tonight I think."

At the end of the track lay the road which wound up from the flats and passed on between the white chalk cliffs to the moorlands above. Past the trees at the end of the spinney the road was by day visible from the cottage for several hundred yards until a sharp bend shut it off behind the rising banks. It was on this road that the giant trucks came, after midnight always, churning their way up the hill to some obscure rendezvous.

His wife joined him in the window alcove and shivered slightly. With no moon it was impossible to see the trucks, but each made its presence felt by the noise and the vibration which rattled the window sash. One . . . two. . . .

"Why do they have no lights, Karel?"

"I don't know," Balchic said, "but they surely have their reasons. If they wished us to know they would no doubt say."

"But what do they carry and where to?"

"I don't know, Marie, nor would they thank me for asking."

She stood for a long time staring at the road, mentally following each unseen giant as it ground its gears at the corner and turned up the slope.

"I'm frightened, Karel. Do you think it's the army preparing for another war?"

"There's not going to be a war," said Balchic. "Perhaps it's an exercise."

"Every night for months? Oh, God! I couldn't stand another war."

"There's not going to be another war. No fear of that."

"Then why do they drive their trucks in the dark? What are they carrying, night after night?"

"It's no concern of ours," said Balchic.

She rounded on him bitterly. "The trucks that ran to Auschwitz and to Belsen were no concern of some," she said. "The walls of hell are dressed with eyes all turned the other way."

"There is no concentration camp upon the moors. We're in England now, remember."

"No, not that, but there is something up there. I can feel it. Sometimes in the night I feel its breath. If there is not going to be a war then what are they trying to hide up there? Why does that major come and try to get us to leave this cottage? Why is he always so tired and so afraid?"

"Questions!" said Balchic. "Always questions! You are tired, Marie, and the trucks have finished passing. Now I think we had better go to sleep."

But Balchic could not sleep. Shortly he turned the small lamp on again and picked up the newspaper and read of crisis and the rumours of war. His wife stirred, fretful in

her sleep, and finally woke, seeking his reassuring hand in the shadows.

"God! I dreamt the war had started. It has not started, has it, Karel?"

"There's not going to be any war," said Balchic, but his words belied his feelings. He dropped the paper and lay back on the bed and thought of the dark trucks passing in the night, and of the night-flame and of the holocaust which was not going to come—and what it might be like to have to die.

The rain cast transparent wriggling worms down the window-pane. Balchic opened the window and breathed the soft air and listened to the raindrops thudding into the thorn hedge. He watched the water glistening on the brown stones of the path, and heard the shrill conversation of the birds in the broad oak beyond. In his own land he could remember mornings which began like that.

The jar of a jeep entering the rutted track ended his reverie and sent him searching for a shirt. Marie was still sleeping and he was careful not to waken her. The jeep was screeching to a halt at the gate as Balchic reached the step.

"Why do you never sleep?" asked Balchic directly. "Is it your conscience?"

The major combed his damp hair back with impatient fingers and smiled a wan smile. "It's not through choice, believe me." His tie was awry and his face unshaven. He waved the jeep's driver away with a gesture.

"How will you get back?" asked Balchic.

"Walk," said the major tiredly. "If I don't damn-well fall down first."

"What kind of army are you in?"

"If only you knew," said the major. "If only you ruddy well knew!"

He followed Balchic into the hall and on into the trim kitchen bright with coloured chintz and the homely flame of polished copper bowls.

"If it's about the cottage," said Balchic, "you have already heard all I have to say."

"Not only that. Early this morning you sent a telegram to Professor Niemann asking for an urgent appointment."

"You know even that? Well, what of it? Niemann is a friend of mine."

"He is also a haematologist. What do you want from him?"

"I want him to do a blood-count on me."

"Why do you want that?"

"I don't have to answer that—not to you."

The major gestured impatiently and loosened his tie further. "Please, Mr. Balchic. I don't have much time for games. Why do you want a blood-count so urgently?"

"I thought I might have been exposed to some—radiation. I wanted to make sure."

"Radiation? In these parts?" The major was still tiredly composed, but Balchic sensed the sudden tension. "Where did you think you found this radiation?"

"Out in the valley. I went to see the night-flame. It affected the figures on my watch."

The major was perfectly motionless now, a haggard tailor's dummy displaying a crumpled military uniform.

"Do you know what you're saying?" he asked at last.

"Yes," said Balchic. "I saw it and I felt it. It was some kind of tight-beamed radiation, but I don't know what or how it came to be there."

"Did you tell this to your wife or anyone?"

"No. I needed to think about it first. Does this have to do with our leaving the cottage?"

"It does, but I wish you wouldn't ask. I don't mind admitting you've placed yourself and us in a very difficult position. We ourselves are partly to blame for not clearing you from the district before we started. Frankly, Mr. Balchic, you're sitting on one of the hottest secrets of the century."

Balchic shrugged. "I am used to secrets. I once carried a

secret through the hell-chambers of the secret police in my own land. For nine months I used the strength that secret gave me instead of a sufficiency of food and minimal human comfort. I do not part easily with the wrong words."

"I know," said the major, "else you'd not be receiving such consideration. Tell me what you know about the war?"

"There is not going to be any war," Balchic said. "We have agreed inspection teams, controlled disarmament, the United Nations guarantee, and a new charter of human rights. Civilisation has become sane."

"Christ! And you believe that?"

"No," said Balchic, "but that is what I am told. I have natural reservations about the words of politicians." He glanced at his hands awkwardly. "You don't have to tell me any more if you don't wish."

"I do wish," said the major, "for several reasons. In your own country you were the victim of power-politics yet you fought back as an individual. Thank God for individuals! I don't know if I've got the guts to stand up to what you went through. I don't think I have, so at least do not let me treat you like a child. If you want to know why we want you out of the cottage I will tell you."

"It's because of the night-flame, isn't it?"

The major nodded. "It's as good a name for it as any. We produce it at a station on the moors."

"Is that where the dark trucks go each night?"

"Yes, that's where they go. Each night a convoy brings new equipment. Each night they take away the debris of the old. The night-flame, as you call it, is purchased at no small expense in terms of apparatus and men."

"Is the battle that desperate?" asked Balchic quietly.

"A shrewd question, my friend. It is indeed that desperate."

"Then we're at war?"

"Yes, we're at war. We have been for many months. We're encircled by a ring of artificial satellites which

contain weapons more grisly and horrifying than anything known at Hiroshima. It's a war we're sadly in danger of losing. We keep these things from being used by means of devices scared from the brains of a few geniuses and which as a nation we are properly equipped neither to make nor use."

Balchic turned away and drew back the curtains a little further so that he could clearly see the dovecote across the fresh and rain-soaked lawn.

"What do you want of me?" he asked at last.

"Your cottage is in the path where we need to re-direct our beam. Previously the satellites have always used the same orbit and we could pick them up as they rose above the horizon. Now new launching sites are being used and because of the angle of approach we can only make contact with them for a very short period. One day soon that is not going to be sufficient. If we have to choose between missing a satellite and lowering our beam and frying you and your wife in bed—then I'm sorry, but I don't have any option. We had hoped to get you to move without having to reveal even a hint of the stakes involved. Above all things we must avoid public panic."

"Don't you think people have a right to know they're at war?" asked Balchic.

"Look," said the major, "they aren't just threatening us with those things up there—they're trying to use them. By the grace of God and some breadboard electronics we're managing to avert catastrophe—just. Now I'm not very strong on rights . . . but do you seriously contend that a man is better off for knowing that all that stands between him and total extinction is a prayer and a bloody white-hot magnetron that's being over-run to destruction? Remember that no retaliation on the aggressors, however violent and destructive, could ever hope to save us from the things already up there."

The phone in the hall rang shrilly. Balchic went to answer it.

"It's for you, Major."

The major picked up the handset and listened. As he did so an explosion like a dark thunderclap sounded long over the headland.

"Christ!" He shook the handset and jabbed at the button, trying to re-establish contact. "There's been a blowup at the station," he said finally. His hand was shaking as if with the palsy, and the handset chattered violently as he set it down. "I must get back at once."

"My car," said Balchic. "I'll drive you."

The major frowned at some unspoken thought, then followed Balchic to the garage. Inside he found some rope and an axe and threw them into the back of the car without pausing to ask permission. Balchic noticed but made no comment and concentrated on coaxing his ancient car into unwilling service. He knew too well the acts of a man living on time no longer his own.

For once the car behaved itself, as though the sense of importance and urgency had infiltrated the metal itself. It took the steep hill between the white chalk cliffs with scarcely a splutter and settled into a jogging rhythm as it drew out on to the moorlands and the slight incline southwards along the gorse-banked road. Had the car faltered Balchic had a feeling that the major's own imperative determination would have seized them and carried them along by sheer strength of will. Unconsciously the major's hands pressed forward on the wooden dashboard as though to encourage its progress, while his haunted eyes never left the slight column of black smoke which rose from the hollow at the top end of the valley.

"What is it they have up there," asked Balchic, "which makes all this so desperately important?"

"You know about lasers?" asked the major, without turning.

"Yes, I know about lasers."

"If you had one big enough and you could find a source of sufficient power to pump it you could burn a hole in the earth to a depth of fifty feet and thirty miles wide—in less

than a second . . . or scorch a town out of existence in a few microseconds."

"From up there?"

"Especially from up there."

"Even allowing for the inverse square law of propagation?"

"It's a cohesive beam," said the major. "But allow any attenuation you like. Christ! When you can afford to use collected solar energy itself to pump a laser you don't measure the output at a few scant megawatts. They can do all that and more. One big gas-laser satellite could burn the life from the face of Europe in a single orbit, yet stop selectively at certain national boundaries. And remember, no radio-activity, no dangerous fallout, nothing to occupy but a nicely sterilised charnel-house. Genocide? Hell, we need a few new words in the dictionary of humanity!"

They lapsed into silence, and Balchic concentrated on the road again. Finally: "You have children?" he asked.

"Two—a boy and a girl. I even manage to see them for an hour or two sometimes."

"We had children. Two girls."

"Had?" For the first time the major turned and looked into Balchic's face.

"Had," said Balchic. "I wish that God in His mercy could have taken them in some fiery microsecond instead of—the other way."

The major bit his lip. "How can you still believe after all that?"

"It is only after such atrocities that one learns what belief really means."

"I hope I shall never achieve your equanimity," said the major. "It is purchased at a greater price than I would be prepared to pay."

The smoke column had thickened and darkened to a rising pillar of black smoke shot with small charred papery cinders which fell under the slight wind and drifted across the road like snowflakes from Hell. The heated air rising beyond the bank shivered the further trees at the valley's

head into indistinctness, and as the car rounded the bank the full extent of the disaster was laid before them.

There had been four huge domelike structures clustered together at the rim of the hill to house the great projectors. Two of these were now reduced to heaps of burning slag, a third was damaged but not yet burning, while the fourth was yet untouched. On the moorland's edge the supporting buildings had also suffered in the holocaust, and soldiers were busy attempting to divide the living from the dead.

The great gates were open and unguarded, so Balchic drove straight in, looking to the major for directions. They passed the buildings black with death and sped on towards the domes, where the fierce heat of destruction could be plainly felt a hundred yards away. The major wanted to reach the damaged dome and was either praying or crying or something half-way in between the two. At the nearest point of approach he left the car while it was still moving and ran into the blockhouse underneath the dome. For want of any alternative, Balchic braked the car and followed.

The air in the blockhouse was unbreathably hot and sharp with the rapid snick-snick of vacuum pumps. The stench of heated metals made Balchic retch in the doorway. Beside the major there were two others in the room, dirty and tired and seeming like curious anachronisms against the background of electronic apparatus. Centrally in the room a gaunt cage cradled a giant device whose output was fed into a waveguide large enough to admit the body of a man. The whole structure of the projector was hot, the immense copper barrel of the anode block glowing a dull cherry red which betokened the imminent collapse of the seals and all the ultra-high-powered catastrophe which such a failure would invoke.

"When?" the major was asking.

"Soon after you'd left. The radar chain reported a new pattern on o6o orbit presumed from the Novaya Zemlya pads. GenCom came in with an immediate instruction-imperative to inactivate the satellite regardless of cost. We

don't have anything capable of matching that range, but we tried. One and Two projectors broke up under the strain, taking the modulators and crews with them."

"What's the state of number Four?"

"Filament's gone. They're breaking the seals down now, but we aren't equipped. . . ."

"I know we aren't equipped. We aren't equipped for a bloody thing except to die. How long can this one last out?"

The technician shook his head. "We're already running on prayers."

"And the satellite's still active?"

"She's still transmitting to base, which is the best indication."

The major wrenched off his collar and then his shirt savagely.

"I'm going to give her every erg we've got. We daren't let that bastard remain active."

One of the technicians shrugged. "You can't increase the power. We've ninety per cent overload already. The damn projector will come unstuck right round the seams."

"I don't care. If that satellite makes one orbit intact you know what'll happen on the next." He thrust his way to the controls and examined the meters. "Hell, I don't see what's holding the projector together now!"

"Prayers, I said before. They've shielded that one in some way. We don't have power enough to penetrate it. It was only a matter of time before they found out what we were using."

"Better get out," said the major. "No sense in us all taking the risk. I'm going to deliberately take the projector through to destruction. We can't have many seconds left."

Nobody moved. The major balanced-out some controls and then brought up the energy with a deliberate controlled movement. Fear dripped along with the perspiration.

"How long before she drops behind the horizon?" he asked.

"Less than a minute to lowest beam tolerance."

The major increased the energy again. Somewhere an insulator began to smoulder, still further defiling the air with burning phenolics. The projector body glowed more brightly red.

"Forty-seven seconds and we've lost her," somebody said.

Again the major turned the energy up until the control stopped short against the stop. He wrenched it savagely as if to force metal into metal past all practical limits.

"Thirty seconds and she's still transmitting."

"She's got to be stopped! Lord in Heaven—she's got to be stopped!"

"Seventeen seconds to tolerance."

"Damn the tolerance," said the major. "Get on the safety trip and hold it in."

"But it'll burn. . . ."

The sentence was uncompleted. The implications were too vast to be explored in the available instant of time. The projector's beam was even now skirting the grass in the valley and tracking down the false horizon of the nearer outline of the hill.

The major suddenly became aware of Balchic and their eyes met.

"You know what I have to do? Those extra seconds . . ."

"My wife . . ." said Balchic. Then he reached across and replaced the technician who had grasped the safety control which prevented the beam sweeping too low across the land. "It is better that I do this."

The major spat and the safety trip attempted to fulfil its function of halting the progress of the projector's beam down on to the hill. Strong, nerveless fingers held it in while the solenoids rebelled.

The beam dropped lower until the hill gave up a trace of smoke which spoke of the impending complete attenuation of the beam by the land-mass. Somewhere on the skyline lay—had lain—Balchic's house and his wife. . . . The smoke trail stood up broadly now.

"Shutoff!" The technician called the final count of track-

ing. The satellite was now below their false horizon and out of range of the beam with which they had sought to de-activate it.

The major reached reluctantly for the shutoff button, but as he did so a vacuum seal cracked on the projector with a sharp snick, a sound infinitely small yet something to which their ears had been so trained to detect through the ambient noise that the major and the two technicians reacted instantaneously and without the luxury of thought. They ran and the catastrophe followed within a short half second. The major was sure that his back had been scorched by the leaping sheets of electrical energy which speared like crazy, living lace from the projector out to the instrument racks. Blindly he cut on, knowing that only God and the transience of an ionized air gap at such energies would determine whether he lived or died.

As he reached the door a brief explosion, violent enough in such a confined area, knocked him down in the entrance and stunned him momentarily. Two hands grasped his wrists and dragged him back to life and forced him to run, forced him to put as much distance as possible between himself and the dome before the inevitable blowup.

The final explosion flung him down again, left him clutching irrationally at handfuls of grass as if they had the power to prevent the awful pressure from tearing him from contact with the earth, while burning and red-hot detritus belaboured the ground on all sides. The heat and light which accompanied the blast flooded the whole area with such intensity that when it subsided a bleak chill encompassed his body and even the sun seemed pale and wan.

Painfully the major rose, not wholly thankful to find that he was still alive. One of the technicians had not been so lucky, having been trapped beneath part of the splitting red-hot dome. The other had struggled to his feet, staunching blood from superficial wounds and talking wildly yet without hysteria.

The major grasped his arm. "What did you say?"

"I said we got the satellite. Just before the blowup she stopped transmitting. Lord! So even that one wasn't invulnerable!"

"No," said the major. "And neither are we. I'd better phone GenCom and let them know this place is a write-off. I only hope the American sea-chain is ready for an emergency take-over. God! How I hate this filthy war! Have you ever thought how those poor devils in the satellites must feel when our beam locks on them? Both sides exploiting fundamental weaknesses in the other's physiology: they know that flesh must burn, and we, that sphingomyelin and similar lipoids in the nervous system must react when stimulated by certain types of r.f. radiation. They try to burn us from the face of the earth and we leave their satellites populated with madmen just to prove it can't be done."

But the technician wasn't listening. His attention was transfixed by the hellish red cauldron which had been the dome, now an incandescent slag pool from which irrationally protruded some of the more obstinate portions of the framework, like broken fishbones half-submerged in porridge—the filthy slop-pail of some wanton diety.

"That curious old boy you brought with you to the blockhouse—was he mad?"

The major started violently. He looked around uncertainly, aware for the first time that Balchic was missing.

"No, not mad," he said. "Quite the reverse. Why?"

"Well, he could have got out first, but he didn't. He just stood there with his finger on that damn button and there was crap flying all around him. I tried to grab him. . . ." The technician turned his face away as though trying to turn from images which were already inside his head. "I got the impression that he wanted to die. No, not wanted—that's not the right word. What sort of look does a martyr have in his eyes in those last seconds? Does fulfilment make sense?"

"It doesn't have to make sense," said the major, and turned aside his head for fear of weeping.

THE CREATORS

by

JOSEPH GREEN

One of the most fascinating speculations open to science fiction writers is the possibility of discovering traces of another intelligent species somewhere in the Universe—but such relics would almost certainly be incomprehensible to the mind of Man.

"CONTACT," said Nickno.

Fasail glanced at the lean, competent scientist, a walking stereotype of his difficult breed, and adjusted the knobs on the forward viewscreen. The other forty-nine ships of the Authorised Galactic Landing Team leaped into view. They were grouped over the sunward pole of the planet, though "sunward" was a poor description for reference to a planet circling a star which had been blackened and dead for untold millennia.

Fasail switched the communications unit from ethergraph to radio-translate, his plump fingers clumsy on the adjustment dials, and sent their call signal. It was answered almost immediately by the A.G.L.T. chairman, Seffinn of Algol.

"Where have you humans been? You are eight periods late and the team grows impatient."

"We regret the inconvenience we have caused the other team members," said Fasail smoothly. "You will recall that we were asked to bring the two representatives from Sinkannatatat, as they lacked means of transportation. They were, unfortunately, in communion with their racial memory bank when we arrived and refused to disconnect until their researches were completed. Thus our lateness."

"Your explanation is accepted," said Seffinn. The translator delivered his words with crisp shortness. His race of filament creatures was famous for their unswerving devotion to truth and their complete lack of tact, which was why he was chairman and the only galactic intelligence represented by one individual. "Take your position behind me and let us land at once. The robot sun has been in position over the city for seven units and the general temperature long ago reached the agreed median."

"Understood. Signing off," said Fasail with equal crispness, and flipped the switch to "receive only". Nickno, who had monitored, moved them carefully into their assigned position, using only the gravitics.

"You had better alert Jelly and Belly," said Nickno as he completed his last manoeuvre. "This landing could inflict a skin injury."

"Affirmative," said Fasail, his dislike of the tall scientist evident in his voice, and projected an "alert" signal. His own psi powers were much too weak for actual communication but the jellyfish could reinforce him once they were alerted.

We monitored the conversation, Fasail, and are moving into our eggs, said the voice of Belly in his mind. *If you will wait a moment . . Jelly is inside now and I am closing my own door. We are secure. Please proceed without further thought of us. And let me apologise again for the inconvenience——*

No need! No need! Fasail projected furiously. The Sinkannatatatians were the most polite known intelligence, always convinced they had caused offence and always apologising for it. After a while it grew tiring. However, if you had to endure the close proximity of aliens he preferred the two jellyfish to most species. Even though installing the metal eggs which protected their globular bodies had held up their departure from Arcturus for three days, and they had been held up again on Sinkannatatat by the research effort.

"Jellyfish secured," he said aloud to Nickno, and adjusted a strap himself. His plump body did not fare too well under the stresses of gravitic landing.

Nickno nodded, and began to ease them down. This ancient planet in the Large Magellanic cloud had no atmosphere, and they followed Seffinn's ship with ease as he moved past the pole to the sunward side. They saw the artificial sun immediately, small but intensely bright, about a mile above the top of the highest tower. The fleet followed Seffinn under it and to a landing in the huge open

circle in the city's heart. The other ships, all small cruisers, settled around them, each holding its assigned position in the grid.

"I would remind all of you that per the agreement worked out by our respective governments I am to remain in my ship while you ninety-eight individuals do the actual research," said the voice of Seffinn as the last ship landed. "I would also remind you all results are to be turned into me nightly, and that if any of the collected data indicates a promising line of attack I have the authority to assign specific tasks to selected teams. At the end of the third galactic there will be a full team conference. And I doubt I need remind you a compilation of *all* collected data will be given to each unit before we leave. Now start the individual lines of exploration each of you has worked out, and good variable factors to all of you."

The compartment door of the humans' ship slid aside and Jelly and Belly rolled into the room. The Sinkannatatatians propelled themselves on land by shifting water inside their skins in a regular pattern which caused a forward rolling motion of the entire body. Those skins, the only impermeable feature of their semi-liquid bodies, were tougher than human skin but not impervious to sharp objects. The intelligent jellyfish had the ability to thin or thicken the skin as required, an excellent feature when unusual conditions made it necessary for them to leave their all-water world.

What the jellyfish would learn, considering they had to deal with physical objects and were completely unmanipulative, was doubtful, but there were only fifty intelligent species in the galaxy and they could not be excluded.

Probably a lot of the other forty-eight intelligences could just as well have stayed at home, Nickno found himself thinking as he and Fasail donned their exterior suits. Not more than ten of them had discovered the galactic drive without human help, though admittedly all except the jellyfish had perfected spacetravel techniques. Many of them were riding the coat-tails of the advanced species,

acquiring technical information in exchange for goods and services. Still, in an affair of this sort there was no predicting who would be most useful. Except, of course, Fasail. It was reasonably certain there was no place for an artist on this expedition. Why they had chosen to send one instead of a second scientist was beyond him. And when he was dressed, he tested his radio by saying something of this aloud.

Fasail, in communication but not yet suited up, sighed wearily, but answered, "They sent me to solve the problem if you can't, esteemed colleague. Please remember these people, whoever they were, used their great technical knowledge for artistic purposes, not to build more gadgets. It may mean a great deal more to me than you."

"That would be the joke of the millennium," said Nickno shortly as he opened the inner door to the airlock.

The four intelligences filed out of the ship, the humans staring at the massed towers of the ageless city, the jellyfish absorbing the scene by whatever means their psi senses provided. The robot sun two miles overhead gave an excellent light directly below, but created deep black shadows where the numerous multi-formed towers cut the light rays. The other forty-eight ships were disgorging their passengers also, and they were a motley assemblage. The largest intelligences present were the Cyclops, one-eyed giant humanoids forty feet high, the smallest, the thousand individuals who clung together in symbiotic partnership to form a single unit resembling a tentacled melon. Near the humans' ship on the right were the Rigellians, a vigorous young race of anthropods who had only recently acquired the galactic drive and joined the community of intelligences. They had paid no one for the knowledge and unpleasant stories were circulating about their methods of acquisition. The remaining species varied from sentient, mobile plants to creatures almost human in appearance but with a silicon life-chain. This was only the second time in galactic history all recognised intelligences had joined in a

group venture, and even here distrust was so strong most teams wanted to work alone.

We will leave you now, said a voice in both human minds. *Belly and I, lacking tools, will seek the nearest building containing the formations and attempt to arrive at an understanding by absorbing impressions of art. Good variables to you, dear friends.*

And to you, projected Nickno, unable to keep from liking the friendly jellyfish. *You will need it if you seek to solve the mystery by "absorbing" it.*

They felt his derision but were not offended. The two five-foot globes rolled across the deserted pavement to the nearest building, and disappeared inside.

"Let's go," said Nickno shortly, and led Fasail towards the nearest building towards which no other team member seemed to be heading. They had previously agreed to work in a building containing all three known classes of energy phenomena, the transmitting machines with energy formations still existing in front of them, those without energy formations, and energy formations existing where apparently no transmitting machine had ever been.

The first building was a failure for their purposes, containing no energy forms at all. When they emerged again on the ground floor they debated briefly, then headed towards the nearest building on a radial line drawn from the centre of the open circle behind them. The city was laid out in the form of concentric circles, the innermost of which was the open area where they had landed. It probably contained ten thousand buildings, most of them in excess of a mile high. But the energy formations were known to be common. That much the first exploratory ship from Algol had determined before the captain realised what he had found and lifted off to report his find to expedition headquarters. The Algolians, with their typical honesty, had decided the find was too important to be investigated by their small group and set sufficient explosives in the planet to reduce it to atoms if a spaceship attempted to land. Then the combined galactic fleet com-

pleted its tentative survey of the Large Magellanic cloud and returned to their own galaxy, and of all tales they brought with them the one about the deserted city on its lifeless planet was the most important. For that Algolian captain, a competent scientist, had recognised what the buildings contained. And no world in the galaxy could duplicate the feat of creating forms of pure energy, forms that partook of all the known properties of matter without having in fact a real existence. But perhaps the most amazing part of all, the reason why a member of the artist class had been selected to accompany Nickno, was the use to which the unknown scientists had put their unique gift. They had created art forms.

With control of the known universe at their fingertips, with such power available as was never known to a living intelligence, they had created art. Their expression-forms possessed a strange, overpowering beauty, a variety of colour and shape almost unimaginable to anyone not a fellow artist. Some of the huge buildings had been hollowed out until only the exterior remained, and filling it from top to bottom would be a single great formation. Others contained small formations of stirring beauty and infinite variety. Some showed clearly, by the open spaces near which projectors still crouched, that they had been occupied by formations now vanished. And it was into one of these nonoperable machines Nickno wanted to get his trained fingers and prying mind. A machine which created energy, projected it, formed it into immortal shapes and patterns of the designer's choosing, was an invention of the creative mind dwarfing anything which had previously been imagined.

If one species alone obtained the secret it meant almost automatic galactic domination, if they chose to so use it. This group representing every known galactic intelligence was the answer, and even here many of the representatives feared the others would cheat.

The humans' third building met all requirements. It was built in the form of two gigantic ovoids, one sitting on top

of the other. The larger lower ovoid was open from top to bottom and contained one gigantic flaming figure, so dazzling to the eyes it could not be viewed except through protecting shields. The upper ovoid was divided into several floors containing thousands of smaller figures of all possible shapes and types. In the upper floors were many blank spaces where the projectors sitting by them had obviously failed in service.

The two men had done little talking as they climbed, but on the top floor Nickno felt moved to speak when he saw a projector forming a surpassingly beautiful figure no larger than his hand. "Do you realise, Fasail, that although the size of the formations varies from gigantic to tiny the projectors are always roughly the same?"

Fasail's voice was indifferent when he said, "Yes, that's understandable. An artist uses the same tools to create a masterpiece, large or small."

Nickno could not keep the impatience from his voice when he said, "Let's concentrate on solving the problem of *how* it's done, shall we? Look, here's another one which has stopped operating. Hmmmmm, I think this coverplate will be relatively easy to get off. Give me a hand here, will you?"

"No," said Fasail.

Nickno reared back from the machine in astonishment. "No? What do you mean, No? Of course you'll help me. How else are we going to get the answers we're seeking?"

"By reading the message they left for us," said Fasail calmly. "Look, I know you're no artist, but can't you read the meaning of that tiny figure we just passed? It's birth, or the beginning, so obviously even you should see it. I think we've made a very lucky find. This artist seems to have concentrated on telling the story of his race, from its beginnings to whatever end befell it. I propose to learn that story by studying these forms until I understand them."

"Study these forms until you—you——" Nickno broke off, almost inarticulate with anger. He calmed himself with

a visible effort, then said, "Switch to the chop-channel, please."

Fasail, annoyed, hesitated then complied. Now tiny scramblers in their sets gave them protection from eavesdroppers. "What's the reason for secrecy?" he asked.

"Fasail, as leader I have been entrusted with information not given to you. An attempt was made to bribe an Algolian official and obtain the deactivating command for the bomb left here. It was made through an intermediary but the Algolians are certain the Rigellians were behind it. If those Lobsters get the secret they are just young and foolish enough to attempt to use it as a threat, and the result could be galactic catastrophe. Now do you understand why you must help me?"

"No. I was a scientist before I progressed to a higher order of universal understanding. I doubt your ability to learn anything useful by mechanical dissection."

"And I studied art in Final School! And I find it inconceivable that you could learn anything by staring at completely alien artistic forms, forms not meant for the human mind to understand. Now stop this nonsense and get to work, or as your leader I assure you a report will be filed and you will never create another expression-form."

Fasail turned and walked away, completely indifferent. Nickno turned back to the projector with a curse, digging in his suit pockets for tools. He would have to do this alone. Oh, the idiocy of it! Even a member of the Appreciatives, that largest of all human groups, who did not create at all, would have been better than this artistic form-maker.

But a scientist of his experience might, just might, be able to grasp the concepts behind the energy projector by examining its working parts. He set to work again on the cover.

Fasail strolled leisurely through the top floor and to the series of ramps leading to the other levels. Once below the upper ovoid he found what he expected, several doors opening off the ramps to various vantage points where

the huge creation in the bottom ovoid could be seen at different heights. He studied it thoroughly on the way down, being careful of his shielding. It was circular in shape, so bright its details blurred and flowed together when examined by an eye of no greater capacity than the human, and resembled nothing so much as a heatless miniature of a star. He had a feeling the crux of the puzzle was here, but for now the immensity of the creation staggered rather than inspired.

He took a last look from the groundfloor and for the first time a possible form, the hint of a pattern, emerged. It seemed a good possibility that the tiny but beautiful creation on the top floor, and this burning monster, were the two ends of a single complex form. Fasail felt a small pulse of excitement at the thought. If his guess was right and these forms held the answer to the disappearance of this great race—and then a further thought occurred and he raced back to the top of the building, cursing the ramps and wishing the gravlifts still worked. At last he stood panting, not far from where Nickno was busily at work, and surveyed the room. He climbed on a transmitter case for greater height and his heart leaped as, ignoring the machines and concentrating on the forms, he let his eye follow the outline he found. The tiny creation was the approximate centre of a huge spiral of interlocking circles, with the last circle lying against the wall of the building and ending at a ramp leading to the lower floor.

Fasail sped for the door, too excited to walk, and received a puzzled glance from Nickno, who had succeeded in getting the cover off and was staring with fascinated absorption at an apparently simple mechanism. Fasail went down the ramp at a brisk trot and out on the next floor, paused briefly to check distances and started down the circular aisle in front of the series of forms nearest the wall. He made a full circle and discovered he was on the right track when he emerged one ring closer to the centre of the building, and then abandoned the slow route and walked directly to the floor's centre.

There was a gravlift there, as he had expected, but no ramp.

So it was simple enough. You started at the tiny bit of perfection on the top floor and walked in circles, reading all forms along the way, and dropped from the outside of the top circle to the outside of the next one and worked your way to its centre. At the end of your walk you emerged over the centre of the gleaming star, and that was the climax and the culmination.

He had the form, the mode of expression. Now he had to decipher the expressions themselves. And if he did find a clue he still had a terrible obstacle to overcome. Almost a quarter of the transmitters were inoperative.

Fasail skipped the next floor and moved down to the one directly above the gigantic figure. As he walked towards the centre of the room and the overhead view of the burning star he expected to find, his new understanding of the spiral nature of the form progression brought home an odd fact. This was the floor containing forms which existed without benefit of transmitters, and the transition from transmitter-created forms to independent ones was abrupt. In the third circle from the centre the last transmitter stood casting its beautiful creation. The rest of that spiral, and the two inner spirals, were all independent forms.

It looked very much as if the discovery of creating enduring forms with portable machinery had been made as the unknown artist was drawing towards the end of his remarkable composition.

He checked the area near several of the forms carefully, but could see no sign where any portable device had ever been mounted. But the greater mystery was how the energy forms continued to exist after creation, while in hundreds of other cases the forms had disappeared when the transmitters ceased to function. His puzzlement was not alleviated by the observation that all forms created by use of the portable method remained in existence.

Fasail made a final check, verified that the great star in the lower ovoid was indeed an independent form, then

dismissed the problem with a shrug. That was more in Nickno's line of research than his. He would have to bring the oddity to his attention, though.

On the top floor Nickno was staring in wonder at the few simple assemblies before his eyes. He had been sitting that way for half a unit, striving to grasp, to understand what was apparently some natural law on the control of energy so far above the knowledge of any known galactic race that it verged on impossibility of comprehension.

The machinery before his eyes was simple to the eyesight, but not to the brain which must absorb and understand a concept completely beyond its experience. And yet there was no other way.

He settled himself again, concentrating this time on one simple mechanism, the one that appeared to be the power source. If he could arrive at an understanding of this basic assembly, and from there work his way up to the actual transmitting mechanism. . . .

He was still lost in thought when Fasail called on their private wavelength, "Are you ready for a rest, Nickno? I'm out of suit water."

Nickno staggered to his feet, suddenly conscious of deep fatigue, aware that he also was out of water. He had drunk and taken food tablets without being aware of it. And working themselves until their brains dulled and grew foggy was not a good way to solve their problem.

As they emerged from the round building and started towards the central circle Seffinn called them impatiently on the group frequency. "Hello, hello, humans. You are the last still out. Are you ready with your evening report? Respond, please."

Nickno answered for them and gave a brief account of what they had found and he had accomplished. He did not mention Fasail's refusal to assist him or the artist's determination to solve the mystery through "understanding" the message in the artwork itself.

When he finished Seffinn said bluntly, "I have no objection to your line of attack, but you should know that

forty-one other teams have adopted precisely the same attitude. If you think of a more promising line of inquiry do not hesitate to change to it."

"If we think of one," agreed Nickno, and cut off. Of course the other teams were taking the same approach! It was the only sensible one. For creatures like the jellyfish, handicapped by lack of tools and non-technical background, understanding through "absorption" was the only way. But it would gain them nothing.

"Did you get anywhere?" asked Fasail when they had shed their suits in the ship.

"I found a logical starting point and began work," said Nickno shortly. "I'm sure that's more than you accomplished."

"On the contrary, I found both my beginning and the end," said Fasail, smiling. "However, I concede that all which lies between is at present a mystery."

Nickno repressed a sharp rejoinder to the effect it would remain so forever if left to an artist, and ate his meal. He retired for the night immediately afterwards. Fasail soon joined him, but despite his tiredness it was some time before the plump artist went to sleep.

The work went on for two more days, and slowly Nickno felt he was gaining an understanding of at least the function of the machine, if not its operating concepts. He now had it separated into its various operable stages, and some of those stages into their component parts. And he had proven one supposition to his own satisfaction. The machine tapped the planet's weak but still existing magnetic field for power. It was a start.

He had to concede that Fasail, too, was working, though his accomplishments were non-existent. The plump artist spent long hours staring at the energy forms, walking around them, examining, prying, poking. But he made no reports of progress.

The question of the energy forms on the second floor which existed independently of machines was a puzzle in theoretics which Nickno had no intention of solving. They

were here for the very practical purpose of increasing their galaxy's knowledge of the control of energy. Theory could wait.

When they returned to their ship at the end of the third day they found Jelly and Belly there, the first time the self-contained creatures had returned since leaving. Fasail smiled when he saw them, and projected, *Have you solved the puzzle, friends? If not perhaps I can assist you.*

It is not necessary, transmitted Jelly to both of them. There was gentle laughter in the psychic voice. *I only regret that the answer should prove so useless to Nickno and our other friends here.*

Nickno, who had not received Fasail's transmission, stared at them sourly. *We found a round building, many lengths of this ship in diameter,* Jelly transmitted to both of them. *Floating in its exact centre was a tiny energy form, a miniature star, and on the walls of the building other energy forms had been worked into what you call a fresco. This creation tells the story of their species, from birth till death . . . or immortality, if you prefer.*

"Do I understand that you three think you have the answer?" Nickno asked unbelievingly, staring at Fasail and the cryptic skins of the living globes.

"If you mean how to make an energy-form transmitter, the intent of our trip, no. If you want the answer to what happened to this great race, and will perhaps happen to us some day, I can give it to you."

"Please do," said Nickno icily, impressed despite himself. He sensed that the jellyfish and Fasail had reached identical conclusions. But before Fasail could speak the communications unit blared angrily; "This is Chairman Seffinn, Chairman Seffinn. Attention all units. I am calling the scheduled conference together early because of a betrayal in our midst. The team from Rigel has just lifted. I repeat, the team from Rigel has lifted and does not respond to my signals. Since we know their puny intellect to be incapable of mastering the problem this soon we must presume they have taken a complete transmitting unit aboard their ship

and are——" At that moment there was a titanic explosion far over the city, one so strong even the great towers shook slightly. For a brief moment the robot sun's artificial light was greatly augmented, and then the flaring brilliance faded and died away.

There was silence for a moment, and then Seffinn's voice, translated shakily by the communications unit, said, "Apparently our traitorous friends have met the fate they deserved. The conference is postponed until tomorrow. I will file a complete report on this affair tonight, and I hope this deters any other team who may have entertained similar thoughts."

Nickno glanced at Fasail, who had sat silently through the brief message. The plump man was frowning slightly. "The utter fools," Nickno heard him mutter, more to himself than his companions.

Their understanding was limited, came Jelly's voice in their minds. *In their hands knowledge could have been very dangerous. It is best they died.*

"Yes, but so useless," Fasail said aloud. "Nickno, I will attempt to explain what we have found. First, you will have to separate your mind from facts and begin thinking in concepts. That shouldn't be hard, since you are working towards that end. The first concept you must discard is that of universal entropy. The universe is not running down, only changing. It has always existed and will always continue to exist. The only possible changes are that in some areas the hydrogen atoms, the basic building blocks of the universe, are condensed for a time into more complex forms. Next, discard any concepts you hold regarding the destiny of Man. The destiny of all intelligent creatures is the same, and that is the one reached by these people. They started the universal cycle over again. Third, stop thinking of life as an outlaw in the system; it's an established part and has its own role to play. Fourth——"

"You are talking absolute and complete nonsense," said Nickno coldly.

Fasail sighed. "Perhaps I am. Let me put it a different

way, then. The small figure on the top floor of our building represents the first spark of life on this planet. The succeeding forms tell of the growth of that life, of its gradual evolvement over several billion of our years into what we consider intelligence. After intelligence appeared the world population increased greatly, but never strained the resources of the people. Due to some peculiar properties of this planet they never emigrated, existing only on this one sphere. They reached a population," he glanced at their top viewscreen, where their own distant galaxy glowed brightly, "of approximately a hundred billion. They reached the point attained by ourselves only a few thousand years ago, a complete absence of need. Like us, they diverted their energies into art and into the increase of knowledge for its own sake. They combined science and art to form what is perhaps the ultimate in artistic expression, the energy expression-forms. And always they dug deeper into the greatest mystery of all, the meaning of life. And they found it. Or rather, they found that life is a natural part of a cycling universe. There is no beginning and no end, only change. Their greatest step forward was when they learned to duplicate by the mind alone what it had formerly taken a machine to do, the creation and freezing of energy into semi-permanent form. From there it was only a small jump to an understanding of the universal life-cycle. My guess is that when the first intelligence made his discovery it was flashed to all the hundred billion others almost instantly."

He paused, staring again at the viewscreen and their own wheeling spiral of stars. "Several of them stayed when the great emigration started, even at the risk of having to travel further than the rest in order to find sufficient free hydrogen for growth. They wanted to finish their current works, most of which dealt with their new understanding of the universal life-force. I'm not sure we should be grateful."

Nickno felt a coldness beginning to work its way up his spine. Jelly and Belly were listening silently with their psi senses, and not disagreeing.

"I see you're beginning to grasp the principle," said

Fasail. His voice was gentle and without mockery. "Yes, the ability to control energy with the mind alone was only a short step away from the mind, an entity conscious of itself, to becoming primarily energy. And once a mind became free energy it exercised its sovereign right to accumulate more energy and start the growth process again. Only there isn't room for growth in an existing galaxy. The hundred billion inhabitants left, separated into a hundred billion paths, though all of them headed in the same general direction. The nearest open area." He glanced again at the viewscreen. "Don't you understand yet, Nickno? The Large Magellanic Cloud is the child of the Small. Our galaxy is the child of the Large. It is fair to say that on this planet every living individual gave birth to—a sun."

ROGUE LEONARDO

by

G. L. LACK

In the modern world of electronics, anything is possible. Take the little matter of duplicating Old Master paintings, for instance. . . .

ROGUE LEONARDO

THE old man heard the world pass by behind him. His knees had become almost accustomed to the shiny plastic tiles with the passing of the years, although the only truly familiar thing was the matt surface of the concrete slabs he had been allowed to retain as his canvas.

Glancing up from his chalks he could have seen the reflections of passers-by in the lower part of the store window. The old, the middle aged, and the young sometimes paused to look over his hunched back. He heard them all; knew their voices. Especially the young; they changed least.

"Look!"

"Look, Daddy!"

"What's he doing?"

One of his favourite pictures was simple, a rectangle with the lower half green and the upper half blue; in the sky an airliner and wisps of cirrus cloud.

"Look, Daddy. A rocket with *wings*."

"That's how they used to be. I remember my grandfather talking about them. You must have seen them on your history-screens."

"What's that white stuff, Daddy?"

Pause.

"Cloud, I suppose. They used to allow it once upon a time—even on air-lanes."

Clouds. The old man remembered the last of them; curling wisps of cirrus like the hair of a woman grey before her time; stratus, dirty, low, and ominous; and great cumulus clouds, towering billowing white castles. Now they were controlled, coralled, and herded like cattle, or just false cumulus puffed up at night for irrigation purposes, with no blue backdrop.

He remembered rain too. Coming unexpectedly, or continuously, sometimes ruthlessly, swamping the pavements, fusing his chalk pictures into an abstract puddle.

Another picture was that of a pink rose. A pink seen nowhere else in the city. Not quite the flesh pink that is obscene in a flower. Not even the pink of the chalk he used. The concrete slab altered its tone, gave it new texture. Were roses like it growing anywhere?

Around mid-day he would doze. The sun at its zenith beat down from a cloudless sky on the square. Traffic diminished. Pedestrians sought shade. The pigeons came into their own in the muted hour, cooing softly.

Occasionally his eyes flickered open. He saw the bright splashing of the fountains reflected in the windows of the store. And the lions crouching.

He was on the north side of Trafalgar Square, London.

Ross Trafford was the senior technician of Public Art Galleries (S.E. Section). Under him was a team of electronic engineers, skilled, competent, and unimaginative. From his city office he directed operations and dealt with all calls from the area. The morning of Tuesday, 12th May, 2096, promised to be typical of his routine.

Arriving at the office at 9.30 he switched on the playback and listened to the messages which had been abstracted from incoming tapes by his assistants. This résumé prior to the giving of detailed communications conveyed the overall picture.

"Guildford—Reynolds over-aging. Watford—Picasso—blue too modest. Maidenhead—background prominent. Harrow—Constable greens rather fresh. Picasso—blues modest. Canterbury—Leonardo da Vinci erratic. Brighton—Matisse. . . ."

He listened on, noting common defects, choosing the engineers he would send.

The list droned to an end. He jabbed his thumb on the external communicator. "Select the Picasso's," he ordered.

"Damn the Picasso's," he thought. The machines were

moody and it was difficult to suit the styles requested. Basically it was the fault of the artist of course. He could always fall back on the idea which the National Director had suggested and have several machines each for a particular period, the Blue, Pink, Negro, Cubist, and Expressionist. To have a single model to produce all styles did however present a challenge and although he was past the stage of becoming excited by correcting details himself, it was good for the young and enthusiastic members of the team.

He listened carefully to the individual reports on the Picasso's. Their faults were similar and he decided to send the same pair of engineers to each, Samus and Cater. They had alleviated many of the earlier troubles and would like to be in at the perfection of the machines.

By 10.30 he had heard all the reports except the erratic Leonardo. All the teams were out and since this seemed an isolated case he would go himself. It was a nice day for a flip over the downs. It was always a nice day but today he felt like some fresh country air.

Normally it was a trip of a few minutes from the roof-deck. This morning he took it easily, watching the white sails of the yachts in the estuary.

"An erratic Leonardo. Unusual. Probably something quite simple, a weakened coil or a sticking fuse. Just a little disturbing, though." It nagged at the back of his mind, taking away some of the pleasure from the morning.

Disturbing because the first dollar in the slot reproduction machine had been a Leonardo da Vinci. A dollar in the slot and Space! a perfect Mona Lisa for the sun lounge wall. Another coin in and one for the Amatt's, they like Art. And while we're at it one for Uncle Jo's birthday.

That was several years ago in the early commercial days. Now all the famous and most of the lesser known painters were available. With the inevitable development of the variable reproducer where the operator could select any work of a painter, the prototype Leonardo da Vinci became redundant and now stood in the Science Museum turning

out daily dozens of Mona Lisas for inquisitive school-children.

Trafford dropped down slowly over Canterbury and landed gently as a bird on the roof-deck of what in the twentieth century had been the cathedral. The flat deck structure flying over the roof gave the building a somewhat incongruous architectural appearance. However in this age of uniformity it was the policy to retain a few buildings of interest, often ecclesiastical. The resulting atmosphere inside was deemed to compensate for the odd exterior. If the Clow Plan was adopted then such buildings would be completely encased in a rectangular box giving a contemporary simpleness of line. Paradoxically it was one of the newest of cathedrals, Coventry, which had been the subject of the experiment. It was so designed that one could walk around the inside walls of the new structure at different levels and view the highlighted features of the original. At the opening the crowds had been enormous and the early scenes of mass hysteria of a semi-religious nature were in the eyes of the government best forgotten.

The lift fell smoothly to ground level and Ross Trafford stood in the nave looking along the lines of cubic steel and plastic reproducers, each with its viewing screen.

Acilia Clow, the Curator, was waiting to greet him. She was a niece of Edard Clow, deviser of the Clow Plan.

"Ross. You have come in person. To what do we owe the honour—or are all the mechanics off?"

Trafford smiled at the young curator. With her severe straight smock and short tightly curled hair she was typical of the rising generation of women, many in positions of responsibility by the age of twenty-five, giving their husbands time for research.

"It is a nice day," he shrugged, "and it is always a pleasure to visit the Canterbury Gallery."

"Even if we seem to have trouble at least once a week?"

"Who doesn't?"

"You are surprised it's the Leonardo?" Her voice was sharp.

Again he shrugged his shoulders, smiling. She noticed the faint lines of anxiety on his brow.

They walked the length of the ground floor between the rows of machines. A few visitors wandered around, idly pressing buttons to view the collections. Occasionally the whirr of smooth machinery followed by a click indicated that someone had worked a reproducer.

The Leonardo da Vinci was finished in pale buff plastic. Automatically Trafford selected the Mona Lisa; pressed the viewing button. The painting came on the screen in all its perfectness. Against the background of misty blue mountains rising above a rocky plain crossed by a winding river the woman smiled her ageless smile. Her long tresses drawn back from her wide face fell to cover her shoulders, meeting the dark gathered dress. The right arm was crossed below her bosom with hand resting casually on her left wrist.

"Now for a copy."

Acilia inserted a dummy token and pressed the button. The machinery slipped into motion, whirring as softly as brushwork. Ross Trafford's ears, attuned to the delicate mechanism, heard the changing patterns and the slipping of the painting into the aging chamber. Forty-five seconds later a click told him that the picture was framed. He pulled the rake handle at the base of the machine and the completed painting emerged enclosed in a transparent carrying case.

At a quick glance the picture appeared perfect. Ross Trafford raised his eyebrows slightly in a question.

"Give it a full run-through if you like," said Acilia shortly, "but I have already done so with various selections. Come to the office. The staff have mounted them for you."

They sat in easy chairs facing an inspection screen, drinking coffee. Acilia pressed the control by her side. The first picture flashed into view : the Mona Lisa.

"I'll show a selection quickly. Say if you want me to hold one."

Virgin And Child With Saint Anne.

The Virgin Of The Rocks.

The Annunciation.

Bacchus.

St. John The Baptist.

La Belle Ferronniere.

Then several unfinished canvasses and cartoons followed.

Trafford's experienced eye examined them clinically. As far as he could tell with normal lighting and the naked eye they were perfect. Was Acilia imagining things or was there something she was withholding from him?

"I'll run the next batch through."

Again he could see no fault.

Six selections passed before him. On the last showing he asked Acilia to re-select one or two, then dismissed them immediately. By that time he felt saturated with Florentine art and was thoroughly irritated. She looked at him with a worried expression, mouth slightly open as if to frame a question. He was annoyed. It had happened before. Young dedicated curators became over-saturated, hypercritical. Some had too much imagination. He wondered whether to recommend her for a month's vacation, but decided to let it ride for a time.

"All satisfactory," he said crisply. "Let me know if anything develops."

He left quickly and once aloft cruised for an hour watching the sails of the yachts on the blue Thames. They soothed his nerves.

Three weeks went by with no reports from the Canterbury Gallery. This was not so unusual, but the complete silence disturbed him. Was it that Acilia felt that she would not report minor defects and so incur his disapproval if they turned out to be trivial or non-existent? Once this had happened at Guildford. By the time the engineers had been informed the paintings were so far below standard

that it had been necessary to recall them and offer replacements. A major art scandal was only just averted.

He wondered why it played so much on his mind. Was it that he was concerned with the standard of the Leonardo's? Or the status and welfare of his staff? He, a man in his middle forties, living alone and confirmed in bachelor habits since his marriage had broken up over twenty years ago, was, he had to admit when the position was analysed, really worrying about the girl. Was it the fondness of a father or . . . ? At first the alternative shook him. And although he found no answer to his questions he began to accept that his concern was based on love of some kind.

One night he had a dream. This too was alien to his pattern of life. He was flying eastwards along the estuary with the yachts flittering below like butterflies. Suddenly the power-unit failed and he was dropping like a stone. At the last moment when fear was cold steel in his stomach, his descent slowed and he landed on the springy turf of an unspoiled down. He looked around, being no longer in the machine. In fact it was not to be seen.

He stood in a shallow fold. To his left the chalk hill stood out sharply against the sky, smooth and rounded as a girl's breast. He trembled at the adolescent thought. Ahead and slightly below him was a track rutted down to the solid chalk. He took the track which led along a dry valley. Shortly, past a spur, he saw that the grassy down gave way to more wooded country through which there was a lane. A girl carrying a basket under her arm was tripping along. He was hidden from her view by a thorn bush.

The girl had a scarf of filmy material over her head. As she drew level with the bush she turned towards where he was. The girl was Acilia. He was transfixed and his tongue was unable to call. She moved away and within seconds another girl came along. She too was dressed the same way and turned towards the bush. Again it was Acilia.

This was repeated four times. It was on the fifth occasion that he realised something more strange than just the

recurring was taking place. The face of the fifth girl was Acilia, yet it was not quite her. And the sixth more so. And the seventh. By the eleventh or so (he had lost count and was numb with a kind of fear) the face was not hers yet was familiar. Twice more and it changed subtly until the face wore the enigmatic smile with which he was so familiar.

He woke in a cold sweat, thinking of the stupid tricks the primeval layers of the brain could still play in sleep. The dream itself was forgotten.

The daily routine was normal at first. The reports were brief. No Picasso's. There was a slight case of under-aging with Canaletto's in three galleries. It was strange how the same defect occurred in several places simultaneously. One of these days he must study the problem. It was no doubt something to do with the personal touches of the mechanics and was a trait to be eradicated ruthlessly.

It was also, he thought, no coincidence that he had never known or heard of any difficulties with a Van Gogh. This confirmed his belief that the artist was a man ahead of his time.

There was no report from Canterbury.

At lunch time he strolled from the office for a brief spell. His steps took him to Trafalgar Square. As usual at this time of day it was almost deserted. The old pavement artist was hunched by his slabs. He paused to look at the crude mechanical drawings; the aeroplanes, the clouds, the rose.

The old man was dozing, snoring gently in harmony with the cooing of the pigeons. Behind the tattered cloak he could see the skeleton chalkings of a picture partly begun. Just a few grey lines. The framework of a cartoon. The rude beginnings of a head; face still blank. Imitation of a master. Mentally Trafford tried to fill in the detail. He shook his head smiling.

He wandered across the square to sit down beneath one of the striped sunshades of an outside café and ordered an iced lemon. The cool liquid was like nectar. Most people

were inside away from the scorching sun. Only a few tourists sat drinking idly; almost silent.

At the back of his mind was a nagging yet forgotten thought. He tried to direct his brain towards it. He relaxed, decided to re-live the day's events in a logical stream to fill the insistent missing gap. It had been an uneventful morning. The one difference from everyday routine was his stroll to the square and even that he did occasionally. It was when he pictured again the framework of the head sketched by the old man that the stream paused almost imperceptibly. A girl's face . . . He re-cast his thoughts. Somehow a woman was involved, yet whom had he seen recently? No one in particular. Even his secretaries preferred to use tape and he went days scarcely seeing them. Where, outside the normal scheme of things, had a woman's face been so important as to stick in his memory?

Again the thought nagged at him. He finished his drink quickly and crossed to the north side of the square. The old man was working. Trafford looked over the hunched shoulders. The old twisted fingers were slowly but confidently filling in the details of the face. The beginnings of a smile, ghostly but enigmatic were coming to life.

Almost at once his dream became a memory and he called it to mind as if thinking over again the action of a film. The procession of faces which gradually changed from Acilia's . . . gradually changed . . . merged. . . .

He almost ran back to the office, and dialled the lift to the roof deck.

Canterbury Gallery was nearly as devoid of visitors as Trafalgar Square had been. The coolness of the interior was such a contrast from the blazing sun outside that it struck him physically, like diving into water. He burst into the curator's office. There was no one there. The other rooms of the administrative section were deserted too.

For a few seconds he paused, thinking that he had been following some foolish whim; then he saw the pilot light of the viewing room glowing a dull red.

He slid the doors aside to find himself in darkness save for the light cast by the lamp of the inspection screen. Ahead he could discern the silhouette of Acilia sitting in one of the viewing chairs. She was pushing the picture control button rapidly sending illuminated copies of the Mona Lisa across the screen, the images merging like the frames of a cine film.

Each portrait was slightly different to the previous one. Her eyes closed slightly, the enigmatic expression became almost gay; three-quarter face became full-face and with the movement the face was unexpectedly thinner and the eyebrows more pronounced. Gaiety replaced a certain severity and her whole being from near-laughter to the soft falling of hair over the shoulders lived up to the beauty which her eyes had promised for nearly six centuries.

Behind her the winding river flowed gently from the mist-shrouded mountains.

"Stop! Stop!" Trafford heard himself shouting.

He threw on the light switches. The image was relegated to vague shadows.

"Acilia!"

She looked at him coolly, showing no surprise.

"Stop playing with freaks," he snapped. "Why haven't you sent for corrections to be made?"

"Corrections!" She flung the word back in his face as if it were a palette full of black oils. "And ruin the machine? Don't you see it's *developing* the picture, making it alive, vital?"

"Stop this . . ." he grasped for an adequate word. "This heresy."

She stood hands on hips staring straight at him; through him.

"Stop staring!" How many times had he repeated the word as though she were an erring child.

"What will you do?" she asked slowly. "No. Don't tell me, I know."

She turned her back, then swung round.

"Must it be so? Why not let it continue?"

One generation does not understand the reply of another and he remained silent.

"Why not let it continue?" she repeated.

Quickly he slid the doors back and was at the telephone. "Send the transporter in and remove the Leonardo immediately!"

"Ross, please?" She pulled at his sleeve.

"Don't be foolish, Acilia. The machine is faulty. It must be destroyed."

The mobile platform rolled smoothly along the aisles between the rows of reproducers. Two white-coated operators swung the jib over the Leonardo da Vinci and lowered a magnetic plate. Bodily the whole unit was lifted and within seconds was being taken away.

Trafford supervised the removal to the breaker's yard personally. The machine was placed on a steel block and a great hammer came down on it at the same time as heat was applied. The operators turned the wreckage like a slab of butter until all that remained was a cubic foot of fused metal and plastic.

Next day when the sun was high in the sky his steps took him once more to Trafalgar Square. Heat shimmered from the pavements. Tourists sipped cool drinks idly under the sunshades of the outside cafés. Pigeons cooed.

Outside the store was a road transporter. By its side two sun-tanned workmen wearing straw hats, singlets, and cotton trousers, were levering up the concrete paving slabs.

He had only to look at them to receive a reply to his unasked question.

"The old man died yesterday afternoon. They found him lying here." The labourer tapped a plastic tile with his boot.

As Trafford turned away the last slab was thrown into the vehicle. Amid the puff of chalk dust and before the slab cracked he saw an enigmatic smile that had lasted for but one day.

MAIDEN VOYAGE

by

JOHN RANKINE

New methods of propulsion in space travel will present new problems in control, and there may well come a time when such experiments get completely out of hand.

"THE board will see you now, Mr. Fletcher."

Dag Fletcher picked his long dangling legs from the sofa in the plushy ante room of the Space Projects' H.Q. and followed the trim attendant into the corridor. He liked the way her bottom moved in the tight blue-grey cheongsam and he was wondering if he ought to pinch it, when the debate was cut short by their arrival at the bronze doors which filled the end of the white passage. She spoke quietly into a grille in the left hand wall.

"Mr. Fletcher is here now."

The doors rolled silently into the wall and revealed the Space Project Committee in session. The long elliptical room was filled with light from the continuous curving sheet of glass which made one wall.

There was an empty chair facing the light and opposite the Chairman, and as he took it, Dag sensed that there was trouble ahead. The bland face of the Chairman, Paul Y. Spencer, gave nothing away, but other members of the Committee had the look that people get when they are about to make a disagreeable decision. He was not quite sure that pinching the orderly would have been as inopportune as a carnival hat at a cremation and he looked steadily at the Chairman, determined to give no ground on the main count.

It was a full minute before Spencer made a move and then he tapped the grey folder in front of him.

"You know of course, Controller, that your suggestion will hold up the development of the new space fleet for at least two years and put another thirty per cent on the initial costs."

Since Dag knew that his report had made every angle crystal clear, he felt he could afford to regard this as a rhetorical question and he waited for a second transmis-

sion. Spencer had a large heavy face with droopy jowls and thick grey hair. He liked to put an interviewee on the defensive, knowing to a fraction the effect on a Committee of hearing a man attempting impossible explanations. Usually his technique worked out and many a clever engineer had been made to look an incompetent bungler by skilful questioning. Dag was not to be drawn into details however and the Chairman was forced to go on.

"You contend that the power unit in the *Nova* could develop characteristics which would make it as you say 'no better than a delayed action bomb'."

"Yes."

"But against your report we have the Development Corporation's reports and they see no problem."

"They are selling it."

"Are you suggesting that Dr. Vedrun and Professor Fielding—to name only two of their research team, names which you must agree carry the greatest weight in this field—would give their approval to something which was not fully investigated?"

The Chairman's deliberate and unctuous voice made the most of this key statement and he gathered approving looks from other members of the Committee. One or two who knew Fletcher well, remained grave and uncommitted. Dag could understand the average member. He was there to see that the Budget finances were not exceeded and that there was no loss of face incurred by having to ask the Finance Control for a supplementary estimate. But he and his colleagues would have to fly in the craft and it was their lives and not the Committee's which would be hazarded.

Again Dag gave himself time to answer. It was a hot one. Fielding and Vedrun had produced the blue print for *Interstellar-Two-Seven* and that was a near-perfect machine. But there was something about *Nova* which had unsettled him. This sixth sense, a hunch that all was not well, had led him into the mathematics of the power pack and he had found, what seemed to him at least, a shaky argument

in one equation which could spell trouble. It skated too near the lower limit of permissible safety margins and gave the *Nova* more power at no increase in production cost.

"They may be satisfied. I am not. If we want to be sure, there must be further testing—without crew—in deep space, and I agree that it will cost money."

The Chairman looked round the table inviting comment.

"Does anyone wish to ask Controller Fletcher any question?"

There was an uneasy silence and Dag felt that his report had not made him Number One favourite. Still, it was stalemate; because there would bound to be some support for his views and only a unanimous vote could send a new spaceship into commission. Then Spencer put down his ace. He pressed the bell for the attendant and said, "Please ask Controller Lucas to come in."

Dag had an intuitive flash on what would happen next. He had never liked Lucas—who was next Senior Controller to himself and without making any overt statement to that effect made it clear that he considered himself the better man. Dag was adjusted well enough not to mind an able man stepping close to his heels; but there was something about Lucas which he found hard to take and without ever being in open disagreement, the two men had a hostile attitude to each other. Now Dag heard the Chairman voice what had already come into his own mind.

"The Committee would no doubt like to hear from Controller Lucas about the *Nova*. They will recall that this experienced officer has been closely connected with the early trials. I can now say that he has volunteered to command the ship on its maiden voyage."

There was an appreciative murmur from round the table and at that moment the eye-filling orderly announced, "Controller Lucas."

Lucas was a man of medium height and trim build with a parade ground manner. He was wearing the semi-military uniform of the Space Service with blue and bronze rank

flashes on the right shoulder. Fletcher wondered ironically if he would salute the Chairman; but the newcomer came to a snappy halt at the table and waited in silence.

Spencer's unctuous drone resumed with "The Committee are very grateful, Controller, for your offer to command the *Nova* yourself. We would be glad to have your opinion, however, about the new drive. Do you feel that further testing is necessary?"

Lucas's clipped precise voice was in direct contrast.

"Answering your last question first, sir, I am confident that the new drive in the *Nova* is better than anything we have yet. I believe it to be fully reliable and not to require any new trial. There will be better than twenty-five per cent saving in time on long missions and a very great saving on fuel costs. Added to this, the pay load on the *Nova* is half as great again as in the existing fleet cruisers."

"Thank you." Again Spencer looked round for questions but it was clear that the Committee were very ready to be convinced.

Dag said, "I am sure that my colleague is sincere, but without any wish to oppose his professional opinion, I must continue to urge further trials. It must be remembered that a crew of twenty-five experienced deep space personnel will be committed to the voyage. They are virtually irreplaceable. If, however, the Committee are determined to go ahead I should like to make one further suggestion. *Interstellar-Two-Seven* is commissioned and ready for immediate service. I suggest that she should accompany the *Nova* on the first three months of her trip. Some freight commitments could be brought forward and there would only be a fractional increase in normal operating costs."

A murmur of approval greeted this. Bradley Parsons, an ex-Space Officer himself and normally one who supported Fletcher on controversial matters, summed up for most: "I was uneasy about Controller Fletcher's report and I do not see how we could hope for a unanimous decision when such doubts had been raised. But the inclusion of

Interstellar-Two-Seven alters the picture and I would be satisfied to see both ships on this mission. Three months will be more than enough to prove the *Nova*."

The nods that greeted this made a vote unnecessary, but Spencer duly took it and recorded the unanimous decision. Dag said, "In view of the importance of this mission, I should be glad to have approval to accompany *Interstellar-Two-Seven*. The accommodation for planet personnel will not be taken up since no changes of duty groups are due. This is a special voyage, command can remain separate and the *Nova* need not be under my orders."

Assent again was given, and the two Controllers withdrew from the meeting.

In the corridor Lucas said, "You are wrong about the *Nova*, Fletcher. You are wasting your time bringing *Two-Seven* out. There won't be any command problem; because you won't be able to keep near us once we get under way."

The launching pads for deep space ships were the furthest from the complex of admin. buildings and a hover bus waited to take the crews from the briefing room. Dag saw the *Nova*'s Chief Navigation Officer and made a point of taking the seat next to her. He knew her slightly. She was Asian, slim and dark with large brilliant eyes and a figure like a dancing girl from Hindu sculpture.

"Well, what do you think of the *Nova*?"

"A Navigator's paradise, of course, Controller." The low husky voice had an element of irony in it and Dag looked questioningly; but nothing further was volunteered.

"What do you think of the new drive?"

"Sensational, you will see. *Two-Seven* will be half a light year behind in three months. But I confess I am not entirely satisfied on the safety margin."

"You may be glad to see us then?"

"I am always glad to see you, Controller, what else?"

This time there was no mistaking the gentle mockery of the tone and Dag made a mental note that Yolanda Siang

would merit further investigation if and when the mission ended.

As he settled his gear in the tiny cabin, Dag wondered, as he always did at this stage of a mission, what he was doing to spend so much time in so much discomfort. Later when the fantastic vistas of deep space had worked their magic, he would be less troubled by doubts.

There was a tap on the door and the Captain of *Interstellar-Two-Seven* edged his way in. Captain John D. Sherratt was different in almost every way from his friend Fletcher. Where Dag was tall and lanky, he was short and inclined to be spherical. In fact in a spacesuit he looked rather like an old time advert for Michelin Tyres. In temperament he was volatile and, within the limits of complete stability, inclined to be up and down from pessimism to optimism. But his eyes gave the lie to anyone who might take him for an easy-going, good-time layabout. Nobody stood on the carpet in the Command Office with a quiet mind when he was on the warpath.

"Like old times, Dag."

"Only a nursemaid mission though, this time."

"I'm with you about it being necessary though. There's something phoney about *Nova*."

A low buzzing sounded throughout *Interstellar-Two-Seven* and Sherratt eased his way out of the cabin and moved with surprising speed to the Command cockpit. Dag wound down the bunk which doubled as an acceleration couch and settled himself in the harness. Keeping to his self-imposed role as a passenger, he left the control centre to the crew members. There was no room for an observer, anyway. The five couches were strictly for essential personnel. Captain, Pilot, Navigator, Power, and Communications.

The continuous buzz broke down into half minute bursts of buzz and silence and indicated that five minutes remained to blast off. Sherratt checked with his team. Ned Fairclough, the second pilot—stocky, tow-haired, and hard as nails, repeated his take off patter ending with "All

systems go" as he pulled down the red lever which cleared his section on the Captain's Console. Lorraine Ravenscroft, the Navigator, vivacious, fair Renoir type, checked and answered in husky contralto, "All systems go" and cleared with Sherratt.

The Power Seat was well filled by Ray Mortimer—broad six foot three, immensely strong with a deep bass "All systems go." Lastly Peter Wright, the youngest member of the crew and a specialist in all communication methods. His "All systems go" had a trace of tenseness in it. He had not yet been through the drill often enough to be blasé.

Sherratt looked at his all affirmative board and pushed down the "Clear to Fire." He turned the scanner up for a view of the pad. The internal buzzing stopped and metallic clicks announced the count down. The picture on the scanner showed the orange flame building into a fan below the gantry. *Interstellar-Two-Seven* began to tremble slightly and then to lift.

Half a mile away the *Nova* completed her count-down on the same beat and the two ships rose simultaneously into their trajectory, Twin Hyperions flaming over the threshold of the solar system into deep space.

On the ninth day, with Earth a pale distant moon, it was time to clear the *Nova* for a trial run. The ships were at visible distance and Dag took a seat next to the blonde Lorraine who was duty officer in the control centre.

"Anything from *Nova?*"

"Not a thing, Controller, but did you expect it? Controller Lucas will want to make this a solo."

"Can you raise the *Nova* on vision?"

"Surely. Who shall I call?"

"Captain Gordon."

"Will do."

Lorraine began to tune in the communication scanner and the *Nova* appeared, unmoving, as if suspended as an exhibit in a glass case. She waited and the screen filled

with the head and shoulders of the duty officer of the other ship. It was Siang looking very lovely in a light blue sari.

"Hello, Lorraine. What can we do for you?"

"Hello, Yolanda, Controller Fletcher would like to speak to Captain Gordon."

"Right away."

The screen blanked and then Gordon appeared.

Dag said, "Any problems yet, Frank? When do we get this famous tear away?" Frank Gordon had served with Dag as first officer when Dag had been in command of *Interstellar Nine* and they had reason to respect each other.

"Seriously, Dag, this new drive is a break-through. We are idling along now. I can treble this speed at any time. It may take us near the safety threshold; but my calculations shows us comfortably on the right side even at that. Thanks anyway for coming along!"

"That's all right, Frank. Take it easily. You and I know that there are no second chances in this game. No safety margin can be too wide for me out here. When do you plan to go ahead?"

"Day Ten at median time. Lucas would like us to make a landfall on Fingalna in five days flat. He has an ear for a headline and he can see 'Fifteen days to Fingalna' on the front pages. Anyway, you would like to speak to him direct, I'll put you through to his stateroom."

There was a brief reappearance of the main panel where Yolanda had time to lean forward confidingly with, "Are you following us with anything definite in mind, Controller?" before she switched him through to Lucas.

"Well, Fletcher, what do you say now?" Lucas was looking very pleased with himself.

"So far, so good, of course. You know my views. It's a matter of statistics. Circumstances could arise where *Nova* was in jeopardy. Not often. Perhaps never. But we have not accepted even this possibility in previous designs."

"Risks have to be taken sometimes as you know, Fletcher."

"Only in practice. Never, by me at least, in the theoretical stage."

"Well, we shall see you at Fingalna. I shall wait there for you until Day Forty-five and then move into the ellipse for Kappodan."

"Quite honestly, Lucas, I hope I'm proved wrong. Good luck."

The interim picture dissolved and once again Lorraine tuned to a picture of the *Nova* suspended in the void like a toy model and then the screen blacked out.

"Thank you, Lorraine. Give me a call tomorrow at median time. I would like to see *Nova* move off."

"Certainly, Controller."

The relative position of the ships was the same when Dag next looked at the screen after Lorraine's laconic call "Median less sixty, *Nova* in view."

He looked carefully at the shining silver ship and particularly at the thrust tubes. A sweep second hand was counting down and had reached ten when discoloration began to appear on the nearest tube. Simultaneously *Nova* began to accelerate and Lorraine had to spin dials to keep the picture in. The image shrank rapidly and as the final second was counted out had become a shining dot which winked out leaving Dag thoughtfully looking at the empty screen. If Lucas had meant to disappear on the median that was fine, but if he had meant to begin his acceleration at the median it was altogether a different thing and the drive was showing faster reactions than even the test reports had claimed.

He called on Sherratt. "John. Sorry to do this, but would you run a round the clock listening watch until we reach Fingalna."

It was usual in deep space to suspend regular watch duties and man the communication system at precise times to receive messages from Space Control.

"Right, Dag, I'll lay it on."

By Day Thirty, Dag was beginning to feel that he might

well have let the whole matter drop. He could imagine Lucas waiting smugly at the Space Port on Fingalna and boring the pants off any stray listener with his accounts of *Nova*'s pace-making flight. Anyway, *Two-Seven* would have to complete its freight commitments and he would get back to his desk. That cheered him. Any time not spent chairbound was a pure gain whichever way you looked at it. He went along to the bridge and found Peter Wright doing a routine scan for off-schedule signals. The scanning eye swept a 360° path in 360 planes, checking in every conceivable direction and plotting a detailed vivid star chart on the navigator's screen.

On the last sweep of its circuit with Taurus, the only near planet, there was a faint bleep and flash which brought a comment from Wright.

"That's been there twice now on that sweep. I've held track on it but no joy."

"Keep on it now."

Wright juggled a dial and the scanner revolved in the same orbit again and again. Taurus was repeatedly shown up sombre, green, and menacing on this bearing. Dag had landed there once. It was marginally habitable by earthmen, but had greater gravity than Earth and thinner air. A dying race of hominids were living out the fast farouche and violent episode of their stormy history. Space Control had decided not to intervene, but at some future date an atmosphere plan would be applied and a new race would be settled in there.

At the ninth sweep on the same orbit there was a flash again and Dag stiffened.

"That's a garbled version of *Nova*'s call sign! Send a straight beam down to Taurus."

Five seconds later the direct beam picked up unmistakably the two figures of *Nova*'s identification signal followed by the inter-galactic distress call and the word "Taurus". Dag pulled down the red lever which buzzed every part of the ship and turned to Sherratt who materialised behind him.

"They're down on Taurus, John. We'll be lucky if we can get them out of there."

Sherratt nodded. He too knew of the occasional visits paid to Taurus and of the ships that had been lost with all hands. He eased into the seat behind the command console and by this time the other key personnel had reached their controls. Dag left the tricky operation of re-setting a course to the Captain and was buckling himself into his take-off cradle in his own cabin when the intercom began its count down.

"Captain to all hands. Stand by for major change in course. Counting down now——"

The metallic clicks began, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1. There was a surge of acceleration, not as severe as a blast off, but severe enough to make even an experienced spaceman glad of the shock cradle.

Dag traced out a line on the solar map.

"My guess is they found the reactor was playing up and had to damp off. They would set a homing course on Taurus before they blanked out. They would only need to switch to power for a few seconds to make a landfall. Their original course was much the same as ours; so they must have come down somewhere in the coastal strip of Guernica here." He tapped the map of Taurus which Wright had rolled out on the Navigator's table. "This is a well populated area so there is not much time. If they stay in the ship they will be safe for a day or two at least."

"They will be sure to hang on in the ship, Dag. No one would go out on Taurus unless they had to," Sherratt visualised the scene. The silver ship stranded like a waterless whale and the savage hominids beating at it with clubs and stones. Food and water would be no problem; but the spaceship could be broken open. Nothing more sure. A peaceful cruiser like the *Nova* carried no defensive armament. There might be half a dozen Laser pistols at most—which were needle-accurate to kill an individual at thirty or forty yards range, but would not stop a mass attack.

"A lot depends on where they are. But if we can get down unseen somewhere on the plateau we might do some good."

The sombre green of Taurus was filling the scanner when Dag and Sherratt took stock of the situation next day. No further message had been received though the listening watch had concentrated on a narrow band. The only break had been a short scheduled transmission back to base with a bleak message from Sherratt giving the bare facts. Base replied with confirmation that they were out of touch with *Nova* who had not come up on scheduled transmission times for three days.

"Assuming that *Nova* followed the course we have followed so far, she should be somewhere down there," said Dag. He pointed to the flat coastal strip which edged the sullen black waters of the great inland sea. The majority of the surviving tribes of hominids lived in rock dwellings on the lower slopes of the escarpment which rose to the high bare plateau of the hinterland. The plain was their hunting ground and their primitive farmland. Some domesticated animals were kept in crude pens built of massive rough stone blocks and were let out to graze during the day.

"Put us down there, John," he went on, and pointed to a smooth rocky basin about five miles from the tip of the escarpment. "We can do a survey on vision from there and move on if we have to."

"Will do."

Sherratt trimmed his ship and bounced a direction beam on to the chosen landing site to get exact distances. He could land *Interstellar-Two-Seven* on a tennis court in any pinpoint section of the navigator's grid. Matter of fact, and without haste, his voice came over the intercom.

"Landing on Taurus 1300 hours, day Thirty-two, to investigate whereabouts of companion ship *Nova*. Stand by. Going in now. Count down." All intercom messages were recorded on a sealed tape and could be used later to

account for a Captain's actions. Sherratt was putting on record his purpose in hazarding his ship.

High gravity on Taurus made landing a great strain on the retro rocket motors, but *Two-Seven* slowed like a hydraulic lift and came down to a barely perceptible bump on three telescopic struts.

Sherratt's voice again on the intercom. "Landing accomplished. Site, smooth rock, only minor adjustment needed for take off. Ray, take out two of your engineers and prepare for immediate take off. Pete, set up the highest antenna you have for a visual sweep. Lorraine, I want a map of the ground between here and *Nova*—when she's found."

They had come down in a shallow, bare, scraped-out hollow and unless they had been sighted in the sky were not likely to be seen by any creature on the escarpment. There was nothing in view except the jade green rock. It was like being in an ornamental ash tray. The antenna began to thrust out from the nose cone which was already almost level with the rim of the shallow valley. Thin, but immensely strong, it rose steadily until it was fifty feet above the ship.

Dag sat with Wright and watched the camera eye scan in the baleful green light. Beyond the rim of the valley were fluted rock channels and some litter of broken rock showing brilliant rust splashes in the green. Then for about a mile was level scrubland with stunted bush-like trees dropping away in a gentle slope for half a mile to the edge of the escarpment. What lay immediately over the edge was out of direct vision, but from about a mile further on the scanning eye picked out the coastal plain and at extreme range, far off, the black line of the sea.

Wright put the set on 'search' and a grid of fine lines meshed the picture. Then he began to take each square methodically and blow it up to maximum size. Anything bigger than a dog kennel would show up in this magnification, but giving ten seconds to each square it would be some hours before he had covered the first complete scan.

Time, indeed, might be running out for the *Nova*. Dag made a sudden decision.

"I'll take out the loading trolley and have a look over the ridge. They could be nearer than we think."

Sherratt spoke to the engineer section, "How's it coming, Ray?"

"Fine, Cap, you could take her up any time now. We're coming in." Ray sounded breathless, and several minutes later he heaved himself through the small entry port, looking grey and tired. "I'd advise a suit for anyone staying out any time." He paused and took some deep breaths, "Lovely air in here! Moving about down there is like walking knee deep in mud."

"Would the loading trolley run on that surface?"

"Sure, it's smooth enough. Don't ask anybody to run a hundred yards, though."

The lower hatch cover slid slowly back and the loading ramp telescoped out. Dag said, "You can get that in when I'm down, John. We shall have to leave the trolley anyway. The extra weight of *Nova*'s crew will make a big difference to our power weight." He had stripped off to shorts and canvas shoes. Every ounce of weight was important. He had adapted a spacesuit to give him a face piece and one oxygen bottle which was strapped on his back like a skin diver. On the belt he had a small communication set and a Laser pistol. His body was lean and brown and finely muscled, but even in the ship where movement was restricted he was feeling the effect of the increase in gravity.

The loading truck was not much more than a flat tray with shallow caterpillar tracks, but it was highly powered and would carry any load that could be put on it. The operator stood at the rear between waist-high tubular loops and had two stubby levers to work. With both fully forward he could get a straight run at about twenty miles an hour. Easing back on one or other slowed the track on that side and gave steerage. A skilled operator could make it

dance on a coin and its tractive grip would take it up or down any slope.

The two engineers were at the foot of the ramp and took a free lift back to the ship as it slowly retracted. From underneath, the ship seemed massive and inert squatting on its tripod. It was vulnerable though. A determined attack by Tauratians could soon have it toppled and useless on its side and then it would only be a matter of time.

Dag cautiously eased forward the controls and the trolley hummed into life and moved off. After a minute or two he began to enjoy the novel experience of driving it. This led to over-confidence and near disaster. It was very sensitive and an over-correction of extra power to the left track after a left turn spun him round a half circle and headed him back along his path. "Watch it," he said to himself, and carefully fed more power to the right track. This swung him back and in another two minutes he was coming out of the depression on to the scrub. It took every ounce of concentration to steer a course among the littered rocks and bush and he went down to quarter speed.

About fifty yards from the edge of the escarpment he stopped and swung round to face the way he had come. There was silence. A green pallor lay over the scene. He saw that the ship was invisible from here in its hollow. Ahead of him, the ridge of the escarpment was the horizon cutting the turquoise sky with its jagged green line. Leaving the trolley he moved slowly forward. It was like walking with magnetic soles on an iron plate. The gravity drag had a nightmarish quality. A few yards from the lip he went down and crawled. It was almost preferable.

A heavily scored channel ground out by some ancient movement of volcanic lava gave a covered vantage point and he lowered himself into it. Then the scene suddenly opened out. Directly below, the ground dropped away in two sweeping slopes with a broad ledge between. At the foot of the lower slope was one of the great animal pens, empty, with the tree trunk gateway pushed aside. At that moment a large black furred hominid appeared on the

ledge and stood erect almost immediately below him. The cave entrance was not visible, but no doubt the whole area below was honeycombed with cliff dwellings. The hominid seemed to be listening and swayed its massive head from side to side. Evolution on this dying planet could get no further, but the huge limbs and barrel chest of the creature adapted it well for life here and now. It seemed satisfied that all was well and Dag remembered that the remaining tribes on Taurus lived in a state of suicidal internecine warfare, so that raiding parties were a daily reality. He watched the man-ape as it began to descend the lower slope with casual ease and knew that any head-on brush with these animals could only end one way.

Vision in the green-tinged light was clear for about twenty earth miles and Dag began a systematic examination of the landscape. On the far left the slopes became more abrupt and in some places sheer cliff face stretched from top to bottom. Unbroken jungle filled the level plain to the horizon. In front, some irregular patches of darker green suggested clearings where perhaps primitive crops were grown. On the right, the escarpment advanced like one arm of a great bay and the slopes gradually became steeper until the point of the headland was a bare rock face. Here too were patches of brown and one circular area of black, as though a localised fire had burned out the vegetation.

Then he saw it. A branch sticking out too straight and angular from the uniform jungle. As his glasses focused, it was clear it could be a tripod leg and then vaguely the long pencil shape of the ship. He imagined the landing. Unable to use full power, *Nova*'s retro rockets had not cushioned her landing enough and the landing gear must have crumpled. She would have toppled into the jungle. Landing there facing the caves she must have been seen by many of the tribes. With the crew at emergency stations, there was every chance that they would have survived a heavy landing; but what had happened since then?

The *Nova* appeared to be about ten earth miles out from

the foot of the slopes at his feet. Exact distance could be worked out from the scanner if it was in vision. It would take several hours to reach the wreck and the journey would have to be made at night when the hominids kept to their caves. That meant navigating by compass over unknown ground. Probably two nights. One there, one back. Anyway nothing could be done without consultation, so he began to ease back up the gulley.

At that moment a movement at the edge of the jungle immediately below him attracted his attention and a group of a dozen or more hominids came into the open. They were driving a herd of the lumbering cattle towards the great pen. Dag looked at his watch and saw that only about one hour of daylight remained. They were preparing for the night. The clumsy beasts were docile enough, but seemed more stupid than sheep. In shape they resembled the earth-type hippopotamus, but carried a mat of coarse hair from shoulder to rump.

Looking more closely at the men, Dag had one question answered for him. One was whacking left and right with a long straight stick which glinted like metal. Focusing on it, Dag identified it as a rib of white alloy. It could have come from the retracting gear of a space ship. Unless there were other wrecks, it probably came from the *Nova*.

The beasts were finally goaded into the pen and two hominids lifted the tree trunks into niches in the gateway. Then they moved up the slope towards the ledge and finally disappeared behind an outcrop of rock which must mark the entrance to a cave.

Dag eased himself back and turned round. In five minutes he was below the ship and the winch was lowering a lifting harness.

In the control room Wright was still patiently and systematically searching every square. Dag pointed to two squares on the extreme right.

"Blow those up, Pete."

The first one was blank; but the second showed them the *Nova* lying as Dag had supposed in a tangle of broken trees.

It looked as though she had fallen on to the main entry ports. The base was a crumpled wreck and two of the tripod legs had driven back into the body of the fuselage.

Sherratt said, "If we get there we must be able to get inside. We shall have to take cutting gear. That needs some carrying. We have six spare sets of breathing apparatus and the ship could make it with six more hands for the take off. Dark in about half an hour and at this time of the year the tables say ten hours of night for this latitude. Can we get there in four hours, cut a door and get them back before dawn?"

There was silence.

Dag tapped the scanner. "We can get nearer by following the cliff round to the point. That leaves about three miles through the bush. We can ferry the equipment round now in the light. If we take winching gear we can make a straight drop over the cliff. Also we miss the caves."

Sherratt was already speaking quietly into the intercom. Within minutes the trolley was off in a wide sweep loaded with gear and manned by two engineers.

The pale green light of Taurus dimmed quickly in its brief dusk and settled into a sombre black streaked with the arcs of its three wheeling moons. Dag crouched by the winch which had been set up at the end of a narrow cleft which cut back about ten yards at the point of the promontory and looked down at the figure spinning slowly at the rope's end a hundred feet below. He saw the man touch down and he held up his arm in a signal to stop turning.

"That took two minutes. Bringing twenty people up that way might get rough."

Sherratt said, "O.K., Dag, I know your arguments about time. That could be forty minutes too many. But we shall just have to be here that much earlier."

"You next, John."

"Right, let her go, Stevens."

The man at the winch put the setting to "free fall" and

Sherratt dropped like a stone for about twenty-five feet, then the automatic brake slowed up his descent until he touched down with hardly a jolt.

Dag slipped into the harness.

"Haul up after me, Stevens, then keep quiet and don't show any lights. If all goes well we should be back before daylight. The hominids probably stay holed up during the night so we should all be all right; but if you're attacked get on the trolley and circle back to the ship. Mr. Fairclough has orders to blast off if an attack develops there. Good luck!"

"I'll do that, Controller. Good luck!"

Dag swung himself out and dropped down. Sherratt had got the loads distributed. There were five of them in the party. Ray Mortimer and one of his engineers—another husky six-footer, Alan Beresford—and Simon Tyndale, the second navigator. The two engineers carried a short stretcher between them with the power cutting apparatus on it. It was as light as it could be made; but it was all of seventy-five pounds Earth weight and here it was as much as they could take. Tyndale had made a fix on the position of the *Nova* and was calling *Two-Seven* on a portable intercom.

"Calling *Two-Seven*. All below the cliff. Starting now."

Lorraine Ravenscroft's voice came back, "Understood. All the best, out."

There was not much in the Space Manuals about Taurus and none of them had been on foot in its jungle before. There was little undergrowth, though they were walking on a thick carpet of peaty soil. The predominant colour on Taurus was green and this showed pale green in the occasional flashes of light which they allowed themselves. The trees had a soft rubbery texture and the trunks grew to a great width with massive branches growing out almost to ground level. This meant constant stooping under and stepping over as they cut across the path. It was never impossible, but it was hard work and in ten minutes they were all streaming with sweat.

Dag was counting down on time. "Nine hours to go. Where do we stand, Navigator?"

They were taking a spell. Now that they were well in the forest the oppressive atmosphere of the dying planet was a tangible menacing thing.

"About a mile to go."

"Let's get on then."

They were moving now at a slower pace. It was very clear that any attack by the hominids would be fatal. Brain must choose its opportunity to beat brawn and this was not it. No less than an hour passed before they stumbled out into the blackened clearing where *Nova*'s rockets had burned out a landing strip.

Dag congratulated the young navigator. "Nice work, Simon. You've put us right on its tail. Take care now. It's just possible there may be a guard left. *Nova* should lie over to the left."

A torch beam showed the crumpled base of the ship. Massive and inert as a barn.

They climbed the debris to where the round hull loomed above them. From the deep shadow under the curve there was a movement of deep shadow in deeper shadow. There was nothing to gain now by pretending they were not there and Dag had a stab of bitter self reproach for his carelessness in letting his party stumble up to the ship without concealment. However, they now had more to gain from light than whatever was moving about in front of them.

"Lights," he snapped out, and five powerful torches lit up the whole side of the *Nova*. Lumbering to their feet from where they had been bending under the ship were six huge black-furred hominids. Their eyes glinted redly in the light and although they looked like king size bull gorillas it was clear that they were motivated like primitive men. There was a grunted command from the leader and the six advanced in a line, slowly, heavily, with great hands hanging ready to seize and tear.

Urgently Dag said, "Take one each and fire to kill."

They had rounded up all the Laser pistols in the ship. Only executives could carry arms and their use was hedged with heavy restrictions. Every use of a pistol had to be a log entry even in a hostile world like Taurus.

If the primitives had continued to advance at that slow ponderous walk they would have advanced to their death. By some signal which the Earth men missed, they were suddenly galvanised into action and with a screaming roar from open fanged mouths, they flung forward. Four died before they reached the line of torches, one clutched at a hairy shoulder which had been punched through by a Laser beam but he came on and one torch went out as he trampled over Simon Tyndale. Dag swung his torch on to the broad matted back and got in a shot at the apex of the spine which brought him down like a felled tree. The sixth had altered the line of his run when the others fell and could be heard crashing through the trees like a runaway tank.

Tyndale was quite dead. One huge foot had crushed in his chest. The communications set was a wreck. Regret for him could come later, but if they did not get on there would not be any later.

"Get the cutting gear out, Ray. We haven't much time before that one brings the tribe."

Remembering the plans of the *Nova* which he had studied in detail, Dag pointed up to the cone. "There should be a communications corridor close to the skin up there. For God's sake get cracking."

The two engineers ran out a flexible line from the vibrator. The slim pointer ripped through the hardened heat shield of the ship as if it were paper. Mortimer—a stylist—cut a door with a gothic arch. Underneath, the first bulkhead of the ship proper appeared and, as sections were tugged away, an opening into the corridor. There was no hiss of escaping pressure and that meant that this section must have been penetrated in the crash. Anyone without breathing apparatus would be feeling the strain after this time.

Dag led the way in and they followed the narrow passage back into the ship. Ten yards and a closed collision bulkhead. There was an intercom set hanging in its cradle. Dag pressed the switch and said "*Nova* ahoy, Fletcher here."

An incredulous Yolanda answered, "Welcome aboard, Controller!"

Inside the control room the survivors of the *Nova's* crew had made a lounge hospital. None of the engineers in the power block had survived the landing which had telescoped their section. Everyone in the control room further forward had survived. Lucas in his own cabin had had to be cut out of splintered debris and was strapped in a shock cradle with a broken thigh and crushed shoulder. The ship's doctor, Janet Young, Elaine Forester, the second Navigator, Banister, the second pilot, Yolanda, and Gordon were unhurt. Five others had minor injuries.

This made eleven out of the twenty-five personnel. The ship had been sighted and surrounded by primitives within an hour of its landing, and since the main power unit could not be used the elaborate communications computers were also out and there was no way of assessing the situation outside.

Lucas said, "The power unit is now a hair trigger atom bomb. We have it stabilised, but much vibration will get it going. Then there will be about two hours before the critical point is reached. We must get out of here tonight."

"We haven't got all of tonight," replied Dag. "I want everybody out in five minutes. Breathing apparatus if possible. Pistols, torches, move your people along, Frank, will you?"

Frank Gordon levered himself from the seat behind the wrecked control console and snapped into action.

Ten minutes later they were all standing outside the shattered *Nova*. Without Tyndale to navigate they had to follow the tracks they had made on the journey out. Lucas was slung on a stretcher improvised from a take-off cradle.

Mortimer and two *Nova* communications men went ahead. Yolanda and the two other women were in the centre with the stretcher party.

It was not long before this first burst of energy burned itself out and the journey became a nightmare slog with weary limbs and aching lungs. Even with minimum clothing the extra gravity seemed a pinning weight. Every new tree branch across the track loomed up like a wall and muscles protested that they could not go on.

Every five minutes the bearers changed places, but carrying Lucas was a major chore. It was doing him no good. Janet Young, incongruous in briefs and plimsolls with a medical bag over one bare shoulder, stopped the column and looked carefully at the patient.

"I've done what I can, Controller, but he's not going to make it like this. Every jolt is causing damage."

"Is he conscious?"

"Not all of the time, and I've stopped any pain of course, but the outlook for future surgery is deteriorating."

"Thank you, Janet. We have to get on, though. If we are caught here the prognosis is nil for everyone. Keep him sedated and keep moving."

Dag moved up to Mortimer with a great effort of labouring will.

"How far, Ray?"

"Not more than half a mile."

"Twenty minutes?"

"Could be!"

"Listen!"

They stood still and the rest of the column came to a stop. From behind them there was the familiar hiss of the first phase of a ship blasting off. An arc of orange flame began to build up, near and threatening over the trees.

"By God! They're in the *Nova*. They've triggered off the drive!"

Gordon panted up, grey with effort, "We haven't much time, Dag. Whether they catch us or not there won't be much left alive on this side of Taurus when it hits the

critical spot. Tethered down like that it could build up fast."

"O.K. Ray, take Elaine and Yolanda with your two boys and get ahead. We can't do with a hold-up at the cliff. When you get up top send Stevens back to Fairclough with a report. Then a shuttle service with the trolley."

Ray opened his mouth to argue and saw the look in Dag's eye. Yolanda looked sulky, but also moved on and her warm ivory back splashed with reflected orange light disappeared ahead. The rest closed up on the stretcher party and ploughed on.

The roar of jets had built up to a scream and the vibration could be felt through the spongy loam underfoot. A broad column of violet flame was thrusting up from the area of the wreck as even the rubbery trees caught fire in the aching heat. There was enough light to see the face of the cliff ahead and the dark line of the cleft which housed the escape line. Once in the cleft they could defend it against the hominids. Not more than one of them at a time could get in.

As they lifted Lucas over the last massive tree branch and broke out into the open ground below the cliff, hominids broke cover to right and left of them about fifty yards away on either side. The intention was plain. They must have been stalked at a distance for some time and their pursuers planned to trap them in the open with the cliff wall at their back.

Gutteral commands brought the hominids into two lines from the rock to the forest and then they began a slow forward movement. In the fantastic light they looked like figures from a medieval picture of hell. They moved in silence. Black eyes and mouths flecked red. Dag waited for the rush that had come before which would annihilate them before they reached the cleft.

Ten yards to go. The six remaining men fanned out in an arc with Dag at the centre, covering the stretcher party.

A figure appeared on a ledge thirty feet above the ground on the cliff face. Lit up by the lurid glare of the rocket fire,

Yolanda looked bigger than life size. She wore only two golden bracelets. Against the green cliff her skin had an unearthly pallor. She was an incarnation of the rock sculptures of ancient Hindu mythology. Golden breasted Kali. Great Earth Goddess. Sensual. Compelling.

The advancing lines stopped dead and every eye turned to the rock. Then a growling roar came from thrown back throats.

Lucas was in. The others followed stumbling in the dark of the shadow. Dag saw the ledge which led round to where Yolanda had appeared and heaved himself on to it.

The clamour outside had turned to the attacking roar of a charge and the hominids hurled themselves forward at the rock face. Only two could get in together and then they were in each other's way. The first two were dropped immediately and fell forward. Two more died over them and blocked the narrow entrance. They were torn away and a pressing mass of growling monsters raged against the gap. Then as quickly as they had come they fell back.

Dag had reached Yolanda on the ledge. To make her show-stopping appearance she had discarded her breathing mask and was now leaning heavily against the rock face. "Well done, India," he said, and caught her as she fell forward towards him. He put her over his shoulder in a fireman's lift and swung back along the path.

Four men remained at the gap, pistols ready. Lucas was conscious, and before Dag could ask why he was not swayed up first, he said painfully, "Sorry about this, Fletcher. My fault all along the line. No, don't interrupt. I told them to leave me here. I can't make it up there you know. Shift me forward and leave two pistols. Janet's a good girl, but I know I'm finished. I can manage here for an hour until you get *Two-Seven* out of it. Let me do this!"

"All right, Controller, if that's the way you want it. But don't think I blame you. You had a good ship and you weren't alone in thinking it was safe."

Dag called up one of the men and they lifted the stretcher to a piece of rising ground about four yards inside the cleft. He fixed four torches to shine on to the entrance which now showed a slit of brilliantly lit jungle under a heavy pall of smoke. This would blind anyone coming in and conceal the numbers of the defence. Two Laser pistols were put beside the stretcher.

Dag was last to leave. Lucas said steadily, "Thanks, Fletcher. Good luck. There was no other way for me."

"Good luck."

As Dag swung away there was another attempt at the passage. Not many involved this time and Lucas calmly picked off each one that appeared in the torch glare. At this range the Laser pistol was quick and deadly accurate. The attack was not pressed and even as he swayed up, Dag wondered if it had not been in the nature of a feint. That would mean that some had gone to detour round behind them and that meant the ship might be found.

At the top he found Mortimer back at the winch with Frank Gordon turning the trolley.

"Leave this, Ray, and let's get to hell out of it."

"O.K., Dag, what about Lucas?"

"He's all right."

They pushed the trolley at full tilt over the rock strewn plateau. Concealment was not important now and its searchlight beam splayed out in front. Light from the burning forest lit up the edge of the escarpment with a glow like the Aurora Borealis. As they dipped into the valley and saw *Interstellar-Two-Seven* rearing up in front of them, the first line of the outflanking hominids appeared over the slope where Dag had first looked out when they arrived. They could not see the ship, but they had seen the lights of the trolley. Their deep throated cries were taken up to the far left and two packs began to converge on the valley.

"Up you get, Ray. Now you, Frank. Retract as soon as I'm on."

As the flexible steel ladder slid back into the ship, Dag

saw the silhouettes of the first hominids appear against the flaming skyline. His head levelled with the port and hands reached down to haul him in. The yells outside were cut off abruptly as the ship sealed itself.

"Blast off!"

The control room was crowded and the intercom was warning all hands to buckle up for take off. Every spare shock cradle was in use.

Dag eased in beside Sherratt, braced himself into the foam pads and passed spare straps round his shoulders and knees. The scanner was set for immediate vicinity sweep and showed the hominids in a racing charge down the sides of the valley.

Short circuiting full procedure, Sherratt was counting down for take off. Fairclough had kept the ship at take off readiness since the first message. As the first hominids hurled themselves at the supporting tripod, the rockets fired. Those directly below disintegrated into hot gas, those further off threw themselves back. *Interstellar-Two-Seven* began to lift....

They had cleared Taurus and were back on a course for Kappodan when it happened. The green planet was filling the screen like a malevolent cyst when it began to crumble before their eyes. A huge black rift appeared on the coastal plain area which deepened and widened. The whole sphere began to lose shape and sag apart. Lucas had company in oblivion!

Dag made his way slowly to his cabin. He felt no pleasure at being proved right. Only weariness and the sense of waste in the loss of good spacemen. Why did they do it? Why not be a banker or a salesman? As he slid back the cabin door he met a perfume of sandalwood.

Yolanda said, "Come in, Controller. I hope you will not mind if I share your cabin. I take up very little room."

She was still dressed as an apostle of Vedic culture.

Dag said, "Be my guest."

There might, after all, be a lot to be said for the Space Service.

ODD BOY OUT

by

DENNIS ETCHISON

A new young American author presents an interesting idea coupled with a terrible problem in this story of mind transference.

ODD BOY OUT

THREE sat on the brown oldwood bridge somewhere in the forest near the century-old millwheel which creaked under its load of ever-aging insect and crayfish water. The boy sitting on the edge flipped away his length of rotting twig and wiped his palms on his jeans.

"Gimme a cigarette," he said, looking up into the lukewarm air that smelled faintly of matted leaves.

The taffy-blonde girl who sat with her legs folded, facing away from him, stretched two long fingers into her white shirt pocket and came up with a flattened packet. "Got two left."

She lifted the pungent package to her nose. "Mmm." Pulling one half out of the pack, she extended her arm backwards to him.

He took it, hung it on his lips and struck a paper match. His eyes squinted. "I can almost get it. Sometimes. Until a minute ago I saw it clear, all of them moving around the trailer." His eyes closed and he took a short drag, wrinkling his forehead.

"Zoe?" The blondish girl leaned on one hand and looked at the girl lying on her back, one arm over her eyes.

Zoe shifted and sighed. "Nothin'."

"How long she been tryin', Carrie?" asked the boy.

Zoe herself answered quietly. "It's been over an hour, counting before you came." Of the three, only black-haired Zoe wore a wrist watch.

"Do you get even a shadow image?"

"Sorry, Cam. Not even a shadow." Zoe held her breath and let it out slowly from her plaid-shirted chest. "I'm sorry. I guess I can keep on trying."

Carrie stood up and straightened the bottom of her white

blouse and stretched, finishing up with her hands clasped around the back of her neck.

"Let her rest, Cam. You too. It's only about four. Give 'em some more time." She met Cam's eyes and suppressed a sad kind of grin. "Let's give 'em time to cook dinner."

Cam didn't say anything.

She stuck her hands into the back pockets of her jeans and started along the bridge, slapping her bare feet as resoundingly as possible against the old planks. When she reached the end of the bridge she scurried down the bank to the water and squatted, pressing her hands on the smooth brown and green stones just below the surface. When she looked up at the two on the bridge, she was smiling.

The dark girl sat up, rubbing her temples. "I don't know what's wrong with me." She took the cigarette from between Cam's fingers and smoked it, squinting. Her lips were red and her features cleanly attractive, her black hair cut just short enough. "Not even a shadow," she said with a half-hearted laugh, staring at the cigarette.

Not bothering to look at her, Cam reached back and touched her arm firmly. He said nothing, but looked up and around at the trees. He held his head as if listening to the water pouring off the old mill in the distance.

"It *is* the camp site, isn't it?" asked the girl, studying the side of his face.

"It has to be." He met her gaze. "I'm sure it's a trailer. Blue on the inside. This is the only trailer site in my range."

"Will we be able to reach them . . . by nightfall?" She finished hesitantly. "I mean, will we be able to make the transfer?"

"I think I can manage it." He took the cigarette from her and finished it quickly. He flicked it into the water.

"Is it a family?" she asked.

"Yes. A little boy. I've been probing him. I think——" he frowned, and finished softly, "he'll do."

She spoke slowly, looking at her fingers. "Cam, I wish . . . I wish I could be of more help. Carrie was able to

probe someone in the camp today, but so far I haven't been able to——"

"It takes only one to do it. It isn't as hard on me as it is on you. Or Carrie, even. It takes just one to probe the subject and time the transfer. Make it easy on yourself. And Carrie." He watched the girl kneeling at the edge of the water. "But don't tell her that."

Carrie tossed a stone out into the river, where it plunked in a circle a few yards in front of them.

"You ought to take a rest, Cam," said the dark-haired girl, looking down. "Let's take a walk. The sun won't be down for four hours yet. Or don't you . . . I mean . . ."

"Let's go." He stood, pulling her up with him. "Come on." He forced a little smile. They glanced at Carrie but she said nothing as they left the bridge and headed into the trees.

They wandered until they came to a familiar wide stump, several feet across.

"Here she is," he announced. "The Roundtable." He planted himself in the middle of the stump, drawing his knees up. "Licorice? I didn't think I had any left." He chewed a little round piece and tossed her the box.

She sat down on the edge and reached into the box. "Cam, I don't know what I should say to you, but I know I have to say something before . . . well, before our last day is over." With her index finger, she rubbed her nose. "Gee, but that sounds dramatic, doesn't it?"

He watched her.

"But we should—I mean, it seems to me that we ought to say what we have to say to each other, all three of us, while we can. Because who knows when we'll get another chance?" Her eyes found his. "What chance is there that we'll be . . . I mean, will we be able to see each other afterwards? What happens to the three of us?"

"Well——" His tone was deceptively casual. "After my transfer, you two will probably be told by Connection to get to an area near others of our kind. If you have to transfer after that—well, it'll be pretty much up to you guys.

You'll have to set it up and carry it through under your own power. They'll give you time to improve your skill."

Looking straight at her he said, "It's been a good thing for us, this growing up together, hasn't it? You know——"

"What, Cam?"

"Nothing."

"Please say it while you can."

"It's just that . . . well, this kid has two sisters about the same age as him, you know. If you both were good enough at it, we could probably all pull through. I'm sorry I said that." He looked up, trying to break the tension. "Cigarette?"

"Sorry, Cam, I'm out."

He tried a laugh but it was hoarse and didn't sound quite right. "No, I guess I'm the one who's out. Odd boy out."

For a moment she didn't say anything.

Finally she said, "I am very sorry about this, Cam. I don't know how to really tell you—to apologise—so you'll believe me. But, you know." As she raised her hand to her eyes, it was trembling. "I guess I always held you and Carrie back. I know I'm to blame for getting you transferred." She looked at him with glossy eyes.

He shot a glance at her.

"Now, wait a minute. You've been able to get through sometimes. Carrie's told me how sometimes you've got a probe shadow without any warning in the middle of the afternoon. Anyway, you're one of us, and that's enough. It wouldn't matter about the other, even if it were true. Which it isn't. I know you're able to make probes just like any of the rest of our people. Carrie told me and I know she wouldn't lie. Not Carrie. It's not your fault I was picked. I just was, and that's all we can think about it. They decided I'll be of more use somewhere else. Maybe I've made myself too conspicuous."

The black-haired girl took out a Kleenex and wiped her nose. "Thank you, Cam," she said simply.

They both were silent for a moment.

"And so now it's my turn," said Cam. "It's my turn to

speak my piece. I didn't let you lead me out here for the exercise, you know, kid." He tried to smile.

Zoe cleared her throat. "No, you wait."

He waited.

"There's . . . something more. I don't know, I——" She turned away, pressing her fist to her forehead, eyes closed.

The boy swung his legs around and stood before her, very close. After a few seconds, when her hand remained over her eyes and she began shaking her head from side to side, he said, "Hey, you."

A second after she lifted up her face he had it resting against the side of his neck, wordlessly. His hand rubbed over her back and gripped her shoulder firmly. When he made a sound, she whispered quickly. "Don't say anything."

After a minute she drew away from him and began speaking down into herself.

"You always knew, didn't you? I don't know what to say to you. Three or four years ago, when I was thirteen or fourteen, I used to plan how I would say it to you. Some afternoon in the forest, or some night late, when our folks were asleep, I'd come over to your trailer and we'd just be alone together for a while and I'd tell you that I didn't expect anything from you, that I didn't expect you ever to feel towards me the way you did about Carrie. I knew it was always you and Carrie. But I used to watch you, Cammy. Did you know that? I used to watch you swim in the river, and sometimes Carrie was with you and sometimes she wasn't, but I used to watch. I just——" Sudden tears ran from her eyes. "Carrie was always the proud one, the brave one, that hair of hers blowing wild. Oh, you were two of a kind! Oh, Cammy!" She hid her face.

He squatted down in front of her and, miraculously, he was smiling.

"Well, what the hell do you think *I* came all the way out here to tell you, anyway, kid?"

He took her shoulders.

"I have eyes. I tried many times to show you that I knew, but I guess I was never really able. Sure it was me and Carrie—you said it yourself, we're two of a kind, I guess. We always knew you were one of us, as soon as I caught you probing Carrie for the first time when she was five. And you were three. If it hadn't——" He looked at the ground. "Well, if it hadn't been for that—whatever it is that decides it for people without them having anything to do with it—if it hadn't been for that, well, I don't know——"

Spontaneously, boyishly, he leaned forward and kissed her cheekbone.

Zoe sniffed a couple of times and dried her eyes.

"Cam——" She sniffed again and smoothed the hair on her forehead. "Cam, what . . . I mean, I hate to ask it, but it's just that I've never known. . . ." She was staring at him, her voice low. "What will—happen to your—body?"

Cam stood up and turned to take a few steps to a tree, where he picked loose a fragment of rotting bark.

"Carrie knows what to do."

"I mean——" Her voice was almost a whisper and sounded ready to break again any second. "You won't still be alive or anything, in this body, will you? It'll seem like . . . like . . ."

"There'll be nothing but a corpse left, an empty shell. Burn it. After the transfer——"

"Oh!"

She was on her feet, hand over her mouth, staring at him round-eyed.

"You don't have to. Carrie can do it."

She made a high little sound in her throat.

"Look—it has to be destroyed. If anything were found—well, there would be no way of telling what had happened, but just the same that's always the procedure. Burn the body and the clothing with it. We can't afford to leave any loose ends lying around. Zoe, the body will be just a shell.

I'll be in a new one, a younger one with a lot of growing up to do all over again."

Zoe turned away, hands to her eyes. She went over to a tree and leaned her forehead on the trunk.

After a few seconds he said, "I'll go on back," and started to walk past her.

As soon as she began speaking, her voice broke.

"Sometimes, Cam, sometimes—it's happened several times before—I feel like—like I almost wish we—weren't what we are. That the parents who raised us were really our own, that we hadn't been sent here by the Group to do whatever it is they're doing to this world, that we didn't have the telepower lobe on our brains . . . that we could just . . . marry and . . . live like the rest here. I know I'm being very immoral by Group standards, or unethical, or whatever you want to call it. But *Cam*? Can you tell me why it had to be us? Can you just *tell* me that one thing, so I can go on feeling like I really belong in this body after today? Can you just tell me something to keep me from—*Cam*? Do you know. Do you know why it had to be us? Are . . . are you going to be able to keep your sanity sleeping tonight in a little boy's body?"

After a long, pitiful pause he started back, blinking fast, keeping his eyes aimed up into the gold coin pattern the falling sun made high in the leaves of the trees.

Carrie stood up when he came out of the forest, wiped her hands on her shorts, and met his gaze. Then she turned away and moved under the bridge, watching her toes in the wet gravel at the water's edge.

He saw her standing there, arms limp at her sides, her bare feet planted firmly apart, the sun making little spun highlights in her hair. There was an unmistakable strength in the line of her stance, from her ankles up her long and perfect legs, over her hips and on up to the almost careless hang of her shoulders. Before she turned away he could see her full lips, the nose so narrow and clean, her expressionless, noncommittal eyes beneath a broad forehead.

At the first rough touch of his face against hers, she

turned to him. It may very well have been the first time in her life that she had ever really seen him crying. . . .

They sat at the mouth of the bridge in the waning light of a burnt-orange sun which flashed like golden teeth through the trees.

Cam's legs were folded under him and his eyes were closed, making a furrow between them, and his fingertips hung limp to touch the earth. Opposite him knelt the blonde girl, staring intently at his closed eyes. Zoe stood further down the bank, watching.

"Now he's lost his ball," crooned the boy, swaying almost imperceptibly.

"And now she's setting out paper plates and cups on the trailer table," answered Carrie, shutting her eyes to be certain.

Far down the bank, where the river wound on to the old mill, a bird flew off in the direction of the dying sun.

"He's wandering back to the trailer now, slowly, biting his fingernail."

"The pot's ready . . . Now she's calling the kids to supper." She placed her hands on her thighs and swayed slightly.

"Down to the end of the trailer where he thinks she won't see him. He knows it'll be too dark to play by the time he's finished eating. He's trying to pretend he hasn't heard. . . ."

"She's smiling and going to the door—leaning out. . . ."

In the tops of the trees, for the first time all day, a breeze stirred and swished.

"He knows his two sisters are coming . . . he's turning to watch them go inside——"

"And she's smiling at them as they come through the door, asking them if they've washed their hands. . . ."

"And . . . he's turning to go in . . . *help me.*"

"What——"

"Is she coming out after——"

"No. She'll give him another couple of minutes, she's thinking."

"He's standing there, expecting her to call again. . . ."

"Anyone around?"

Listening, Zoe began to walk towards them.

"No. No other kids playing around."

"She's going to give him another minute, Cam. . . ."

"Then . . . " His fingers rubbed his temples. "Then . . . NOW!"

With a start, Carrie opened her eyes.

He went rigid for a moment, and fell forward on to the ground before her. And that was all.

Carrie did not move.

The forest air hummed with silence at the end of the day.

Zoe put out her hand, hesitated, then bent to touch him. And that was all.

At the first leap of flame, Carrie let the match drop on to his body.

From the other side of the river Zoe could see the splash of flame caught reflected in the black water. The sticks burned quickly, turning the pyre into a bright, angular frame in the night.

In the glow, Carrie jumped back from the flames.

"Zoe!" she screamed in an animal scream. "ZOE!"

She crossed the bridge and ran up to her side. Carrie was still shaking, fists clenched at her sides.

She seemed to be groping for words, staring ahead into the fire. Finally she said, in a strained voice, "He came back. At the last minute, he—*came back*!"

Zoe made a choked sound in her throat.

"I could see—through the fire—I could see his eyes open!" She dropped to her knees. "He wasn't gone. He tried to yell something about not making it all the way, he tried to yell while he had a chance——" Her face was not distorted but the tears ran down her seared cheeks. "Something went wrong!"

She began rocking slowly, eyes not fixed on anything, saying what had to be said.

Dry twigs popped and sputtered. Something bubbled away into steam.

"Something must have frightened the little boy at the last second . . . the contact wasn't complete—only halfway . . . he was caught between the two bodies . . . he hadn't settled into the boy's all the way yet. . . ." Her mouth twisted up and she sobbed heavily, hoarsely.

The fire flared up suddenly against the darkness.

The girl on her knees let herself fall forward on to the ground. Her light hair tossed forward and was singed.

Zoe walked back along the river, turning her face into the night.

Much later, when the forest darkness had deepened like velvet around the pointed fingers of the treetops, Zoe came back along the water's edge to the pile of dying embers.

The other girl lay in almost the same spot as before, but she had rolled over on to her back and was now sweeping her dulled eyes back and forth across the heavens. Antares was ablaze in its full brilliance in the southern sky. Occasionally something sputtered and died in the orange-red glow beyond the top of her head. Her face and neck and arms and legs were greasy with perspiration and dirt. The dry lips were parted, and her breathing deep and rhythmic.

Zoe stood over her for a while, then helped her to stand. Slowly, Zoe supporting her, they started down towards the bridge.

From the middle of the bridge, the pyre was a dying flicker.

"I'm all right." Zoe let her go and she stepped to the rail.

"Before we started, I asked if we could see him—see the one he'll be—after the transfer. He said he didn't know. I told him that when I probed the mother, she was thinking about moving the trailer out in the morning. He said to come to the camp early and he'd try to make himself visible as they move out. He said he'd like a glimpse of us,

too, before moving on, because . . . because he didn't know how long it would be, or if we'd ever——"

Something ran from her eye, but she let it go.

"He explained again that he would be gaining by absorbing the other's mentality, and that the only loss would be in aloneness. I asked him what about us and he didn't answer at first. Finally he said we'd probably have to make a transfer, too, before long. Then he said something about looking for each other from time to time—that is, if our transfers don't take us too far away. Then . . . well, the rest we didn't say with words."

She waited. Zoe came up alongside her and leaned on the rail.

Carrie was standing straight once more and almost proud. Almost.

"You know . . . he—the little boy—has two sisters—two little girls to grow up with again." When she looked at Zoe, she had the faintest beginnings of a smile on her lips.

Which didn't last.

"But it wasn't complete. . . . We lost half of Cam tonight, you know. . . . He came back—half-way—and it wasn't—complete."

The water lapped steadily at the sand. As it sloshed back out each time, a portion of the faint glow was pulled with it to be shattered as a warm wind came up and strafed the river's surface.

And then, after a long, quiet waiting, the rest had to be said, in a voice that broke long before it was finished.

"And so we'll go tomorrow morning, early, just after dawn, and we'll look for him—and maybe, if we're lucky, we'll see him as he climbs into the car with his sisters to start on the trip. But maybe . . . maybe he won't move out tomorrow, after all. Maybe the mother will change her mind. Maybe he'll be out playing with the other little kids in the morning camp. And you know, Zoe, he won't be . . . too hard to spot, if you think about it. . . . All—all we have to do—is look for the one who—who acts sort of

crazy—like—like he just has maybe half a mind—the half that didn't get burned up. . . ."

After a long, long time, Zoe was the one who left the bridge and walked back along the water. Somebody had to get rid of the evidence.

THE ETERNAL MACHINES

by

WILLIAM SPENCER

It was a graveyard planet—the junk-pile of the Universe—but its sole keeper had a use for many of the machines discarded by humanity: to build a memorial for mankind.

Rosco checked the scope again.

The big shuttle ship was arcing in smoothly on a re-entry curve. The speck of light on the screen, indicating her position, was crossing the hairlines of range and altitude at pre-programmed intervals. It was going to be a routine landing.

In a moment now, the glowing hull of the vast ship would break through cloud-base on flaring jets, closing in for a touch-down on the scarred slag of the landing apron, which lay a few hundred yards from Rosco's control centre.

The growing thunder of the jets affronted Rosco's ears, setting a panel vibrating in the transparent dome over his head.

The process of landing was completely automated. There was really nothing for Rosco to do. He deliberately turned away from the big curving window that overlooked the landing zone, and went through a pretence of checking over some racks of telecommunications equipment on the far side of the control room.

He'd seen too many of these unmanned shuttle ships come simmering in for a landing on the dusty grey surface of the planet. Watched them settling on a cone of flame, blistering down through unsteady waves of boiling atmosphere. Observed the trellis of spidery legs extending on pneumatic joints, the pads at their extremities feeling for a firm purchase on the treacherously hot slag. Then the long ramp telescoping out, and the automatic lift trucks beginning to shuttle up and down with their loads.

So many ships had come and gone that the event no longer excited any particular emotion in him.

Or did it? Perhaps, if he was completely honest with

himself, it did affect him in a subliminal way. The suppressed irritation he felt at the sight of a ship coming in from the inner inhabited planets—planets where men like himself lived—was it a symptom of something deeper?

Were those faint waves of resentment, vague stirrings of uneasiness—were they simply a mask for genuine homesickness and longing for companionship?

Rosco mentally brushed the question aside. For fourteen years the nearest he had been to home was a pale flickering image coming faintly over the interplanetary communications channel. A garbled sound of voices, distorted and chopped around by the dust and ionisation bands of many million miles of space.

Rosco flipped switches on the control panel with unnecessary vigour. Dammit, he didn't regret his decision to take over as warden of Chaos (the name chosen for the outermost planet at the time of its discovery had taken on an unconscious irony in the light of its subsequent use).

All right, so he *had* got just about the loneliest job in the whole system. He liked it that way.

He, Rosco, was the sole human inhabitant of Chaos: a trillion tons of planet with several million tons of assorted junk littering a large part of its sterile surface.

Chaos was the municipal rubbish dump of the whole system. Only they didn't call it a rubbish dump any more. It went by some polite new name. Spoil tip . . .? Infill zone . . .? That was it.

Robot ships shuttled in regularly from the more favoured planets of the system, bringing with them a capacity load of obsolete and unwanted junk of all kinds. Battered and bent relics of metal and polymer, crystal and fibre, outmoded before they could be outworn. The cast-offs from a machine-dominated culture, in which only the latest devices, the newest techniques, the most get-ahead styling, were acceptable in civilised circles. The dented detritus of the march of progress—a march that was breaking into a run.

The ships came in, unloaded their quota of junk, and

scooped up a load of high-grade niobium ore. Then they were off again.

Weight of ore removed exactly balanced the incoming mass of junk. And so Chaos remained nicely in her orbit, not nudging inwards towards her more lovely sisters, or swinging outwards on a flighty new orbit in the depths of space.

Rosco looked out now at the ship safely sitting on the landing apron, enshrouded in shimmering waves of heat, and saw that the automatic trucks were already engaged in their work of shuttling to and fro up and down the ramp.

He checked off the entry in the arrivals log, and began to close down the control room for the night.

There was nothing more he need do. The job of unloading would carry on without intermission through the hours of darkness, as the trucks streamed back and forth, following the sonic sensors in their sensitive noses.

He could safely turn in. In the morning, according to schedule, the big freighter would have left. Another ship come and gone in the dozens of identical grey ships that were his sole companions and visitors on this lonely planet, with its sterile surface unquickened by life of any kind, wrapped in an inert atmosphere of nitrogen, krypton, and argon.

Rosco padded through into the living quarters attached to the control dome.

They had the functional, unlovely air that any accommodation tends to have when a man runs it purely for his own convenience, without regard for appearances.

On a table by the window was a tumble of old books, piled up in apparent disorder, mostly old-fashioned histories of technology and out-of-date manuals and catalogues. The collection revealed Rosco's sole self-indulgence, his one concession to human weakness.

Usually the ships brought in a few new reference books on each visit, a sealed package being specially ferried over in one of the trucks and left just outside the airlock of the control dome.

Rosco's superiors at System Headquarters indulged his odd obsession, despite its unmodish air. Everybody needed to have his small hobby, this much was granted. And Rosco was a good warden, the best they'd had for the greater part of a century. He never complained about the loneliness, or requested home leave. One day, they were going to have quite a difficult job replacing him.

Rosco selected a book from the pile, to read while chewing his way through the pre-cooked supper. Later, he took a shower, and then settled down in his bunk to enjoy the copy of "The Development of the Centrifugal Motor" (Accra, 2035).

He adjusted the angle of the reading light and the height of the pillows to his satisfaction and prepared to read himself asleep.

It was three hours after dawn when Rosco rose again, the light streaming into the sleeping quarters through the round window, and a babble of electronic music coming from the time-sequencer.

The big freighter had gone, and it would be three days before another came smouldering in down the landing beam.

Each day on Chaos was thirty-five hours long. The sun gleamed, a pale disk, through the high layer of grey dust that hid the stars at night.

He had three days of solitude. Over a hundred hours of complete isolation. Or, if you preferred to look at it that way, three days when he was undisputed king of the planet. There was no one to challenge his authority, not even an intelligent robot.

Rosco finished a leisurely breakfast, then rode one of the utility trucks out through the dumps which surrounded the landing zone and occupied vast tracts of the planet's surface.

As the truck rolled along the dusty metalled road, Rosco watched the walls of junk slipping past on either side. The debris of civilisation lay piled up in fantastic profusion. A

tangle of broken domestic gadgets, dead robots, crashed jetplanes, bruised rotor-craft, fragments of electronic sub-units, communications gear, and mangled computers.

The detritus of a society of dedicated consumers. To Rosco, it represented the reckless plundering of the system for minerals and raw materials.

Men had torn the elements out of underground tunnels, sucked them out of the air, or sieved them out of the seas. Fashioned them into devices of extraordinary complexity. Then, in a matter of a year, or a few months, some new advance had turned the plunder into obsolete junk, fit only for the scrap-heap.

His daily rides through the junk tips had become for Rosco a solemn and deeply satisfying ritual.

He sensed a kind of magnificence in these mountains of tangled artifacts. In death, they revealed a brilliance of conception which, when they had been in use, had often been masked by opaque casings, smooth and glossy shells.

Now the sections of computers, torn out by the roots, showed in the many-coloured intricacy of their connections a sort of technological artistry. The parts of the automated machinery, refined by several centuries of development, had the same sleekness of functional form that appears in a mammal's jawbone or shoulder-blade.

Rosco drove slowly down between the long ridges of the dumps, which humped their serrated backs thirty feet upwards, shutting him in from the skyline. In all directions the flat-topped ridges reached almost the same height, showing the precision with which the dump-trucks had done their work.

His route took him a couple of miles in a ziz-zag course through the grid of intersecting roadways that criss-crossed the dumps, until, near one of the lesser intersections, he stopped the truck and switched off the motor.

Clambering down from the cabin, he walked through an inconspicuous gap in the nearest ridge of debris.

Through the gap, hidden from the roadway, there was a clearing about two hundred yards square. Rosco had

arranged, some time past, for the ground in this area to be left clear of junk. He had done so by the somewhat devious expedient of temporarily re-siting the sonic beacons which gave the dump trucks from the freighters their co-ordinates on the surface of the planet.

The cleared space had become Rosco's own private retreat. An oasis of order in the midst of piled-up disorder. Here he could pursue his obsession undisturbed.

With the loving care of a dedicated collector, he had reassembled some of the original machines from the dumps, salvaging a part here and joining a part there. In the inert atmosphere of the planet, these specimens of human technological equipment might last well over a million years.

Rosco walked slowly through his lines of specimens.

They gave him a sense of achievement, a deep inward satisfaction. But for his intervention, these machines would have disappeared irrecoverably into limbo.

Some of the machines had the hunched look of sleeping giants. Others towered over his head in tall slender forms, with a questioning or admonitory air. He felt the sense of homecoming that a man feels when he comes among friends.

Rosco strolled over towards an infra-red communicator of obsolete design. He rubbed his hand over its flank. This was one of his favourites. He pressed a recessed key that brought it to life.

The machine, after emitting a few brief crackles and coughs through an audio panel in its side, began to recite a poem:

Broken fragments
After brief glory
Discarded,
Now with longing
We remember
Our first subterranean sleep.
Where was the merit
In waking us at all?

The word "subterranean" came out in slightly garbled form, and Rosco made a mental note to clarify the recording some time.

The communicator had scanned the words from a memory bank into which Rosco had written them some years earlier. As the machine read them, it sumultaneously transmitted them down a modulated infra-red beam across the clearing.

At the far side of the clearing was another similar machine. The beam hit its receptors and the message was fed down into the second machine's memory. One minute later, the second machine beamed the message back again.

This mechanised conversation continued to shuttle back and forth until Rosco switched the communicators off.

Rosco, who felt no need for human discourse, derived a kind of wry pleasure from this sterile gossiping of machines. But after three cycles had been completed, he grew tired of the repetitions and stopped the communicators.

Near the centre of the clearing was a computer complex, a sprawling assembly of units of differing design and vintage, which Rosco had coupled together after a certain amount of modification. He remembered the problem which he had fed into it during his last visit, and went over in its direction.

The computer, scanning the air restlessly with its hypersonic probes, emitted a shrill whistling noise indicating that it had sensed his approach.

"Good morning, Rosco," the computer said. "You would like the answer to your problem now?"

Rosco stood in front of the machine.

"Yes, go ahead," he said.

The computer paused briefly, as though scanning its memory, and then announced: "The probability of a meteor obliterating this area, on the basis of the data you gave. The answer is: one hit should occur every 10^{19} years."

"Thank you," said Rosco, smiling.

"Have you any problem for today?"

"No. You may return to a resting state."

Rosco turned away, fully satisfied with the answer. There was nothing to worry about.

Ten-to-the-nineteenth years. At that rate it would have to be a very unlucky meteor indeed that smashed his collection, before that time in the unthinkably remote future when even the inert atmosphere of Chaos had corroded the machines to unrecognisable masses of crumbling rust.

Rosco's personal image of himself took on a new posture of assurance, in the light of this information.

He was the custodian of the most durable museum in the system—perhaps even in the entire cosmos. When the men who had first made them were forgotten dust, these machines would still be standing in immaculate completeness.

The men had consigned the machines to the scrap-heap. Now it was the machines, in effect, who were relegating the men to oblivion. There was a kind of justice in it, really.

He looked round him at the ranks of the machines he'd salvaged. But for him, they would have remained tangled, useless, all-but-unidentifiable wrecks. Now they were launched on a career of unthinkable duration and majesty.

Rosco knew that he could not share the longevity of the machines. His metabolism was still burning itself up at the same rate, feeding on oxygen recycled in the hydroponics installation, topped up by extra supplies brought in by the freighters. Several big pressure cylinders, each containing a ton of the gas, were always cached in the main store, ready to be bled off as needed.

But although his life-span, measured against the cosmic scale, was only a moment, he was preparing to perpetuate his own image for as long as the museum lasted.

His genius—the far-sightedness of the man who had created a memorial to outlast the whole human race—should surely not be entirely lost to posterity. So at any rate Rosco modestly thought.

He went over to the video rostrum where the master recorder was sited. He usually made a point of not leaving the museum without putting a few memorable thoughts for the day on to tape. Revealing a few new facets of himself to the wondering gaze of future generations.

Rosco ran his fingers over the selector buttons, flipping through some of his early masterpieces of communication. Which did he want to view today? That was it: tape E-73 291. Summing up the whole situation admirably. Just about the best thing he had done.

He had to wait for a few moments while the capsule was being sorted out and loaded on to the tape deck. Then the coloured image of himself—a few years younger, but still recognisably Rosco—began to speak from the video display screen.

"So I came to the conclusion that man was consuming the vital raw materials of the cosmos at an outrageous rate. Greedily feeding on minerals and fossil deposits which he could not possibly replace. Accelerating the process of entropy with reckless haste.

"Man is behaving, in fact, like a spoilt child confronted with a mountainously huge cream cake. He just goes on eating and eating, becoming utterly insensitive, in the long run, to the taste of what he is eating. Losing sight of any enjoyment. Consumed simply by the urge to consume."

Rosco, watching the screen with absorbed interest, nodded his head unconsciously, in agreement with himself.

"Becoming, in fact, no more admirable than a fat worm eating its way through an immense baulk of timber."

Good, good, thought Rosco.

"The point of the exercise, if there is one, has become completely lost in the overwhelming reflex compulsiveness of the whole business.

"Man has even lost sight of the time process. And since his existence has become meaningless, he has no urge to distil the significance of his experience and preserve it for future generations of men—or for the beings who will come later, when man has finally disappeared from the cosmos.

"So I, Rosco, conceived the need for a perpetual memorial to the folly and extravagance of man."

The face, Rosco's face, but full of youthful enthusiasm and idealism, faded from the screen. Rosco nodded thoughtfully as the tape was shuffled back to its proper position in the store.

Then, after positioning the numerous microphones and cameras to his satisfaction, he mounted the rostrum and began to dictate yet another instalment of his interminable memoirs.

So Rosco worked away, cutting, re-casting, and editing his tape, working painstakingly towards the final perfection of expression that always in the end escaped him.

While he did so, events were taking place above his head that would have surprised him.

High above the dust-veiled atmosphere of Chaos, in the outer reaches of the planet's gravitational field, a space craft was in difficulties.

Manned space craft were forbidden to land on Chaos. Their approach might easily have interfered with the work of the automatic craft, shuttling in and out with their rich loads of niobium. Also, in view of the very high price that niobium commanded on the international market, it was considered undesirable to have unauthorised craft landing and blasting off from its valuable surface.

The Homecomer, a six-hundred ton interplanetary short-haul craft with a three-man crew, was having trouble with a couple of vernier motors. The captain of the ship, Dr. Graves, had taken the opportunity of putting her into orbit round the convenient mass of Chaos, while he and his plasma specialist did some investigating.

Working in pressure suits outside the hull, they uncoupled the motors from their mounts and brought them through the main airlock, manoeuvring the half-ton masses of metal with comparative ease in their weightless, though not intertia-less, condition.

The process of stripping down the high temperature

section could not be hurried and took them all of three hours. When they had the parts laid out on an almost surgically clean bench, it was clear that all the main refractories were badly cracked.

"What do you say, Dale?" Graves asked his plasma expert.

The young technologist rubbed his chin.

"Looks like a long job. And a tricky one, too. To do it properly, we need more equipment than we're carrying aboard this ship."

"So we either call up a repair ship, or . . ."

"Is there an alternative?"

"I was thinking of the possibility of landing on the planet. They must have repair facilities down there."

Harley, the navigator, intervened at this point, telling them that only official ships were permitted to land on Chaos.

"Why the ban?"

"Practically the entire planet's made of niobium. They mine it down there for the whole system."

Graves whistled.

"Niobium. Well, that's no problem. We'll just bleep out an ultimate distress signal and they'll have to give us a landing beam. They're compelled to do so, by international law, don't forget. It's as simple as that. I'm certainly not waiting around for three or four days for a repair ship."

The younger men glanced at each other uneasily. Was Graves getting too old for the job? He'd displayed several irrational quirks just lately, and his temper seemed if anything to be getting shorter.

"Ultimate distress?" said Harley slowly. "Isn't that pushing it a little, when we're only missing a couple of verniers?"

The trouble with the verniers could have been avoided if Graves had taken account of the obvious symptoms earlier on, Harley thought privately.

Dr. Graves made a gesture of impatience. "I'll worry

about the law problem when I come to it. Just you send out the signal, that's all."

He turned his back, effectively closing the conversation.

Rosco ran through the new tape again, with mingled feelings of pleasure and regret.

Pleasure, because there were undoubtedly some good things in it, well said. Regret, because he was aware still of the many imperfections that he had failed to eliminate. Perhaps the next time he came to the museum site he might do a little more polishing.

As he switched the video set off and turned to go, his overriding feelings, he decided, were of satisfaction.

He was conscious that, however the rest of the human race might be squandering their energies, he, Rosco, was creating a timeless memorial to outlast them all.

The eternal machines stood round him, as though silently approving his judgment, immobile in the uncorrupting atmosphere.

Rosco looked round once more at the ranks of metallic forms. Then, as he walked back towards the gap in the enclosing wall of debris, his ears caught a distant rumble. Thunderstorms were rare on Chaos. To his trained ear this sounded more like the remote roar of rocket motors.

But surely the next ship was not due for another couple of days?

Flipping a control in his pocket communicator, Rosco interrogated the control centre, which he had left in charge of the automatic programme. The coded response told him that an unidentified ship was coming in on emergency procedure.

Rosco snapped off the communicator. For some reason, the information that visitors were on the way had caused a feeling of foreboding to chill his mind momentarily. Perhaps he had been cut off too long, away from his fellow human beings, to welcome an interruption of his total isolation. After being alone for so long it was a disturbing prospect to have to face his fellow men again. To put on

the assumed smile, and exchange the pleasantries of normal conversation. It was going to be difficult.

The roar of the landing ship grew louder. Rosco reached the roadway where he had left his transport. He'd better get back to the landing zone as soon as possible. Maybe if these people were coming in on an emergency routine, they would need help as soon as they landed. He was fully equipped, back at control headquarters, with all essential medical and surgical gear, as well as a portable diagnostic computer.

Rosco was about to climb aboard the truck and start the motor when the descending ship broke through cloud-base, a few thousand feet up. The hot hull glowed a dull orange as it pierced the grey dust clouds like an enormous sun, touching the undersides of the nearest reefs of cloud with an ominous reddish tinge.

The roar of the motors was a massive wall of sound, reaching down from the ceiling of cloud to the ground under Rosco's feet and setting it quivering.

Rosco paused, half-in and half-out of the truck, watching the big ship as it lumbered downwards, staggering through the concentric waves of sound and heat that shuddered from the labouring motors.

All Rosco's senses were stretched taut and his mind spun wildly without generating any coherent thought. But he seemed to hear a ragged irregular note in the roar of the ship, as though the pilot were juggling the throttles as he fought to establish control.

It was descending the last few hundred feet now, and he became vividly aware of the ship's vast bulk as it leaned across the sky crazily, crabbing sideways in a way that caused Rosco to dive into the cabin of the truck and crash-start the motor, head craning over his shoulder as he did so, to keep the looming ship in view.

He had a wild notion that he would be able to run for it in the truck, escaping from under the searing hot hull of the vast ship, which now seemed to him to blot out most of the sky.

Then he saw where the ship was going to crash, where the impact of the massive hull must come.

Rosco leapt out of the truck, shouting at the top of his lungs. He started to run back into the clearing, through the gap, gesticulating and roaring at the ship. The noise of his shouts were lost in the monumental roar of the motors as the enormous hull careened in above his head.

The men inside the ship, braced in their contoured couches against the inevitable impact, saw on their screens Rosco running forward madly. But now they were unable to influence the outcome one way or another.

The ship struck a few yards from the centre of Rosco's museum. Great waves of flame engulfed it, and there were a series of sharp explosions as those of the exhibits which had not been destroyed by impact were gutted by the flames.

Then, for a few moments, there was something approaching silence.

When the shaken men from the interior of the ship clambered out in their space suits and walked unsteadily across the scorched ground, there were only a few sparse tongues of flame licking at the twisted skeletons of those machines which had contained combustible material.

They found Rosco lying face downwards near the gap. When they turned him over they could see where a splinter of metal from an exploding machine had pierced his visor and gashed his forehead.

Quickly, Dr. Graves sealed the punctured helmet with a plastic compound and turned up full oxygen inside the pressure suit, pressing Rosco's sternum rhythmically with the ball of his hand.

It was no use. Rosco must have been dead already by the time they reached him.

After a few minutes of persistent effort, when it was clear that resuscitation would not succeed, Dr. Graves turned to his companions and spread the open palms of his hands outwards in a gesture of hopelessness.

The three of them stood for a moment in a leaden trance,

looking round them at the remains of Rosco's smashed museum. The machines still retained in their twisted destruction a sense of ordered arrangement, rank upon rank, contrasting with the confused piles of debris surrounding them.

Harley approached one of the nearest relics, which towered above him in an attitude that might have suggested, to an imaginative eye, a grotesque kind of supplication, a pleading for justice from whatever powers were in control of the cosmos.

But it suggested nothing of the kind to Harley. He was merely trying to decipher what the original purpose of the machine had been.

He was looking at the funerary relic of the infra-red communicator. But the design was so outmoded that Harley, who had no taste for antiquarian studies, could make nothing of it.

He was about to turn away, having lost interest in the problem. Then some obscure electro-mechanical process in the remains of the machine—it could have been warping induced by the progressive cooling of the scorched shell—caused the communicator to snap into action.

Once again the discs in the memory bank began to rotate, but their records had been irreparably damaged by the heat, and by shock waves from the explosions nearby.

The most the communicator could manage was a kind of strangled cough, and then :

"Broken frags. . . ."

A pause, another cough, and again :

"Broken frags. . . .
"Broken frags. . . .
"Broken frags. . . .
"Broken frags. . . ."

Harley turned to his companions with a puzzled grin on his face.

Then he turned back to the communicator.

"Broken frags. . . .
"Broken frags. . . .
"Broken frags. . . ."

Harley stepped closer to the machine.

"Damn stupid thing," he said, without any particular emotion in his voice.

He gave the flank of the communicator a sharp kick with his space boot, and it lapsed finally into silence.

A ROUND BILLIARD TABLE

by

STEVE HALL

The cloak of invisibility could be a useful asset in many walks of life, but there would almost certainly come a time when the asset would become a liability....

A ROUND BILLIARD TABLE

HAVE you ever heard the story about the billiard table maker who gets a call from an eccentric millionaire? The millionaire mentions who he is, and having established confidence in himself, asks for a special table to be made. He is told they will be delighted to produce whatever he wants, but that there will be extra charges, of course, depending on how special the requirements are. Well; he reels off: he wants the table to be round instead of oblong (considerable consternation at this but if *he* wants it, O.K.); then he says something about the table having only one pocket instead of six and that pocket to be in the middle (only mild shock at that one) and Mr. Moneybags also wants trimmed mink fur for the bed and cushions instead of green baize. There are other details, but you get the idea. The guy is a fruit-cake from way back, but who cares? If he's got the money, they can make the table for ten thousand of the best. "O.K.," says Mr. M., "go ahead, and let me know when it's ready."

The billiard table maker strains every nerve and finishes the job in three weeks. He rings up the millionaire to give him the good news—only to be told that the guy with the money has changed his mind. You finish your tale by looking your listener straight in the eyes and saying with a very confidential air: "So if you know of anyone who wants a round billiard table with one pocket in the middle and a mink fur bedding and cushions, I can tell them where there's one going cheap." Crazy isn't it? Well, I was reminded of this yarn by something which happened to me a few months back.

There were delegates to the European Fiction Writers' Convention at Amsterdam from all over and the whole function had gone like a bomb. On the third and last

evening, a bunch of us were together in the bar and the conversation had got around to Wells' *Invisible Man*. We continentals, including the contingent from Amsterdam itself, thought it was pretty good—an intriguing conception—and we were saying so. There were plenty of speculations about what you could do if you were invisible (some of them pretty ribald) when all of a sudden a new voice breaks into the conversation.

"That's all very fine," it drawls, "but if you *were* invisible you wouldn't see a thing."

We really take in the newcomer for the first time. He is a tall, languid type with a full, rather florid face and a guard's moustache, and he has a built-in, fancy cigarette holder.

Oh-ho, I think, a chair-borne iconoclast, and I'd had just enough schnapps to be argumentative myself.

"Do go on," I say, in my best English accent.

He gives me a condescending nod. "Well, it's like this—to be invisible, an object must be completely transparent, i.e. light must pass straight through it without being reflected—are you with me?"

I play him along. "Not quite—why *must* light not be reflected?"

He raises his eyebrows at my ignorance. "Don't you see? If light *was* reflected, only slightly, we'd see the thing it was bouncing off, just as we can see a sheet of glass."

"So?" I prompt.

"So if our subject is to be completely invisible, he'd inevitably be blind because his eyes would have to be absolutely transparent—and if they *were*," he paused to puff at his cigarette before taking us into the secret, "if they *were*, he wouldn't see a damned thing, because the light wouldn't impinge on his retinas and form an image of what he had before him. It would seem to him as if he was in utter darkness." He finished on a note of triumph for knowledge over ignorance.

"And so you think invisibility is the bunk?"

I could see the rest of the crowd drifting off. They could

tell the sort of purist he was and they knew the sort of joker I was, and they weren't in the mood for either. I had the know-all to myself.

The Englishman fell into the trap. "Of course it is—completely so."

I took a good swig of schnapps and let him wallow in his conviction for a moment. "What if I told you that I could make something invisible?"

"Then I'd say you were trying to have me on, old boy."

"You don't think it's even remotely possible?"

"I've told you," he said, impatiently, "it's right out of the window—and I'm prepared to bet on it." He pulled out some travellers' cheques and thumped them on the bar counter. "There you are."

His type is always ready to try and ram their opinions down your throat by the argument of currency, to them money talks the loudest.

I appeared to hesitate. "I wouldn't want to take your money, Mr. . . . er . . . ?"

"Lloyd," he said, quickly, "and I insist you take it—if you can do what you say—is it a bet?"

"All right," I said, and covered his money. This took the wind out of his sails, he had been expecting me to back down. "The bet is that I can't make some solid object of my own choice completely invisible."

That seemed explicit enough so there was little he could object to.

"Right," I said, "let's go."

"To where?" queried Lloyd, suspiciously.

"Around to the lab where I work—I'll give you a demonstration and take my money," I reached for the little pile on the bar.

"Just a minute," objected Lloyd, "you haven't won it yet—I'll take it." He took a long look at me, evidently working out whether I was likely to roll him for his roll, then decided that he was enough bigger than me to rule out that angle.

We went around to the lab at the Tech. Old Willi, the

caretaker, let us in, grumbling a little at the lateness of the hour. I promised that we'd let ourselves out and lock up safely, which mollified him somewhat.

"See that you do, Professor Schroeder," he mumbled, and tottered off to his quarters.

Lloyd looked around the experimental electrical lab. "Well, let's see your vanishing trick."

I searched around in a drawer for what I wanted. "Are you a scientist yourself?"

"No," he admitted, "but it's a demonstration I want not a lecture."

"That you *shall* have," I promised. "Do you want to call off the bet before I do it!"

He'd been getting more apprehensive, but my apparent willingness to let him back out hardened his resolve. He thought, now, that my game was to spoof him into submission without doing anything.

"No," he said, "the bet stands."

"So be it," I said, and showed him what I'd taken out of the drawer. "If I make these two glass marbles invisible, will you be satisfied?"

He took them from me and examined them closely looking for the catch. There wasn't one, they were ordinary marbles; hard, spherical, and with the faintest tinge of green about them—and easily visible.

I handed him the tray of a match-box.

"Put them in there and hold them for a moment."

On the bench to my right was the Multiple Polariser which we'd developed.

I opened the door to its operating chamber and motioned to Lloyd. "Put them in there yourself."

He squinted inside before he did so, but there's not much to see except the turns of the high frequency coils in the sides; the electrostatic plates are at the top and bottom of the chamber.

I closed and dogged shut the door, then went to the control panel and switched on the juice.

"Five minutes ought to do it."

Lloyd didn't say anything while the seconds ticked away. Beads of nervous perspiration formed on his forehead, though, and he lit a cigarette, forgetting even to use his holder.

The time was up so I opened the door.

"Take the box out yourself," I offered.

"It's not hot in there, is it?"

"No."

Gingerly, he reached in and took hold of the little tray. I could hear the marbles rolling and clicking as he brought it out. He thought the sound effects were coming from somewhere else, though, when he saw the tray apparently empty.

"Feel them," I said, quietly.

"I've seen this trick before," he said, "the marbles are not in there, are they?"

"Feel them," I repeated.

Lloyd poked around with his forefinger until he did so and the expression on his face was incredulous as he located the invisible spheres. His hands shook only too visibly.

"Don't tip it," I said, "or we'll lose them." I spread my handkerchief on the bench. "Put the tray down here."

He did as I told him.

"Now turn it over slowly."

Again he followed my instructions, feeling gently over the cloth and picking up the transparent, invisible marbles one at a time between thumb and forefinger and holding them up to the light.

"All right," he said finally, "you win—how's it done?"

I took the marbles and my handkerchief back and put them in my jacket pocket.

"It's a laboratory curiosity," I said. "As you said earlier, if you make something *perfectly* transparent you can't see it—that's what we've done. An ordinary piece of glass is really highly translucent. This gadget of ours rotates the planes of the glass molecules so that light will pass between them without reflection—hence invisibility q.e.d."

"But what are you doing with it?"

"Nothing," I said flatly, "it's just a laboratory freak that works with translucent materials, and it's only a temporary effect anyway."

"You mean that the marbles will become visible again?"

"Yes. In about forty-eight hours the molecules will slip back to their normal positions rather like induced magnetism will disappear from a piece of soft iron in fairly short order."

Lloyd parted with the stake money after I'd reminded him and I ushered him out. And that, I thought, was the last I'd see of him.

However, two days later, just as I was about to pack up for the evening, he turned up again with another man, a sneaky-looking runt with ferret eyes.

"Good evening, Professor Schroeder," said Lloyd heartily, sticking out his right hand.

"What brings you here?"

He winked. "I've got a friend of mine who doesn't believe in invisibility, and we've got a bet on—will you demonstrate again for us?"

"I haven't got time for any more jokes," I said.

"Oh, come on—you took *my* money, give me a chance to get some back—play the white man."

It's probably simpler to do it than argue, I thought. "All right, come in." I led the way to the Polariser and fumbled in the drawer for the marbles which were back to normal again.

"Don't bother," said Lloyd. "My friend's brought some samples of his own."

The ratty little man took a match-box from his pocket, pushed out the tray and showed the contents to me. Inside, six identical cut-glass beads winked and sparkled.

I opened the door. "O.K. put them in."

The little man did so and watched like a hawk while I closed it again.

"Those are hard glass crystals," I commented, "better give them eight minutes to cook."

Finally, the little man took his match tray back and peered in. The contents were invisible on schedule. He wasn't satisfied, though, until he had felt each one carefully and then he stowed them away in a little velvet sack. Next, he made his one and only comment to Lloyd: "You were right."

I let them out. "Look," I said to Lloyd, "*don't* make a habit of this, we're not here to perform to order."

"Of course, my dear chap, of course."

And that really is the last of Lloyd, I thought. "Don't forget," I repeated, "don't come again."

"I'm going home on tonight's flight," he replied, "don't give it another thought."

They hurried off.

A week later, old Willi came into my study and told me that there were two gentlemen to see me.

"What do they want?"

"I don't know, Professor, they said it was a private matter."

"Bring them in, then."

A few seconds later, Lloyd and the runt stalked in, both loking a little haggard.

"What the devil do you want?" I expostulated. "I told you *not* to come back."

Lloyd waved a placating hand.

"We won't keep you a moment—I hope."

"Well, what is it?"

"Those glass beads you made invisible for us—they're still invisible."

"Nonsense," I snorted, "that was seven days ago, they'd have reverted by now."

By way of answer, the little man silently took a matchbox from his pocket and shook it gently. It rattled. He pushed the drawer open and let me look inside. I couldn't see anything, and felt with my fingers. There were six objects inside—faceted objects.

"You've got some freak glass there," I commented, as

innocent as a new-born babe, "maybe it'll take a little longer to switch to normal again—harder glass always does."

They exchanged curious glances.

At length, Lloyd beat his companion by a whisker in asking the sixty-four dollar question. "How long?"

"I don't *know* exactly," I said irritably, fed up with their concern over a few cut-glass crystals. "A few weeks, maybe."

"Suppose it wasn't glass?" persisted Lloyd.

The runt shot him a warning look, but the Englishman ignored it.

"How long would it take, say, if it was diamond?"

I got the message at last. "Were they?"

Again they exchanged looks, this time more soul-searching ones, and this time the little man nodded his agreement to Lloyd. The Englishman hesitated for a moment longer and then shot the whole works.

"Look, I'm in the gem business at Hatton Garden—I'm not the owner or anything like that, but I buy and sell stones for the company. I was combining business with pleasure when I came over for the writers' convention last week."

"And you thought up a little extra-curricular business after my demonstration," I finished. "Like smuggling some invisible diamonds into England?"

"That's about the size of it," admitted Lloyd. He gestured to his undersized companion. "We're partners in the operation—we've sunk all our cash in it."

"And it'll stay sunk," I said, baldly. "You're a pair of fools."

Lloyd ran a nervous finger around his collar. "Why do you say that?"

"As far as I know, the rotation of the molecular planes is a one-way process," I explained. "They slip back to normal of their own volition—nothing we have ever been able to do has hastened it or slowed it down in glass."

"Then you *haven't* experimented with diamonds?" queried Lloyd, doubtfully.

I shook my head, amazed that a man in the diamond business could fail to see the obvious. "Hard glass takes longer to revert than the ordinary variety, and the harder it is the longer it takes. *Now, as you know, the diamond is the hardest substance known—would you take any chances on experimenting with them?*"

His face whitened. "But can't you reverse the process somehow?"

I shook my head definitely.

"You'd better think of one," said the little man in an ugly voice.

"And you two had better think of this," I said, getting to my feet. "You've just admitted smuggling, now you're adding threats to your repertoire—I wonder what the boys in blue will think of that?" I walked over to the door, opened it, and jerked my thumb. "Out!"

Lloyd wasn't a fighter really, and as I've said, the other one was just a runt, mentally as well as physically, once his bluff was called. They drifted out uncertainly like a couple of collapsing detergent bubbles on a slow stream.

Sometimes I see Lloyd wandering around—he's always got the matchbox with him and he always sidles up to me to ask if I know of a way to help him. He never mentions the runt and I've never seen him. But my answer's always the same: "Sorry."

So if you know anyone who'd like to buy half a dozen invisible diamonds . . .

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