

MAJOR OPERATION by James White

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Other BOOKS BY JAMES WHITE

The Secret Visitor (1957)
Second Ending (1962)
Deadly Litter (1964)
Escape Orbit (1965)
The Watch Below (1966)
All Judgment Fled (1968)
The Aliens Among Us (1969)
Tomorrow Is Too Far (1971)
Dark Inferno (1972)
The Dream Millennium (1974)
Monsters and Medics (1977)
Underkill (1979)
Future Past (1982)
Federation World (1988)
The Silent Stars Go By (1991)
The White Papers (1996)
Gene Rodden berry's Earth:
Final Conflict-The First Protector (Tor, 2000)

THE SECTOR GENERAL SERIES

Hospital Station (1962)
Star Surgeon (1963)
Major Operation (1971)
Ambulance Ship (1979)
Sector General (1983)
Star Healer (1985)
Code Blue-Emergency (1987)
The Genocidal Healer (1992)
The Galactic Gourmet (Tor, 1996)
Final Diagnosis (Tor, 1997)
Mind Changer (br, 1998)
Double Contact (br, 1999)

INVADER

Far out on the Galactic Rim, where star systems were widely scattered and the darkness nearly absolute, the tremendous structure which was Sector Twelve General Hospital hung in space. Inside its three hundred and eighty-four levels were reproduced the environments of all the intelligent life-forms known to the Galactic Federation, a biological spectrum ranging from the ultra frigid methane species through the more normal oxygen- and chlorine-breathing types up to the exotic beings who existed by the direct conversion of hard radiation. In addition to the patients, whose number and physiological classification was a

constant variable, there was a medical and maintenance staff who were composed of sixty-odd differing life-forms with sixty different sets of mannerisms, body odors and ways of looking at life.

The staff of Sector General was an extremely able, dedicated, but not always serious group of people who were fanatically tolerant of all forms of intelligent life-had this not been so they could never have served in such a multienvironment hospital in the first place. They prided themselves that no case was too big, too small or too hopeless, and their facilities and professional reputation were second to none. It was unthinkable that one of their number should be guilty of nearly killing a patient through sheer carelessness.

"Obviously the thought isn't unthinkable," O'Mara, the Chief Psychologist, said dryly. "I'm thinking it, reluctantly, and you are also thinking it-if only momentarily. Far worse, Mannon himself is convinced of his own guilt. This leaves me with no choice but to-"

"No!" said Conway, strong emotion overriding his usual respect for authority. "Mannon is one of the best Seniors we have-you know that!"

He wouldn't. . . I mean, he isn't the type to. . . He's..

"A good friend of yours," O'Mara finished for him, smiling. When Conway did not reply he went on, "My liking for Mannon may not equal yours, but my professional knowledge of him is much more detailed and objective. So much so that two days ago I would not have believed him capable of such a thing. Now, dammit, uncharacteristic behavior bothers me..."

Conway could understand that. As Chief Psychologist, O'Mara's prime concern was the smooth and efficient running of the hospital's medical staff, but keeping so many different and potentially antagonistic life-forms working in harmony was a big job whose limits, like those of O'Mara's authority, were difficult to define. Given even the highest qualities of tolerance and mutual respect in its personnel, there were still occasions when friction occurred.

Potentially dangerous situations arose through ignorance or misunderstanding, or a being could develop a xenophobic neurosis which might affect its efficiency, mental stability, or both. An Earth-human doctor, for instance, who had a subconscious fear of spiders would not be able to bring to bear on one of the insectile Cinrus skin patients the proper degree of clinical detachment necessary for its treatment. It was O'Mara's duty to detect and eradicate such trouble, or to remove the potentially troublesome individuals. This guarding against wrong, unhealthy or intolerant thinking was a duty which he performed with such zeal that Conway had heard him likened to a latter-day Torquemada.

Now it looked as if this paragon of psychologists had been something less than alert. In psychology there were no effects without prior cause and O'Mara must now be thinking that he had missed some small but vital warning signal-a slightly uncharacteristic word or expression or display of temper, perhaps-which should have warned him of trouble developing for Senior Physician Mannon.

The psychologist sat back and fixed Conway with a pair of gray eyes which saw so much and which opened into a mind so keenly analytical that together they gave O'Mara what amounted to a telepathic faculty. He said, "No doubt you are thinking that I have lost my grip. You feel sure that Mannon's trouble is basically psychological and that there is an explanation other than negligence for what happened. You may decide that the recent death of his dog has caused him to go to pieces from sheer grief, and other ideas of an equally uncomplicated and ridiculous nature will occur to you. In my opinion, however, any time spent investigating the psychological aspects of this business will be completely wasted. Doctor Mannon has been subjected to the most exhaustive tests. He is physically sound and as sane as we are. As sane as I am any..."

"Thank you," said Conway.

"I keep telling you, Doctor," O'Mara said sourly, "my job here is to shrink heads, not swell them. Your assignment, if we can call it that, is strictly unofficial. Since there is no

excuse for Mannon's error so far as health and psycho profile are concerned I want you to look for some other reason-some outside influence, perhaps, of which the Doctor is unaware. Doctor Prilicla observed the incident in question and may be able to help you.

"You have a peculiar mind, Doctor," O'Mara concluded, rising from his seat, "and an odd way of looking at problems. We don't want to lose Doctor Mannon, but if you do get him out of trouble the surprise will probably kill me. I mention this so that you will have an added incentive . .

Conway left the office, fuming slightly. O'Mara was always flinging his allegedly peculiar mind in his face when the simple truth was that he had been so shy when he had first joined the hospital, especially with nurses of his own species, that he had felt more comfortable in extraterrestrial company. He was no longer shy, but still he numbered more friends among the weird and wonderful denizens of Traltha, Illensa and a score of other systems than beings of his own species. This might be peculiar, Conway admitted, but to a doctor living in a multi-environment hospital it was also a distinct advantage.

Outside in the corridor Conway contacted Prilicla in the other's ward, found that the little empath was free and arranged a meeting for as soon as possible on the Forty-sixth Level, which was where the Hudlar operating theater was situated. Then he devoted a part of his mind to the problem of Mannon while the rest of it guided him toward Forty-six and kept him from being trampled to death en route.

His Senior Physician's armband automatically cleared the way so far as nurses and subordinate grades of doctors were concerned, but there were continual encounters with the lordly and absentminded Diagnosticians who plowed their way through everyone and everything regardless, or with junior members of the staff who happened to belong to a more massive species. Tralthans of physiological classification FGLI-warm-blooded oxygen breathers resembling a sort of low-slung, six-legged elephant. Or the Kelgian DBLFs who were giant, silver-furred caterpillars who hooted like a siren when they were jostled whether they were outranked or not, or the crab-like ELNTs from Melf LV...

The majority of the intelligent races in the Federation were oxygen breathers even though their physiological classifications varied enormously, but a much greater hazard to navigation on foot was the entity traversing a foreign level in protective armor. The protection required by a TLTU doctor, who breathed superheated steam and whose gravity and pressure requirements were three times those of the oxygen levels, was a great, clanking juggernaut which was to be avoided at all costs.

At the next intersection lock he donned a lightweight suit and let himself into the yellow, foggy world of the chlorine-breathing Illensans. Here the corridors were crowded with the spiny, membranous and unadorned denizens of Illensa while it was the Tralthans, Kelgians and Earth humans like himself who wore, or in some cases drove, protective armor. The next leg of his journey took him through the vast tank where the thirty-foot long, water-breathing entities from Chalderescol II swam ponderously through their warm, green world. The same suit served him here and, while the traffic was less dense, he was slowed down considerably through having to swim instead of walk. Despite this he was on the Forty-sixth Level observation gallery, his suit still streaming Chalder water, just fifteen minutes after leaving O'Mara's office, and Prilicla arrived close behind him.

"Good morning, friend Conway," said the little empath as it swung itself deftly onto the ceiling and hung by six fragile, sucker-tipped legs. The musical trills and clicks of its Cinruskin speech were received by Conway's Translator pack, relayed down to the tremendous computer at the center of the hospital and transmitted back to his earpiece as flat, emotionless English. Trembling slightly, the Cinruskin went on, "I feel you needing help, Doctor."

"Yes indeed," said Conway, his words going through the same process of Translation and reaching Prilicla as equally toneless Cinruskin. "It's about Mannon. There was no time to give details when I called you..

"No need, friend Conway," said Prilicla. "On the Mannon incident the grapevine is

more than usually efficient. You want to know what I saw and felt, of course.

"If you don't mind," said Conway apologetically.

Prilicla said that it didn't mind. But the Cinruskin was, in addition to being the nicest entity in the whole hospital, its greatest liar.

Of physiological classification GLNO-insectile, exoskeletal with six pipe stem legs and a pair of iridescent and not quite atrophied wings, and possessing a highly developed empathic faculty, only on Cinruss with its one-eighth Earth gravity could a race of insects have grown to such dimensions and in time developed intelligence and a high civilization. But in Sector General Prilicla was in deadly danger for most of its working day. It had to wear gravity nullification devices everywhere outside its quarters because the gravity pull which most beings considered normal would instantly have crushed it flat, and when Prilicla held a conversation with anyone it swung itself out of reach of any thoughtless movement of arm or tentacle which would have caved in its fragile body or snapped off a leg. While accompanying anyone on rounds it usually kept pace with them along the corridor walls or ceiling so as to avoid the same fate.

Not that anyone would have wanted to hurt Prilicla in any way-it was too well liked for that. Prilicla's empathic faculty saw to it that the little being always said and did the right thing to people-being an emotion-sensitive to do otherwise would mean that the feelings of anger or sorrow which its thoughtless action caused would bounce back and figuratively smack it in the face. So the little empath was forced constantly to lie and to always be kind and considerate in order to make the emotional radiation of the people around it as pleasant for itself as possible.

Except when its professional duties exposed it to pain and violent emotion in a patient, or it wanted to help a friend.

Just before Prilicla began its report Conway said, "I'm not sure myself what exactly it is I'm looking for, Doctor. But if you can remember anything unusual about Mannon's actions or emotions, or those of his staff. .

With its fragile body trembling with the memory of the emotional gale which had emanated from the now empty Hudlar theater two days ago, Prilicla set the scene as it had been at the beginning of the operation. The little GLNO had not taken the Hudlar physiology tape and so had not been able to view the proceedings with any degree of involvement with the patient's condition, and the patient itself was anesthetized and scarcely radiating at all. Mannon and his staff had been concentrating on their duties with only a small part of their minds free to think or emote about anything else. And then Senior Physician Mannon had his... accident. In actual fact it was five separate and distinct accidents.

Prilicla's body began to quiver violently and Conway said, "I... I'm sorry.

"I know you are," said the empath, and resumed its report.

The patient had been partially decompressed so that the operative field could be worked more effectively. There was some danger in this considering the Hudlar pulse rate and blood pressure, but Mannon himself had evolved this procedure and so was best able to weigh the risks. Since the patient was decompressed he had had to work quickly, and at first everything seemed to be going well. He had opened a flap of the flexible armor-plating which the Hudlars used for skin and had controlled the subcutaneous bleeding when the first mistake occurred, followed in quick succession by two more. Prilicla could not tell by observation that they were mistakes, even though there was considerable bleeding-it was Mannon's emotional reactions, some of the most violent the empath had ever experienced, which told it that the surgeon had committed a serious and stupid blunder.

There were longer intervals between the two others which followed- Mannon's work had slowed drastically, his technique resembling the first fumbings of a student rather than that of one of the most skillful surgeons in the hospital. He had become so slow that curative surgery was impossible, and he had barely time to withdraw and restore pressure before the patient's condition deteriorated beyond the point of no return.

It was very distressing," Prilicla said, still trembling violently. "He wanted to work

quickly, but the earlier mistakes had wrecked his self confidence. He was thinking twice about doing even the simplest things, things which a surgeon of his experience would do automatically, without thinking."

Conway was silent for a moment, thinking about the horrible situation Mannon had been in. Then he said, "Was there anything else unusual about his feelings? Or those of the theater staff?"

Prilicla hesitated, then said, "It is difficult to isolate subtle nuances of emotion when the source is emoting so . . . so violently. But I received the impression of. . . the effect is hard to describe . . . of something like a faint emotional echo of irregular duration..."

"Probably the Hudlar tape," said Conway. "It's not the first time a physiology tape gave me mental double vision."

"That might possibly be the case," said Prilicla. Which, in a being who was invariably and enthusiastically in agreement with whatever was said to it, was as close as the empath could come to a negative reply. Conway began to feel that he might be getting onto something important.

"How about the others?"

"Two of them," said Prilicla, "were radiating the shock-worry-fear combination indicative of a mildly traumatic experience in the recent past. I was in the gallery when both incidents occurred, and one of them gave me quite a jolt..

One of the nurses had almost had an accident while lifting a tray of instruments. One of them, a long, heavy, Hudlar Type Six scalpel used for opening the incredibly tough skin of that species, had slipped off the tray for some reason. Even a small punctured or incised wound was a very serious matter for a Kelgian, so that the Kelgian nurse had a bad fright when it saw that vicious blade dropping toward its unprotected side. But somehow it had struck in such a way-it was difficult to know how, considering its shape and lack of balance-that it had not penetrated the skin or even damaged the fur. The Kelgian had been relieved and thankful for its good fortune, but still a little disturbed.

"I can imagine," said Conway. "Probably the Charge Nurse read the riot act. Minor errors become major crimes where theater staff are concerned . .

Prilicla's legs began to tremble again, a sign that it was nerving itself for the effort of being slightly disagreeable. It said, "The entity in question was the Charge Nurse. That was why, when the other nurse goofed on an instrument count-there was one too many or too few-the ticking off was relatively mild. And during both incidents I detected the echo effect radiated by Mannon, although in these cases the echo was from the respective nurses.

"We may have something there!" said Conway excitedly. "Did the nurses have any physical contact with Mannon?"

"They were assisting him," said Prilicla, "and they were all wearing protective suits. I don't see how any form of parasitic life or bacteria could have passed between them, if that is the idea which is making you feel so excited and hopeful just now. I am very sorry, friend Conway, but this echo effect, while peculiar, does not seem to me to be important."

"It's something they had in common," said Conway.

"Yes," Prilicla said, "but the something did not have self identity, it was not an individual. Just a very faint emotional echo of the feelings of the people concerned."

"Even so," said Conway.

Three people had made mistakes or had had accidents in this theater two days ago, all of whom had radiated an odd emotional echo which Prilicla did not consider important. The presence of an accident-prone Conway ruled out because O'Mara's screening methods were too efficient in that respect. But suppose Prilicla was wrong and something had got in the theater or into the hospital, some form of life which was difficult to detect and outside their present experience. It was well known that when odd things happened in Sector General the reasons very often were found outside the hospital. At the moment, however, he hadn't enough evidence to form even a vague theory and the first job should be to gather some-even though he might not recognize it if he tripped over it with both feet.

"I'm hungry and it's high time we talked to the man himself," said Conway suddenly. "Let's find him and invite him to lunch."

The dining hall for the oxygen-breathing Medical and Maintenance staff occupied one complete level, and at one time it had been sectioned off into physiological types with low dividing ropes. But this had not worked out too well because the diners very often wanted to talk shop with other species colleagues or they found that there were no vacant places in their own enclosure and space going to waste in that of another life-form. So it was no surprise when they arrived to find that they had the choice of sitting at an enormous Tralthan table with benches which were a shade too far from the table's edge and one in the Melfan section which was cozier but whose chairs resembled surrealistic wastepaper baskets. They insinuated themselves into three of the latter and began the usual preliminaries to ordering.

"I'm just myself today," said Prilicla in answer to Conway's question. "The usual, if you please."

Conway dialed for the usual, which was a triple helping of Earth type spaghetti, then looked at Mannon.

"I've an FROB and an MSVK beastie riding me," the other Senior said gruffly. "Hudlars aren't persnickity about food, but those blasted MSVKs are offended by anything which doesn't look like birdseed! Just get me something nutritious, but don't tell me what it is and put it in about three sandwiches so's I won't see what it is...."

While they were waiting for the food to arrive Mannon spoke quietly, the normality of his tone belied by the fact that his emotional radiation was making Prilicla shake like a leaf. He said, "The grapevine has it that you two are trying to get me out of this trouble I'm in. It's nice of you, but you're wasting your time.

"We don't think so and neither does O'Mara," said Conway, shading the truth considerably. "O'Mara gives you a clean bill of mental and physical health, and he said that your behavior was most uncharacteristic. There must be some explanation, some environmental influence, perhaps, or something whose presence or absence would make you behave, if only momentarily, in an uncharacteristic fashion..."

Conway outlined what little they knew to date, trying to sound more hopeful than he really felt, but Mannon was no fool.

"I don't know whether to feel grateful for your efforts or concerned for your respective mental well-beings," Mannon said when he had finished. "These peculiar and rather vague mental effects are..., are... at the risk of offending Daddy-longlegs here I would suggest that any peculiarities there are lie in your own minds-your attempts to find excuses for me are becoming ridiculous!"

"Now you're telling me I have a peculiar mind," said Conway.

Mannon laughed quietly, but Prilicla was trembling worse than ever. "A circumstance, person or thing," Conway repeated, "whose presence or absence might effect your- "Ye Gods!" Mannon burst out. "You're not thinking of the dog!" Conway had been thinking about the dog, but he was too much of a moral coward to admit it right then. Instead he said, "Were you thinking about it during that op, Doctor?"

"No!" said Mannon.

There was a long, awkward silence after that, during which the service panels slid open and their orders rose into view. It was Mannon who spoke first.

"I liked that dog," he said carefully, "when I was myself, that is. But for the past four years I've had to carry MSVK and LSVO tapes permanently in connection with my teaching duties, and recently I've needed the Hudlar and Melfan tapes for a project Thornnastor invited me to join. They were in permanent occupation as well. With my brain thinking that it was five different people, five very different people... Well, you know how it is..."

Conway and Prilicla knew how it was only too well.

The Hospital was equipped to treat every known form of intelligent life, but no single person could hold in his brain even a fraction of the physiological data necessary for this purpose. Surgical dexterity was a matter of ability and training, but the complete physiological knowledge of any patient was furnished by means of an Educator Tape, which was simply the brain record of some great medical genius belonging to the same or a similar species to that of the patient being treated. If an Earth human doctor had to treat a Kelgian patient he took a DBLF physiology tape until treatment was completed, after which it was erased. The sole exceptions to this rule were Senior Physicians with teaching duties and the Diagnosticians.

A Diagnostician was one of the elite, a being whose mind was considered stable enough to retain permanently six, seven or even ten physiology tapes simultaneously. To their data-crammed minds was given the job of original research in xenological medicine and the treatment of new diseases in hitherto unknown life-forms.

But the tapes did not impart only physiological data, the complete memory and personality of the entity who had possessed that knowledge was transferred as well. In effect a Diagnostician subjected himself or itself voluntarily to the most drastic form of schizophrenia. The entities apparently sharing one's mind could be unpleasant, aggressive individuals- geniuses were rarely charming people-with all sorts of peevish and phobias. These did not become apparent only at mealtimes. The worst period was when the possessor of the tapes was relaxing prior to sleeping.

Alien nightmares were really nightmarish and alien sexual fantasies and wish-fulfillment dreams were enough to make the person concerned wish, if he were capable of wishing coherently for anything, that he was dead.

..... Within the space of a few minutes," Mannon continued, "she would change from being a ferocious, hairy beast intent on tearing out my belly feathers to a brainless bundle of fur which would get squashed by one of my six feet if it didn't get to blazes out of the way, to a perfectly ordinary dog wanting to play. It wasn't fair to the mutt, you know. She was a very old and confused dog toward the end, and I'm more glad than sorry that she died.

"And now let's talk and emote about some other subject," Mannon ended briskly. "Otherwise we will completely ruin Prilicla's lunch..

He did just that for the remainder of the meal, discussing with apparent relish a juicy piece of gossip originating in the SNLU section of the methane wards. How anything of a scandalous nature could occur between two intelligent crystalline life-forms living at minus one hundred and fifty degrees Centigrade was something which puzzled Conway, or for that matter why their moral shortcomings were of such interest to a warm-blooded oxygen-breather. Unless this was one of the reasons why Senior Physician Mannon was so far on the way to becoming a Diagnostician himself.

Or had been.

If Mannon was assisting Thornnastor, the Diagnostician-in-Charge of Pathology (and as such the hospital's senior Diagnostician) in one of that august being's projects, then Mannon had to be in good physical and mental shape-Diagnosticians were terribly choosy about their assistants. And everything the Chief Psychologist had told him pointed the same way. But then what had got into Mannon two days ago to make him behave as he had?

As the others talked Conway began to realize that the sort of evidence he needed might be difficult to gather. The questions he had to ask would require tact and some sort of theory to explain his line of investigation. His mind was still miles away when Mannon and Prilicla began rising to go. As they were leaving the table Conway moved closer to Prilicla and asked softly, "Any echoes, Doctor?"

"Nothing," said Prilicla, "nothing at all."

Within seconds their places at the table were taken by three Kelgians who draped their long, silvery, caterpillar bodies over the backs of the ELNT chairs so that their forward manipulators hung over the table at a comfortable distance for eating. One of the three was

Naydrad, the Charge Nurse on Mannon's theater staff. Conway excused himself to his friends and returned quickly to the table.

When he had finished talking it was Naydrad who spoke first. It said, "We would like to help, sir, but this is an unusual request. It involves, at very least, the wholesale betrayal of confidence. .

"We don't want names," said Conway urgently. "The mistakes are required for statistical purposes only and no disciplinary action will be taken. This investigation is unofficial, an idea of my own. Its only purpose is to help Doctor Mannon."

They were all keen to help their Chief, naturally, and Conway went on, "To summarize, if we accept that Senior Physician Mannon is incapable of gross professional misconduct-which we all do-then we must assume that his error was caused by an outside influence. Since there is strong evidence that the Doctor was mentally stable and free from all disease or physical malfunction it follows that we are looking for an outside influence-or more accurately, indications of the presence of an outside influence-which may be nonphysical.

"Mistakes by a person in authority are more noticeable, and serious, than those of a subordinate," Conway went on, "but if these errors are being caused by an outside agency they should not be confined only to senior staff, and it is here that we need data. There are bound to be mistakes, especially among trainee staff-we all realize this. What we must know is whether there has been an overall or local increase in the number of these minor errors and, if so, exactly where and when they occurred."

"Is this matter to be kept confidential?" one of the Kelgians asked.

Conway nearly choked at the idea of anything being kept confidential in this place, but the sarcasm was, fortunately, filtered out of his tone by the process of Translation.

"The more people gathering data on this the better," he said. "Just use your discretion..."

A few minutes later he was at another table saying much the same thing, then another and another. He would be late back to his wards today, but fortunately he had a couple of very good assistants-the type who just loved it when they had a chance to show how well they could do without him.

During the remainder of the day there was no great response, nor had he expected any, but on the second day nursing staff of all shapes and species began approaching him with elaborate secrecy to tell of incidents which invariably had happened to a third party. Conway noted times and places carefully while showing no curiosity whatever regarding the identities of the persons concerned. Then on the morning of the third day Mannon sought him out during his rounds.

"You're really working at this thing, aren't you, Conway," Mannon said harshly, then added, "I'm grateful. Loyalty is nice even when it's misplaced. But I wish you would stop. You're heading for serious trouble."

Conway said, "You're the one in trouble, Doctor, not me.

"That's what you think," said Mannon gruffly. "I've just come from O'Mara's office. He wants to see you. Forthwith."

A few minutes later Conway was being waved into the inner sanctum by one of O'Mara's assistants, who was trying hard to warn him of impending doom with his eyebrows while commiserating with him by turning down the corners of his mouth. The combination of expressions looked so ridiculous that Conway found himself inside before he realized it, facing a very angry O'Mara with what must have been a stupid grin on his face.

The psychologist stabbed a finger in the direction of the least comfortable chair and shouted, "What the blazes do you mean by infesting the hospital with a disembodied intelligence?"

"What. . . ?" began Conway.

"Are you trying to make a fool of yourself?" O'Mara stormed on, disregarding him. "Or make a fool out of me? Don't interrupt! Granted you're the youngest Senior in the place and

your colleagues-none of whom specialize in applied psychology, let me add-think highly of you. But such idiotic and irresponsible behavior is worthy only of a patient in the psychiatric wards!

"Junior staff discipline is going to pot, thanks to you," O'Mara went on, a little more quietly. "It is now becoming the done thing to make mistakes! Practically every Charge Nurse in the place is screaming for me-me!-to get rid of the thing! All you did was invent this invisible, undetectable, insubstantial monster-apparently the job of getting rid of it is the responsibility of the Chief Psychologist!"

O'Mara paused to catch his breath, and when he continued his tone had become quiet and almost polite. He said, "And don't think that you are fooling anyone. Boiled down to its simplest terms, you are hoping that if enough other mistakes are made your friend's will pass relatively unnoticed. And stop opening and closing your mouth-your turn to talk will come! One of the aspects of this whole situation which really troubles me is that I share responsibility for it in that I gave you an insoluble problem hoping that you might attack it from a new angle-an angle which might give a partial solution, enough to let our friend off the hook. Instead you created a new and perhaps worse problem!"

"I may have exaggerated things a little because of excusable annoyance, Doctor," O'Mara went on quietly, "but the fact remains that you may be in serious trouble over this business. I don't believe that the nursing staff will deliberately make mistakes-at least, not of the order which would endanger their patients. But any relaxation of standards is dangerous, obviously. Do you begin to see what you've been doing, Doctor?"

"Yes, sir," said Conway.

"I see that you do," O'Mara said with uncharacteristic mildness. "And now I would like to know why you did it. Well, Doctor?"

Conway took his time about answering. This was not the first time he had left the Chief Psychologist's office with his ego singed around the edges, but this time it looked serious. The generally held opinion was that when O'Mara was not unduly concerned over, or in some cases when he actually liked an individual, the psychologist felt able to relax with them and be his bad-tempered, obnoxious self, but when O'Mara became quiet and polite and not at all sarcastic, when he began treating a person as a patient rather than a colleague in other words, that person was in trouble up to his or its neck.

Finally, Conway said, "At first it was simply a story to explain why I was being so nosy, sir. Nurses don't tell tales and it might have looked as if that was what I wanted them to do. All I did was suggest that as Doctor Mannon was in all respects fit, outside physical agencies such as e-t bacteria or parasites and the like were ruled out because of the thoroughness of our aseptic procedures. You, sir, had already reassured us regarding his mental condition. I postulated an... an outside, nonmaterial cause which might or might not be consciously directed.

"I haven't anything so definite as a theory about it," Conway went on quickly. "Nor did I mention disembodied intelligences to anyone, but something odd happened in that theater, and not only during the time of Mannon's operation. .

He described the echo effect Prilicla had detected while monitoring Mannon's emotional radiation, and the similar effect when Naydrad had had the accident with the knife. There was also the later incident of the Melfan intern whose sprayer wouldn't spray-their mandibles weren't suited to surgical gloves so that they painted them with plastic before an op. When the intern had tried to use the sprayer it oozed what the Melfan described as metallic porridge. Later the sprayer in question could not be found. Perhaps it had never existed. And there were other peculiar incidents. Mistakes which seemed a little too simple for trained staff to make-errors in instrument counts, dropping things, and all seeming to involve a certain amount of temporary mental confusion and perhaps outright hallucination.

So far there has not been enough to make a statistically meaningful sample," Conway went on, "but they are enough to make me curious. I'd give you their names if I

wasn't sworn to keep them confidential, because I think you would be interested in the way they describe some of these incidents.

"Possibly, Doctor," said O'Mara coldly. "On the other hand I might not want to lend my professional support to a figment of your imagination by investigating such trivia. As for the near-accidents with scalpels and the other mistakes, it is my opinion that some people are lucky, others a little bit stupid at times, while others are fond of pulling other peoples' legs. Well, Doctor?"

Conway took a firmer grip on the arms of his chair and said doggedly, "The dropped scalpel was an FROB Type Six, a very heavy, unbalanced instrument. Even if it had struck handle first it would have spun into Naydrad's side a few inches below the point of impact and caused a deep and serious wound-if the blade had any actual physical existence at all! This is something I'm beginning to doubt. That is why I think we should widen the scope of this investigation. May I have permission to see Colonel Skempton and if necessary contact the Corps survey people, to check on the origins of recent arrivals?"

The expected explosion did not come. Instead O'Mara's voice sounded almost sympathetic as he said, "I cannot decide whether you are honestly convinced that you're onto something or simply that you've gone too far to back down without looking ridiculous. So far as I'm concerned you couldn't look anymore ridiculous at the moment. You should not be afraid to admit you were wrong, Doctor, and begin repairing some of the damage to discipline your irresponsibility has caused."

O'Mara waited precisely ten seconds for Conway's reply, then he said, "Very well, Doctor. See the Colonel. And tell Prilicla I'm rearranging its schedule-it may be helpful to have your emotional echo-detector available at all times. Since you insist on making a fool of yourself you might as well do it properly. Afterward-well, we will be very sorry to see Mannon go, and in all honesty I suppose I must say the same about you. Both of you are likely to be on the same ship out. .

A few seconds later he was dismissed very quietly.

Mannon himself had accused Conway of misguided loyalty and now O'Mara had suggested that his present stand was the result of not wanting to admit to a mistake. He had been given an out, which he had refused to take, and now the thought of service in the smaller multienvironment hospital, or even a planet-side establishment where the arrival of an e-t patient would be considered a major event, was beginning to come home to him. It gave him an unpleasantly gone feeling in the abdominal area. Maybe he was basing his theory on too little evidence and refusing to admit it. Maybe the odd errors were part of an entirely different puzzle, with no connection whatever with Mannon's trouble. As he strode along the corridors, taking evading action or being evaded every few yards, the impulse grew in him to rush back to O'Mara, say yes to everything, apologize abjectly and promise to be a good boy. But by the time he was ready to give into it he was outside Colonel Skempton's door.

Sector General was supplied and to a large extent maintained by the Monitor Corps, which was the Federation's executive and law enforcement arm. As the senior Corps officer in the hospital, Colonel Skempton handled traffic to and from the hospital in addition to a horde of other administrative details. It was said that the top of his desk had never been visible since the day it arrived. When Conway was shown in he looked up, said "Good morning," looked down at his desk and said, "Ten minutes. . .

It took much longer than ten minutes. Conway was interested in traffic from odd points of origin, or ships which had called at such places. He wanted data on the level of technology, medical science and physiological classification of their inhabitants-especially if the psychological sciences or psionics were well-developed or if the incidence of mental illness was unusually high. Skempton began excavating among the papers on his desk.

But the supply ship, ambulances and ships pressed into emergency service as ambulances which had arrived during the past few weeks had originated from Federation

worlds which were well known and medically innocuous. All except one, that was-the Cultural Contact and Survey vessel Descartes. It had landed, very briefly, on a most unusual planet. She was on the ground, if it could be called that, for only a few minutes. None of the crew had left the ship, the air-locks had remained sealed and the samples of air, water and surface material were drawn in, analyzed and declared interesting but harmless. The pathology department of the hospital had made a more thorough analysis and had had the same thing to say. Descartes had called briefly to leave the samples and a patient...

"A patient!" Conway almost shouted when the Colonel reached that point in his report. Skempton would not need an empathic faculty to know what he was thinking.

"Yes, Doctor, but don't get your hopes up," said the Colonel. "He had nothing more exotic than a broken leg. And despite the fact e-t bugs find it impossible to live on beings of another species, a fact which simplifies the practice of extraterrestrial medicine no end, ship medics are constantly on the lookout for the exception which is supposed to prove the rule. In short, he was suffering only from a broken leg."

"I'd like to see him anyway," said Conway.

"Level Two-eighty-three, Ward Four, name of Lieutenant Harrison," said Skempton. "Don't slam the door."

But the meeting with Lieutenant Harrison had to wait until late that evening, because Prilicla's schedule needed time to rearrange and Conway himself had duties other than the search for hypothetical disembodied intelligences. The delay, however, was fortunate because much more information was made available to him, gathered during rounds and at mealtimes, even though the data was such that he did not quite know what to do with it.

The number of boops, errors and mistakes was surprising, he suspected, only because he had not interested himself in such things before now. Even so, the silly, stupid mistakes he encountered, especially among the highly trained and responsible OR staff, were definitely uncharacteristic, he thought. And they did not form the sort of pattern he had expected. A plot of times and places should have shown an early focal point of this hypothetical mental contagion becoming more widespread as the disease progressed. Instead the pattern indicated a single focus moving within a certain circumscribed area-the Hudlar theater and its immediate surroundings. Whatever the thing was, if there was anything there at all, it was behaving like a single entity rather than a disease.

... Which is ridiculous!" Conway protested. "Even I didn't seriously believe in a disembodied intelligence-it was a working hypothesis only. I'm not that stupid!"

He had been filling Prilicla in on the latest developments while they were on the way to see the Lieutenant. The empath kept pace with him along the ceiling for a few minutes in silence, then said inevitably, "I agree."

Conway would have preferred some constructive objections for a change, so he did not speak again until they had reached 283-Four. This was a small private ward off a larger e-t compartment and the Lieutenant seemed glad to see them. He looked, and Prilicla said that he felt, bored.

"Apart from some temporary structural damage you are in very good shape, Lieutenant," Conway began, just in case Harrison was worried by the presence of two Senior Physicians at his bed. "What we would like to talk about is the events leading up to your accident. If you wouldn't mind, that is."

"Not at all," said the Lieutenant. "Where do you want me to start? With the landing, or before that?"

"If you were to tell us a little about the planet itself first," suggested Conway.

The Lieutenant nodded and moved his headrest to a more comfortable angle for conversation, then began, "It was a weirdie. We had been observing it for a long time from orbit. .

Christened Meatball because Captain Williamson of the cultural contact and survey vessel Descartes had declined, very forcibly, to have such an odd and distasteful planet named after him, it had to be seen to be believed-and even then it had been difficult for its

discoverers to believe what they were seeing.

Its oceans were a thick, living soup and its land masses were almost completely covered by slow-moving carpets of animal life. In many areas there were mineral outcroppings and soil which supported vegetable life, and other forms of vegetation grew in the water, on the sea bed, or rooted itself on the organic land surface. But the greater part of the land surface was covered by a layer of animal life which in some places was half a mile thick.

This vast organic carpet was subdivided into strata which crawled and slipped and fought their way through each other to gain access to necessary top surface vegetation or subsurface minerals or simply to choke off and cannibalize each other. During the course of this slow, gargantuan struggle these living strata heaved themselves into hills and valleys, altering the shapes of lakes and coastlines and changing the whole topography of their world from month to month.

It had been generally agreed by the specialists on Descartes that if the planet possessed intelligent life it should take one of two forms, and both were a possibility. The first type would be large—one of the tremendous, living carpets which might be capable of anchoring itself to the underlying rock while pushing extensions toward the surface for the purpose of breathing, ingestion, and the elimination of wastes. It should also possess a means of defense around its far-flung perimeter to keep less intelligent strata creatures from insinuating themselves between it and the ground below or from slipping over it and cutting off light, food, and air as well as discouraging sea predators large and small who seemed to nibble at it around the clock.

The second possibility might be a fairly small life-form, smooth skinned, flexible, and fast enough to allow them to live inside or between the strata creatures and avoid the ingestive processes of the strata beasts whose movements and metabolism were slow. Their homes, which would have to be safe enough to protect their young and develop their culture and science, would probably be in caves or tunnel systems in the underlying rock.

If either life-form existed on the planet it was unlikely that they would possess an advanced technology. Certainly the larger, complex type of industrial machinery was impossible on this heaving world. Tools, if they developed them at all, would be small, handy and unspecialized, but the chances were that it would be a very primitive society with no roots.

"They might be strong in the philosophical sciences," Conway broke in at that point. Prilicla moved closer, trembling with Conway's excitement as well as its own.

Harrison shrugged. "We had a Cinruskin with us," he said, looking at Prilicla. "It reported no indication of the more subtle type of emoting usually radiated by intelligent life, but the aura of hunger and raw, animal ferocity emanating from the whole planet was such that the empath had to be kept under sedation most of the time. This background radiation might well have concealed intelligent emoting. The proportion of intelligent life on any given world is only a small proportion of its total life..

"I see," said Conway, disappointed. "How about the landing?"

The Captain had chosen an area composed of some thick, dry, leathery material. The stuff looked dead and insensitive so that the ship's tail flare should not cause pain to any life in the area, intelligent or otherwise. They landed without incident and for perhaps ten minutes nothing happened. Then gradually the leathery surface below them began to sag, but slowly and evenly so that the ship's gyros had no trouble keeping them level. They began to sink into what was at first a shallow depression and then a low-walled crater. The lips of the crater curled toward them, pressing against the landing legs. The legs were designed to retract telescopically, not fold toward the center line of the ship. The extension mechanism and leg housings began to give, with a noise like somebody tearing sheet metal into small pieces.

Then somebody or something began throwing rocks. To Harrison it had sounded almost as if Descartes was sitting atop a volcano in process of erupting. The din was

unbelievable and the only way to transmit orders was through the suit radios with the volume turned way up. Harrison was ordered to make a quick damage check of the stern prior to takeoff.

I was between the inner and outer skin close to the venturi orifice level when I found the hole," the Lieutenant went on quickly. "It was about three inches across and when I started to patch it I found the edges to be slightly magnetized. Before I could finish the Captain decided to take off at once. The crater wall was threatening to trap one of the landing legs. He did give us five seconds' warning..."

Harrison paused at that point as if to clarify something in his own mind. He said carefully, "There wasn't much danger in this, you understand. We were taking off at about one-and-a-half Gs because we weren't sure whether the crater was a manifestation of intelligence, even hostile intelligence, or the involuntary movement of some dirty great beastie closing its mouth, so we wanted to avoid unnecessary destruction in the area. If I hung onto a couple of supporting struts and had somewhere to brace my feet I'd be all right. But long-duration suits are awkward and five seconds isn't long. I had two good hand-holds and was looking for a bracket which should have been there to brace my foot. Then I saw it, and actually felt my boot touch it, but.., but. .

"You were confused and misjudged the distance," Conway finished for him softly. "Or perhaps you simply imagined it was there."

On the other side of the Lieutenant, Prilicla began to tremble again. It said, "I'm sorry, Doctor. No echoes."

"I didn't expect any," said Conway. "It must have moved on by now."

Harrison looked from one to the other, his expression puzzled and a little hurt. He said, "Maybe I did imagine it was there. Anyhow, it didn't hold me and I fell. The landing leg on my side tore free during the takeoff and the wreckage of its housing plugged the interskin space so tightly that I couldn't get out. The engine room control lines passed too close to me for them to risk cutting me out, and our medic said it would be better to come here and let your heavy-rescue people cut a way in. We were coming here with the samples anyway.

Conway looked quickly at Prilicla, then said, "At any time during the trip back did your Cinrusskin empath monitor your emotional radiation?"

Harrison shook his head. "There was no need-I was having pain despite the suit's medication and it would have been unpleasant for an empath. Nobody could get within yards of me..

The Lieutenant paused, then in the tone of one who wished to change an unpleasant subject he said brightly, "We'll send down an unmanned ship next, packed with communications equipment. If that thing is just a big mouth connected with a bigger belly and with no brains at all, at worst we'll lose a drone and it will get indigestion. But if it is intelligent or if there are smaller intelligent beings on the planet who maybe use, or have trained, the bigger beasties to serve them-that is a strong possibility, our cultural contact people say-then they are bound to be curious and try to communicate.. ."

"The imagination boggles," said Conway, smiling. "At the present moment I'm trying hard not to think about the medical problems a beastie the size of a subcontinent would have. But to return to the here and now, Lieutenant Harrison, we are both very much obliged for the information you've given us, and we hope you won't mind if we come again to-"

"Any time," said Harrison. "Glad to help. You see, most of the nurses here have mandibles or tentacles or too many feet. .. No offense, Doctor Prilicla

"None taken," said Prilicla.

... And my ideas regarding ministering angels are rather old fashioned," he ended as they turned to go. His expression looked decidedly woebegone.

In the corridor Conway called Murchison's quarters. By the time he had finished explaining what he wanted her to do she was fully awake.

"I'm on duty in two hours and don't have any free time for another six," she said, yawning. "And normally I do not spend my precious time off doing a Mata Han on lonely

patients. But if this one has information which might help Doctor Mannon I don't mind at all. I'd do anything for that man.

"How about me?"

"For you, dear, almost anything. 'Bye."

Conway racked the handset and said to Prilicla, "Something gained entrance to that ship. Harrison suffered the same type of mild hallucination or mental confusion that the OR staff experienced. But I keep thinking about that hole in the outer skin-a disembodied intelligence shouldn't have to make a hole to get in. And those rocks hitting the stern. Suppose this was only a side-effect of the major, nonmaterial influence-a disturbance analogous to the poltergeist phenomena. Where does that leave us?"

Prilicla didn't know.

"I'll probably regret it," said Conway, "but I think I'll call O'Mara. .

But it was the Chief Psychologist who did all the talking at first. Mannon had just left his office after having told O'Mara that the Hudlar patient's condition had deteriorated suddenly, necessitating a second operation not later than noon tomorrow. The Senior Physician, it had been obvious, held no hopes for the patient's survival, but had said that what little chance it did have would be fractionally increased if they operated quickly.

O'Mara ended, "This doesn't give you much time to prove your theory, Conway. Now, what did you want to say to me?"

The news about Mannon had put Conway badly off his stride, so that he was woefully aware that his report on the Meatball incident and his ideas regarding it sounded weak and, what was worse where O'Mara was concerned, incoherent. The psychologist had little patience with people who did not think clearly and say exactly what they meant.

And the whole affair is so peculiar," he concluded awkwardly, "that I'm almost convinced now that the Meatball business has nothing to do with Mannon's trouble, except that...

"Conway!" said O'Mara sharply. "You're talking in circles, dithering! You must realize that if two peculiar events occur with only a small separation in time then the probability is high that they have a common cause. I don't mind too much if your theory is downright ridiculous- at least you arrived at it by a tortuous form of logic-but I do mind you ceasing to think at all. Being wrong, Doctor, is infinitely preferable to being stupid!"

For a few seconds Conway breathed heavily through his nose, trying to control his anger enough to reply. But O'Mara saved him the trouble by breaking the connection.

"He was not very polite to you, friend Conway," said Prilicla. "Toward the end he sounded quite bad-tempered. This is a significant improvement over his feelings for you this morning..

Conway laughed in spite of himself. He said, "One of these days you will forget to say the right thing, Doctor, and everyone in the hospital will drop dead!"

The galling part of the whole affair was that they did not know what exactly they were looking for, and now their time for finding it had been cut in half. All they could do was to continue gathering information and hope that something would emerge from it. But even the questions sounded nonsensical-variations of "Have you done or omitted to do something during the past few days which might lead you to suspect that something was influencing your mind?" They were loosely worded, silly, almost meaningless questions, but they went on asking them until Prilicla's pencil-thin legs were rubbery with fatigue-the empath's stamina was proportional to its strength, which was practically nonexistent-and it had to retire. Doggedly Conway went on asking them, feeling more tired, angrier and more stupid with every hour which passed.

Deliberately he refrained from contacting Mannon again-the Doctor at that time would, if anything, be a demoralizing influence. He called Skempton to ask if Descartes' medical officer had made a report, and was sworn at horribly because it was the middle of the Colonel's night. But he did find out that the Chief Psychologist had called seeking the same information, saying that he preferred his facts to come from the official report rather

than through an emotionally involved Doctor with a disembodied ax to grind. Then the totally unexpected happened in that Conway's sources of information went suddenly dry on him.

Apparently O'Mara was bringing in certain operating room staff for their periodic testing before their psych tests were due, and most of them had been people who had been very helpful about admitting their mistakes to Conway. It was not suggested in so many words that Conway had broken confidence and blabbed to O'Mara, but at the same time nobody would talk about anything.

Conway felt weary and discouraged and stupid, but mostly weary. It was too near breakfast time, however, to go to bed.

After his rounds Conway had an early lunch with Mannon and Prilicla, then accompanied the doctor to O'Mara's office while the empath left for the Hudlar theater to monitor the emotional radiation of the staff during their preparations. The Chief Psychologist looked a little tired, which was unusual, and rather grumpy, which was usually a good sign.

"Are you assisting Senior Physician Mannon in this operation, Doctor?"

"No, sir, observing," Conway replied. "But from inside the theater. If anything funny is going on-f mean, the Hudlar tape might confuse me and I want to be as alert as possible-"

"Alert, he says." O'Mara's tone was scathing. "You look asleep on your feet." To Mannon he said, "You will be relieved to know that I, too, am beginning to suspect something funny is going on, and this time I'll be observing from the observation blister. And now if you'll lie on the couch, Mannon, I'll give you the Hudlar tape myself..

Mannon sat on the edge of the low couch. His knees were nearly level with his chin and he had half-folded his arms across his chest so that his posture was almost a fetal position, sitting up. When he spoke his tone was pleading, desperate. He said, "Look. I've worked with empaths and telepaths before. Empaths receive but do not project emotion, and telepaths can only communicate with other telepaths of their own species-they've tried occasionally, but all they did was give me a slight mental itch. But that day in the theater I was in complete mental control of myself-f am absolutely sure of this! Yet you all keep trying to tell me that something unsubstantial, invisible and undetectable influenced my judgment. It would be much simpler if you admitted that this thing you're looking for is nonexistent as well, but you're all too damned-"

"Excuse me," said O'Mara, pushing Mannon backward and lowering the massive helmet into position. He spent a few minutes positioning the electrodes, then switched on. Mannon's eyes began to glaze as the memories and experience of one of the greatest Hudlar physicians who had ever lived flooded into his brain.

Just before he lost consciousness completely he muttered, "My trouble is that no matter what I say or do, you believe only the best about me..

Two hours later they were in the theater. Mannon wore a heavy operating suit and Conway a lighter type which relied only on its gravity neutralizers for protection. The G-plates under the floor were set for a pull of five gravities, the Hudlar normal, but the pressure was only a fraction higher than the Earth norm-Hudlars were not unduly bothered by low pressure and could, in fact, work quite without protection in the vacuum of space. But if something went disastrously wrong and the patient needed full, home-planet pressure, Conway would have to leave in a hurry. Conway had a direct line to Prilicla and O'Mara in the observation blister and another, and completely separate, channel linking him with Mannon and the operating staff.

O'Mara's voice crackled suddenly in his ear-piece. "Prilicla is getting emotional echoes, Doctor. Also the radiation indicative of a minor error having been made-minor level anxiety and confusion..

"Yehudi is here," said Conway softly.

"What?"

"The little man who isn't there," Conway replied, and went on, misquoting slightly,

"The little man upon the stair. He isn't there again today, Oh, gee I wish he'd go away..."

O'Mara grunted, then said, "Despite what I told Mannon in my office there is still no real proof that anything untoward is happening. My remarks then were designed to help both Doctor and patient by bolstering Mannon's weakening self-confidence-something which they failed to do. So it would be better for Mannon and yourself if your little man came in and introduced himself."

The patient was brought in at that moment and transferred to the table. Mannon's hands, projecting from the heavy arms of the suit, were encased only in thin, transparent plastic, but should full Hudlar pressure become necessary he could snap on heavy gauntlets within a few seconds. But to open a Hudlar at all in these conditions was to cause an immediate decompression, so that the subsequent procedures had to be done quickly.

Physiological classification FROB, the Hudlar was a low, squat, immensely powerful being somewhat reminiscent of an armadillo with a tegument like flexible armor plate. Inside and out the Hudlars were tough-so much so that Hudlar medical science was almost a complete stranger to surgery. If a patient could not be cured by medication very often it could not be cured at all, because surgery on that planet was impracticable if not downright impossible. But in Sector General, where pressure and gravity of any desired combination could be produced at a few minutes notice, Mannon and a few others had been nibbling at the edges of the hitherto impossible.

Conway watched him make a triangular incision in the incredibly tough tegument and clamp back the flap. Immediately a bright yellow, inverted cone of mist flicked into being above the operative field-a fine spray of blood under pressure escaping from the severed capillaries. A nurse quickly interposed a sheet of plastic between the opening and Mannon's visor while another positioned a mirror which gave him an indirect view of the operative field. In four and a half minutes he had controlled the bleeding. He should have done it in two.

Mannon seemed to be reading Conway's mind, because he said, "The first time was faster than this-I was thinking two or three moves ahead, you know how it is. But I found I was making incisions now that I shouldn't have made until several seconds later. If it had happened once it would have been bad enough, but five times...! I had to withdraw before I killed the patient there and then.

"And now," he added in a voice thick with self-loathing, "I'm trying to be careful and the result will be the same.

Conway remained silent.

"Such a piddling little growth, too," Mannon went on. "So near the surface and a natural for the first attempt at Hudlar surgery. Simply cut away the growth, encase the three severed blood vessels in the area with plastic tubing, and the patient's blood pressure and our special clamps should make a perfect seal until the veins regenerate in a few months. But this...! Have you ever seen such a botched-up mess..."

More than half of the growth, a grayish, spongy mass which seemed to be more than half vegetable, remained in position. Five major blood vessels in the area had been severed-two of necessity, the rest by "accident"-and encased in tubing. But these lengths of artificial vein were too short or insecurely clamped-or perhaps the movement of the heart had pulled one of the vessels partially out of its tube. The only thing which had saved the patient's life had been Mannon's insistence that it was not to be allowed to regain consciousness since the first operation. The slightest physical effort could have pulled one of those vessels free of its tubing and caused a massive internal hemorrhage and, with the tremendous pulse rate and pressure of the Hudlar species, death within a few minutes.

On O'Mara's channel Conway said harshly, "Any echoes? Anything at all?"

"Nothing," said O'Mara.

"This is ridiculous!" Conway burst out. "If there is an intelligence, disembodied or otherwise, it should possess the attributes-curiosity, the ability to use tools, and so on. Now this hospital is a large and interesting place, with no barriers we know of to the movements of the entity we are trying to find. Why then had it stayed in one place? Why didn't it go

prowling around Descartes? What makes it stay in this area? Is it frightened, or stupid, or disembodied even?

"There is little likelihood of finding a complex technology on Meatball," Conway went on quickly, "but a good chance of them being well advanced in the philosophical sciences. If something physical boarded Descartes, there is a definite lower limit to the mass of an intelligent being..

"If you want to ask questions of anyone, Doctor," O'Mara said quietly, "I will throw a little of my weight behind them. But there isn't much time."

Conway thought for a moment, then said, "Thank you, sir. I'd like you to get Murchison for me. She's in-"

"At a time like this," said O'Mara in a dangerous voice, "he wants to call his . . .

"She's with Harrison at the moment," said Conway. "I want to establish a physical connection between the Lieutenant and this theater, even though he has never been within fifty levels of the place. Would you ask her to ask him..

It was a long, involved, many-sided question, designed to tell him how a small, intelligent life-form had reached this area without detection. It was also a stupid question because any intelligence which affected the minds of Earth-humans and e-ts alike could not have remained undetected with an empath like Prilicla around. Which left him back where he started with a nonmaterial something which refused, or was incapable of, moving beyond the environs of the theater.

"Harrison says he had lots of delusions during the trip back," O'Mara's voice sounded suddenly. "He says the ship's doctor said this was normal considering all the dope he had in him. He also says he was completely out when he arrived here and doesn't know how or where he came in. And now I suppose we contact Reception, Doctor. I'm patching you in, just in case I ask the wrong questions..

Seconds later a slow, flat, translated voice which could have belonged to anything said, "Lieutenant Harrison was not processed in the usual way. Being a corpsman whose medical background was known in detail he was admitted to Service Lock Fifteen into the charge of Major Edwards.

Edwards was not available, but his office promised O'Mara that they would have him in a few minutes.

All at once Conway felt like giving up. Lock Fifteen was too far away-a difficult, complicated journey involving three major changes of environment. For their hypothetical invader, who was also a stranger to the hospital, to find its way to this theater would have necessitated it taking mental control of someone and being carried. But if that was the case Prilicla would have detected its presence. Prilicla could detect anything which thought-from the smallest insect to the slow emanations of a mind deeply and totally unconscious. No living thing could shut its mind down completely and still be alive.

Which meant that the invader might not be alive!

A few feet distant Mannon had signaled for a nurse to stand by the pressure cock. A sudden return to Hudlar normal pressure would diminish the violence of any bleeding which might occur, but it would also make it impossible for Mannon to operate without heavy gloves. Not only that, the pressure increase would cause the operative field to subside within the opening, where movement transmitted from the nearby heart would make delicate work impossible. At present, despite the danger of a wrong incision, the complex of blood vessels was distended, separate and relatively motionless.

Suddenly it happened. Bright yellow blood spurted out, so violently that it hit Mannon's visor with an audible slap. Driven by the patient's enormous blood pressure and pulse rate the severed vein whipped about like a miniature unheld hose-pipe. Mannon got to it, lost it, tried again. The spurting became a thin, wavering spray and stopped. The nurse at the pressure cock relaxed visibly while the one at Mannon's side cleaned his visor.

Mannon moved back slightly while the field was sucked clear. Through the visor his eyes glittered oddly in the sweating white mask of his face. Time was important now.

Hudlars were tough, but there were limits-they could not stand decompression indefinitely. There would be a gradual movement of body fluid toward the opening in the tegument, a strain on vital organs in the vicinity and an even greater increase in blood pressure. To be successful the operation could not last for much more than thirty minutes and more than half the time had gone merely in opening up the seat of the trouble. Even if the growth was removed, its removal entailed damage to underlying blood vessels which had to be repaired with great care before Mannon withdrew.

They all knew that speed was essential, but to Conway it seemed suddenly as if he was watching a film which was steadily being speeded up. Mannon's hands were moving faster than Conway had ever seen them move before. And faster still.

"I don't like this," said O'Mara harshly. "It looks like he's regained his confidence, but more likely that he's ceased caring-about himself, that is. He still cares about the patient, obviously, even though he knows it hasn't much chance. And the tragic thing about it is that it never did have much chance, Thornnastor tells me. If it hadn't been for your hypothetical friend's interference Mannon wouldn't have worried too much about losing this patient-it would have been one of his very few failures. When he made that first slip it wrecked his self-confidence and now he's-

"Something made him slip," said Conway firmly.

"You've tried convincing him of that, with what result?" the psychologist snapped back. He went on, "Prilicla is seriously agitated and its shakes are getting worse by the minute. But Mannon is, or was, a pretty stable type I don't think he'll crack until after the operation. Though with these serious, dedicated types whose profession is their whole life it's hard to say what might happen."

"Edwards here," said a new voice. "What is it?"

"Go ahead, Conway," said the psychologist. "You ask the questions. Right now I've other things on my mind."

The spongy growth had been lifted clear, but a great many small blood vessels had been severed to accomplish this and the job of repairing them would be much more difficult than anything which had gone before. Insinuating the severed ends into the tubing, far enough so that they would not simply squirm out again when circulation was restored, was a difficult, repetitious, nerve-wracking procedure.

There were only eighteen minutes left.

"I remember Harrison well," the distant Edwards replied when Conway had explained what he wanted to know. "His suit was damaged in the leg section only, so we couldn't write it off-those things carry a full set of tools and survival gear and are expensive. And naturally we decontaminated it! The regulations expressly state that-

"It still may have been a carrier of some kind, Major," Conway said quickly. "How thoroughly did you carry out this decon-"

"Thoroughly," said the Major, beginning to sound annoyed. "If it was carrying any kind of bug or parasite it is defunct now. The suit together with all its attachments was sterilized with high-pressure steam and irradiated-it went through the same sterilization procedure as your surgical instruments, in fact. Does that satisfy you, Doctor?"

"Yes," said Conway softly. "Yes indeed."

He now had the link-up between Meatball and the operating theater, via Harrison's suit and the sterilization chamber. But that wasn't all he had. He had Yehudi!

Beside him Mannon had stopped. The surgeon's hands were trembling as he said desperately, "I need eight pairs of hands, or instruments that can do eight different operations at once. This isn't going well, Conway. Not well at all. .

"Don't do anything for a minute, Doctor," Conway said urgently, then began calling out instructions for the nurses to file past him carrying their instrument trays. O'Mara started shouting to know what was going on, but Conway was concentrating too hard to answer him. Then one of the Kelgian nurses made a noise like a foghorn breathing in, the DBLF equivalent of a shriek of surprise, because suddenly there was a medium sized box spanner

among the forceps on her tray.

"You won't believe this," said Conway joyfully as he carried the thing to Mannon and placed it in the surgeon's hands, "but if you'll just listen for a minute and then do as I tell you..

Mannon was back at work in less than a minute.

Hesitantly at first, but then with growing confidence and speed, he resumed the delicate repair work. Occasionally he whistled through his teeth or swore luridly, but this was normal behavior for Mannon during a difficult op which was promising to go well. In the observation blister Conway could see the happily scowling, baffled face of the Chief Psychologist and the fragile, spidery body of the empath. Prilicla was still trembling, but very slowly. It was a type of reaction not often seen in a Cinruskin off its native planet, indicating a nearby source of emotional radiation which was intense and altogether pleasant.

After the operation they had all wanted to question Harrison about Meatball, but before they could do so Conway had first to explain what had happened again to the Lieutenant.

"...And while we still have no idea what they look like," Conway was saying, "we do know that they are highly intelligent and in their own fashion technically advanced. By that I mean they fashion and use tools...

"Indeed yes," said Mannon dryly, and the thing in his hand became a metallic sphere, a miniature bust of Beethoven and a set of Tralthan dentures. Since it had become certain that the Hudlar would be another one of Mannon's successes rather than a failure he had begun to regain his sense of humor.

..... But the tool-making stage must have followed a long way after the development of the philosophical sciences," Conway went on. "The imagination boggles at the conditions in which they evolved. These tools are not designed for manual use, the natives may not possess hands as we know them. But they have minds...

Under the mental control of its owner the "tool" had cut a way into Descartes beside Harrison's station, but during the sudden takeoff it had been unable to get back and a new source of mental control, the Lieutenant, had unwittingly taken over. It had become the foothold which Harrison had needed so badly, only to give under his weight because it had not really been part of the ship's structure. When the attachments of Harrison's suit had been sterilized in the same room as the surgical instruments and when a nurse had come looking for a certain instrument for the theater, it again became what was wanted.

From then on there was confusion over instrument counts and falling scalpels which did not cut and sprayers which behaved oddly indeed, and Mannon had used a knife which had followed his mind instead of his hands, with near-fatal results for the patient. But the second time it happened Mannon knew that he was holding a small, unspecialized, all purpose tool which was subject to mental as well as manual control, and some of the shapes he had made it take and the things he had made it do would make Conway remember that operation for the rest of his life.

..... This. . . gadget. . . is probably of great value to its owner," Conway finished seriously. "By rights we should return it. But we need it here, many more of them if possible! Your people have got to make contact and set up trade relations. There's bound to be something we have or can do that they want. .

"I'd give my right arm for one," said Mannon, then added, grinning, "My right leg, anyway."

The Lieutenant returned his smile. He said, "As I remember the place, Doctor, there was no shortage of raw meat."

O'Mara, who had been unusually silent until then, said very seriously, "Normally I am not a covetous man. But consider the things this hospital could do with just ten of those things, or even five. We have one and, if we were doing the right thing, we would put it back where we found it- obviously a tool like this is of enormous value. This means that we will have to buy or conduct some form of trade for them, and to do this we must first learn to

communicate with their owners."

He looked at each of them in turn, then went on sardonically. "One hesitates to mention such sordid commercial matters to pure-minded, dedicated medical men like yourselves, but I must do so to explain why, when Descartes eventually makes contact with the beings who use the tools, I want Conway and whoever else he may select to investigate the medical situation on Meatball.

"Our interest will not be entirely commercial, however," he added quickly, "but it seems to me that if we have to go in for the practice of barter and exchange, the only thing we have to trade is our medical knowledge and facilities."

VERTIGO

It was perhaps inevitable that when the long-awaited indication of intelligent life at last appeared the majority of the ship's observers were looking somewhere else, that it did not appear in the batteries of telescopes that were being trained on the surface or on the still and cine films being taken by Descartes' planetary probes, but on the vessel's close approach radar screens.

In Descartes' control room the Captain jabbed a button on his console and said sharply, "Communications..."

"We have it, sir," came the reply. "A telescope locked onto the radar bearing-the image is on your repeater screen Five. It is a two- or three stage chemically fueled vehicle with the second stage still firing. This means we will be able to reconstruct its flight path and pinpoint the launch area with fair accuracy. It is emitting complex patterns of radio frequency radiation indicative of high-speed telemetry channels. The second stage has just cut out and is falling away. The third stage, if it is a third stage, has not ignited. . . It's in trouble!"

The alien spacecraft, a slim, shining cylinder pointed at one end and thickened and blunt at the other, had begun to tumble. Slowly at first but with steadily increasing speed it swung and whirled end over end.

"Ordnance?" asked the Captain.

"Apart from the tumbling action," said a slower, more precise voice, "the vessel seems to have been inserted into a very neat circular orbit. It is most unlikely that this orbit was taken up by accident. The lack of sophistication-relative, that is-in the vehicle's design and the fact that its nearest approach to us will be a little under two hundred miles all point to the conclusion that it is either an artificial satellite or a manned orbiting vehicle rather than a missile directed at this ship.

"If it is manned," the voice added with more feeling, "the crew must be in serious trouble . . ."

"Yes," said the Captain, who treated words like nuggets of some rare and precious metal. He went on, "Astrogation, prepare intersecting and matching orbits, please. Power Room, stand by."

As the tremendous bulk of Descartes closed with the tiny alien craft it became apparent that, as well as tumbling dizzily end over end, the other vessel was leaking. The rapid spin made it impossible to say with certainty whether it was a fuel leak from the unfired third stage or air escaping from the command module if it was, in fact, a manned vehicle.

The obvious procedure was to check the spin with tractor beams as gently as possible so as to avoid straining the hull structure, then defuel the unfired third stage to remove the fire hazard before bringing the craft alongside. If the vessel was manned and the leak was of air rather than fuel, it could then be taken into Descartes' cargo hold where rescue and first contact proceedings would be possible-at leisure since Meatball's air was suited to human beings and the reverse, presumably, also held true.

It was expected to be a fairly simple rescue operation, at first...

"Tractor stations Six and Seven, sir. The alien spacecraft won't stay put. We've

slowed it to a stop three times and each time it applies steering thrust and recommences spinning. For some reason it is deliberately fighting our efforts to bring it to rest. The speed and quality of the reaction suggests direction by an on-the-spot intelligence. We can apply more force, but only at the risk of damaging the vessel's hull-it is incredibly fragile by present-day standards, sir."

"I suggest using all necessary force to immediately check the spin, opening its tanks and jettisoning all fuel into space then whisking it into the cargo hold. With normal air pressure around it again there will be no danger to the crew and we will have time to..."

"Astrogation, here. Negative to that, I'm afraid, sir. Our computation shows that the vessel took off from the sea-more accurately, from beneath the sea, because there is no visible evidence of floating gantries or other launch facilities in the area. We can reproduce Meatball air because it is virtually the same as our own, but not that animal and vegetable soup they use for water, and all the indications point toward the crew being water breathers."

For a few seconds the Captain did not reply. He was thinking about the alien crew member or members and their reasons for behaving as they were doing. Whether the reason was technical, physiological, psychological or simply alien was, however, of secondary importance. The main thing was to render assistance as quickly as possible.

If his own ship could not aid the other vessel directly it could, in a matter of days, take it to a place which possessed all the necessary facilities for doing so. Transportation itself posed only a minor problem-the spinning vehicle could be towed without checking its spin by attaching a magnetic grapple to its center of rotation, and with the shipside attachment point also rotating so that the line would not twist-shorten and bring the alien craft crashing into Descartes' side. During the trip the larger ship's hyper-drive field could be expanded to enclose both vessels.

His chief concern was over the leak and his complete ignorance of how long a period the alien spacecraft had intended to stay in orbit. He had also, if he wanted to establish friendly relations with the people on Meatball, to make the correct decision quickly.

He knew that in the early days of human space flight leakage was a quite normal occurrence, for there had been many occasions when it had been preferable to carry extra air supplies rather than pay the severe weight penalty of making the craft completely airtight. On the other hand the leak and spinning were more likely to be emergency conditions with the time available for their correction strictly limited. Since the alien astronaut or astronauts would not, for some odd reason, let him immobilize their ship to make a more thorough investigation of its condition and because he could not reproduce their environment anyway, his duty was plain. Probably his hesitancy was due to misplaced professional pride because he was passing responsibility for a particularly sticky one to others.

Quickly and with his usual economy of words the Captain issued the necessary orders and, less than half an hour after it had first been sighted, the alien spacecraft was on its way to Sector General.

With quiet insistence the PA was repeating, "Will Senior Physician Conway please contact Major O'Mara. .

Conway quickly sized up the traffic situation in the corridor, jumped across the path of a Tralthan intern who was lumbering down on him on six elephantine feet, rubbed fur briefly with a Kelgian caterpillar who was moving in the opposite direction and, while squeezing himself against the wall to avoid being run over by something in a highly refrigerated box on wheels, unracked the hand-set of the communicator.

As soon as he had established contact the PA began insisting quietly that somebody else contact somebody else.

"Are you doing anything important at the moment, Doctor?" asked the Chief Psychologist without preamble. "Engaged on vital research, perhaps, or in performing some

life-or-death operation?" O'Mara paused, then added dryly, "You realize, of course, that these questions are purely rhetorical . . .

Conway sighed and said, "I was just going to lunch."

"Fine," said O'Mara. "In that case you will be delighted to know that the natives of Meatball have put a spacecraft into orbit-judging by its looks it may well be their first. It got into difficulties-Colonel Skempton can give you the details-and Descartes is bringing it here for us to deal with. It will arrive in just under three hours and I suggest you take an ambulance ship and heavy rescue gear out to it with a view to extricating its crew. I shall also suggest that Doctors Mannon and Prilicla be detached from their normal duties to assist you, since you three are going to be our specialists in Meatball matters."

"I understand," said Conway eagerly.

"Right," said the Major. "And I'm glad, Doctor, that you realize that there are things more important than food. A less enlightened and able psychologist than myself might wonder at this sudden hunger which develops whenever an important assignment is mentioned. I, of course, realize that this is not an outward symptom of a sense of insecurity but sheer, blasted greed!

"You will have arrangements to make, Doctor," he concluded pleasantly. "Off."

Skempton's office was fairly close so that Conway needed just fifteen minutes-which included the time taken to don a protective suit for the two hundred yards of the journey which lay through the levels of the Illensan chlorine breathers-to reach it.

"Good morning," said Skempton while Conway was still opening his mouth. "Tip the stuff off that chair and sit down. O'Mara has been in touch. I've decided to return Descartes to Meatball as soon as it leaves the distressed spacecraft. To native observers it might appear that the vehicle was taken-one might almost say kidnapped-and Descartes should be on hand to note reactions, make contact if possible and give reassurances. I'd be obliged if you would extricate, treat and return this patient to Meatball as quickly as possible-you can imagine the boon this would be to our cultural contact people.

"This is a copy of the report on the incident radioed from Descartes," the Colonel went on without, apparently, even pausing for breath. "And you will need this analysis of water taken from the sea around the takeoff-the actual samples will be available as soon as Descartes arrives. Should you need further background information on Meatball or on contact procedures call on Lieutenant Harrison, who is due for discharge now and who will be glad to assist. Try not to slam the door, Doctor."

The Colonel began excavating deeply in the layer of paperwork covering his desk and Conway closed his mouth again and left. In the outer office he asked permission to use the communicator and got to work.

An unoccupied ward in the Chalder section was the obvious place to house the new patient. The giant denizens of Chalderescol II were water breathers, although the tepid, greenish water in which they lived was almost one hundred percent pure compared with the soupy environment of Meatball's seas. The analysis would allow Dietetics and Environmental Control to synthesize the food content of the water-but not to reproduce the living organisms it contained. That would have to wait until the samples arrived and they had a chance to study and breed these organisms, just as the E.C. people could reproduce the gravity and water pressure, but would have to wait for the arrival of the spacecraft to add the finishing touches to the patient's quarters.

Next he arranged for an ambulance ship with heavy rescue equipment, crew and medical support to be made available prior to Descartes' arrival. The tender should be prepared to transfer a patient of unknown physiological classification who was probably injured and decompressed and close to terminal by this time, and he wanted a rescue team experienced in the rapid emergency transfer of shipwreck survivors.

Conway was about to make a final call, to Thornnastor, the Diagnostician-in-Charge of Pathology, when he hesitated.

He was not quite sure whether he wanted to ask a series of specific questions-even

a series of hypothetical questions-or to indulge in several minutes worrying out loud. It was vitally important that he treat and cure this patient. Quite apart from it being his and the hospital's job to do so, successful treatment would be the ideal way of opening communications with the natives of Meatball and ultimately laying hands on more of those wonderful, thought-controlled surgical instruments.

But what were the owners of those fabulous tools really like? Were they small and completely unspecialized with no fixed physical shape like the tools they used or, considering the mental abilities needed to develop the tools in the first place, were they little more than physically helpless brains dependent on their thought-controlled instruments to feed them, protect them and furnish all their physical needs? Conway badly wanted to know what to expect when the ship arrived. But Diagnosticians, as everyone knew, were unpredictable and even more impatient of muddy or confused thinking than was the Chief Psychologist.

He would be better advised, Conway told himself, to let his questions wait until he had actually seen his patient, which would be in just over an hour from now. The intervening period he would spend studying Descartes' report.

And having lunch.

The Monitor Survey cruiser popped into normal space, the alien spacecraft spinning like an unwieldy propeller astern, then just as quickly reentered hyperspace for the return trip to Meatball. The rescue tender closed in, snagged the towline which had been left by Descartes and fixed the free end to a rotating attachment point of its own.

Space suited Doctors Mannon and Prilicla, Lieutenant Harrison and Conway watched from the tender's open airlock.

"It's still leaking," said Mannon. "That's a good sign-there is still pressure inside . . .

"Unless it's a fuel leak," Harrison said.

"What do you feel?" asked Conway.

Prilicla's fragile, eggshell body and six pipe-stem legs were beginning to quiver violently so it was obvious that it was feeling something.

"The vessel contains one living entity," said Prilicla slowly. "Its emotional radiation is comprised chiefly of fear and feelings of pain and suffocation. I would say that these feelings have been with it for many days-the radiation is subdued and lacking in clarity due to developing unconsciousness. But the quality of that entity's mentation leaves no doubt that it is intelligent and not simply an experimental animal..

"It's nice to know," said Mannon dryly, "that we're not going to all this trouble for an instrument package or a Meatball space puppy...

"We haven't much time," said Conway.

He was thinking that their patient must be pretty far gone by now. It's fear was understandable, of course, and its pain, suffocation and diminished consciousness were probably due to injury, intense hunger and foul breathing water. He tried to put himself in the Meatball astronaut's position.

Even though the pilot had been badly confused by the apparently uncontrollable spinning, the being had deliberately sought to maintain the spin when Descartes tried to take it aboard because it must have been smart enough to realize that a tumbling ship could not be drawn into the cruiser's hold. Possibly it could have checked its own spin with steering power if Descartes had not been so eager to rush to its aid-but that was simply a possibility, of course, and the spacecraft had been leaking badly as well. Now it was still leaking and spinning and, with its occupant barely conscious, Conway thought he could risk frightening it just a little more by checking the spin and moving the vehicle into the tender and the patient as quickly as possible into the water-filled compartment where they could work on it.

But as soon as the immaterial fingers of the tractor beams reached out an equally

invisible force seemed to grip Prilicla's fragile body and shake it furiously.

"Doctor," said the empath, "the being is radiating extreme fear. It is forcing coherent thought from a mind which is close to panic. It is losing consciousness rapidly, perhaps dying. . . Look! It is using steering thrust!"

"Cut!" shouted Conway to the tractor beamers. The alien spacecraft, which had almost come to rest, began to spin slowly as vapor jetted from lateral vents in the nose and stern. After a few minutes the jets became irregular, weaker and finally ceased altogether, leaving the vehicle spinning at approximately half its original speed. Prilicla still looked as if its body was being shaken by a high wind.

"Doctor," said Conway suddenly, "considering the kind of tools these people use I wonder if some kind of psionic force is being used against you-you are shaking like a leaf."

When it replied Prilicla's voice was, of course, devoid of all emotion. "It is not thinking directly at anyone, friend Conway," said the empath. "Its emotional radiation is composed chiefly of fear and despair. Perceptions are diminishing and it seems to be struggling to avoid a final catastrophe . . .

"Are you thinking what I'm thinking?" said Mannon suddenly.

"If you mean am I thinking of setting the thing spinning at full speed again," Conway replied. "The answer is yes. But there's no logical reason for doing so, is there?"

A few seconds later the tractor beam men reversed polarity to increase the vessel's spin. Almost immediately Prilicla's trembling ceased and it said, "The being feels much better now-relatively, that is. Its vitality is still very low."

Prilicla began to tremble again and this time Conway knew that his own feelings of angry frustration were affecting the little being. He tried to make his thinking cooler and more constructive, even though he knew that the situation was essentially the same as it had been when Descartes had first tried to aid the Meatball astronaut, that they were making no progress at all.

But there were a few things he could do which would help the patient, however indirectly.

The vapor escaping from the vehicle should be analyzed to see if it was fuel or simply water from the being's life-support system. Much valuable data could be gained from a direct look at the patient-even if it was only possible to see it through the wrong end of a periscope, since the vessel did not possess a direct-vision port. They should also seek means of entering the vessel to examine and reassure the occupant before transferring it to the ambulance and the wards.

Closely followed by Lieutenant Harrison, Conway pulled himself along the towing cable toward the spinning ship. By the time they had gone a few yards both men were turning with the rotating cable so that when they reached the spacecraft it seemed steady while the rest of creation whirled around them in dizzying circles. Mannon stayed in the airlock, insisting that he was too old for such acrobatics, and Prilicla approached the vessel drifting free and using its spacesuit propulsors for maneuvering.

Now that the patient was almost unconscious the Cinruskin had to be close to detect subtle changes in its emotional radiation. But the long, tubular hull was hurtling silently past the little being like the vanes of some tremendous windmill.

Conway did not voice his concern, however. With Prilicla one did not need to.

"I appreciate your feelings, friend Conway," said Prilicla, "but I do not think that I was born, despite my physiological classification, to be swatted."

At the hull they transferred from the towing cable and used wrist and boot magnets to cling to the spinning ship, noting that the magnetic grapple placed there by Descartes had seriously dented the hull plating and that the area was obscured by a fog of escaping vapor. Their own suit magnets left shallow grooves in the plating as well. The metal was not much thicker than paper, and Conway felt that if he made a too sudden movement he would kick a hole in it.

"It isn't quite as bad as that, Doctor," said the Lieutenant. "In our own early days of

space flight-before gravity control, hyper spatial travel and atomic motors made considerations of weight of little or no importance-vehicles had to be built as light as possible. So much so that the fuel contents were sometimes used to help stiffen the structure.

"Nevertheless," said Conway, "I feel as if I am lying on very thin ice-I can even hear water or fuel gurgling underneath. Will you check the stern, please. I'll head forward."

They took samples of the escaping vapor from several points and they tapped and sounded and listened carefully with sensitive microphones to the noises coming from inside the ship. There was no response from the occupant, and Prilicla told them that it was unaware of their presence. The only signs of life from the interior were mechanical. There seemed to be an unusually large amount of machinery, to judge from the sounds they could hear, in addition to the gurgling of liquid. And as they moved toward the extremities of the vessel, centrifugal force added another complication.

The closer they moved toward the bow or stern, the greater was the force tending to fling them off the spinning ship.

Conway's head was pointing toward the ship's bow so that the centrifugal force was imposing a negative G on his body. It was not really uncomfortable as yet, however-he felt a little pop-eyed but there was no redding out of vision. His greatest discomfort came from the sight of the ambulance ship, Prilicla and the vast, tubular Christmas tree which was Sector General sweeping around the apparently steady ship's bows. When he closed his eyes the feeling of vertigo diminished, but then he could not see what he was doing.

The farther forward he went the more power his suit magnets needed to hold him against the smooth metal of the ship's hull, but he could not increase the power too much because the thin plating was beginning to ripple under the magnets and he was afraid of tearing open the hull. But a few feet ahead there was a stubby, projecting pipe which was possibly some kind of periscope and he began to slide himself carefully toward it. Suddenly he began to slip forward and grabbed instinctively for the pipe as he slithered past.

The projection bent alarmingly in his hand and he let go hurriedly, noticing the cloud of vapor which had formed around it, and he felt himself being flung away like a stone from a slingshot.

"Where the blazes are you, Doctor?" said Mannon. "Last time around you were there, now you aren't .

"I don't know, Doctor," Conway replied angrily. He lit one of his suit's distress flares and added, "Can you see me now?"

As he felt the tractor beams focus on him and begin to draw him back to the tender, Conway went on, "This is ridiculous! We're taking far too long over what should be a simple rescue job. Lieutenant Harrison and Doctor Prilicla, go back to the tender, please. We'll try another approach."

While they were discussing it Conway had the spacecraft photographed from every angle and had the tender's lab begin a detailed analysis of the samples Harrison and himself had gathered. They were still trying to find another approach when the prints and completed analyzes reached them several hours later.

It had been established that all the leaks in the alien spacecraft were of water rather than fuel, that the water was for breathing purposes only since it did not contain the usual animal and vegetable matter found in the Meatball ocean samples and that, compared with these local samples, its CO₂ content was rather high-the water was, in brief, dangerously stale.

A close study of the photographs by Harrison, who was quite an authority on early space flight, suggested that the flared-out stern of the ship contained a heat shield to which was mounted a solid fuel retro pack. It was now plain that, rather than an unignited final stage, the long cylindrical vehicle contained little more than the life-support equipment which, judging by its size, must be pretty crude. Having made this statement the Lieutenant promptly had second, more charitable thoughts and added that while air-breathing

astronauts could carry compressed air with them a water breather could not very well compress its water.

The point of the nose cone contained small panels which would probably open to release the landing parachutes. About five feet astern of this was another panel which was about fifteen inches wide and six feet deep. This was an odd shape for an entry and exit hatch for the pilot, but Harrison was convinced that it could be nothing else. He added that the lack of sophistication shown in the vehicle's construction made it unlikely that the exit panel was the outer seal of an airlock, that it was almost certainly a simple hatch opening into the command module.

If Doctor Conway was to open this hatch, he warned, centrifugal force would empty the ship of its water-or to be quite accurate, of half its water-within a few seconds. The same force would see to it that the water in the stern section remained there, but it was almost certain that the astronaut was in the nose cone.

Conway yawned furiously and rubbed his eyes. He said, "I have to see the patient to get some idea of its injuries and to prepare accommodation, Lieutenant. Suppose I cut a way in amidships at the center of rotation. An appreciable quantity of its water has already leaked away and centrifugal force has caused the remainder to be pushed toward the nose and stern, so that the middle of the ship would be empty and the additional loss of water caused by my entry would be slight."

"I agree, Doctor," said Harrison. "But the structure of the ship might be such that you would open a seam into the water-filled sections-it's so fragile there is even the danger that centrifugal force might pull it apart. ~

Conway shook his head. "If we put a wide, thin-metal band around the waist section, and if the band included a hinged, airtight hatch big enough for a man, we can seal the edges of the band to the ship with fast-setting cement-no welding, of course, as the heat might damage the skin-and rig a temporary airlock over the hatch. That would allow me to get in without-"

"That would be a very tricky job," said Mannon, "on a spinning ship."

Harrison said, "Yes. But we can set up a light, tubular framework anchored to the hull by magnets. The band and airlock could be set up working from that. It will take a little time, though."

Prilicla did not comment. Cinrus skins were notoriously lacking in physical stamina and the little empath had attached itself to the ceiling with six, sucker-tipped legs and had gone to sleep.

Mannon, the Lieutenant and Conway were ordering material and specialized assistance from the Hospital and beginning to organize a work party when the tender's radioman said, "I have Major O'Mara for you on Screen Two."

"Doctor Conway," said the Chief Psychologist, when he was able to see and be seen. "Rumors have reached me that you are trying-and may have already succeeded, in fact-to set up a new record for the length of time taken to transfer a patient from ship to ward. I have no need to remind you of the urgency and importance of this matter, but I will anyway. It is urgent, Doctor, and important. Off."

"You sarcastic. . ." began Conway angrily to the already fading image, then quickly controlled his feelings because they were beginning to make Prilicla twitch in its sleep.

"Maybe," said the Lieutenant, looking speculatively at Mannon, "my leg isn't properly healed since I broke it during that landing on Meatball. A friendly, cooperative doctor might decide to send me back to Level Two-eighty-three, Ward Four."

"The same friendly, helpful doctor," said Mannon dryly, "might decide a certain Earth-human nurse in 283-Four had something to do with your relapse, and he might send you to. . . say, 241-Seven. There is nothing like being fussed over by a nurse with four eyes and far too many legs to cure a man of baying at the moon."

Conway laughed. "Ignore him, Harrison. At times his mind is even nastier than O'Mara's. Right now there isn't anything more we can do and it has been a long, hard day.

Let's go to bed before we go to sleep."

Another day went by without any significant progress being made. Because of the need for urgency the team setting up the framework tried to hurry the job, with the result that they lost tools, sections of framework and on several occasions men overboard. The men could be retrieved easily enough by tractor beams, but the tools and framework sections were not equipped with signal flares and were usually lost. Cursing the necessity for having to perform a tricky job of construction on a space going merry-go-round, the men went back to work.

Progress became much slower but a little more certain, the number of dents and furrows put in the spacecraft's hull by tools and space boots had become uncountable, and the fog of water vapor escaping from the vessel continued to increase.

In a desperate attempt to speed things up, and much against Prilicla's wishes, Conway tried slowing the craft's rate of spin again. There were no signs of panic from the occupant this time, the empath reported, because it was too deeply unconscious to care. It added that it could not describe the patient's emotional radiation to anyone but another empath, but that it was its considered professional opinion that if full spin was not restored the patient would die very shortly.

Next day the framework was completed and work started on fitting the metal band which would take the temporary airlock. While the lock structure was going up Conway and Harrison attached safety lines to the framework and examined the hull. The Lieutenant discovered quite a lot about the steering jets and the circuits to the retro pack, while Conway could only stare baffled at the long, narrow exit hatch or stare through the tiny glass port-it was only a few inches in diameter-which showed little more than a shutter which opened and closed rapidly. And it was not until the following day that the Lieutenant and himself were able to enter the alien spacecraft.

Its occupant was still alive, Prilicla said, but only just.

As expected the waist section of the spacecraft was almost empty of water. Centrifugal force had caused it to collect toward the extremities of the ship, but their spotlights reflected off a dazzling fog of water vapor and droplets which, a quick investigation showed, were being stirred up by the operation of a system of sprocket wheels and chain drives that ran the length of the ship.

Moving carefully so as not to snag a hand between a gear wheel and its chain or inadvertently stick a boot through the fragile hull into space, the Lieutenant moved aft while Conway went forward. They did this so as to ensure that the vessel's center of gravity stayed as closely as possible to its center of rotation, for any imbalance introduced now would shake loose the framework and probably tear holes in the sides of the ship.

"I realize that the circulation and purification of water requires heavier hardware than an air recycling system," said Conway, speaking to Harrison and the tender, "but surely there should be a higher proportion of electrical to mechanical systems? I can't move more than a few yards forward and all I can see are gear wheels and chains drives. The circulation system sets up a strong current, as well, and I'm in danger of being drawn into the works."

The fine, ever-present mist of bubbles made it difficult to see clearly, but for a moment he caught a glimpse of something which was not part of the machinery-something that was brown and convoluted and with a suggestion of fronds or short tentacles sprouting from it, something organic. The being was hemmed in on all sides by revolving machinery, and it also seemed to be rotating, but there was so little of its body visible that he could not be sure.

"I see it," said Conway. "Not enough for accurate classification, though. It doesn't seem to be wearing a pressure suit so this must be its equivalent of shirt-sleeve conditions. But we can't get at the brute without tearing its ship apart and killing it in the process." He swore, then went on furiously, "This is ridiculous, insane! I'm supposed to come out here,

immobilize the patient, transfer it to a ward and give treatment. But this blasted thing can't be immobilized without...

"Suppose there is something wrong with its life-support system," the Lieutenant broke in. "Something which requires gravity, or artificial gravity in the form of centrifugal force, to restore proper function. If we could somehow repair this malfunctioning equipment.

"But why?" said Conway suddenly, as a vague idea that had been lurking at the back of his mind began to creep out into the light. "I mean, why should we assume that it is malfunctioning.. ." He paused, then said, "We'll open the valves of a couple of oxygen tanks in here to freshen up the beastie's air-I mean water. It's only a first-aid measure, I'm afraid, until we're in a position to do something more positive. Then back to the tender, I'm beginning to get some odd ideas about this astronaut and I'd like to test them."

They returned to the control room without taking off their suits, and were met by Prilicla who told them that the patient's condition seemed a little better although it was still unconscious. The empath added that the reason for this might be that the being was injured and in an advanced state of malnutrition as well as having been close to death through asphyxiation. Conway began telling them about his idea and sketching the alien ship as he talked.

"If this is the center of spin," he said when the drawing was complete, "and the distance from that point to the pilot's position is this, and the rate of rotation is this, can you tell me how closely does the apparent gravity in the pilot's position approach that of Meatball itself?"

"Just a minute," said Harrison as he took Conway's pen and began to scribble. A few minutes later-he had taken extra time to double check his calculations-he said, "Very close, Doctor. Identical, in fact."

"Which means," said Conway thoughtfully, "that we have here a beastie which can't, for some very good physiological reason no doubt, live without gravity, for whom weightless conditions are fatal. .

"Excuse me, Doctor," the quiet voice of the radioman cut in. "I have Major O'Mara for you on Screen Two..

Conway felt the idea which was beginning to take shape at the back of his mind being blown into tatters. Spin, he thought furiously, trying to draw it back; centrifugal force, wheels within wheels! But the square, craggy features of the Chief Psychologist were filling the screen and it was impossible to think of anything else.

O'Mara spoke pleasantly-a very bad sign. He said, "Your recent activity has been impressive, Doctor-especially when it took the form of man-made meteorite activity in the shape of dropped tools and structural material. But I'm concerned about your patient. We all are-even, and especially, the Captain of Descartes who has recently returned to Meatball.

"The Captain has run into trouble," the psychologist continued, "in the shape of three missiles with nuclear warheads which were directed at his ship. One of them went off course and dirtied up a large area of Meatball ocean, and the other two came so close that he had to use full emergency thrust to avoid them. He says that establishing communications and friendly contact with the inhabitants in these circumstances is impossible, that they obviously think he has kidnapped their astronaut for some ghastly purpose of his own, and that the return of the being in a happy and healthy condition is the only means there is of retrieving the situation... Doctor Conway, your mouth is open. Either say something or close it!"

"Sorry, sir," said Conway absently. "I was thinking. There is something I would like to try, and perhaps you could help me with it-by getting Colonel Skempton's support, I mean. We're wasting time out here, I realize that now, and I want to bring the spacecraft inside the hospital. Still spinning, of course-at first, anyway. Cargo Lock Thirty is big enough to take it and is close enough to the water-filled corridor leading to the ward we are preparing for this patient. But I'm afraid the Colonel will be a bit sticky about allowing the spacecraft into the hospital."

The Colonel was very sticky indeed, despite Conway's arguments and the support given by O'Mara. Skempton, for the third time, gave a firm and unequivocal negative.

He said, "I realize the urgency of this matter. I fully appreciate its importance to our future hopes of trading with Meatball and I sympathize with your technical problems. But you are not, repeat not, going to bring a chemically powered spacecraft with a live retro pack inside this hospital! If it accidentally ignited we might have a hole blown in the hull which would cause a lethal pressure drop on a dozen levels, or the vehicle might go bulleting into the central computer or gravity-control sections!"

"Excuse me," said Conway angrily, and turned to the Lieutenant. He asked, "Can you ignite that retro pack, working from the ambulance ship, or disconnect it?"

"I probably couldn't disconnect it without inadvertently setting it off and burning myself to a crisp," Harrison replied slowly, "but I know enough to be able to set up a relay which.. . Yes, we could ignite it from this control room."

"Go to it, Lieutenant," said Conway, and returned to the image of Skempton. "I take it, sir, that you have no objection to taking the vessel aboard after its retro pack has been fired? Or to furnishing the special equipment I will need in the cargo lock and ward?"

"The maintenance officer on that level has orders to cooperate," said Skempton. "Good luck, Doctor. Off."

While Harrison set up his relay, Prilicla kept an emotional eye on the patient while Mannon and himself worked out the being's approximate size and weight based on the brief look Conway had had of the astronaut and on the dimensions of its ship. This information would be needed quickly if the special transporter and the rotating operating theater were to be ready in time.

"I'm still here, Doctor," said O'Mara sharply, "and I have a question. Your idea that the being needs gravity, either normal or artificial, to live I can understand, but strapping it onto an elaborate merry-go-round. .

"Not a merry-go-round, sir," said Conway. "It will be mounted vertically, like a ferris wheel."

O'Mara breathed heavily through his nose. "I suppose you are quite sure that you know what you're doing, Doctor?"

"Well.. ." began Conway.

"Ask a stupid question," said the psychologist, and broke the connection.

It took longer than the Lieutenant had estimated to set up his relay- everything took longer than estimated on this assignment!-and Prilicla reported that the patient's condition was rapidly worsening. But at last the spacecraft's retros flared out for the number of seconds necessary to have brought it out of its original orbit and the ambulance ship kept pace with it, spinning it with opposing tractors as soon as thrust disappeared so that the occupant would still have the gravity it needed. There were complications even so. Immediately the retros cut out, panels opened in the nose cone and the landing parachute tumbled out and within seconds the spinning ship had wound the parachute untidily around itself.

The short period of thrust had added to the hull damage as well.

"It's leaking like a sieve!" Conway burst out. "Shoot another magnetic grapple to it. Keep it spinning and get us to Lock Thirty quick! How is the patient?"

"Conscious now," said Prilicla, trembling. "Just barely conscious and radiating extreme fear . .

Still spinning, the vehicle was maneuvered into the enormous mouth of Lock Thirty. Inside the lock chamber the artificial gravity grids under the deck were set at neutral so that the weightless conditions of space were duplicated there. Conway's feeling of vertigo, which had been with him since he had first seen the ship, was intensified by the sight of the alien vessel whirling ponderously in the enclosed space, flinging out streamers of coldly steaming water as it spun.

Then suddenly the lock's outer seal clanged shut, the tractors smoothly checked the ship's spin as, simultaneously, the artificial gravity of the deck was brought up to Meatball normal. Within a few seconds the spacecraft was resting horizontally on the deck.

"How is it?" began Conway anxiously.

Prilicla said, "Fear.. . no, extreme anxiety. The radiation is quite strong now-otherwise the being seems all right, or at least improved.. The empath gave the impression of not believing its own feelings.

The spacecraft was lifted gently and a long, low trolley mounted on balloon wheels rolled under it. Water began pouring into the lock chamber from the seal which had opened into the adjacent water-filled section. Prilicla ran up the wall and across the ceiling until it was in position a few yards above the nose of the vessel, and Mannon, Harrison and Conway waded, then swam, in the same direction. When they reached it they clustered around the forward section, ignoring the team which was throwing straps around the hull and fastening it to the trolley prior to moving it into the nearby corridor of the water-breathers, while they cut into the thin hull plating and carefully peeled it away.

Conway insisted on extreme care during this operation so as to avoid damaging the life-support machinery.

Gradually the nose section became little more than a skeleton and the astronaut lay revealed, like a leathery, brown caterpillar with its tail in its mouth that was caught on one of the innermost gear wheels of a giant clock. By this time the vessel was completely submerged, oxygen was being released into the water all around it, and Prilicla was reporting the patient's feelings as being extremely anxious and confused.

"It's confused.. ." said a familiar, irascible voice and Conway discovered O'Mara swimming beside him. Colonel Skempton was dogpaddling along on his other side, but silently. The psychologist went on, "This is an important one, Doctor, in case you've forgotten-hence our close personal interest. But now why don't you pull that glorified alarm clock apart and get the patient out of there? You've proved your theory that it needed gravity to live, and we're supplying that now. .

"No, sir," said Conway, "not just yet.."

"Obviously the rotation of the being inside the capsule," Colonel Skempton broke in, "compensates for the ship's spin, thus allowing the pilot a stationary view of the outside world."

"I don't know," said Conway doggedly. "The ship's rotation does not quite match that of the astronaut inside it. In my opinion we should wait until we can transfer it quickly to the ferris wheel, which will almost exactly duplicate module conditions. I have an idea-it may be a pretty wild one-that we aren't out of the woods yet."

"But transferring the whole ship into the ward when the patient alone could be moved there in a fraction of the time. .

"No," said Conway.

"He's the Doctor," said O'Mara, before the argument could develop further, and smoothly directed the Colonel's attention to the system of paddle-wheels which kept the water-breathing astronaut's air circulating.

The enormous trolley, its weight supported in the water to a large extent by air-filled balloon tires, was manhandled along the corridor and into the tremendous tank which was one of the combined theater/wards of the hospital's water-breathing patients. Suddenly there was another complication.

"Doctor! It's coming out!"

One of the men swarming around the nose section must have accidentally pushed the astronaut's ejection button, because the narrow hatch had swung open and the system of gears, sprocket wheels and chain drives was sliding into new positions. Something which looked like three five foot diameter tires was rolling toward the opening.

The innermost tire of the three was the astronaut while the two on each side of it had a metallic look and a series of tubes running from them into the central, organic tire-probably

food storage tanks, Conway thought. His theory was borne out when the outer sections stopped just inside the hatch and the alien, still trailing one of the feeding tubes, rolled out of its ship. Still turning it began to fall slowly toward the floor eight feet below.

Harrison, who was nearest, tried to break its fall but could only get one hand to it. The being tipped over and hit the floor flat on its side. It bounced slowly just once and came to rest, motionless.

"It is unconscious again, dying! Quickly, friend Conway!"

The normally polite and self-effacing empath had turned the volume of its suit radio to maximum so as to attract attention quickly. Conway acknowledged with a wave-he was already swimming toward the fallen astronaut as fast as he could-and yelled at Harrison, "Get it upright, man! Turn it!"

"What.. ." began Harrison, but he nevertheless got both hands under the alien and began to lift.

Mannon, O'Mara and Conway arrived together. With four of them working on it they quickly lifted the being into an upright position, but when Conway tried to get them to roll it, it wobbled like a huge, soggy hoop and tended to fold in on itself. Prilicla, at great danger to life and its extremely fragile limbs, landed beside them and deafened everyone with details of the astronaut's emotional radiation-which was now virtually nonexistent.

Conway yelled directions to the other three to lift the alien to waist height while keeping it upright and turning. Within a few seconds he had O'Mara pulling down on his side, Mannon lifting on his and the Lieutenant and himself at each flank turning and steadying the great, flaccid, ring-shaped body.

"Cut your volume, Prilicla!" O'Mara shouted. Then in a quieter, furious voice he snarled, "I suppose one of us knows what we're doing?"

"I think so," said Conway. "Can you speed it up-it was rotating much faster than this inside its ship. Prilicla?"

"It . . . it is barely alive, friend Conway."

They did everything possible to speed the alien's rotation while at the same time moving it toward the accommodation prepared for it. This contained the elaborate ferris wheel which Conway had ordered and a watery atmosphere which duplicated the soup of Meatball's oceans. It was not an exact duplicate because the material suspended in the soup was a nonliving synthetic rather than the living organisms found in the original, but it had the same food value and, because it was nontoxic so far as the other water breathers who were likely to use the ward were concerned, the astronaut's quarters were contained by a transparent plastic film rather than metal plating and a lock chamber. This also helped speed the process of getting the patient into its ward and onto the wheel.

Finally it was in position, strapped down and turning in the direction and at the same velocity as its "couch" on the spacecraft. Mannon, Prilicla and Conway attached themselves as close to the center of the wheel and their rotating patient as possible and, as their examination proceeded, theater staff, special instruments, diagnostic equipment and the very special, thought-controlled "tool" from Meatball added themselves or were attached to the framework of the wheel and whirled up and over and around through the nearly opaque soup.

The patient was still deeply unconscious at the end of the first hour.

For the benefit of O'Mara and Skempton, who had relinquished their places on the wheel to members of the theater staff, Conway said, "Even at close range it is difficult to see through this stuff, but as the process of breathing is involuntary and includes ingestion, and as the patient has been short of food and air for a long time, I'd prefer not to work in clear, food-free water at this time."

"My favorite medicine," said Mannon, "is food."

"I keep wondering how such a life-form got started," Conway went on. "I suppose it all began in some wide, shallow, tidal pool-so constituted that the tidal effects caused the water to wash constantly around it instead of going in and out. The patient might then have evolved

from some early beastie which was continually rolled around in the shallows by the circular tides, picking up food as it went. Eventually this prehistoric creature evolved specialized internal musculature and organs which allowed it to do the rolling instead of trusting to the tides and currents, also manipulatory appendages in the form of this fringe of short tentacles sprouting from the inner circumference of its body between the series of gill mouths and eyes. Its visual equipment must operate like some form of coeleostat since the contents of its field of vision are constantly rotating.

"Reproduction is probably by direct fission," he went on, "and they keep rolling for every moment of their lives, because to stop is to die."

"But why?" O'Mara broke in. "Why must it roll when water and food can be sucked in without it having to move?"

"Do you know what is wrong with the patient, Doctor?" Skempton asked sharply, then added worriedly, "Can you treat it?"

Mannon made a noise which could have been a snort of derision, a bark of laughter or perhaps merely a strangled cough.

Conway said, "Yes and no, sir. Or, in a sense, the answer should be yes to both questions." He glanced at O'Mara to include the psychologist and went on, "It has to roll to stay alive-there is an ingenious method of shifting its center of gravity while keeping itself upright by partially inflating the section of its body which is on top at any given moment. The continual rolling causes its blood to circulate-it uses a form of gravity feed system instead of a muscular pump. You see, this creature has no heart, none at all. When it stops rolling its circulation stops and it dies within a few minutes.

"The trouble is," he ended grimly, "we may have almost stopped its circulation once too often."

"I disagree, friend Conway," said Priicla, who never disagreed with anyone as a rule. The empath's body and pipe stem legs were quivering, but slowly in the manner of a Cinruskin who was being exposed to emotion of a comfortable type. It went on, "The patient is regaining consciousness quickly. It is fully conscious now. There is a suggestion of dull, unlocalized pain which is almost certainly caused by hunger, but this is already beginning to fade. It is feeling slightly anxious, very excited and intensely curious.

"Curious?" said Conway.

"Curiosity is the predominating emotion, Doctor."

"Our early astronauts," said O'Mara, "were very special people, too .

It was more than an hour later by the time they were finished, medically speaking, with the Meatball astronaut and were climbing out of their suits. A Corps linguist was sharing the ferris wheel with the alien with the intention of adding, with the minimum of delay, a new e-t language to the memory banks of the hospital's translation computer, and Colonel Skempton had left to compose a rather tricky message to the Captain of Descartes.

"The news isn't all good," Conway said, grinning with relief despite himself. "For one thing, our 'patient' wasn't suffering from anything other than malnutrition, partial asphyxiation and general mishandling as a result of being rescued-or rather by-by Descartes. As well, it shows no special aptitude in the use of the thought-controlled tools and seems completely unfamiliar with the things. This can only mean that there is another intelligent race on Meatball. But when our friend can talk properly I don't think there will be much difficulty getting it to help us find the real owners-it doesn't hold any grudges for the number of times we nearly killed it, Priicla says, and.., and I don't know how we managed to come out of this so well after all the stupid mistakes we made."

"And if you are trying to extract a compliment from me for another brilliant piece of deductive reasoning, or your lucky guess," said O'Mara sourly, "you are wasting your time and mine. .

Mannon said, "Let's all have lunch."

Turning to go, O'Mara said, "You know I don't eat in public-it gives the impression that I am an ordinary human being like everyone else. Besides, I'll be too busy working out a set

of tests for yet another so-called intelligent species . .

BLOOD BROTHER

This is not a purely medical assignment, Doctor," said O'Mara when Conway was summoned to the Chief Psychologist's office three days later, "although that is the most important, naturally. Should your problems develop political complications-"

"I shall be guided by the vast experience of the cultural-contact specialists of the Monitor Corps," said Conway.

"Your tone, Doctor Conway," said O'Mara dryly, "is an implied criticism of the splendid body of men and creatures to which I have the honor to belong..

The third person in the room continued to make gurgling sounds as it rotated ponderously like some large, organic prayer wheel, but otherwise said nothing.

..... But we're wasting time," O'Mara went on. "You have two days before your ship leaves for Meatball-time enough, I should think, to tidy up any personal or professional loose ends. You had better study the details of this project as much as possible, while you still have comfortable surroundings in which to work."

He continued, "I have decided, reluctantly, to exclude Doctor Prilicla from this assignment-Meatball is no place for a being who is so hypersensitive to emotional radiation that it practically curls up and dies if anyone thinks a harsh thought at it. Instead you will have Surreshun here, who has volunteered to act as your guide and adviser-although why it is doing so when it was quite literally by and nearly killed by us is a mystery to me . .

"It is because I am so brave and generous and forgiving," said Surreshun in its flat, Translated voice. Still rotating, it added, "I am also farsighted and altruistic and concerned only with the ultimate good of both our species."

"Yes," said O'Mara in a carefully neutral voice. "But our purpose it not completely altruistic. We plan to investigate and assess the medical requirements on your home planet with a view to rendering assistance in this area. Since we are also generous, altruistic and... and highly ethical this assistance will be given freely in any case, but if you should offer to make available to us a number of those instruments, quasiliving implements, tools or what ever you choose to call them which originate on your planet-"

"But Surreshun has already told us that its race does not use them.. ." began Conway.

"And I believe it," said Major O'Mara. "But we know that they come from its home planet and it is your problem-one of your problems, Doctor-to find the people who do use them. And now, if there are no other questions . .

A few minutes later they were in the corridor. Conway looked at his watch and said, "Lunch. I don't know about you, but I always think better with my mouth full. The water breathers' section is just two levels above us- "It is kind of you to offer but I realize how inconvenient it is for

your species to eat in my environment," replied Surreshun. "My life-support equipment contains an interesting selection of food and, although I am completely unselfish and thoughtful where the comfort of my friends is concerned, I shall be returning home in two days and the opportunities of experiencing multienvironment conditions and contacts are therefore limited. I should prefer to use the dining facilities of your warm-blooded oxygen breathers."

Conway's sigh of relief was untranslatable. He merely said, "After you.

As they entered the dining hall Conway tried to decide whether to eat standing up like a Tralthan or risk giving himself a multiple hernia on a Melfan torture rack. All the Earth-human tables were taken.

Conway insinuated himself into a Melfan chair while Surreshun, whose food supply was suspended in the water it breathed, parked its mobile life-support system as close as

possible to the table. He was about to order when there was an interruption. Thornnastor, the Diagnostician-in-Charge of Pathology, lumbered up, directed an eye at each of them while the other two surveyed the room at large and made a noise like a modulated foghorn.

The sounds were retransmitted in the usual toneless voice saying, "I saw you come in, Doctor and Friend Surrehun, and wondered if we might discuss your assignment for a few minutes-before you begin your meal . .

Like all its fellow Tralthans Thornnastor was a vegetarian. Conway had the choice of eating salad-a food which he considered fit only for rabbits-or waiting, as his superior had suggested, on a steak.

At the tables around them people finished their lunches and walked, undulated and, in one case, flew out to be replaced by a similar assortment of extraterrestrials, and still Thornnastor continued to discuss methods of processing the data and specimens they would be sending him and the efficient organization of this planet-sized medical examination. As the being responsible for analyzing this mass of incoming data it had very definite ideas on how the job should be handled.

But finally the pathologist lumbered off, Conway ordered his steak and for a few minutes he performed major surgery with knife and fork in silence. Then he became aware that Surrehun's Translator was making a low, erratic growling sound which was probably the equivalent of the untranslatable noise an Earth-human would make clearing his throat. He asked, "You have a question?"

"Yes," said Surrehun. It made another untranslatable sound then went on, "Brave and resourceful and emotionally stable as I am..

"Modest, too," said Conway dryly.

I cannot help but feel slightly concerned over tomorrow's visit to the being O'Mara's office. Specifically, will it hurt and are there any mental aftereffects?"

"Not a bit and none at all," said Conway reassuringly. He went onto explain the procedure used for taking a brain recording or Educator Tape, adding that the whole affair was entirely voluntary and should the idea cause Surrehun mental or physical distress it could change its mind at any time without loss of respect. It was doing the hospital a great service by allowing O'Mara to prepare this tape, a tape which would enable them to gain a full and valuable understanding of Surrehun's world and society~

Surrehun was still making the equivalent of "Aw, shucks noises when they finished their meal. Shortly afterward it left for a roll around the water-filled AUGL ward and Conway headed for his own section.

Before morning he would have to make a start on tidying up loose ends, familiarizing himself with Meatball conditions and drawing up some fairly detailed plans for procedure prior to arrival-if for no other reason than to give the corpsman who would be assisting him the idea that Sector General doctors knew what they were doing.

Currently in his charge were a ward of silver furred caterpillar Kelgians and the hospital's Tralthan maternity section. He was also responsible for a small ward of Hudlars, with their hide like flexible armor plate, whose artificial gravity system was set at five Gs and whose atmosphere was a dense, high-pressure fog-and the oddball TLTU classification entity hailing from he knew not where who breathed superheated steam. It took more than a few hours to tidy up such a collection of loose ends.

The courses of treatment or convalescence were well advanced, but he felt obliged to have a word with them all and say good-bye because they would be discharged and back on their home planets long before he returned from Meatball.

Conway had a hurried and unbalanced meal off an instrument trolley, and then decided to call Murchison. Reaction to his lengthy bout of medical dedication was setting in, he thought cynically, and he was beginning to think only of his own selfish pleasure...

But in Pathology they told him that Murchison was on duty in the methane section,

encased in a small half-track vehicle-heavily insulated, jammed with heaters inside, hung with refrigerators outside-which was the only way of entering the Cold Section without both freezing herself to death within seconds and blasting the life out of every patient in the ward with her body heat.

He was able to get through to her on a relay from the ward's duty room but, remembering the ears both human and otherwise which were probably listening in, he spoke briefly and professionally about his coming assignment and the possibility that she might be able to join him on Meatball in her capacity as a pathologist, and suggested that they discuss the details on the recreation level when she came off duty. He discovered that that would not be for six hours. While she spoke he could hear in the background the ineffably sweet and delicate tinkling-like the chiming of colliding snowflakes, he thought-of a ward full of intelligent crystals talking to each other.

Six hours later they were in the recreation level, where trick lighting and some really inspired landscaping gave an illusion of spaciousness, lying on a small, tropical beach enclosed on two sides by cliffs and open to a sea which seemed to stretch for miles. Only the alien vegetation growing from the cliff tops kept it from looking like a tropical bay anywhere on Earth, but then space was at a premium in Sector General and the people who worked together were expected to play together as well.

Conway was feeling very tired and he realized suddenly that he would have been due to start tomorrow morning's rounds in two hours' time if he still had had rounds to make. But tomorrow-today, that was- would be even busier and, if he knew his O'Mara, Conway would not be completely himself.

When he awakened, Murchison was leaning over him with an expression which was a mixture of amusement, irritation and concern. Punching him not too gently in the stomach she said, "You went to sleep on me, in the middle of a sentence, over an hour ago! I don't like that-it makes me feel insecure, unwanted, unattractive to men." She went on punishing his diaphragm. "I expected to hear some inside information, at least. Some idea of the problems or dangers of your new job and how long you will be gone. At very least I expected a warm and tender farewell . . ."

"If you want to fight," said Conway laughing, "let's wrestle..."

But she slipped free and took off for the water. With Conway close behind she dived into the area of turbulence surrounding a Tralthan who was being taught how to swim. He thought he had lost her until a slim, tanned arm came around his neck from behind and he swallowed half of the artificial ocean.

While they were catching their breath again on the hot, artificial sand, Conway told her about the new assignment and about the tape taken from Surrishun which he was expected to take shortly. Descartes was not due to leave for another thirty-six hours, but for most of that time Conway would have delusions of being an animated doughnut which probably considered all Earth-human females as shapeless and unlovely bags of dough, or perhaps something much worse.

They left the recreation level a few minutes later, talking about the best way of wangling her release from Thornnastor, to whose elephantine species the word romance was just an unTranslatable noise.

There was no real necessity for them to leave the recreation level, of course. It was just that the Earth-human DBDGs were the only race in the Galactic Federation with a nudity taboo, and one of the very few member species with an aversion to making love in public.

Surrishun had already gone when Conway arrived in Major O'Mara's office. "You know it all already, Doctor," said the psychologist as he and Lieutenant Craythorne, his assistant, hooked him up to the Educator. "But I am nevertheless required to warn you that the first few minutes following memory transfer are the worst-it is then that the human mind feels sure that it is being taken over by the alien alter ego. This is a purely subjective phenomenon caused

by the sudden influx of alien memories and experience. You must try to maintain flexibility of mind and adapt to these alien, sometimes very alien, impressions as quickly as possible. How you do this is up to you. Since this is a completely new tape I shall monitor your reactions in case of trouble. How do you feel?"

"Fine," said Conway, and yawned.

"Don't show off," said O'Mara, and threw the switch.

Conway came to a few seconds later in a small, square, alien room whose planes and outlines, like its furnishings, were too straight and sharp-edged. Two grotesque entities—a small part of his mind insisted they were his friends—towered over him, studying him with flat, wet eyes set in two faces made of shapeless pink dough. The room, its occupants and himself were motionless and...

He was dying!

Conway was aware suddenly that he had pushed O'Mara onto the floor and that he was sitting on the edge of the treatment couch, fists clenched, arms crossed tightly over his chest, swaying rapidly back and forth. But the movement did not help at all—the room was still too horrifying, dizzyingly steady! He was sick with vertigo, his vision was fading, he was choking, losing all sense of touch...

"Take it easy, lad," said O'Mara gently. "Don't fight it. Adapt."

Conway tried to swear at him but the sound which came out was like the bleat of a terrified small animal. He rocked forward and back, faster and faster, wagging his head from side to side. The room jerked and rolled about but it was still too steady. The steadiness was terrifying and lethal. How, Conway asked himself in utter desperation, does one adapt to dying?

"Pull up his sleeve, Lieutenant," said O'Mara urgently, "and hold him steady."

Conway lost control then. The alien entity who apparently had control would not allow anyone to immobilize its body—that was unthinkable! He jumped to his feet and staggered into O'Mara's desk. Still trying to find a movement which would pacify the alien inside his mind Conway crawled on hands and knees through the organized clutter on top of the desk, rolling and shaking his head.

But the alien in his mind was dizzy from standing still and the Earth human portion was dizzy from too much movement. Conway was no psychologist but he knew that if he did not think of something quickly he would end up as a patient-of O'Mara's—instead of a doctor, because his alien was firmly convinced that it was dying, right now.

Even by proxy, dying was going to be a severe traumatic experience.

He had had an idea when he climbed onto the desk, but it was hard to recall it when most of his mind was in the grip of panic reaction. Someone tried to pull him off and he kicked until they let go, but the effort made him lose his balance and he tumbled head first onto O'Mara's swivel chair. He felt himself rolling toward the floor and instinctively shot out his leg to check the fall. The chair swiveled more than 180 degrees, so he kicked out again, and again. The chair continued to rotate, erratically at first, but then more smoothly as he got the hang of it.

His body was jackknifed on its side around the back of the chair, the left thigh and knee resting flat on the seat while the right foot kicked steadily against the floor. It was not too difficult to imagine that the filing cabinets, bookshelves, office door and the figures of O'Mara and Craythorne were all lying on their sides and that he, Conway, was rotating in the vertical plane. His panic began to subside a little.

"If you stop me," said Conway, meaning every word, "I'll kick you in the face..."

Craythorne's expression was ludicrous as his face wobbled into sight. O'Mara's was hidden by the open door of the drug cabinet.

Defensively Conway went on, "This is not simply revulsion to a suddenly introduced alien viewpoint—believe me, Surreshun as a person is more human than most of the taped entities I've had recently. But I can't take this one! I'm not the psychologist around here, but I don't think any sane person can adapt to a continually recurring death agony."

"On Meatball," he continued grimly, "there is no such thing as pretending to be dead, sleeping or unconsciousness. You are either moving and alive or still and dead. Even the young of Surreshun's race rotate during gestation until-

"You've made your point, Doctor," said O'Mara, approaching once again. His right hand, palm upward, held three tablets. "I won't give you a shot because stopping you to do so will cause distress, obviously. Instead I'll give you three of these sleep-bombs. The effects will be sudden and you will be out for at least forty-eight hours. I shall erase the tape while you're unconscious. There will be a few residual memories and impressions when you awaken, but no panic.

"Now open your mouth, Doctor. Your eyes will close by themselves

Conway awoke in a tiny cabin whose austere color scheme told him that he was aboard a Federation cruiser and whose wall plaque narrowed it down to Cultural Contact and Survey vessel Descartes. An officer wearing Major's insignia was sitting in the single, fold-down chair, overcrowding the cabin while studying one of the thick Meatball files. He looked up.

"Edwards, ship's medical officer," he said pleasantly. "Nice to have you with us, Doctor. Are you awake?"

Conway yawned furiously and said, "Half."

"In that case," said Edwards, moving into the corridor so that Conway could have room to dress, "the Captain wants to see us.

Descartes was a large ship and its control room was spacious enough to contain Surreshun's life-support system without too much inconvenience to the officers manning it. Captain Williamson had invited the roller to spend most of its time there—a compliment which could be appreciated by any astronaut regardless of species—and for a being who did not know the meaning of sleep it had the advantage of always being manned. Surreshun could talk to them, after a fashion.

The vessel's computer was tiny compared with the monster which handled Translation at Sector General, and even then only a fraction of its capacity could be spared for translation purposes since it still had to serve the ship. As a result the Captain's attempts at communicating complex psycho political ideas to Surreshun were not meeting with much success.

The officer standing behind the Captain turned and he recognized Harrison. Conway nodded and said, "How's the leg, Lieutenant?"

"Fine, thank you," said Harrison. He added seriously, "It troubles me a little when it rains, but that isn't often in a spaceship..

"If you must make conversation, Harrison," said the Captain with controlled irritation, "please make intelligent conversation." To Conway he said briskly, "Doctor, its governmental system is completely beyond me—if anything it appears to be a form of paramilitary anarchy. But we must contact its superiors or, failing this, its mate or close relatives. Trouble is, Surreshun doesn't even understand the concept of parental affection and its sex relationships seem to be unusually complex..

"That they are," said Conway with feeling.

"Obviously you know more than we do on this subject," said the Captain, looking relieved. "I had hoped for this. As well as sharing minds for a few minutes it was also your patient, I'm told?"

Conway nodded. "It was not really a patient, sir, since it wasn't sick, but it cooperated during the many physiological and psychological tests. It is still anxious to return home and almost as anxious for us to make friendly contact with its people. What is the problem, sir?"

Basically the Captain's problem was that he had a suspicious mind and he was giving the Meatball natives credit for having similar minds. So far as they were concerned Surreshun, the first being of their race to go into space, had been swallowed up by Descartes' cargo lock and taken away.

"They expected to lose me," Surreshun put in at that point, "but they did not expect to

have me stolen."

Their subsequent reaction on Descartes' return was predictable- every form of nastiness of which they were capable had been hurled at the ship. The nuclear missiles were easily evaded or knocked out, but Williamson had withdrawn because their warheads had been of a particularly dirty type and surface life would have been seriously affected by fallout if the attack had been allowed to continue. Now he was returning again, this time with Meatball's first astronaut, and he must prove to the planetary authorities and/or Surrেশun's friends that nothing unpleasant had happened to it.

The easiest way of doing this would be to go into orbit beyond the range of their missiles and let Surrेशun itself spend as much time as necessary convincing its people that it had not been tortured or had its mind taken over by some form of monstrous alien life like the Captain. Its vehicle's communications equipment had been duplicated so there was no technical problem. Nevertheless, Williamson felt that the proper procedure would be for him to communicate with the Meatball authorities and apologize for the mistake before Surrेशun spoke.

"The original purpose of this exercise was to make friendly contact with these people," Williamson concluded, "even before you people at the hospital got so excited about these thought-controlled tools and decided that you wanted more of them."

"My reason for being here is not altogether commercial," said Conway, in the tone of one whose conscience is not altogether clear. He went on, 'So far as the present problem is concerned, I can help you. The difficulty stems from your not understanding their complete lack of parental and filial affection or any other emotional ties other than the brief but very intense bond which exists prior to and during the mating process. You see, they really do hate their fathers and everyone else who . . .

"Help us, he said," muttered Edwards.

Everyone else who is directly related to them," Conway went on.

"As well, some of Surrेशun's more unusual memories have remained in my mind. This sometimes occurs after exposure to an unusually alien personality, and these people are unusual. .

The structure of Meatball's society until the fairly recent past had been a complete reversal of what most intelligent species considered normal. Outwardly it was an anarchy in which the most respected people were the rugged individualist, the far travelers, the beings who lived dangerously and continually sought for new experiences. Cooperation and self-imposed discipline was necessary for mutual protection, of course, since the species had many natural enemies, but this was completely foreign to their natures and only the cowards and weaklings who put safety and comfort above all else were able to overcome the shame of close physical cooperation.

In the early days this stratum of society was considered to be the lowest of the low, but it had been one of them who had devised a method of allowing a person to rotate and live without having to travel along the sea bed. This, the ability to live while remaining stationary, was analogous to the discovery of fire or the wheel on Earth and had been the beginning of technological development on Meatball.

As the desire for comfort, safety and cooperation grew the number of rugged individualists dwindled-they tended to be killed off rather frequently, in any case. Real power came to lie in the stubby tentacles of the beings who worried about the future or who were so curious about the world around them that they were willing to do shameful things and give up practically all of their physical freedom to satisfy it. They made a token admission of guilt and lack of authority, but they were, in fact, the real rulers. The individualists who were nominally the rulers had become figureheads with one rather important exception.

The reason for this topsy-turvy arrangement was a deep, sex-based revulsion toward all blood relations. Since the rollers of Meatball had evolved in a fairly small and confined area and had been forced to move continually within this area, physical contact for mating purposes-a wholly instinctive affair in presapient times-was much more likely to occur

between relatives than complete strangers, they had evolved an effective safeguard against inbreeding.

Surreshun's species reproduced hermaphroditically. Each parent after mating grew their twin offspring, one on each side of their bodies like continuous blisters encircling the side walls of a tire. Injury, disease or the mental confusion immediately following birth could cause the parent to lose balance, roll onto its side, stop and die. But this type of fatality occurred less frequently now that there were machines to maintain the parent's rotation until it was out of danger. But the points where the children eventually detached themselves from their parents remained very sensitive areas to everyone concerned and their positions were governed by hereditary factors. The result was that any close blood relation trying to make mating contact caused itself and the other being considerable pain. The rollers really did hate their fathers and every other relative. They had no choice.

..... And the very brief period of courtship," Conway added in conclusion, "explains the apparent boastfulness we have observed in Surreshun. During a chance convergence on the sea bottom there is never much time to impress an intended mate with the strength and beauty of one's personality, so that modesty is definitely a no survival characteristic."

The Captain gave Surreshun a long, thoughtful look, then turned back to Conway. "I take it, Doctor, that our friend, because of the long training and discipline necessary to its becoming Meatball's first astronaut, belongs to the lowest social stratum even though unofficially it may be quite well thought of?"

Conway shook his head. "You're forgetting, sir, the importance- again this is tied in with the avoidance of inbreeding-which these people place on the far travelers who bring back new blood and knowledge. In this respect Surreshun is unique. As the planet's first astronaut it is top dog no matter which way you view it-it is the most respected being on its world and its influence is, well, considerable."

The Captain did not speak, but his features were stretching themselves into the unusual, for them, configuration of a smile.

"Speaking as one who had been inside looking out," said Conway, "you can be sure that it doesn't hold a grudge over being kidnapped-it feels obligated to us, in fact-and that it will cooperate during contact procedure. Just remember, sir, to stress our differences to these people. They are the strangest species we have encountered-which is literally true. Be especially careful not to talk about us all being brothers under the epidermis, or that we belong to the great, galaxy-wide family of intelligent life. 'Family' and 'brother' are dirty words!"

Shortly afterward Williamson called a meeting of the cultural contact and communications specialists to discuss Conway's new information. Despite the poor translation facilities available on Descartes, by the time the watch-keeping officers in the control room had been relieved for the second time they had completed plans for making contact with the natives of Meatball.

But the senior cultural-contact specialist was still not satisfied-he wanted to study the culture in depth. Normal civilizations, he insisted, were based upon the extension of family ties to tribe, village and country until eventually the world was untied. He could not see how a civilization could rise without such cooperation at family and tribal level, but he thought that a closer study of personal relationships, might clarify things. Perhaps Doctor Conway would like to take the Surreshun tape again?

Conway was tired, irritable and hungry. His reply was forestalled by Major Edwards who said, "No! Definitely not! O'Mara has given me strict instructions about this. With respect, Doctor, he forbids it even if you are stupid enough to volunteer. This is one species whose tapes are unusable. Dammit, I'm hungry and I don't want more sandwiches!"

"Me, too," said Conway.

"Why are doctors always hungry?" asked the CC officer.

"Gentlemen," said the Captain tiredly.

"Speaking personally," Conway said, "it is because my entire adult life had been

devoted to the unselfish service of others and my wide powers of healing and surgical skill instantly available at any time of the day or night. The tenets of my great and altruistic profession demand no less. These sacrifices-the long hours, inadequate sleep and irregular meals-I suffer willingly and without complaint. If I should think of food more often than seems normal for lesser beings it is because some medical emergency may arise to make the next meal uncertain and eating now will enable me to bring a greater degree of skill-even laymen like yourselves must appreciate the effect of malnutrition on mind and muscle- to the aid of my patient."

He added dryly, "There is no need to stare, gentlemen. I am merely preparing my mind for contact with Surrshun's people by pretending that modesty does not exist."

For the remainder of the voyage Conway divided his time between Communications and Control talking to the Captain, Edwards and Surrshun. But by the time Descartes materialized inside the Meatball solar system he had gained very little useful information on the practice of medicine on the planet and even less about its medical practitioners.

Contact with his opposite numbers on Meatball was essential for the success of the assignment.

But curative surgery and medicine were very recent developments which had become possible only when the species learned how to rotate while remaining in one position. There were vague references to another species, however, who acted as physicians of sorts. From Surrshun's description they seemed to be part physician, part parasite and part predator. Carrying one of them was a very risky business which very often caused imbalance, stoppage and death in the patient's continually rotating body. The doctor, Surrshun insisted, was more to be feared than the disease.

With the limited translation facilities it was unable to explain how the beings communicated with their patients. Surrshun had never met one personally nor was it on rolling-together terms with anyone who had. The nearest it could express it was that they made direct contact with the patient's soul.

"Oh Lord," said Edwards, "what next?"

"Are you praying or just relieving your feelings?" asked Conway.

The Major grinned, then went on seriously, "If our friend uses the word 'soul' it is because your hospital translator carries the word with an equivalent Meatball meaning. You'll just have to signal the hospital to find out what that overgrown electronic brain thinks a soul is."

"O'Mara," said Conway, "will begin wondering about my mental health again. .

By the time the answer arrived Captain Williamson had successfully made his apologies to the Meatball non-authorities and Surrshun had painted such a glowing picture of the utter strangeness of the Earth humans that their welcome was assured. Descartes had been requested to remain in orbit, however, until a suitable landing area had been marked out and cleared.

"According to this," said Edwards as he passed the signal flimsy to Conway, "the computer's definition of 'soul' is simply 'the life of principle.' O'Mara says the programmers did not want to confuse it with religious and philosophical factors by including material or immortal souls. So far as the translation computer is concerned if a thing is alive then it has a soul. Apparently Meatball physicians make direct contact with their patients' life-principle."

"Faith healing, do you think?"

"I don't know, Doctor," said Edwards. "It seems to me that your Chief Psychologist isn't being much help on this one. And if you think I'm going to help by giving you Surrshun's tape again, save your breath."

Conway was surprised at the normal appearance of Meatball as seen from orbit. It was not until the ship was within ten miles of the surface that the slow wrinklings and twitchings of the vast carpets of animal tissue which crawled over the land surface became obvious, and the unnatural stillness of the thick, soupy sea. Only along the shorelines was there activity. Here the sea was stirred into a yellow-green froth by water-dwelling predators

large and small tearing furiously at the living coastline while the "land" fought just as viciously back.

Descartes came down about two miles off a peaceful stretch of coast in the center of an area marked with brightly colored floats, completely hidden in the cloud of steam produced by its tail flare. As the stern slipped below the surface, thrust was reduced and it came to rest gently on the sandy sea bottom. The great mass of boiled water produced by the flare drifted slowly away on the tide and the people began to roll up.

Literally, thought Conway.

Like great soggy doughnuts they rolled out of the green liquid fog and up to the base of the ship, then around and around it. When outcroppings of rock or a spiky sea growth got in the way they wobbled ponderously around it, sometimes laying themselves almost flat for an instant if forced to reverse direction, but always maintaining their constant rate of rotation and the maximum possible distance from each other.

Conway waited for a decent interval to allow Surrshun to descend the ramp and be properly welcomed by its non-friends. He was wearing a lightweight suit identical to the type used in the water breather's section of the hospital, both for comfort and to show as much as possible of his oddly shaped body to the natives. He stepped off the side of the ramp and fell slowly toward the sea bottom, listening to the translated voices of Surrshun, the VIPs and the louder members of the circling crowd.

When he touched bottom he thought he was being attacked at first. Every being in the vicinity of the ship tried to score the nearest possible miss on him and each one said something as it passed. The suit mike picked up the sound as a burbling grunt but the translator, because it was a simple message within the capabilities of the ship's computer, relayed it as "Welcome stranger."

There could be no doubt about their sincerity-on this cockeyed world the warmth of a welcome was directly proportional to the degree of strangeness. And they did not mind answering questions one little bit. From here on in, Conway was sure his job would be easy.

Almost the first thing he discovered was that they had no real need of his professional services.

It was a society whose members never stopped moving through and around "towns" which were simply facilities for manufacture, learning or research rather than large groupings of living quarters-on Meatball there were no living quarters. After a period of work on a mechanically rotated frame the doughnut slipped out of its retaining harness and rolled away to seek food, exercise, excitement or strange company somewhere across the sea bed.

There was no sleep, no physical contact other than for reproduction, no tall buildings, no burial places.

When one of the rollers stopped due to age, accident or a run-in with one of the predators or a poison-spined plant it was ignored. The generation of internal gases which took place shortly after death caused the body to float to the surface where the birds and fish disposed of it.

Conway spoke to several beings who were too old to roll and who were being kept alive by artificial feeding while they were rotated in their individual ferris wheels. He was never quite sure whether they were kept alive because of their value to the community or simply the subject of experimentation. He knew that he was seeing geriatrics being practiced, but other than a similar form of assistance with difficult births this was the only form of medicine he encountered.

Meanwhile the survey teams were mapping the planet and bringing in specimens by the boatload. Most of this material was sent to Sector General for processing and very soon detailed analysis suggestions for treatment began coming from Thornnastor. According to the Diagnostician-Pathologist Meatball had a medical problem of the utmost urgency.

Conway and Edwards, who had had a preliminary look at the data and a number of low-level flights over the planetary surface, could not have agreed more.

"We can begin a preliminary diagnosis of the planet's troubles," said Conway angrily, "which are caused by the rollers being too damned free with the use of nuclear weapons! But we still badly need a local appreciation of the medical situation and that we are not getting. The big question is-

"Is there a doctor in the house?" said Edwards, grinning. "And if so, where?"

"Exactly," said Conway. He did not laugh.

Outside the direct vision port the slow, turgid waves reflected the moonlight through a curtain of surface mist. The moon, which was approaching Roche's Limit and disintegration, would pose the inhabitants of Meatball yet another major problem-but not for another million years or so. At the moment it was a great jagged crescent illuminating the sea, the two hundred feet of Descartes which projected above the surface and the strangely peaceful shoreline.

Peaceful because it was dead and the predators refused to eat carrion.

"If I built a rotating framework for myself would O'Mara.. . ?" began Conway.

Edwards shook his head. "Surreshun's tape is more dangerous than you think-you were very lucky not to have lost all of your marbles, permanently. Besides, O'Mara has already thought of that idea and discarded it. Rotating yourself while under the influence of the tape, either in a swivel chair or in a gadget built by our machine shop, will fool your mind for only a few minutes, he says. But I'll ask him again, if you like?"

"I'll take your word for it," said Conway. Thoughtfully, he went on, "The question I keep asking myself is where on this planet is a doctor most likely to be found. Suppose the answer is where the greatest number of casualties occur, that is, along the coastlines-

"Not necessarily," Edwards objected. "One doesn't normally find a doctor in a slaughterhouse. And don't forget that there is another intelligent race on this planet, the makers of those thought-controlled tools. Isn't it possible that your doctors belong to this race and your answer lies outside the roller culture entirely?"

"True," said Conway. "But here we have the willing cooperation of the natives and we should make all possible use of it. I shall ask permission, I think, to follow one of our far-traveling doughnuts next time it sets off on a trip. It may be like having a third party along on a honeymoon and I may be told politely where to go with my request, but it is obvious that there are no doctors in the towns or settled areas and it is only the travelers who have a chance of meeting one. Meanwhile," he ended, "let's try to find that other intelligent species."

Two days later Conway made contact with a non-relative of Surreshun who worked in the nearby power station, a nuclear reactor in which he felt almost at home because it had four solid walls and a roof. The roller was planning a trip along an unsettled stretch of coast at the end of its current work period which, Conway estimated, would last two or three days. The being's name was Camsaug and it did not mind Conway coming along provided he did not stay too close if certain circumstances arose. It described the circumstances in detail and without apparent shame.

Camsaug had heard about the "protectors," but only at second or third hand. They did not cut people and sew them up again as Conway's doctors did-it did not know what they did exactly, only that they often killed the people they were supposed to protect. They were stupid, slow moving beings who for some odd reason stayed close to the most active and dangerous stretches of shore.

"Not a slaughterhouse, Major, a battlefield," said Conway smugly. "You expect to find doctors on a battlefield. .

But they could not wait for Camsaug to start its vacation-Thornnastor's reports, the samples brought in by the scout ships and their own unaided eyes left no doubt about the urgency of the situation.

Meatball was a very sick planet. Surreshun's people had been much too free in the use of their newly discovered atomic energy. Their reason for this was that they were an

expanding culture which could not afford to be hampered by the constant threat of the massive land beasts. By detonating a series of nuclear devices a few miles inland, taking good care that the wind would not blow the fallout onto their own living area, of course, they had killed large areas of the land beast. They were now able to establish bases on the dead land to further their scientific investigation in many fields.

They did not care that they spread blight and cancer over vast areas far inland-the great carpets were their natural enemy. Hundreds of their people were stopped and eaten by the land beasts every year and now they were simply getting their own back.

"Are these carpets alive and intelligent?" asked Conway angrily as their scout ship made a low-level run over an area which seemed to be afflicted with advanced gangrene. "Or are there small, intelligent organisms living in or under it? No matter which, Surrishun's people will have to stop chucking their filthy bombs about!"

"I agree," said Edwards. "But we'll have to tell them tactfully. We are their guests, you know."

"You shouldn't have to tell a man tactfully to stop killing himself!"

"You must have had unusually intelligent patients, Doctor," said Edwards dryly. He went on, "If the carpets are intelligent and not just stomachs with the attachments for keeping them filled they should have eyes, ears and some kind of nervous system capable of reacting to outside stimuli-"

"When Descartes landed first there was quite a reaction," said Harrison from the pilot's position. "The beastie tried to swallow us! We'll be passing close to the original landing site in a few minutes. Do you want to look at it?"

"Yes, please," said Conway. Thoughtfully, he added, "Opening a mouth could be an instinctive reaction from a hungry and unintelligent beast. But intelligence of some kind was present because those thought controlled tools came aboard."

They cleared the diseased area and began to chase their shadow across large patches of vivid green vegetation. Unlike the types which recycled air and wastes these were tiny plants which served no apparent purpose. The specimens which Conway had examined in Descartes' lab had had very long, thin roots and four wide leaves which rolled up tight to display their yellow undersides when they were shaded from the light. Their scout ship trailed a line of rolled-up leaves in the wake of its shadow as if the surface was a bright green oscilloscope screen and the ship's shadow a high-persistence spot.

Somewhere in the back of Conway's mind an idea began to take shape, but it dissolved again as they reached the original landing site and began to circle.

It was just a shallow crater with a lumpy bottom, Conway thought, and not at all like a mouth. Harrison asked if they wanted to land, in a tone which left no doubt that he expected the answer to be "No."

"Yes," said Conway.

They landed in the center of the crater. The doctors put on heavy duty suits as protection against the plants which, both on land and under sea, defended themselves by lashing out with poison-thorn branches or shooting lethal quills at anything that came too close. The ground gave no indication of opening up and swallowing them so they went outside, leaving Harrison ready to take off in a hurry should it decide to change its mind.

Nothing happened while they explored the crater and immediate surroundings, so they set up the portable drilling rig to take back some local samples of skin and underlying tissue. All scout ships carried these rigs and specimens had been taken from hundreds of areas all over the planet. But here the specimen was far from typical-they had to drill through nearly fifty feet of dry, fibrous skin before they came to the pink, spongy, underlying tissue. They transferred the rig to a position outside the crater and tried again. Here the skin was only twenty feet thick, the planetary average.

"This bothers me," said Conway suddenly. "There was no oral cavity, no evidence of operating musculature, no sign of any kind of opening. It can't be a mouth!"

"It wasn't an eye it opened," said Harrison on the suit frequency. "I was there... here, I

mean."

"It looks just like scar tissue," said Conway. "But it's too deep to have been formed only as a result of burning by Descartes' tail flare. And why did it just happen to have a mouth here anyway, just where the ship decided to land? The chances against that happening are millions to one. And why haven't other mouths been discovered inland? We've surveyed every square mile of the land mass, but the only surface mouth to appear was a few minutes after Descartes landed. Why?"

"It saw us coming and.. ." began Harrison.

"What with?" said Edwards.

..... Or fit us land, then, and decided to form a mouth..

"A mouth," said Conway, "with muscles to open and close it, with teeth, predigestive juices and an alimentary canal joining it to a stomach which, unless it decided to form that as well, could be many miles away- all within a few minutes of the ship landing? From what we know of carpet metabolism I can't see all that happening so quickly, can you?"

Edwards and Harrison were silent.

"From our study of the carpet inhabiting that small island to the north," said Conway, "we have a fair idea of how they function."

Since the day after their arrival the island had been kept under constant observation. Its inhabitant had an incredibly slow, almost vegetable, metabolism. The carpet's upper surface appeared not to move, but it did in fact alter its contours so as to provide a supply of rainwater wherever needed for the plant life which recycled its air and wastes or served as an additional food supply. The only real activity occurred around the fringes of the carpet, where the great being had its mouths. But here again it was not the carpet itself which moved quickly but the hordes of predators who tried to eat it while it slowly and ponderously ate them in with the thick, food-rich sea water. The other big carpets unlucky enough not to have a fringe adjoining the sea ate vegetation and each other.

The carpets did not possess hands or tentacles or manipulatory appendages of any kind-just mouths and eyes capable of tracking an arriving spaceship.

"Eyes?" said Edwards. "Why didn't they see our scout ship?"

"There have been dozens of scout ships and copters flitting about recently," said Conway, "and the beast may be confused. But what I'd like you to do now, Lieutenant, is take your ship up to, say, one thousand feet and do a series of figure-eight turns. Do them as tightly and quickly as possible, cover the same area of ground each time and make the crossover point directly above our heads. Got it?"

"Yes, but . .

"This will let the beastie know that we aren't just any scout ship but a very special one," Conway explained, then added, "be ready to pick us up in a hurry if something goes wrong.

A few minutes later Harrison took off, leaving the two doctors standing beside their drilling rig. Edwards said, "I see what you mean, Doctor. You want to attract attention to us. 'X' marks the spot and an 'X' with closed ends is a figure-eight. Persistency of vision will do the rest."

The scout ship was criss-crossing above them in the tightest turns Conway had ever seen. Even with the ship's gravity compensators working at full capacity Harrison must have been taking at least four Gs. On the ground the ship's shadow whipped past and around them, trailing a long, bright yellow line of rolled-up leaves. The ground shook to the thunder of the tiny vessel's jet and then, very slightly, it began shaking by itself.
"Harrison!"

The scout ship broke off the maneuver and roared into a landing behind them. By then the ground was already beginning to sag.

Suddenly they appeared.

Two large, flat metal disks embedded vertically in the ground, one about twenty feet in front of them and the other the same distance behind. As they watched each disk

contracted suddenly into a shapeless blob of metal which crawled a few feet to the side and then suddenly became a large, razor-edged disk again, cutting a deep incision in the ground. The disks had each cut more than a quarter circle around them and the ground was sagging rapidly inside the incisions before Conway realized what was happening.

"Think cubes at them!" he yelled. "Think something blunt! Harrison!"

"Lock's open. Come running."

But they could not run without taking their eyes and minds off the disks, and if they did that they could not run fast enough to clear the circular incision which was being made around them. Instead they sidled toward the scout ship, willing every inch of the way that the disks become cubes or spheres or horseshoes-anything but the great, circular scalpels which something had made them become.

At Sector General Conway had watched his colleague Mannon perform incredible feats of surgery, using one of these thought-controlled tools, an all-purpose surgical instrument which became anything he wanted it to be instantly. Now two of the things were crawling and twisting like metallic nightmares as they tried to shape them one way and something else-which was their owner and as such had more expertise-tried to shape them another. It was a very one-sided struggle but they did, just barely, manage to hamper their opponent's thinking enough to allow them to get clear before the circular plug of "skin" containing the drilling rig and other odds and ends of equipment dropped from sight.

"They're welcome to it," said Major Edwards as the lock slammed shut and Harrison lifted off. "After all, we've been taking specimens for weeks and it may give them something to think about before we broaden contact with shadow diagrams." He grew suddenly excited as he went on, "With high-acceleration radio-controlled missiles we can build up quite complex figures!"

Conway said, "I was thinking more in terms of a tight beam of light projected onto the surface at night. The leaves should react by opening and the beam could be moved very quickly in a rectangular sweep pattern like old-fashioned TV. It might even be possible to project moving pictures."

"That's it," said Edwards enthusiastically. "But how a dirty great beast the size of a county, who doesn't have arms, legs or anything else, will be able to answer our signals is another matter. Probably it will think of something."

Conway shook his head. "It is possible that despite their slow movements the carpets are capable of quick thinking, that they are in fact the tool users we are looking for and that their enormous bodies undergo voluntary surgery whenever they want to draw in and examine a specimen which is not within reach of a mouth. But I prefer the theory of a smaller, intelligent life-form inside or under the big one, an intelligent parasite perhaps which helps maintain the host in good health by the use of the tools and other abilities, and which makes use of the host being's 'eyes' as well as everything else. You can take your pick."

There was silence while the scout ship leveled off on a course which would take it back to the mother ship, then Harrison said, "We haven't made direct contact, then-we've just put squiggles on a vegetable radar screen? But it is still a big step forward."

"As I see it," said Conway, "if tools were being used to bring us to them, they must be a fair distance from the surface-perhaps they can't exist on the surface. And don't forget they would use the carpet exactly as we use vegetable and mineral resources. How would they analyze life samples? Would they be able to see them at all down there? They use plants for eyes but I can't imagine a vegetable microscope. Perhaps they would use the big beastie's digestive juices in certain stages of the analysis .

Harrison was beginning to look a little green around the gills. He said, "Let's send down a robot sensor first, to see what they do, eh?"

Conway began, "This is all theory. .

He broke off as the ship's radio hummed, cleared its throat and said

briskly, "Scout ship Nine. Mother here. I have an urgent signal for Doctor Conway. The being Camsaug has gone on vacation wearing the tracer the Doctor gave it. It is heading for the active stretch of shore in area H-Twelve. Harrison, have you anything to report?"

"Yes, indeed," replied the Lieutenant, glancing at Conway. "But first I think the Doctor wants to speak to you."

Conway spoke briefly and a few minutes later the scout ship leaped ahead under emergency thrust, ripping through the sky too fast for even the leaves to react to its shadow and trailing an unending shock wave which would have deafened anything on the surface with ears to hear. But the great carpet slipping past them might well number deafness among its many other infirmities which now, Conway thought angrily, included a number of well-developed and extensive skin cancers and God alone knew what else.

He wondered if a great, slow-moving creature like this could feel pain, and if so, how much? Was the condition he could see confined to hundreds of acres of "skin" or did it go much deeper? What would happen to the beings living in or under it if too many of the carpets died, decomposed? Even the rollers with their offshore culture would be affected-the ecology of the whole planet would be wrecked! Somebody was going to have to talk to the rollers, politely but very, very firmly, if it wasn't already too late.

All at once the horse-trading aspect of his assignment, the swapping of tools for medical assistance, was no longer important. Conway was beginning to think like a doctor again, a doctor with a desperately ill patient.

At Descartes the copter he had requested was waiting. Conway changed into a lightweight suit with a propulsion motor strapped onto his back and extra air tanks on his chest. Camsaug had too great a lead for him to follow on foot, so Conway would fly out to the being's present position by helicopter. Harrison was at the controls.

"You again," said Edwards.

The Lieutenant smiled. "This is where the action is. Hold tight."

After the mad dash to the mother ship the helicopter trip seemed incredibly slow. Conway felt that he would fall flat on his face if it did not speed up and Edwards assured him that the feeling was mutual and that they would have made better time swimming. They watched Camsaug's trace grow larger in the search screen while Harrison cursed the birds and flying lizards diving for fish and suiciding on his rotor blades.

They flew low over the settled stretch of coast where the shallows were protected from the large predators of the sea by a string of offshore islands and reefs. To this natural protection the rollers had added a landward barrier of dead land-beast by detonating a series of low-power nuclear devices inside the vast creature's body. The area was now so settled that doughnuts could roll with very little danger far inside the beast's cavernous mouths and prestomachs and out again.

But Camsaug was ignoring the safe area. It was rolling steadily toward the gap in the reef leading to the active stretch of coast where predators large, medium and small ate and eroded the living shore.

"Put me down on the other side of the gap," said Conway. "I'll wait until Camsaug comes through, then follow it."

Harrison brought the copter down to a gentle landing on the spot indicated and Conway lowered himself onto a float. With his visor open and his head and shoulders projecting through the floor hatch he could see both the search screen and the half-mile distant shore. Something which looked like a flatfish grown to the dimensions of a whale hurled itself out of the water and flopped back again with a sound like an explosion. The wave reached them a few seconds later and tossed the copter about like a cork.

"Frankly, Doctor," said Edwards, "I don't understand why you're doing this. Is it scientific curiosity regarding roller mating habits? A yen to look into the gaping gullet of a land beast? We have remote-controlled instruments which will let you do both without danger once we get a chance to set them up.."

Conway said, "I'm not a peeping Tom, scientific or otherwise, and your gadgetry might not tell me what I want to know. You see, I don't know what exactly I'm looking for, but I'm pretty sure that this is where I can contact them-"

"The tool users? But we can contact them visually, through the plants."

"That may be more difficult than we expect," Conway said. "I hate to attack my own lovely theory, but let's say that because of their vegetable vision they have difficulty in grasping concepts like astronomy and space travel or, as beings who live in or under their enormous host, of visualizing it from an outside viewpoint..

This was just another theory, Conway went onto explain, but the way he saw it the tool users had gained a large measure of control over their environment. On a normal world environmental control included such items as reforestation, protection against soil erosion, efficient utilization of natural resources and so on. Perhaps on this world these things were not the concern of geologists and farmers but of people who, because their environment was a living organism, were specialists in keeping it healthy.

He was fairly sure that these beings would be found in peripheral areas where the giant organism was under constant attack and in need of their assistance. He was also sure that they would do the work themselves rather than use their tools because these thought-controlled devices had the disadvantage of obeying and shaping themselves to the nearest thought source-this had been proved many times at the Hospital as well as earlier today. Probably the tools were valuable, too much so to risk them being swallowed and/or rendered useless by the savage and disorganized thinking of predators.

Conway did not know what these people called themselves-the rollers called them Protectors or Healers or an almost certain method of committing suicide because they killed more often than they cured. But then the most famous Tralthan surgeon in the Federation would probably kill an Earth-human patient if it had no medical knowledge of the species and no physiology tape available. The tool users worked under a similar handicap when they tried to treat rollers.

"But the important thing is they do try," Conway went on. "All their efforts go toward keeping one big patient alive instead of many. They are the medical profession on Meatball and they are the people we must contact first!"

There was silence then except for the gargantuan splashing and smacking sounds coming from the shoreline. Suddenly Harrison spoke.

"Camsaug is directly below, Doctor."

Conway nodded, closed his visor and fell awkwardly into the water. The weight of his suit's propulsor and extra air tanks made him sink quickly and in a few minutes he spotted Camsaug rolling along the sea bottom. Conway followed, matching the roller's speed and keeping just barely in sight. He had no intention of invading anyone's privacy. He was a doctor rather than an anthropologist and he was interested in seeing what Camsaug did only if it ran into trouble of a medical nature.

The copter had taken to the air again, keeping pace with him and maintaining constant radio contact.

Camsaug was angling gradually toward the shore, wobbling past clumps of sea vines and porcupine carpets which grew more thickly as the bottom shelved, sometimes circling for several minutes while one of the big predators drifted across its path. The vines and prickly carpets had poisonous thorns and quills and they lashed out or shot spines at anything which came too close. Conway's problem now was how to drift past them at a safe altitude but remain low enough so as not to be scooped up by a giant flatfish.

The water was becoming so crowded with life and animal and vegetable activity that he could no longer see the surface disturbance caused by the helicopter. Like a dark-red precipice the edge of the land beast loomed closer, almost obscured by its mass of underwater attackers, parasites and, possibly, defenders-the situation was too chaotic for Conway to tell which was which. He began to encounter new forms of life aglistening black and seemingly endless mass which undulated across his path and tried to wrap itself around

his legs and a great, iridescent jellyfish so transparent that only its internal organs were visible.

One of the creatures had spread itself over about twenty square yards of seabed while another drifted just above it. They did not carry spines or stings so far as he could see, but everything else seemed to avoid them and so did Conway.

Suddenly Camsaug was in trouble.

Conway had not seen it happen, only that the roller had been wobbling more than usual and when he jetted closer he saw a group of poisoned quills sticking out of its side. By the time he reached it Camsaug was rolling in a tight circle, almost flat against the ground, like a coin in slow motion that has almost stopped spinning. Conway knew what to do, having dealt with a similar emergency when Surreshun was being transferred into the Hospital. He quickly lifted the roller upright and began pushing it along the bottom like an oversize, flabby hoop.

Camsaug was making noises which did not translate, but he felt its body grow less flabby as he rolled it-it was beginning to help itself. Suddenly it wobbled away from him, rolling between two clumps of sea vines. Conway rose to a safe height meaning to head it off, but a flatfish with jaws gaping rushed at him and he dived instinctively to avoid it.

The giant tail flicked past, missing him but tearing the propulsion unit from his back. Simultaneously a vine lashed out at his legs, tearing the suit fabric in a dozen places. He felt cold water forcing its way up his legs and under the skin something which felt like liquid fire pushing along his veins. He had a glimpse of Camsaug rolling like a stupid fool onto the edge of a jellyfish and another of the creatures was drifting down on him like an iridescent cloud. Like Camsaug, the noises he was making were not translatable.

"Doctor!" The voice was so harsh with urgency that he could not recognize it. "What's happening?"

Conway did not know and could not speak anyway. As a precaution against damage in space or in a noxious atmosphere his suit lining was built in annular sections which sealed off the ruptured area by expanding tightly against the skin. The idea had been to contain the pressure drop or gas contamination in the area of damage, but in this instance the expanded rings were acting as a tourniquet which slowed the progress of the poison into his system. Despite this Conway could not move his arms, legs or even his jaw. His mouth was locked open and he was able-just barely able-to breathe.

The jellyfish was directly above him. Its edges curled down over his body and tightened, wrapping him in a nearly invisible cocoon.

"Doctor! I'm coming down!" It sounded like Edwards.

He felt something stab several times at his legs and discovered that the jellyfish had spines or stings after all and was using them where the fabric of his suit had been torn away by the vines. Compared with the burning sensation in his legs the pain was relatively slight, but it worried him because the jabs seemed very close to the popliteal arteries and veins. With a tremendous effort he moved his head to see what was happening, but by then he already knew. His transparent cocoon was turning bright red.

"Doctor! Where are you? I can see Camsaug rolling along. Looks like it's wrapped up in a pink plastic bag. There's a big, red ball of something just above it-"

"That's me..." began Conway weakly.

The scarlet curtain around him brightened momentarily. Something big and dark flashed past and Conway felt himself spinning end over end. The redness around him was becoming less opaque.

"Flatfish," said Edwards. "I chased it with my laser. Doctor?"

Conway could see the Major now. Edwards wore a heavy-duty suit which protected him from vines and quills but made accurate shooting difficult-his weapon seemed to be pointing directly at Conway. Instinctively he put up his hands and found that his arms moved easily. He was able to turn his head, bend his back and his legs were less painful. When he looked at them the area of his knees was bright red but the body around it seemed more

rather than less transparent.

Which was ridiculous!

He looked at Edwards again and then at the awkward, dangerously slow rolling of the wrapped-up Camsaug. A great light dawned.

"Don't shoot, Major," said Conway wealdy but distinctly. "Ask the Lieutenant to drop the rescue net. Winch both of us up to the copter and to Descartes, fast. Unless our friend here can't survive in air, of course. In that case haul us both to Descartes submerged-my air will last. But be very careful not to hurt it."

They both wanted to know what the blazes he was talking about. He did his best to explain, adding, "So you see, not only is it my opposite number, the Meatball equivalent of a doctor, but I owe it my life as well. There is a close, personal bond between us-you might almost say that we were blood brothers."

MEATBALL

Conway had been worrying about the Meatball problem during the whole of the trip back to the hospital, but only in the past two hours had the process become a constructive one. That had been the period during which he had finally admitted to himself that he could not solve the problem and had begun thinking of the names and professional capabilities of some of the beings, human and otherwise, who might help him find the solution. He was worrying so hard and constructively that he did not know that their ship had materialized the regulation twenty miles from the hospital until the flat, translated voice of Reception rattled from the control room's speaker.

"Identify yourself please. Patient, visitor, or staff and species."

The Corps lieutenant who was piloting looked back at Conway and Edwards, the mother ship's medical officer and raised an eyebrow.

Edwards cleared his throat nervously and said, "This is scout ship DI 835, tender and communications ship to the Monitor Corps survey and cultural contact vessel Descartes. We have four visitors and one staff member onboard. Three are human and two are native Drambons of different-"

"Give physiological classifications, please, or make full-vision contact. All intelligent races refer to themselves as human and consider others to be nonhuman, so what you call yourself is irrelevant so far as preparing or directing you to suitable accommodation is concerned."

Edwards muted the speaker and said helplessly to Conway, "I know what we are, but how the blazes do I describe Surrehun and the other character to this medical bureaucrat?"

Thumbing the transit switch, Conway said, "This ship contains three Earth-humans of physiological classification DBDG. They are Major Edwards and Lieutenant Harrison of the Monitor Corps and myself, Senior Physician Conway. We are carrying two Drambon natives. Drambo is the native name for the planet-you may still have it listed as Meatball, which was our name for it before we knew it had intelligent life. One of the natives is a CLHG, water-breathing with a warm-blooded oxygen-based metabolism. The other is tentatively classified as SRJH and seems comfortable in either air or water.

"There is no urgency about the transfer," Conway went on. "At the same time the CLHG occupies a physically irksome life-support mechanism and would doubtless feel more comfortable in one of our water filled levels where it can roll normally. Can you take us at lock Twenty-three or Twenty-four?"

"Lock Twenty-three, Doctor. Do the visitors require special transport or protective devices for the transfer?"

"Negative."

"Very well. Please inform Dietetics regarding food and liquid requirements and the periodicity of their meals. Your arrival has been notified and Colonel Skempton would like to

see Major Edwards and Lieutenant Harrison as soon as possible. Major O'Mara would like to see Doctor Conway sooner than that."

"Thank you."

Conway's words were received by the being who was manning the reception board, whose translator pack relayed them to the computer which occupied three whole levels at the nerve-center of the hospital, which in turn returned them stripped of all emotional overtones to the scaly, furry, or feathery receptionist in the form of hoots, cheeps, growls, or whatever other odd noises the being used as its spoken language.

To Edwards, Conway said, "Unless you are attached to a multienvironment hospital you normally meet e-ts one species at a time and refer to them by their planet of origin. But here, where rapid and accurate knowledge of incoming patients is vital, because all too often they are in no condition to furnish this information themselves, we have evolved the four-letter classification system. Very briefly, it works like this.

"The first letter denotes the level of physical evolution," he continued. "The second indicates the type and distribution of limbs and sense organs and the other two the combination of metabolism and gravity-pressure requirements, which in turn gives an indication of the physical mass and form of tegument possessed by a being. Usually we have to remind some of our e-t students at this point that the initial letter of their classification should not be allowed to give them feelings of inferiority, and that the level of physical evolution has no relation to the level of intelligence."

Species with the prefix A, B and C, he went on to explain, were water breathers. On most worlds life had begun in the seas and these beings had developed high intelligence without having to leave it. D through F were warm-blooded oxygen breathers, into which group fell most of the intelligent races in the galaxy, and the G to K types were also oxygen breathing but insectile. The Ls and Ms were light-gravity, winged beings.

Chlorine-breathing life-forms were contained in the O and P groups, and after that came the more exotic, the more highly evolved physically and the downright weird types. Radiation eaters, frigid-blooded or crystalline beings and entities capable of modifying their physical structure at will. Those possessing extrasensory powers sufficiently well-developed to make walking or manipulatory appendages unnecessary were given the prefix V regardless of size or shape.

"There are anomalies in the system," Conway went on, "but those can be blamed on a lack of imagination by its originators-the AACP life-form, for instance, which has a vegetable metabolism. Normally the prefix A denotes a water breather, there being nothing lower in the system than the piscatorial life-forms, but the AACPs are intelligent vegetables and plants came before fish-

"Sorry, Doctor," said the pilot. "We'll be docking in five minutes and you did say that you wanted to prepare the visitors for transfer."

Conway nodded and Edwards said, "I'll lend a hand, Doctor."

The scout ship entered the enormous cubic cavern which was Lock Twenty-three while they were donning the lightweight suits used for environments where the liquid or gas was lethal but at reasonably normal pressures. They felt the grapples draw them into the adjustable cradle and staggered slightly as the artificial gravity grids were switched on. The Lock's outer seal clanged shut and there was the sound of waterfalls pouring down metal cliffs.

Conway had just finished securing his helmet when its receiver said, "Harrison here, Doctor. The reception team leader says that it will take some time to completely fill the lock with water as well as making it necessary to carry out the full anti contamination procedure at the other five internal entrances. It is a big lock, pressure of water on the other seals will be severe if-

"Filling won't be necessary," said Conway. "The Drambon CLCH will be all right so long as the water reaches the top edge of the freight hatch."

"The man says bless you."

They let themselves into the scout ship's hold, carefully avoiding the self-powered life support machinery which kept the first Drambon rotating like an organic prayer wheel as they removed the retaining straps from the freight lashing points.

"We've arrived, Surrehun," said Conway. "In a few minutes you'll be able to say good-bye to that contraption for a few days. How is our friend?"

It was a purely rhetorical question because the second Drambon did not and perhaps could not speak. But if it could not converse it could at least react. Like a great, translucent jellyfish-it would have been completely invisible in water had it not been for its iridescent skin and a few misty internal organs-the Drambon undulated toward them. It curled around Conway like a thick, translucent cocoon for a moment, then transferred its attentions to Edwards.

"Ready when you are, Doctors."

"This is a much better entrance than your first one," said Conway as Edwards helped him maneuver Surrehun's life-support equipment out of the hold. "At least this time we know what we are doing."

"There is no need to apologize, friend Conway," said Surrehun in its flat, translated voice. "To a being of my high intelligence and ethical values, sympathy for the mental shortcomings of lesser beings and, of course, forgiveness for any wrongs they may have done me are but small facets of my generous personality."

Conway had not been aware that he was apologizing, but to a being to whom the concept of modesty was completely alien it was possible that his words had sounded that way. Diplomatically he said nothing.

Lock Twenty-three's reception team arrived to help them move Surrehun's wheel to the entrance to the water-filled AUGL wards. The team leader, whose black suit had red and yellow striped arms and legs making him look like an updated court jester, swam up to Conway and touched helmets.

"Sorry about this, Doctor," his voice sounded, clearly if somewhat distorted by the transmitting media, "but an emergency has come up suddenly and I don't want to tie up the suit frequency. I'd like all you people to move into the ward as quickly as possible. Surrehun has been through our hands before so we don't have to worry about it, just take charge of the other character wherever it is and. . . What the blazes!"

The other character had wrapped itself around his head and shoulders, pinioning his arms and nuzzling at him like a dog with a dozen invisible heads.

"Maybe it likes you," said Conway. "If you ignore it for a minute it will go away."

"Things usually do find me irresistible," said the team leader dryly. "I wish the same could be said for females of my own species.."

Conway swam around and over it, grabbed two large handfuls of the flexible, transparent tegument covering its back and kicked sideways against the water until the being's front end was pointing toward the ward entrance. Great, slow ripples moved along its body and it began undulating toward the corridor leading to the AUGL ward like an iridescent flying carpet. Less gracefully Surrehun's ferris wheel followed close behind.

"An emergency, you said?"

"Yes, Doctor," said the team leader on the suit frequency. "But nothing will happen for another ten minutes, so I can use the suit radio if we keep it brief. My information is that a Kelgian DBLF on the Hudlar operating theater staff was injured by a muscular spasm and involuntary movement of the patient's forward tentacles during the course of the op. The injuries are complicated by compression effects plus the fact that the constituents of that high-pressure muck which Hudlars breathe are highly toxic to the Kelgian metabolism. But it is the bleeding which is the real cause of the emergency. You know Kelgians."

"Yes, indeed," said Conway.

Even a small punctured or incised wound was a very serious matter for a Kelgian. They were giant, furry caterpillars and only their brain, which was housed in the blunt, conical head section, was protected by anything resembling a bony structure. The body consisted of a series of wide, circular bands of muscle which gave it mobility and served to protect, very inadequately, the vital organs within.

The trouble was that to give those tremendous bands of muscle an adequate blood supply the Kelgian pulse rate and pressure were, by Earth standards, abnormally high.

"They haven't been able to control the bleeding very well," the team leader went on, "so they are moving it from the Hudlar section two levels above us to the Kelgian theater just below, and taking it through the water-filled levels to save time. . . Excuse me, Doctor, here they come.

Several things happened at once just then. With an untranslatable gurgle of pleasure Surrেশun released itself from the wheel and went rolling ponderously along the floor, zig-zagging slowly among the patients and nursing staff who ranged from squat, crab-like Melfans to the forty foot long tentacled crocodile who were natives of the ocean-covered world of Chalderescol. The other Drambon had twitched itself free of Conway's grip and was drifting away, while high up on the opposite wall a seal had opened and the injured Kelgian was being moved in, attended by too many people for Conway's assistance to be either necessary or desirable.

There were five Earth-humans wearing lightweight suits like his own, two Kelgians, and an Illensan whose transparent envelope showed the cloudy yellow of chlorine inside. One of the Earth-human helmets contained a head which he recognized, that of his friend Mannon who specialized in Hudlar surgery. They swarmed around the Kelgian casualty like a shoal of ungainly fish, pushing and tugging it toward the other side of the ward, the size of the shoal increasing as the reception-team leader and his men swam closer to assess the situation. The Drambon jellyfish also moved closer.

At first Conway thought the being was merely curious, but then he saw that the carpet of iridescence was undulating toward the injured being with intent.

"Stop it!" Conway shouted.

They all heard him because he saw them jerk as his voice rattled deafeningly from their suit phones. But they did not know and there was no time to tell them who, what, or even how to stop it.

Cursing the inertia of the water Conway swam furiously toward the injured Kelgian, trying to head the Drambon off. But the big, blood soaked area of fur on the Kelgian's side was drawing the other like a magnet and, like a magnet, its attraction increased with the inverse square of the distance. Conway did not have time to shout a warning before the Drambon struck softly and clung.

There was a soft explosion of bubbles as the Drambon's probes ruptured the Kelgian's pressure litter and slid into the already damaged suit it had been wearing in the Hudlar theater and through the thick, silvery fur beneath. Within seconds its transparent body was turning a deepening shade of red as it sucked the blood from the injured Kelgian.

"Quickly," Conway yelled, "get them both to the air-filled section!"

He could have saved his breath because everyone was talking and overloading the suit radio. The direct sound pickup was no help, either- all he could hear was the deep, water-borne growl of the ward's emergency siren and too many voices jabbering at once, until one very loud, translated Chalder voice roared out above the others.

"Animal! Animal!"

His strenuous swimming had overloaded the drying elements in his suit, but those words caused the sweat bathing his body to turn from hot to cold.

Not all the inhabitants of Sector General were vegetarians by any means, and their dietary requirements necessitated vast quantities of meat from extraterrestrial as well as terrestrial sources to be shipped in. But the meat invariably arrived frozen or otherwise preserved, and for a very good reason. This was to avoid cases of mistaken identity on the

part of the larger, meat-eating life-forms who very often came into contact with smaller e-ts who frequently bore a physical resemblance to the former's favorite food.

The rule in Sector General was that if a being was alive, no matter what size or shape it might take, then it was intelligent.

Exceptions to this rule were very rare and included pets-nonviolent, of course-belonging to the staff or important visitors. When a nonintelligent being entered the hospital by accident, protective measures had to be taken very quickly if the smaller intelligent life-forms were not to suffer.

Neither the medical staff engaged in transferring the casualty nor the reception team were armed, but in a few minutes' time the alarm siren would bring corpsmen who would be and meanwhile one of the Chalder patients-all multitentacled, armored, thirty feet of it-was moving in to remove the clinging Drambon with one or at most two bites of its enormous jaws.

"Edwards! Mannon! Help me keep it off!" Conway shouted, but there were still too many other people shouting for them to hear him. He grabbed two fistfuls of the Drambon's tegument and looked around wildly. The team leader had reached the scene at the same time and he had pushed one leg between the injured Kelgian and the clinging SRJH and with his hands was trying to pry them apart. Conway twisted around, drew both knees up to his chin and with both feet booted the team leader clear. He could apologize later. The Chalder was moving dangerously close.

Edwards arrived then, saw what Conway was doing and joined him.

Together they kicked out at the gigantic snout of the Chalder, trying to drive it away. They could not hurt the brute, but were trusting the e-t not to attack two intelligent beings in order to kill an apparent animal who was attacking a third intelligent being. The situation was sufficiently confused, however, for a mistake to be made. It was quite possible that Edwards and Conway could have their legs amputated from the waist down.

Suddenly Conway's foot was grabbed by a pair of large, strong hands and his friend Mannon swarmed along his body until their helmets were touching.

"Conway, what the blazes are you..."

"There's no time to explain," he replied. "Just get them both to the air-filled section quickly. Don't let anyone hurt the SRJH, it isn't doing any harm.

Mannon looked at the being who was covering the Kelgian like an enormous, blood-red blister. No longer transparent, the blood of the injured nurse could actually be seen entering and being diffused throughout the Drambon's great, slug-like body which now seemed filled to bursting point.

"You could have fooled me," said Mannon, and pulled away. With one hand he gripped one of the Chalder's enormous teeth, swung around until he was staring it in an eye nearly the size of a football and with his other hand made jabbing, sideways motions. Looking confused the Chalder drifted away, and a few seconds later they were in the lock leading to the air-filled section.

The water drained out and the seal opened to show two green-clad Corpsmen standing in the lock antechamber, weapons at the ready. One of them cradled an enormous gun with multiple magazines capable of instantly anesthetizing any one of a dozen or more life-forms who came within the category of warm-blooded oxygen breathers, while the other held a tiny and much less ferocious-looking weapon which could blast the life from a bull elephant or any e-t equivalent.

"Hold it!" said Conway, slipping and skidding across the still-wet floor to stand in front of the Drambon. "This is a VIP visitor. Give us a few minutes. Everything will be all right, believe me.

They did not lower their weapons, neither did they look as though they believed him.

"You'd better explain," said the team leader quietly, but with the anger showing in his

face.

"Yes," said Conway. "I, ah, hope you weren't hurt when I kicked you back there."

"Only my dignity, but I still-"

"O'Mara here," roared a voice from the communicator on the wall opposite. "I want vision contact. What's happening down there?"

Edwards was closest. He trained and focused the vision pickup as directed and said, "The situation is rather complicated, Major-"

"Naturally, if Conway has anything to do with it," said O'Mara caustically. "What is he doing there, praying for deliverance?"

Conway was on his knees beside the injured Kelgian, checking on its condition. From what he could see the Drambon had attacked itself so tightly that very little water had entered the pressure litter or the damaged protective suit-it was breathing normally with no indications of water in its lungs. The Drambon's color had lightened again. No longer deep red, it had returned to its normal translucent iridescent coloring tinged only faintly with pink. As Conway watched, it detached itself from the Kelgian and rolled like a great, water-filled balloon to come to rest against the wall.

Edwards was saying A full report on this life-form three days ago. I realize three days is not a long time for the results to be disseminated throughout an establishment of this size, but none of this would have happened if the Drambon had not been exposed to a seriously injured being who-"

"With respect, Major," said O'Mara in a voice oozing with everything else but, "a hospital is a place where anyone at any time can expect to see serious illness or injury. Stop making excuses and tell me what happened!"

"The Drambon over there," put in the team leader, "attacked the injured Kelgian."

"And?" said O'Mara.

"Cured it instantly," said Edwards smugly.

It was not often that O'Mara was lost for words. Conway moved to one side to allow the Kelgian, who was no longer a casualty, to climb to its multitudinous feet. He said, "The Drambon SRJH is the closest thing to a doctor that we have found on that planet. It is a leech-like form of life which practices its profession by withdrawing the blood of its patients and purifying it of any infection or toxic substances before returning it to the patient's body, and it repairs simple physical damage as well. Its reaction in the presence of severe illness or injury is instinctive. When the injured Kelgian appeared suddenly it wanted to help. The casualty was suffering from poisoning due to toxic material from the Hudlar theater environment infecting the wound. So far as the Drambon was concerned it was a very simple case.

"Not all the blood withdrawn is returned, however," Conway went on, 'and we have not been able to establish whether it is physiologically impossible for the being to return all of it or whether it retains a few ounces as payment for services rendered."

The Kelgian gave a low-pitched hoot like the sound of a modulated foghorn. The noise translated as "It's very welcome, I'm sure."

The DBLF moved away then followed by the two armed corpsmen. With a baffled look at the Drambon the team leader waved his men back to their stations and the silence began to drag.

Finally O'Mara said, "When you've taken care of your visitors and if there are no physiological reasons against it, I suggest we meet to discuss this. My office in three hours."

His tone was ominously mild. It might be a good idea if Conway roped in some moral as well as medical support for the meeting with the Chief Psychologist.

Conway asked his empath friend Prilicla to attend the meeting as well as the Monitor officers Colonel Skempton and Major Edwards, Doctor Mannon, the two Drambons, Thornnastor, the Diagnostician-in-Charge of Pathology, and two medics from Hudlar and

Melf who were currently taking courses at the hospital. It took several minutes for them all to enter O'Mara's enormous outer office-a room normally occupied only by the Major's aide and more than a score of pieces of furniture suited to the e-ts with whom O'Mara had professional contact. On this occasion it was the Chief Psychologist who occupied his assistant's desk and waited with visibly controlled impatience for everyone to sit, lie, or otherwise insinuate themselves into the furniture.

When they had done so O'Mara said quietly, "Since the period of high drama accompanying your arrival, I have caught up with the latest Meatball reports, and to know all is to forgive all-except, of course, your presence here, Conway. You were not due back for another three-"

"Drambo, sir," said Conway. "We use the native word sound for it now.

"We prefer that," Surreshun's translated voice joined in. "Meatball is not an accurate name for a world covered with a relatively thin layer of animal life, or for what we consider to be the most beautiful planet in the galaxy-even though we have not as yet had an opportunity to visit any of the others. Besides, your translator tells me that Meatball as a name lacks accuracy, reverence and respect. The continued use of your name for our glorious planet will not anger me-I have too great an understanding of the often shallow thinking engaged in by your species, too much sympathy for these mental shortcomings to feel anger or even irritation-"

"You're too kind," said O'Mara.

"That as well," agreed Surreshun.

"The reason I returned," Conway said hastily, "was simply to get help. I wasn't making any progress with the Drambo problem and it was worrying me."

"Worry," said O'Mara, "is a particularly useless activity-unless, of course, you do it out loud and in company. Ah, now I see why you brought half the hospital along."

Conway nodded and went on, "Drambo is badly in need of medical assistance, but the problem is unlike any other that we have already met on Earth-human or e-t planets and colonies. On those occasions it was simply a matter of investigating and isolating the diseases, bringing in or suggesting where the specifics could be distributed most effectively and then allowing the people affected to administer their own medicine through local doctors and facilities. Drambo is not like that. Instead of trying to diagnose and treat a large number of individuals, the patients are relatively few but very, very large indeed.

"The reason for this is that within the past few years Surreshun's race has learned how to liberate atomic energy," Conway went on, then added, "Explosively, of course, and with vast quantities of radiational dirt. They are very.. ." he hesitated, trying to find a diplomatic word for careless, or criminally stupid or suicidal, and failing, proud of their new-found ability to kill large areas of the strata creatures and render the shallows around these living coastlines safe for their expanding population.

"But living in or under and perhaps controlling these strata creatures is yet another intelligent race whose land is quite literally in danger of dying all around them," Conway continued. "These people made the tool which came aboard Descartes, and judging by that gadget they are highly advanced indeed. But we still know nothing at all about them.

"When it became clear that Surreshun's people were not the tool makers," Conway went on, "we asked ourselves where they would be most likely to be found, and the answer was in those areas where their living country was under attack. It was in this situation that I expected to find their medical people as well, and I did in fact find our transparent friend here. It saved my life, in its rather disconcerting fashion, and I'm convinced that it is the Drambon equivalent of a doctor. Unfortunately it does not seem to be able to communicate in any fashion that I can understand and, bearing in mind the fact that anyone can directly observe its innards without the necessity for X rays, there doesn't seem to be a localized gathering of nerve ganglia or indeed anything at all resembling a brain.

"We badly need the help of its people," Conway added seriously, "which is the reason for bringing it here so that a specialist in e-t communications can succeed, perhaps,

where the ship's contact experts and myself failed."

He looked pointedly at O'Mara, who was looking thoughtfully at the leech-like Drambon. It, in turn, had put one of its eyes into a pseudopod and had extended it toward the ceiling so that it could look at the fragile, insect-like figure of the empath Prilicla. Prilicla had enough eyes to look everywhere at once.

"Isn't it odd," said Colonel Skempton suddenly, "that one of your Drambons is heartless and the other appears to be brainless?"

"Brainless doctors I am used to," said O'Mara dryly. "I communicate with them, on the whole successfully, every day. But this isn't your only problem?"

Conway shook his head. "I've already said that we have to treat a small number of very large patients. Even with the assistance of all the Drambon medical people I would still need help in charting-and I do mean charting by photoreconnaissance-the extent of the trouble as accurately as possible and probing subsurface areas. X rays on this scale are impossible. A full-scale drilling operation to withdraw deep tissue samples would be of little use either, since the drill would be a short and impossibly fine needle. So we will need to investigate the diseased or damaged areas in person, using armored ground cars and, where possible, our hands and feet inside heavy-duty spacesuits. Entrance to the affected areas will be through natural body openings, and the exercise will go much faster if we have the help of people with medical training who do not need the protection of armored vehicles and suits. I'm thinking of species like the Chalders and Hudlars and Melfans who are armored already.

"From Pathology," he went on, looking toward Thornnastor, "I would like suggestions for providing a cure by surgery rather than medication. Present indications are that the trouble will be largely the result of radiation poisoning, and while I realize that we can cure even advanced cases these days, the treatment may well be impossible to apply to patients this size, not to mention the fact that the regenerative medication required for only one of them could represent the total output of that drug from a dozen planets for many years. Hence the necessity for a surgical solution."

Skempton cleared his throat and said, "I begin to see the scope of your problem, Doctor. My part will be in organizing transport and supplies for your medical people. I'd also suggest a full battalion of engineers to set up and maintain the special equipment..."

"To begin with," said Conway.

"Naturally," said the Colonel a trifle coldly, "we shall continue to assist you in whatever-"

"You misunderstood me, sir," said Conway. "I can't be sure just how much help we will need at the present time, but I had been thinking in terms of a full sector sub fleet armed with long-range lasers, surface penetrating torpedoes, tactical atomic weapons-clean, of course-and whatever other forms of frightfulness you can suggest that are both concentrated and capable of being directed accurately.

"You see, Colonel," Conway concluded, "surgery on this scale will mean that the operation will be military rather than surgical." To O'Mara he added, "Those are a few of the reasons for my unscheduled return. The others are less urgent and..

"Can damn well wait until this lot are sorted out," said O'Mara firmly.

The meeting broke up shortly after that because neither Surreshun nor Conway could give any information on Drambo which was not already available in the Corps reports. O'Mara retreated into his inner office with the Drambon doctor, Thornnastor and Skempton returned to their quarters and Edwards, Mannon, Prilicla, and Conway, having first seen to the comfort of Surreshun in the AUGL tank, headed for the cafeteria reserved for warm-blooded oxygen breathers to refuel. The Hudlar and Melfan doctors went along to find out more about Drambo and to watch the others eat. As very recent additions to the hospital staff in the first flush of enthusiasm, they were spending every available minute observing and talking to e-ts.

Conway knew the feeling. It was still very much with him, but nowadays he was

practical enough to use as well as admire the enthusiasm of the new boys...

"The Chalders are tough and mobile enough to hold their own against the native predators," Conway said as they distributed themselves around a table designed for Tralthan FGLIs-the Earth-human DBDG tables were all taken, by Kelgians-and dialed their orders. "You Melfans are very fast movers on the sea bed and your legs, being mostly osseous material, are proof against the poisonous plants and spines growing on the ocean floor. Hudlars, however, while slow-moving do not have to worry about anything less than an armor-piercing shell hurting them and the water all over the planet is so thick with vegetable and animal life anxious to attach itself to any smooth surface that you could throw away your food spraying gear and live completely off the sea."

"It sounds like heaven," said the Hudlar, its flat, translated tone making it impossible to tell whether or not it was being sarcastic. "But you will need large numbers of doctors in all three species-far too many to be supplied by the hospital even if everyone on the staff was allowed to volunteer."

"We'll need hundreds of you," Conway replied, "and Drambo isn't heaven even for Hudlars. At the same time I thought there might be doctors-young, still restless, newly qualified people-anxious for e-t experience.."

"I'm not Prilicla," said Mannon, laughing, "but even I can sense that you are preaching to the converted. Do you like lukewarm steak, Conway?"

For several minutes they concentrated on eating so that the gentle breeze produced by Prilicla's wings-it preferred to hover during meals, claiming that flying aided its digestion-would not ruin everything but the ice cream.

"At the meeting," said Edwards suddenly, "you mentioned other, less urgent problems. I expect the recruiting of thick-skinned beasties like Garoth here was one of them. I'm afraid to ask about the others.."

Conway said, "We will need on-the-spot advice during this large-scale medical examination, which means doctors, nurses and medical technicians experienced in the processing and analysis of specimens covering the widest possible range of life-forms. I am going to have to talk Thornnastor into releasing some of his pathology staff..."

Prilicla side-slipped suddenly and almost put one of its pencil-thin legs into Mannon's dessert. It was trembling slightly as it flew, a sure sign that someone at the table was radiating strong and complicated emotions.

"I'm still not Prilicla," said Mannon, "but from the behavior of our empathic friend I would guess that you are seeking, and trying to justify, a much closer liaison with the pathology department and especially a pathologist called Murchison. Right, Doctor?"

"My emotions are supposed to be privileged," said Conway.

"I did not say a word," said Prilicla, who was still finding difficulty in maintaining a stable hover.

Edwards said, "Who's Murchison?"

"Oh, a female of the Earth-human DBDG classification," said Garoth through his translator. "A very efficient nurse with theater experience covering more than thirty different life-forms, who recently qualified as a pathologist senior grade. Personally I have found her pleasant and polite, so much so that I am able to ignore the, to me, physically repellent slabs of adipose overlaying much of her musculature."

"And you're going to bring her to Drambo with you, Conway?" The Monitor Corps and its officers had very old-fashioned ideas about mixed crews, even on long survey missions.

"Only," said Mannon gravely, "if he's given half a chance."

"You should marry the girl, Conway."

"He did."

"This is a very strange establishment in some ways, Major," said Mannon, smiling,

"full of odd and peculiar practices. Take sex, for instance. To a large number of the entities here it is either a continuing, involuntary process as public, and giving the about degree of stimulation, as breathing, or it is physiological earthquake which rocks them for perhaps three days in the year. People like these find it hard to understand the, to them, bewildering complications and ritualistic behavior connected with pairing off and mating in our species-although admittedly there are a few whose sex lives make ours look about as simple as crosspollination.

"But the point I'm trying to make," Mannon went on, "is that the vast majority of our e-ts just do not understand why the female of our species should lose her identity, surrender that most precious of all possessions, her name. To many of them this smacks of slavery, or at least second-class citizenship, and to the others sheer stupidity. They don't see why an Earth-human female doctor, nurse or technician should change her identity and take the name belonging to another entity for purely emotional reasons and neither, if it comes to that, does the Records computer. So they retain their professional names, like actresses and similar professional females, and are very careful to use them at all times to avoid confusions of identity with e-ts who-

"He gets the point," said Conway dryly. "But sometime I'd like you to explain the difference between an amateur as opposed to a professional female."

"They behave differently in private, of course," Mannon went on, ignoring him. "Some of them are sufficiently depraved to call each other by their first names.

"We need a pathology team," said Conway, ignoring Mannon. "But even more we need local medical help. Surrehun's people, for physiological reasons, can give us only moral support, which means that everything depends on gaining the cooperation of our leech-like friends. This is where you come in, Prilicla. You were monitoring its emotional radiation during the meeting. Any ideas?"

"I'm afraid not, friend Conway," said the empath. "During the whole of the meeting the Drambon doctor was conscious and aware, but it did not react to anything that was said or done or engage in any concentrated thinking. It emoted only feelings of well-being, repletion and self satisfaction."

"It certainly did a good job on that Kelgian," said Edwards, "and to a leech the pint or so of blood it siphoned off..

Prilicla waited politely for the interruption to cease, then went on, "There was a very brief heightening of interest detectable when members of the meeting first entered the room-the emotion was not one of curiosity, however, but more like the increase of awareness necessary for a cursory identification."

"Was there any indication that the trip here had affected it?" asked Conway. "Impaired its physical or mental faculties, anything like that?"

"It was thinking only contented thoughts," replied Prilicla, "so I would say not.~~

They discussed the Drambon doctor until they were about to leave the dining hall, when Conway said, "O'Mara will be glad of your help, Prilicla, while he is putting our blood-sucking friend through his psychological hoops, so I would be grateful if you could monitor its emotional radiation while contact is being established. The Major may want to wait until communication is complete and a special translator pack has been programmed for the Drambon before contacting me. But I would like to have any useful information as you get it..."

Three days later as he was about to board Descartes with Edwards and the first batch of recruits-a very carefully chosen few who would, he hoped, by their enthusiasm attract and instruct many more-the PA began quietly insisting that Doctor Conway contact Major O'Mara at once, its insistence reinforced by the repeated double chime which preceded most urgent signals. He waved the others ahead and went to the lock's communicator.

"Glad I caught you," said the Chief Psychologist before Conway could do anything more than identify himself. "Listen, don't talk. Prilicla and I are getting nowhere with your

Drambon medic. It emotes but we can't get it excited about anything so that we cannot even establish its likes and dislikes.

"We know that it sees and feels," O'Mara went on, "but we aren't sure if it can hear or talk or, if it can, how it does these things. Prilicla thinks it may have a low form of empathy, but until we can put a few ripples into its even disposition there is no way of proving that. I am not admitting that I'm beaten, Conway, but you have handed us a problem which may have a very simple solution-

"Did you try it with the thought-controlled tool?"

"That was the first, second and twenty-eighth thing we tried," said O'Mara sourly. "Prilicla detected a very slight heightening of interest consistent, it says, with the identification of a familiar object. But the Drambon made no attempt to control the gadget. I was saying that you handed us a problem. Maybe the simplest answer would be for you to hand us another just like it."

The Chief Psychologist disliked having to give unnecessary explanations almost as much as people who were slow on the uptake, so Conway thought for a moment before saying, "So you would like me to bring back another Drambon medic so that you could observe and eavesdrop on their conversation when they meet, and reproduce the method on the translator . .

"Yes, Doctor, and fast," said O'Mara, "before your Chief Psychologist needs a psychiatrist. Off."

It was not possible for Conway to immediately seek out, kidnap or otherwise acquire another leech-like SRJH on his return to Drambo. He had a group of e-ts of widely varying dietary, gravity and atmosphere requirements to attend to and, while all three life-forms could exist without too much difficulty in the Drambon ocean, their quarters on Descartes had to have some of the comforts of home.

They also had to be given some appreciation of the scope of the medical problem they were being asked to help solve, and this entailed many copter flights over the strata creatures. He showed them the great tracks of living "land" covered with the tiny, long-rooted plants which might or might not serve as the strata beasts' eyes-the leaves rolled back tightly to reveal their bright undersides when the helicopter's shadow passed over them, and opened out again a few seconds after it had passed. It was as if their shadow was a high-persistency yellow spot on a bright green radar screen. And he showed them the coastlines, which were much more dramatic.

Here the sea predators, large and small, tore at each other and at the periphery of the great land beasts, stirring the thick, turgid ocean into yellow foam streaked and stained with red. It was in an area like this, where Conway had judged the strata beast's need for protection had been greatest, that he had found the leech-like SRJHs and where, as soon as he could possibly manage it, he must look for another.

But this time he would have lots of willing and specialized help.

Every day there was a message from O'Mara, different only in the mounting impatience evident between the lines. Prilicla and the Chief Psychologist were having no success with the Drambon doctor and had come to the conclusion that it used one of the exotic Visio tactile languages which were virtually impossible to reproduce without a detailed sight touch vocabulary.

The first expedition to the coast was in the nature of a rehearsal-at least, it started out that way. Camsaug and Surrshun took the lead, wobbling and wheeling along the uneven sea bed like a pair of great organic doughnuts. They were flanked by two crab-like Melfans who were easily capable of scuttling along twice as fast as the Drambons could roll, while a thirty-foot scaled and tentacled Chalder swam ponderously above them ready to discourage local predators with its teeth, claws and great bony club of a tail-although in Conway's opinion one look from any one of its four extensible eyes would be enough to discourage

anything with the slightest will to live.

Conway, Edwards, and Garoth traveled in one of the Corps's surface cruisers, a vehicle capable not only of moving over any conceivable topography but of going over, through or under the sea as well as being able to hover for a limited period in the air. They kept just far enough in the rear to keep everyone else in sight.

They were headed toward a dead section of coast, a deep strip of the strata beast which Surreshun's people had killed to give themselves more protected rolling space. They had accomplished this by lobbing a series of very dirty atomic bombs ten miles inland and then waiting while the living coastline stopped killing and eating and drinking, and the coastline predators lost interest in the dead meat and left.

Fallout did not concern the rollers because the prevailing wind blew inland. But Conway had deliberately selected a spot which was only a few miles from a stretch of coast which was still very much alive, so that with any luck their first examination might turn out to be something more than an autopsy.

With the departure of the predators the sea's plant life had moved in. On Drambo the division between plant and animal life was rarely sharp and all animals were omnivorous. They had to travel along the coast for nearly a mile before finding a mouth that was not either closed too tightly or too badly overgrown to allow entry, but the time was not wasted because Camsaug and Surreshun were able to point out large numbers of dangerous plants that even the heavily armored e-ts should avoid whenever possible.

The practice of extraterrestrial medicine was greatly simplified by the fact that the illnesses and infections of one species were not transmittable to another. But this did not mean that poisons or other toxic material secreted by e-t animals and plants could not kill, and on the Drambon sea bed the vegetation was particularly vicious. Several varieties were covered with poisoned spines and one acted as if it had delusions of being a vegetable octopus.

The first usable mouth looked like an enormous cavern. When they followed the rollers inside the vehicle's spotlights showed pallid vegetation waving and wriggling slowly to the limit of vision. Surreshun and Camsaug were rolling out unsteady figure-eights on the densely overgrown floor and apologizing for the fact that they could not take the party any farther without risking being stopped.

"We understand," said Conway, "and thank you."

As they moved deeper into the enormous mouth the vegetation became sparse and more pallid, revealing large areas of the creature's tissue. It looked coarse and fibrous and much more like vegetable rather than animal material, even allowing for the fact that it had died several years earlier. The roof began suddenly to press down on them and the forward lights showed the first serious barrier, a tangle of long, tusk-like teeth so thick that they looked like the edge of a petrified forest.

One of the Melfans was the first to report. It said, "I cannot be absolutely sure until Pathology checks my specimens, Doctor Conway, but the indications are that the creature's teeth are vegetable rather than animal osseous material. They grow thickly on both the upper and lower surfaces of the mouth and to the limit of our visibility. The roots grow transversely so that the teeth are free to bend forward and backward under steady pressure. In the normal position they are angled sharply toward the outer orifice and act as a killing barrier to large predators rather than as a means of grinding them into small pieces.

"From the position and condition of several large cadavers in the area," the Melfan went on, "I would say that the creature's ingestion system is very simple. Sea water containing food animals of all sizes is drawn into a stomach or prestomach. Small animals slip through the teeth while large ones impale themselves, whereupon the inward current and the struggles of the animal concerned cause the teeth to bend inward and release it. I assume that the small animals are no problem but that the big ones could do serious damage to the stomach before the digestive system neutralizes them, so they have to be dead before they reach the stomach."

Conway directed the spotlight toward the area containing the Melfan and saw it wave one of its mandibles. He said, "That sounds reasonable, Doctor. It wouldn't surprise me if the digestive processes are very slow indeed-in fact, I'm beginning to wonder if the creature is more vegetable than animal. An organism of normal flesh, blood, bone and muscle of this size would be too heavy to move at all. But it moves, and does everything else, very slowly. . ." He broke off and narrowed the beam for maximum penetration, then went on, "You had better get aboard so we can burn a way through those teeth."

"No need, Doctor," said the Melfan. "The teeth have decayed and are quite soft and brittle. You can simply drive through them and we will follow."

Edwards allowed the cruiser to sink to the floor, then moved it forward at a comfortable scuttling pace for Melfans. Hundreds of the long, discolored plant teeth snapped and toppled slowly through the cloudy water before they were suddenly in the clear.

"If the teeth are a specialized form of plant life," said Conway thoughtfully, "they occupied a very sharply defined area, which suggests that someone is responsible for planting them."

Grunting assent, Edwards checked to see that everyone had come through the tunnel they had just made, then he said, "The channel is widening and deepening again, and I can see another presumably specialized form of plant life. Big, isn't it? There's another. They're all over the place.

"This is far enough," said Conway. "We don't want to lose sight of the way out.

Edwards shook his head. "I can see openings on both sides just like this one. If the place is a stomach, and it looks big enough, there are several inlets."

Angry suddenly, Conway said, "We know that there are hundreds of these mouths in this dead section alone and the number of stomachs is anybody's guess-great, flat, hollow caveins miles across if that radar isn't telling fluorescent lies. We aren't even nibbling at the problem!"

Edwards made a sympathetic noise and pointed ahead. "They look like stalactites that have gone soft in the middle. I wouldn't mind taking a closer look."

Even the Hudlar went out to have a closer look at the great, sharply curved pillars which supported the roof. Using their portable analyzers they were able to establish that the pillars were a part of the strata beast's musculature and not, as they had earlier thought, another form of plant life-although the surface of all the muscular supports in the area were covered with something resembling outsize seaweed. The blisters were nearly three feet across and looked about ready to burst. A Melfan taking a specimen of the underlying muscle accidentally touched one and it did burst, triggering off about twenty others in the vicinity. They released a thick, milky liquid which spread rapidly and dissolved in the surrounding water.

The Melfan made untranslatable noises and scuttled backward.

"What's wrong?" said Conway sharply. "Is it poisonous?"

"No, Doctor. There is a strong acid content but it is not immediately harmful. If you were a water breather you would say that it stinks. But look at the effect on the muscle."

The great pillar of muscle rooted firmly to both floor and roof was quivering, its sharp curve beginning to straighten out.

"Yes," said Conway briskly, "this supports our theory about the creature's method of ingestion. But now I think we should return to Descartes-this area may not be as dead as we thought."

Specialized teeth plants served as a filter and killing barrier to food drawn into the creature's stomach. Other symbiotic plants growing on the muscle pillars released a secretion which caused them to stiffen, expand the stomach, and draw in large quantities of food-bearing water. Presumably the secretion also served to dissolve the food, digest it for assimilation through the stomach wall or by other specialized plants- they had taken enough specimens for Thornnastor to be able to work out the digestive mechanism in detail. When the power of the digestive secretion had been diluted by the food entering the stomach their

effect on the muscles diminished, allowing the pillars to partially collapse again and expel undigested material.

Blisters were beginning to rupture off the other pillars now. By itself that did not mean that the beast was alive, only that a dead muscle could still respond to the proper stimulus. But the cavern roof was being pushed up and water was flowing in again.

"I agree, Doctor," said Edwards, "let's get out of here. But could we leave by a different mouth—we might learn something from a stretch of new scenery.

"Yes," said Conway, with the uncomfortable feeling that he should have said no. If dead muscles could twitch, what other forms of involuntary activity were possible to the gigantic carcass? He added, "You drive, but keep the cargo hatch and personnel lock open—I'll stay outside with the e-ts .

A few minutes later Conway was hanging onto a handy projection as the vehicle followed the e-ts into a different mouth opening. He hoped it was a mouth and not a connection with something deeper inside the beast, because Edwards reported that it was curving toward a live area of coast. But before the lowering temperature of his feet could affect his speech centers enough for him to order them back the way they had come, there was an interruption.

"Major Edwards, stop the cruiser, please," said one of the Melfans. "Doctor Conway, down here. I think I have found a dead.. . colleague."

It was a Drambon SRJH, no longer transparent but milky and shriveled with a long, incised wound traversing its body, drifting and bumping along the floor.

"Thornastor will be pleased with you, friend," said Conway enthusiastically. "And so will O'Mara and Prilicla. Let's get it aboard with the other specimens. Oh, I'm not a water breather, but..

"It doesn't," the Melfan replied to the unspoken question. "I'd say that it was too recently dead to be offensive.~~

The Chalder came sweeping back, its tentacles gripped the dead SRJH and transferred it to the refrigerated specimen compartment, then it returned to its position. A few seconds later one flat, toneless, translated word rasped in their receivers.

"Company. ~

Edwards directed all his lights ahead to show a fighting, squirming menagerie practically filling the throat ahead. Conway identified two kinds of large sea predators who had obviously been able to batter a way through the brittle teeth, several smaller ones, about ten SRJHs and a few large-headed, tentacled fish that he had never seen before. It was impossible to tell at first which were fighting which or even if it mattered to the beings concerned.

Edwards dropped the vehicle to the floor. "Back inside! Quickly!"

Half-running, half-swimming toward the vehicle, Conway envied the underwater mobility of the Melfans so much that it hurt. He overtook the Hudlar who had the jaws of a big predator locked on its carapace. Just above him one of the new life-forms had an SRJH wrapped around it, the Drambon doctor already turning red as it treated its patient in the only way it knew how. There was a deep, reverberating clang as another predator charged the cruiser, smashing two of their four lights.

"Into the cargo hold!" Edwards shouted hoarsely. "We've no time to fiddle about with personnel locks!"

"Get off me, you fool," said the Hudlar with the predator on its back. "I'm inedible."

"Conway, behind you!"

Two big predators were coming at him along the bottom while the Chalder was shooting in from the flank. Suddenly there was a Drambon doctor undulating rapidly between the leading predator and Conway. It barely touched the beast but the predator went into a muscular spasm so violent that parts of its skeleton popped white through the skin.

So you can kill as well as cure, thought Conway gratefully as he tried to avoid the second predator. The Chalder arrived then and with a swipe of its armored tail cleared the

Hudlar's back while simultaneously its enormous maw opened and crashed shut on the second predator's neck.

"Thank you, Doctor," said Conway. "Your amputation technique is crude but effective."

"All too often," replied the Chalder, "we must sacrifice neatness for speed..."

"Stop chattering and get in!" yelled Edwards.

"Wait! We need another local medic for O'Mara," began Conway, gripping the edge of the hatch. There was a Drambon doctor drifting a few yards away, bright red and obviously wrapped around its patient. Conway pointed and to the Chalder said, "Nudge it inside, Doctor. But be gentle, it can kill, too."

When the hatch clanged shut a few minutes later the cargo hold contained two Melfans, a Hudlar, the Chalder, the Drambon SRJH with its patient and Conway. It was pitch dark. The vehicle shuddered every few seconds as predators crashed against its hull, and conditions were so cramped that if the Chalder moved at all everyone but the armor-plated Hudlar would have been mashed flat. Several years seemed to go past before Edward's voice sounded in Conway's helmet.

"We're leaking in a couple of places, Doctor-but not badly and it shouldn't worry water breathers in any case. The automatic cameras have some good stuff on internal life-forms being helped by local medics. O'Mara will be very pleased. Oh, I can see teeth ahead. We'll soon be out of this

Conway was to remember that conversation several weeks later at the hospital when the living and dead specimens and film had been examined, dissected, and viewed so often that the leech-like Drambons undulated through his every dream.

O'Mara was not pleased. He was, in fact, extremely displeased-with himself, which made things much worse for the people around him.

"We have examined the Drambon medics singly and together, friend Conway," said Prilicla in a vain attempt to render the emotional atmosphere in the room a little more pleasant. "There is no evidence that they communicate verbally, visually, tactually, telepathically, by smell or any other system known to us. The quality of their emotional radiation leads me to suspect that they do not communicate at all in the accepted sense. They are simply aware of other beings and objects around them and, by using their eyes and a mechanism similar to the empathic faculty which my race possesses, are able to identify friend and foe-they attacked the Drambon predators without hesitation, remember, but ignored the much more visually frightening Chalder doctor who was feeling friendship for them.

"So far as we have been able to discover," Prilicla went on, "its emphatic faculty is highly developed and not allied to intelligence. The same applies to the second Drambon native you brought back, except that it is .

"Much smarter," O'Mara finished sourly. "Almost as smart as a badly retarded dog. I don't mind admitting that for a while I thought our failure to communicate may have been due to a lack of professional competence in myself. But now it is clear that you were simply wasting our time giving sophisticated tests to Drambon animals."

"But that SRJH saved me."

"A very highly specialized but nonintelligent animal," said O'Mara firmly. "It protects and heals friends and kills enemies, but it does not think about it. As for the new specimen you brought in, when we exposed it to the thought-controlled tool it emoted awareness and caution-a feeling similar to our emotional radiation if we were standing close to a bare power line-but according to Prilicla it did not think at or even about the gadget.

"So I'm sorry, Conway," he ended, "we are still looking for the species responsible for making those tools, and for intelligent local medical assistance with your own problem."

Conway was silent for a long time, staring at the two SRJHs on O'Mara's floor. It seemed all wrong that a creature responsible for saving his life should have done so without thought or feeling. The SRJH was simply a specialist like the other specialized animals and

plants inhabiting the interior of the great strata beasts, doing the work it had evolved to do. Chemical reactions were so slow inside the strata creatures-the material was too diluted for them to be otherwise since its blood might be little more than slightly impure water-that specialized plant and animal symbiotes could produce the secretions necessary for muscle activity, endocrine balance, supplying nourishment to and removing waste material from large areas of tissue. Other specialized symbiotes handled the respiration cycle and gave vision of a kind on the surface.

"Friend Conway has an idea," said Prilicla.

"Yes," said Conway, "but I would like to check it by getting the dead SRJH up here. Thornnastor hasn't done anything drastic to it yet, and if something should happen to it we can easily get another. I would like to face the two living SRJHs with a dead colleague.

"Prilicla says that they do not emote strongly about anything," Conway added. "They reproduce by fission so there can be no sexual feeling between them. But the sight of one of their own dead should cause some kind of reaction."

O'Mara stared hard at Conway as he said, "I can tell by the way Prilicla is trembling and by the smug look on your face that you think you have the answer. But what is likely to happen? Are these two going to heal and resuscitate it? Oh, never mind, I'll wait and let you have your moment of medical drama. .

When the dead SRJH arrived Conway quickly slid it from the litter onto the office floor and waved O'Mara and Prilicla back. The two living SRJHs were already moving purposefully toward the cadaver. They touched it, flowed around and over it and for about ten minutes were very busy. When they had finished there was nothing left.

"No detectable change in emotional radiation, no evidence of grief," said Prilicla. It was trembling but its own feelings of surprise were probably responsible for that.

"You don't look surprised, Conway," said O'Mara accusingly.

Conway grinned and said, "No, sir. I'm still disappointed at not making contact with a Drambon doctor, but these beasties are a very good second best. They kill the strata beast's enemies, heal and protect its friends and tidy up the debris. Doesn't that suggest something to you? They aren't doctors, of course, just glorified leucocytes. But there must be millions of them, and they're all on our side. .

"Glad you're satisfied, Doctor," said the Chief Psychologist, looking pointedly at his watch.

"But I'm not satisfied," said Conway. "I still need a senior pathologist trained in and with the ability to use the hospital's facilities-one particular pathologist. I need to maintain a close liaison with-

"The closest possible liaison," said O'Mara, grinning suddenly. "I quite understand, Doctor, and I shall urge it with Thornnastor just as soon as you've closed the door..."

MAJOR OPERATION

On the whole weird and wonderful planet there were only thirty-seven patients requiring treatment, and they varied widely both in size and in their degree of physical distress. Naturally it was the patient who was in the greatest distress who was being treated first, even though it was also the largest-so large that at their scout ship's sub orbital velocity of six thousand plus miles per hour it took just over nine minutes to travel from one side of the patient to the other.

"It's a large problem," said Conway seriously, "and even altitude doesn't make it look smaller. Neither does the shortage of skilled help."

Pathologist Murchison, who was sharing the tiny observation blister with him, sounded cool and a little on the defensive as she replied, "I have been studying all the Drambon material long before and since my arrival two months ago, but I agree that seeing it like this for the first time really does bring the problem home to one. As for the shortage of

help, you must realize, Doctor, that you can't strip the hospital of its staff and facilities for just one patient even if it is the size of a subcontinent- there are thousands of smaller and more easily curable patients with equal demands on us.

"And if you are still suggesting that I, personally, took my time in getting here," she ended hotly, "I came just as soon as my chief decided that you really did need me, as a pathologist."

"I've been telling Thornnastor for six months that I needed a top pathologist here," said Conway gently. Murchison looked beautiful when she was angry, but even better when she was not. "I thought everybody in the hospital knew why I wanted you, which is one reason why we are sharing this cramped observation blister, looking at a view we have both seen many times on tape and arguing when we could be enjoying some unprofessional behavior-"

"Pilot here," said a tinny voice in the blister's 'speaker. "We are losing height and circling back now and will land about five miles east of the terminator. The reaction of the eye plants to sunrise is worth seeing."

"Thank you," said Conway. To Murchison he added, "I had not planned on looking out the window."

"I had," she said, punching him with one softly clenched fist on the jaw. "You I can see anytime."

She pointed suddenly and said, "Someone is drawing yellow triangles on your patient."

Conway laughed. "I forgot, you haven't been involved with our communications problems so far. Most of the surface vegetation is light sensitive and, some of us thought, might act as the creature's eyes. We produce geometrical and other figures by directing a narrow, intense beam of light from orbit into a dark or twilight area and moving it about quickly. The effect is something like that of drawing with a high persistency spot on a vision screen. So far, there has been no detectable reaction.

"Probably," he went on, "the creature can't react even if it wanted to, because eyes are sensory receptors and not transmitters. After all, we can't send messages with our eyes.

"Speak for yourself," she said.

"Seriously," Conway said, "I'm beginning to wonder if the strata creature itself is highly intelligent..."

They landed shortly afterward and stepped carefully onto the springy ground, crushing several of the vegetable eyes with every few yards of progress. The fact that the patient had countless millions of other eyes did not make them feel any better about the damage inflicted by their feet.

When they were about fifty yards from the ship, she said suddenly, "If these plants are eyes-and it is a natural assumption, since they are sensitive to light-why should it have so many in an area where danger threatens so seldom? Peripheral vision to coordinate the activity of its feeding mouths would be much more useful."

Conway nodded. They knelt carefully among the plants, their long shadows filled with the yellow of tightly closed leaves. He indicated their tracks from the entry lock of the ship, which were also bright yellow, and moved his arms about so as to partly obscure some of the plants from the light. Leaves partially in shade or suffering even minor damage reacted exactly as those completely cut off from the light. They rolled up tight to display their yellow undersides.

"The roots are thin and go on forever," he said, excavating gently with his fingers to show a whitish root which narrowed to the diameter of thin string before disappearing from sight. "Even with mining equipment or during exploratories with diggers we haven't been able to find the other end of one. Have you learned anything new from the internals?"

He covered the exposed root with soil, but kept the palms of both hands pressed lightly against the ground.

Watching him, she said, "Not very much. Light and darkness, as well as causing the

leaves to open out or roll up tight, causes electrochemical changes in the sap, which is so heavily loaded with mineral salts that it makes a very good conductor. Electrical pulses produced by these changes could travel very quickly from the plant to the other end of the root. Er, what are you doing, dear, taking its pulse?"

Conway shook his head without speaking, and she went on. "The eye plants are evenly distributed over the patient's top surface, including those areas containing dense growths of the air-renewal and waste-elimination types, so that a shadow or light stimulus received anywhere on its surface is transmitted quickly-almost instantaneously, in fact-to the central nervous system via this mineral-rich sap. But the thing which bothers me is what possible reason could the creature have for evolving an eyeball several hundred miles across?"

"Close your eyes," said Conway, smiling. "I'm going to touch you. As accurately as you can, try to tell me where."

"You've been too long in the company of men and e-ts, Doctor," she began, then broke off, looking thoughtful.

Conway began by touching her lightly on the face, then he rested three fingers on top of her shoulder and went on from there.

"Left cheek about an inch from the left side of my mouth," she said. "Now you've rested your hand on my shoulder. You seem to be rubbing an X onto my left bicep. Now you have a thumb and two, maybe three, fingers at the back of my neck just on the hairline... Are you enjoying this? I am."

Conway laughed. "I might if it wasn't for the thought of Lieutenant Harrison watching us and steaming up the pilot's canopy with his hot little breath. But seriously, you see what I'm getting at, that the eye plants have nothing to do with the creature's vision but are analogous to pressure-, pain- or temperature-sensitive nerve endings?"

She opened her eyes and nodded. "It's a good theory, but you don't look happy about it."

"I'm not," said Conway sourly, "and I'd like you to shoot as many holes in it as possible. You see, the complete success of this operation depends on us being able to communicate with the beings who produced the thought-controlled tools. Up until now I had assumed that these beings would be comparable in size to ourselves even if their physiological classification would be completely alien, and that they would possess the usual sensory equipment of sight, hearing, taste, touch and be capable of being reached through any or all of these channels. But now the evidence is piling up in favor of a single intelligent life-form, the strata creature itself, which is naturally deaf, dumb and blind so far as we can see. The problem of communicating even the simplest concepts to it is-"

He broke off, all his attention concentrated on the palm of one hand which was still pressed against the ground, then said urgently, "Run for the ship."

They were much less careful about stepping on plants on the way back, and as the hatch slammed shut behind them Harrison's voice rattled at them from the lock communicator.

"Are we expecting company?"

"Yes, but not for a few minutes," said Conway breathlessly. "How much time do you need to get away, and can we observe the tools' arrival through something bigger than this airlock port?"

"For an emergency liftoff, two minutes," said the pilot, "and if you come up to Control you can use the scanners, which check for external damage."

"But what were you doing, Doctor?" Harrison resumed as they entered his control position. "I mean, in my experience the front of the bicep is not considered to be a zone of erotic stimulation."

When Conway did not answer he looked appealingly at Murchison.

"He was conducting an experiment," she said quietly, "designed to prove that I cannot see with the nerve endings of my upper arm. When we were interrupted he was

proving that I did not have eyes in the back of my neck, either."

"Ask a silly question. . ." began Harrison.

"Here they come," said Conway.

They were three semicircular disks of metal which seemed to flicker into and out of existence on the area of ground covered by the long morning shadow of the scout ship. Harrison stepped up the magnification of his scanners, which showed that the objects did not so much appear and disappear as shrink rhythmically into tiny metal blobs a few inches across, then expand again into flat, circular blades which knifed through the surface. There they lay flat for a few seconds among the shadowed eye plants, then suddenly the discs became shallow inverted bowls. The change was so abrupt that they bounced several yards into the air to land about twenty feet away. The process was repeated every few seconds, with one disc bouncing rapidly toward the distant tip of their shadow, the second zig-zagging to chart its width and the third heading directly for the ship.

"I've never seen them act like that before," said the lieutenant.

"We've made a long, thin itch," said Conway, "and they've come to scratch it. Can we stay put for a few minutes?"

Harrison nodded, but said, "Just remember that we'll still be staying put for two minutes after you change your mind."

The third disk was still coming at them in five-yard leaps along the center of their shadow. He had never before seen them display such mobility and coordination, even though he knew that they were capable of taking any shape their operators' thought at them, and that the complexity of the shape and the speed of the change were controlled solely by the speed and clarity of thought of the user's mind.

"Lieutenant Harrison has a point, Doctor," said Murchison suddenly. "The early reports say that the tools were used to undercut grounded ships so that they would fall inside the strata creature, presumably for closer examination at its leisure. On those occasions they tried to undercut the object's shadow, using the shaded eye plants as a guide to size and position. But now, to use your own analogy, they seem to have learned how to tell the itch from the object causing it."

A loud clang reverberated along the hull, signaling the arrival of the first tool. Immediately the other two turned and headed after the first, and one after the other they bounced high into the air, higher even than the control position, to arch over and crash against the hull. The damage scanners showed them strike, cling for a few seconds while they spread over hull projections like thin, metallic pancakes, then fall away. An instant later they were clanging and clinging against a different section of hull. But a few seconds later they stopped clinging because, just before making contact, they grew needle points which scored bright, deep scratches in the plating.

"They must be blind," said Conway excitedly. "The tools must be an extension of the creature's sense of touch, used to augment the information supplied by the plants. They are feeling us for size and shape and consistency."

"Before they discover that we have a soft center," said Harrison firmly, "I suggest that we make a tactical withdrawal, or even get the hell out."

Conway nodded. While Harrison played silent tunes on his control panels he explained that the tools were controllable by human minds up to a distance of about twenty feet and that beyond this distance the tool users had control. He told her to think blunt shapes at them as soon as they came into range, any shape so long as it did not have points or cutting edges .

"No, wait," he said as a better idea struck him. "Think wide and flat at them, with an aerofoil section and some kind of vertical projection for stabilization and guidance. Hold the shape while it is falling and glide it as far away from the ship as possible. With luck it will need three or four jumps to get back."

Their first attempt was not a success, although the shape which finally stuck the ship was too blunt and convoluted to do serious damage. But they concentrated hard on the next

one, holding it to a triangle shape only a fraction of an inch thick and with a wide central fin. Murchison held the overall shape while Conway thought-warped the trailing edges and stabilizer so that it performed a balanced vertical bank just outside the direct-vision panel and headed away from the ship in a long, flat glide.

The glide continued long after it passed beyond their range of influence, banking and wobbling a little, then cutting a short swathe through the eye plants before touching down.

"Doctor, I could kiss you. . ." she began.

"I know you like playing with girls and model airplanes, Doctor," Harrison broke in dryly, "but we lift in twenty seconds. Straps."

"It held that shape right to the end," Conway said, beginning to worry for some reason. "Could it have been learning from us, experimenting perhaps?"

He stopped. The tool melted, flowed into the inverted bowl shape and bounced high into the air. As it began to fall back it changed into glider configuration, picking up speed as it fell, then leveled out a few feet above the surface and came sweeping toward them. The leading edges of its wings were like razors. Its two companions were also aloft in glider form, slicing the air toward them from the other side of the ship.

"Straps."

They hit their acceleration couches just as the three fast-gliding tools struck the hull, by accident or design, cutting off two of the external vision pickups. The one which was still operating showed a three-foot gash torn in the thin plating with a glider embedded in the tear, changing shape, stretching and widening it. Probably it was a good thing that they could not see what the other two were doing.

Through the gash in the plating Conway could see brightly colored plumbing and cable runs which were also being pushed apart by the tool. Then that screen went dead as well just as takeoff boost rammed him deep into the couch.

"Doctor, check the stern for stowaways," said Harrison harshly as the initial acceleration began to taper off. "If you find any, think safe shapes at them-something which won't scramble anymore of my wiring. Quickly."

Conway had not realized the full extent of the damage, only that there were more red lights than usual winking from the control board. The pilot's fingers were moving over his panels with such an intensity of gentleness that the harshness in his voice made it sound as if it was coming from a completely different person.

"The aft pickup," said Conway reassuringly, "shows all three tools gliding in pursuit of our shadow."

For a time there was silence broken only by the tuneless whistling of air through torn plating and unretracted scanner supports. The surface wobbled past below them and the ship's motion made Conway feel that it was at sea rather than in the air. Their problem was to maintain height at a very low flying speed, because to increase speed would cause damaged sections of the hull to peel off or heat up due to atmospheric friction, or increase the drag to such an extent that the ship would not fly at all. For a vessel which was classed as a supersonic glider for operations in atmosphere their present low speed was ridiculous. Harrison must be holding onto the sky with his fingernails.

Conway tried hard to forget the lieutenant's problems by worrying aloud about his own.

"I think this proves conclusively that the strata creatures are our intelligent tool users," he said. "The high degree of mobility and adaptability shown by the tools makes that very plain. They must be controlled by a diffuse and not very strong field of mental radiation conducted and transmitted by root networks and extending only a short distance above the surface. It is so weak that an average Earth-human or e-t mind can take local control."

"If the tool users were beings of comparable size and mental ability to ourselves," he went on, trying not to look at the landscape lurching past below them, "they would have to travel under and through the surface material as quickly as the tools were flying over it if they were to maintain control. To burrow at that speed would require them being encased in a

self-propelled armor-piercing shell. But this does not explain why they have ignored our attempts at making wide-range contact through remote-control devices, other than by reducing the communication modules to their component pieces..

"If the range of mental influence pervades its whole body," Murchison broke in, "would that mean that the creature's brain is also diffuse? Or, if it does have a localized brain, where is it?"

"I favor the idea of a centralized nervous system," Conway replied, in a safe and naturally well-protected area-probably close to the creature's underside where there is a plentiful supply of minerals and possibly in a natural hollow in the subsurface rock. Eye plant and similar types of internal root networks which you've analyzed tend to become more complex and extensive the closer we go to the subsurface, which could mean that the pressure-sensitive network there is augmented by the electro vegetable system which causes muscular movement as well as the other types whose function and purpose are still unknown to us. Admittedly the nervous system is largely vegetable, but the mineral content of the root systems means that electrochemical reactions generated at any nerve ending will transmit impulses to the brain very quickly, so there is probably only one brain and it could be situated anywhere."

She shook her head. "In a being the size of a subcontinent, with no detectable skeleton or osseous structure to form a protective casing and whose body, relative to its area, resembles a thin carpet, I think more than one would be needed-one central brain, anyway, plus a number of neural substations. But the thing which really worries me is what do we do if the brain happens to be in or dangerously close to the operative field."

"One thing we can't do," Conway replied grimly, "is delay the op. Your reports make that very clear."

She had not been wasting time since coming to Drambo and, as a result of her analysis of thousands of specimens taken by test bores, diggers and exploring medics from all areas and levels of its far-flung body, she was able to give an accurate if not completely detailed picture of the creature's current physiological state.

They already knew that the metabolism of the strata creature was extremely slow and that its muscular reactions were closer to those of a vegetable than an animal. Voluntary and involuntary muscles controlling mobility, ingestion and digestion, circulation of its working fluid and the breaking down of waste products were all governed or initiated by the secretions of the specialized plants. But it was the plants comprising the patient's nervous system with their extensive root networks which had suffered worst in the roller fallout, because they had allowed the surface radioactivity to penetrate deep inside the strata creature. This had killed many plant species and had also caused the deaths of thousands of internal animal organisms whose purpose it was to control the growth of various forms of specialized vegetation.

There were two distinct types of internal organisms and they took their jobs very seriously. The large-headed farmer fish were responsible for cultivating and protecting benign growth and destroying all others- for such a large creature, the patient's metabolic balance was remarkably delicate. The second type, which were the being's equivalent of leucocytes, assisted the farmer fish in plant control and directly if one of the fish became injured or unwell. They were also cursed with the tidy habit of eating or otherwise absorbing dead members of their own or the fish species, so that a very small quantity of radioactive material introduced by the roots of surface plants could be responsible for killing a very large number of leucocytes, one after another.

And so the dead areas which had spread far beyond the regions directly affected by roller fallout were caused by the uncontrolled proliferation of malignant plant life. The process, like decomposition, was irreversible. The urgent surgical removal of the affected areas was the only solution.

But the report had been encouraging in some respects. Minor surgery had already been performed in a number of areas to check on the probable ecological effects of large

masses of decomposing animal vegetable material on the sea or adjacent living strata creature, and to devise methods of radioactive decontamination on a large scale. It had been found that the patient would heal, but slowly; that if the incision was widened to a trench one hundred feet across, then the uncontrolled growth in the excised section would not spread to infect the living area, although regular patrols of the incision to make absolutely sure of this were recommended. The decomposition problem was no problem at all—the explosive growth rate continued until the plant life concerned used up the available material and died. On land the residue would subside into a very rich loam and make an ideal site for a self-supporting base if medical observers were needed in the years to come. In the case of material sliding off shelving coastlines into the sea, it simply broke up and drifted to the seabed to form an edible carpet for the rollers.

Certain areas could not be treated surgically, of course, for the same reason that Shylock had to forego his pound of flesh. These were relatively small trouble spots far inland, whose condition was analogous to a severe skin cancer, but limited surgery and incredibly massive doses of medication were beginning to show results.

"But I still don't understand its hostility toward us," Murchison said nervously as the ship went into a three-dimensional skid and lost a lot of height. "After all, it can't possibly know enough about us to hate us like that."

The ship was passing over a dead area where the eye plants were discolored and lifeless and did not react to their shadow. Conway wondered if the vast creature could feel pain or if there was simply a loss of sensation when parts of it died. In every other life-form he had ever encountered, and he had met some really weird ones at Sector General, survival was pleasure and death brought pain—that was how evolution kept a race from just lying down and dying when the going got tough. So the strata creature almost certainly had felt pain, intense pain over hundreds of square miles, when the rollers had detonated their nuclear weapons. It had felt more than enough pain to drive it mad with hatred.

Conway cringed inwardly at the thought of such vast and unimaginable pain. Several things were becoming very clear to him.

"You're right," he said. "They don't know anything at all about us, but they hate our shadows. This one in particular hates them because the aircraft carrying the sea-rollers' atomic bombs produced a shadow not unlike ours just before large tracts of the patient's body were fried and irradiated."

"We land in four minutes," said Harrison suddenly. "On the coast, I'm afraid, because this bucket has too many holes in it to float. Descartes has us in sight and will send a copter.

The pilot's face made Conway fight the urge to laugh. It looked like that of a half-made-up clown. Furious concentration had drawn Harrison's brows into a ridiculous scowl while his lower lip, which he had been chewing steadily since takeoff, was a wide, blood-red bow of good humor.

Conway said, "The tools can't operate in this area and, except for a little background radiation caused by fallout, there is no danger. You can land safely."

"Your trust in my professional ability," said the pilot, "is touching." From their condition of unlevel flight they curved into a barely controlled, tail-first dive. The surface crept, then rushed up at them. Harrison checked the rush with full emergency thrust. There were metallic tearing noises and the rest of the lights on his board turned red.

"Harrison, pieces of you are dropping off.. ." began Descartes' radioman, then they touched down.

For days afterward the observers argued about it, trying to decide whether it had been a landing or a crash. The shock-absorber legs buckled, the stern section took some more of the shock as it tried to telescope amidships and the acceleration couches took the rest—even when the ship toppled, crashed onto its side and a broad, flickering wedge of daylight appeared in the plating a few feet away. The rescue copter was almost on top of them.

"Everybody out," said Harrison. "The pile shielding has been damaged."

Looking at the dead and discolored surface around them, Conway thought again of his patient. Angrily, he said, "A little more radiation hereabout won't make much difference."

"To your patient, no," said the lieutenant urgently. "But perhaps selfishly I was thinking of my future offspring. After you."

During the short trip to the mother ship Conway stared silently out of the port beside him and tried hard not to feel frightened and inadequate. His fear was due to reaction after what could easily have been a fatal crash plus the thought of an even more dangerous trip he would have to make in a few days' time, and any doctor with a patient who stretched beyond the limits of visibility in all directions could not help feeling small. He was a single microbe trying to cure the body containing it, and suddenly he longed for the normal doctor-patient relationships of his hospital-even though very few of his patients or colleagues could be considered normal.

He wondered if it might not be better to have sent a general to medical school than to give a doctor control of a whole sector sub fleet.

Only six of the Monitor Corps heavies were grounded on Drambo, their landing legs planted firmly in the shallows a few miles off one of the dead sections of coastline. The others filled the morning and evening sky like regimented stars. His medical teams were grouped in and around the grounded ships, which rose out of the thick, soupy sea like gray beehives. The Earth-humans like himself lived on board while the e-ts, none of whom breathed air, were quite happy roughing it on the sea bed.

He had called what he hoped would be the final pre-op meeting in the cargo hold of Descartes, which was filled with Drambon sea water whose content of animal and plant, life had been filtered out so that the beam of the projector would have a sporting chance of fighting its way to the screen attached to the forward bulkheads.

Protocol demanded that the Drambons present opened the proceedings. Watching their spokesman, Surrehun, rolling like a great flaccid doughnut around the clear space in the center of the deck, Conway wondered once again how such a ridiculously vulnerable species had been able to survive and evolve a highly complex, technology-based culture-though it was just possible that an intelligent dinosaur would have had similar thoughts about early man.

Surrehun was followed by Garoth, the Hudlar Senior Physician who was in charge of the patient's medical treatment. Garoth's chief concern was with the devising and implementation of artificial feeding in areas where incisions would cut the throat tunnels between the coastal mouths and the inland prestomachs. Again unlike Surrehun, it did not say very much but let the projector do all the talking.

The big screen was filled by a picture of an auxiliary mouth shaft situated about two miles inland of the planned incision line. Every few minutes a copter or small supply ship grounded beside the shaft discharged its load of freshly dead animal life from the coastal shallows and departed while corpsmen with loaders and earth-moving machinery pushed the food over the lip. Possibly the amount and quality of the food was less than that which was drawn in naturally, but when the throat was sealed during the major operation this would be the only way that large areas of the patient could be supplied with food.

Aseptic procedures were impossible in an operation on this scale so that pumping equipment drawing sea water from the coast was drawn through large-diameter plastic piping. It poured in a steady stream- except when tools cut the pipeline-into the food shaft, supplying the strata creature with needed working fluid and at the same time wetting the walls so that leucocytes could be slipped down from time to time to combat the effects of any dangerous plant life which might have been introduced during feeding.

They were seeing a drill, of course, performed at one of the feeding installations a few days earlier, but there were more than fifty auxiliary mouths in a similar state of readiness strung out along the proposed incision line.

Suddenly there was a silvery blur of motion on the ground beside the pump housing and a corpsman hopped a few yards on one foot before falling to the ground. His boot with

his other foot still in it lay on its side where he had been standing and the tool, no longer silvery, was already cutting its way beneath the blood-splashed surface.

"Tool attacks are increasing in frequency and strength," said Garoth in Translated. "They are also displaying considerable initiative. Your idea of clearing an area around the feeding installations of all eye plants so that the tools would have to operate blind, and would have to bounce around feeling for targets, worked only for a short time, Doctor. They devised a new trick, that of sliding along a few inches below the surface, blind, of course, then suddenly extruding a point or a cutting blade and stabbing or swinging with it before retreating under the surface again. If we can't see them, mental control is impossible, and guarding every working corpsman with another carrying a metal detector has not worked very well so far-it has simply given the tool a better chance of hitting someone.

"And just recently," Garoth concluded, "there are indications of the tools linking up into five- , six- and in one case ten-unit combinations. The corpsman who reported this died a few seconds later before he was able to finish his report. The condition of his vehicle later supports this theory, however."

Conway nodded grimly and said, "Thank you, Doctor. But now I'm afraid that you'll have to withstand air attacks as well. On the way here we taught the patient how gliders work, and it learned fast.. ." He went onto describe the incident, adding the latest pathological findings and their deductions and theories on the nature of their patient. As a result the meeting quickly became a debate and was degenerating into a bitter argument before he had to pull rank and get his human and e-t doctors back to a state of clinical detachment.

The heads of the Melfan and Chalder teams made their report practically as a duet. Like Garoth they had both been concerned with the no surgical aspects of the patient's treatment. To a hypothetical observer ignorant of the true scope of their problem this medical treatment could have been mistaken for a very widespread mining operation, agriculture on an even larger scale and mass kidnapping. Both were strongly convinced, and Conway agreed with them, that the wrong way to treat a skin cancer was by amputation of the affected limb.

The amounts of radioactive material deposited by fallout in the central areas were relatively small, and their effects spread fairly slowly into the depths of the patient's body. But even this condition would be ultimately fatal if something was not done to check it. And, since the areas affected by light fallout were too numerous and occurred in too many inoperable locations, they had skinned off the poisoned surface with earth-moving machinery and pushed it into heaps for later decontamination. The remainder of the treatment involved helping the patient to help itself.

A picture appeared suddenly on the screen of a section of subsurface tunnel under one of the areas affected by fallout. There were dozens of life-forms in the tunnel, most of them farmer fish with stubby arms sprouting from the base of their enlarged heads while the others drifted or undulated toward the observer's position like great, transparent slugs.

For a living section of the strata creature it looked none too healthy. The farmer fish, whose function was the cultivation and control of internal plant life, moved slowly, bumping into each other and the leucocytes which, normally transparent, were displaying the milky coloration which occurred shortly before death. The radiation sensor readings left no doubt as to what they were dying from.

"These specimens were rescued shortly afterward," said the Chalder, "and transferred to sick bays in the larger ships and to Sector General. Both fish and leeches respond to the same decontamination and regeneration treatments given to our own people who have been exposed to a radiation overdose. They were then returned to carry on their good work."

"That being," the Melfan joined in, "absorbing the radiation from the nearest poisoned plant or fish and getting themselves sick again."

O'Mara had accused Conway of treating Sector General like some kind of e-t

sausage machine, although the hospital was curing everything Drambon that they possibly could, and the Monitor Corps medics had merely looked long-suffering when they weren't looking extremely busy.

By themselves neither the hospital nor treatment facilities on the capital ships were enough to swing the balance. To really allow the patient to fight these local infections required massive transfusions of the leucocyte life-form from other, and healthier, strata creatures.

When he had first suggested the transfusion idea Conway had been worried in case the patient would reject what were, in effect, another creature's antibodies. But this had not happened, and the only problems encountered were those of transportation and supply as the first single, carefully selected kidnappings became continual wholesale abduction.

On the screen appeared a sequence showing one of the special commandos withdrawing leucocytes from a small and disgustingly healthy strata creature on the other side of the planet. The entry shaft had been in use for several weeks and the motion of the strata creature had caused it to bend in several places, but it was still usable. The corpsmen dropped from the copters and into the sloping tunnel, running and occasionally ducking to avoid the lifting gear which would later haul their catch to the surface. They wore lightweight suits and carried only nets. The leucocytes were their friends. It was very important for them to remember that.

The leucocytes possessed a highly developed empathic faculty, which allowed them to distinguish the parent body's friends from its foes simply by monitoring their emotional radiation. Provided the corpsmen kidnappers thought warm, friendly thoughts while they went about their business, they were perfectly safe. But it was hard and often frustrating work, netting and hauling and transferring the massive and inert slugs into the transport copters. Sweating and short-tempered as they frequently were, it was not easy to radiate feelings of friendship and helpfulness toward their charges. Circumstances arose in which a corpsman gave way to a flash of anger or irritation-at an item of his own equipment, perhaps- and for such lapses many of them died.

Rarely did they die singly. At the end of the sequence Conway watched the entire crew of a transport copter taken out within a few minutes, because it had been impossible for one man to think kindly thoughts toward a being who had just killed a crew mate-by injecting a poison which triggered off muscular spasms so violent that the man broke practically every bone in his body-even if his own life did depend on it. There was no protection and no cure. Heavy-duty spacesuits tough enough to resist the needle points of the leeches' probes would not have allowed enough mobility for the corpsmen to do their job, and the creatures killed just as quickly and thoroughly and unthinkingly as they cured.

"To summarize," said the Chalder as it blanked the screen, "the transfusion and artificial feeding operations are going well at present, but if casualties continue to mount at this rate the supply will fall dangerously short of the computed demand. I therefore recommend, most strongly, that surgery be commenced immediately."

"I agree," added the Melfan. "Assuming that we must proceed without either the consent or cooperation of the patient, we should start immediately."

"How immediate?" broke in Captain Williamson, speaking for the first time. "It takes time to deploy a whole sector sub fleet over the operative field. My people will need final briefings and, well, I think the Fleet Commander is a little worried about this one. Up to now his operations have been purely military."

Conway was silent, trying to force himself to the decision he had been avoiding for several weeks. Once he gave the word to start, once he began cutting on this gargantuan scale, he was committed. There would be no chance to withdraw and try again later, there were no specialists that he could fall back on if the going got tough and, worst of all, there was no time for dithering, because already the patient's condition had been left untreated for far too long.

"Don't worry, Captain," said Conway, trying hard to radiate the confidence and

reassurance which he did not feel. "So far as your people are concerned, this has become a military operation. I know that in the beginning you treated it as a disaster-relief exercise on an unusually large scale, but now it has become indistinguishable from war in your minds, because in war you have to expect casualties and you are certainly getting them. I'm very sorry about that, sir. I never expected such heavy losses and I'm personally very sorry that I taught those tools to glide this morning because that stunt will cost a lot more...

"It couldn't be helped, Doctor," Williamson broke in, "and one of our people was bound to think of the same idea some time-they've thought of practically everything else. But what I want to know is-

"How soon is immediately," said Conway for him. "Well, bearing in mind the fact that the operation will be measured in weeks rather than hours, and provided there are no logistical reasons for holding back, I suggest we start the job at first light on the day after tomorrow."

Williamson nodded, but hesitated before he spoke. "We can be in position at that time, Doctor, but something else has just come up which may cause you to change your mind about the timing."

He gestured toward the screen and went on, "I can show you charts and figures, if you like, but it is quicker to tell you the results first. The survey of healthy and less ill strata creatures which you asked our cultural contact people to carry out-your idea being that it might be easier to establish communications with a being who was not in constant pain than otherwise-is now complete. Altogether eighteen hundred and seventy-four sites covering every known strata creature were visited, a tool left unattended on the surface and kept under observation from a distance for periods of up to six hours. Even though the body material was practically identical with that of our patient, including the presence of a somewhat simplified form of eye plant, the results were completely negative. The strata creatures under test made no attempt to control or change the tools in any way, and the small changes which did occur were directly traceable to mental radiation from birds or nonintelligent surface animals. We fed this data to Descartes' computer and then to the tactical computer on Vespasian. The conclusions left no doubt at all, I'm afraid.

"There is only one intelligent strata creature on Drambo," Williamson ended grimly, "and it is our patient."

Conway did not reply at once and the meeting became more and more disorganized. To begin with there were a few useful ideas put up-at least, they sounded good until the Captain shot them down. But then instead of ideas he got senseless arguments and bad temper and suddenly Conway knew why.

They had all been both overworked and overtired when the meeting had started, and that had been five hours ago. The Melfan's bony underside was sagging to within a few inches of the deck. The Hudlar was probably hungry because the water inside the hold had been cleared of all edible material as had the floor, which would similarly displease the constantly rolling Drambon. Above them the enormous Chalder had been hanging in a cramped position for far too long, and the other Earth humans must have been finding their pressure suits as irksome as Conway was finding his. It was obvious that there would be no more useful contributions from anyone at this meeting, including himself, and it was time to wind it up.

He signaled for silence, then said, "Thank you, everyone. The news that our patient is the planet's only intelligent strata creature makes it necessary for us to try even harder, if that is possible, to make the forthcoming operation a success. It is not a valid reason for delaying surgery.

"You will all have plenty to occupy you tomorrow," he ended. "I shall spend the time making one last try at obtaining the consent and cooperation of our patient."

Modifications had been completed to a pair of the tracked boring machines just three days earlier, making them as foolproof as possible and extending their two-way vision equipment to allow Conway to view and, if necessary, direct the operation from anywhere on

or inside the strata creature. It was the communications gear that he checked first.

"I have no intention of becoming a dead hero," Conway explained, grinning. "If we are in any danger I shall be the first to scream for help."

Harrison shook his head. "The second."

"Ladies first," said Murchison firmly.

They drove inland to a healthy area thickly covered by eye plants and stopped for a full hour, then moved on for an hour and stopped again. They spent the morning and early afternoon moving and stopping with no discernible reaction from the patient. Sometimes they drove around in tight circles in an attempt to attract attention, still without success. Not a single tool appeared. Their ground sensors gave no sign that anything was trying to undercut them. Altogether it was turning out to be an intensely frustrating if physically restful day.

When darkness fell they switched on the digger's spotlights and played them around and watched thousands of eye plants open and close suddenly to this artificial sunshine, but still the strata creature refused the bait.

"In the beginning the brute must have been curious about us," said Conway, "and anxious to investigate any strange object or occurrence. Now it is simply frightened and hostile, and there are much better targets elsewhere."

The digger's vision screens showed several transfusion and feeding sites under constant tool attack, and too many dark stains on the ground which were not of oil.

"I still think," said Conway seriously, "that if we could get close to its brain, or even into the area where the tools are produced, we would stand a better chance of communicating directly. If direct communication is impossible we might be able to artificially stimulate certain sections to make it think that large objects had landed on the surface, forcing it to draw off the tools attacking the transfusion installations. Or if we could gain an understanding of its technology that might give us a lever..."

He broke off as Murchison shook her head. She produced a chart comprising thirty or more transparent overlays which showed the patient's interior layout as accurately as six months' hard work with insufficient facilities could make it. Her features fell into their lecturing expression, the one which said that she wanted attention but not admiration.

She said, "We have already tried to find the patient's brain location by backtracking along the nerve paths—that is, the network of rootlets containing metallic salts which are capable of carrying electrochemical impulses. Using test bores taken at random on the top surface and by direct observation from diggers, we found that they link up, not to a central brain, but to a flat layer of similar rootlets lying just above the subsurface. They do not join directly onto this new network, but lie alongside, paralleling it close enough for impulses to be passed across by induction.

"Some of this network is probably responsible for the subsurface muscular contractions which gave the patient mobility before it took over this particular land mass and stopped climbing over and smothering its enemies, and it is natural to assume that the eye plants above and the muscles below has a direct connection since they would give the first warning of another strata creature attempting to slip over this one, and the subsequent muscular reaction would be almost involuntary.

"But there are many other root networks in that layer," she went on, "whose function we do not know. They are not color coded—they all look exactly the same except for minute variations in thickness. The type which apparently abstracts minerals from the subsurface rock can vary in thickness. So I would advise against artificial stimulation of any kind. You could very easily start a bunch of subsurface muscles to twitching, and the corpsmen up top would have localized earthquakes to contend with as well as everything else."

"All right," said Conway irked for no other reason than that her objections were valid. "But I still want to get close to its brain or to the tool-producing area, and if it won't pull us in we must go looking for it. But we're running out of time. Where, in your opinion, is the best place to look?"

She was thoughtful for a moment, then said, "Either the brain or the tool-producing

area could be in a hollow or small valley in the subsurface where, presumably, the creature absorbs necessary minerals. There is a large, rocky hollow fifteen miles away, just here, which would give the necessary protection from below and from all sides while the mass of the overlaying body would save it from injury from above. But there are dozens of other sites just as good. Oh, yes, there would have to be a constant supply of nutriment and oxygen available, but as this is a quasi vegetable process in the patient with water instead of blood as the working fluid, there should be no problem in supplying a deeply buried brain..

She broke off, her face and jaw stiffening in a successfully stifled yawn. Before she could go on, Conway said, "It's quite a problem. Why don't you sleep on it?"

Suddenly she laughed. "I am. Hadn't you noticed?"

Conway smiled and said, "Seriously, I would like to call a copter to pick you up before we go under. I've no idea what to expect if we do find what we're looking for—we might find ourselves caught in an underground blast furnace or paralyzed by the brain's mental radiation. I realize that your curiosity is strong and entirely professional, but I would much prefer that you didn't come. After all, scientific curiosity kills more cats than any other kind."

"With respect, Doctor," said Murchison, showing very little of it, "you are talking rubbish. There have been no indications of unusually high temperatures on the subsurface, and we both know that while some e-ts communicate telepathically, they can only do so among their own species. The tools are an entirely different matter, an inert but thought-malleable fabrication which. . ." She broke off, took a deep breath and ended quietly, "There is another digger just like this one. I'm sure there would also be an officer and gentleman on Descartes willing to trail you in it."

Harrison sighed loudly and said, "Don't be antisocial, Doctor. If you can't beat 'em, let them join you."

"I'll drive for a while," said Conway, treating incipient mutiny in the only way he could in the circumstances, by ignoring it. "I'm hungry, and it's your turn to dish up."

"I'll help you, Lieutenant," said Murchison.

As Harrison turned over the driving position to Conway and headed for the galley, he muttered, "You know, Doctor, sometimes I enjoy drooling over a hot dish, especially yours."

It was shortly before midnight that they reached the area of the subsurface depression, nosed over and bored in. Murchison stared through the direct-vision port beside her, occasionally making notes about the tracery of fine roots which ran through the damp, cork-like material which was the flesh of the strata creature. There was no indication of a conventional blood supply, nothing to show that the creature had ever been alive in the animal rather than the vegetable sense.

Suddenly they broke through the roof of a stomach and drifted down between the great vegetable pillars which raised and lowered the roof, drawing food-bearing water from the sea and expelling, many days later, the waste material not already absorbed by specialist plants. The vegetable stalactites stretched away to the limits of the spotlight in all directions, each one covered with the other specialized growths whose secretions caused the pillars to stiffen when the stomach had been empty for too long and relax when it was full. Other caverns, smaller and spaced closer together than the stomachs, simply kept the water flowing in the system without performing any digestive function.

Just before they drifted to the floor Harrison angled the digger into diving position and spun the forward cutters to maximum speed. They struck the stomach floor softly and kept on going. Half an hour later they were thrown forward against their straps. The soft thudding of the cutter blades had risen to an ear-piercing shriek, which died into silence as Harrison switched them off.

"Either we've reached the subsurface," he said dryly, "or this beastie has a very hard heart.

They withdrew a short distance, then flattened their angle of descent so that they could continue tunneling with their tracks rolling over the rocky subsurface and the cutters chewing through material which now had the appearance of heavily compressed and thickly

veined cork. When they had gone a few hundred yards Conway signaled the Lieutenant to stop.

"This doesn't look like the stuff that brains are made of," Conway said, "but I suppose we should take a closer look."

They were able to collect a few specimens and to look closely, but not for long. By the time they had sealed their suits and exited through the rear hatch, the tunnel they had made was already sagging dangerously and, where the wet, gritty floor met the tunnel sides, an oily black liquid oozed out and climbed steadily until it was over their ankles. Conway did not want to take too much of the stuff back with them into the digger. From the earlier samples taken by drill they knew that it stank to high heaven.

When they were back inside Murchison lifted one of the specimens. It looked a little like an Earthly onion which had been cut laterally in two. The flat underside was covered by a pad of stubby, worm-like growths and the single stalk divided and subdivided many times before joining the nerve network a short distance above them. She said, "I would say that the plant's secretions dissolve and absorb minerals and/or chemicals from the subsurface rock and soil and, with the water which filters down here, provides the lubrication which allows the creature to change position if the mineral supply runs out. But there are no signs of unusual or concentrated nerve networks here, nor are there any traces of the scars which tools leave when they cut their way through this material. I'm afraid we'll have to try again somewhere else."

Nearly an hour went by before they reached the second hollow and another three took them to the third. Conway had been a little doubtful from the beginning about the third site because it was too close to the periphery, in his opinion, to house a brain. But the possibility had still not been ruled out, on a creature this size, of multiple brains or at least a number of neural substations. She reminded him that the old-time brontosaurus had needed two, and it had been microscopic when compared with their patient.

The third site was also very close to the beginning of the first incision line.

"We could spend the rest of our lives searching hollows and still not find what we're looking for," said Conway angrily, "and we haven't that much time."

His repeater screens showed the sky lightening far above them, with Monitor heavy cruisers already in position, floodlights being switched off at transfusion and feeding installations and occasionally glimpses of Edwards, who had been transferred to the flagship *Vespasian* as medical liaison chief for the duration. It was his job to translate Conway's medical instructions into military maneuvers for the fleet's executive officers.

"Your test bores," said Conway suddenly. "I assume they were spaced out at regular intervals and went right down to the subsurface? Was there any indication that the black goo which the patient uses as a lubricant is more prevalent in certain areas than in others? I'm trying to find a section of the creature which is virtually incapable of movement, because—"

"Of course," said Murchison excitedly, "that is the big factor which makes our intelligent patient different from all the smaller and nonintelligent strata creatures. For better protection the brain, and probably the tool-production centers, would almost certainly have to be in a stationary section. Offhand, I can only remember about a dozen test bores in which lubricant was absent or present in very small quantities, but I can look up the map references for you in a few minutes."

"You know," said Conway with feeling, "I still don't want you here but I'm glad you've come."

"Thank you," she said, then added, "I think."

Five minutes later she had all the available information. "The subsurface forms a small plain ringed by low mountains in that area. Aerial sensors tell us that it is unusually rich in minerals, but then so is most of the center of this land mass. Our test bores were very widely spaced, so that we could easily have missed picking up brain material, but I'm pretty sure now that it is there."

Conway nodded, then said, "Harrison, that will be the next stop. But it's too far to go

traveling on or under the surface. Take us topside and arrange for a transport copter to lift us to the spot. And on the way would you mind angling us toward Throat Tunnel Forty-three, as close to the incision line as you can manage, so that I can see how the patient reacts to the early stages of the operation. It is bound to have some natural defense against gross physical injury.

He broke off, his mood swinging suddenly from high excitement to deepest gloom. He said, "Dammit, I wish I had concentrated on the tools from the very beginning, instead of getting sidetracked with the rollers, and then thinking that those overgrown leucocytes were the intelligent tool users. I've wasted far too much time."

"We're not wasting time now," said Harrison, and pointed toward his repeater screens.

For better or for worse, major surgery had begun.

The main screen showed a line of heavy cruisers playing ponderous follow-the-leader along the first section of the incision, rattlers probing deep while their pressers held the edges of the wound apart to allow deeper penetration by the next ship in line. Like all of the Emperor class ships they were capable of delivering a wide variety of frightfulness in very accurately metered doses, from putting a few streets full of rioters to sleep to dispensing atomic annihilation on a continental scale. The Monitor Corps rarely allowed any situation to deteriorate to the point where the use of mass destruction weapons became the only solution, but they kept them as a big and potent stick-like most policemen, the Federation's law-enforcement arm knew that an undrawn baton had better and more long-lasting effects than one that was too busy cracking skulls. But their most effective and versatile close-range weapon-versatile because it served equally well either as a sword or a plowshare-was the rattler.

A development of the artificial gravity system which compensated for the killing accelerations used by Federation spaceships, and of the repulsion screen which gave protection against meteorites or which allowed a vessel with sufficient power reserves to hover above a planetary surface like an old-time dirigible airship, the rattler beam simply pushed and pulled, violently, with a force of up to one hundred Gs, several times a minute.

It was very rarely that the corps were forced to use their rattlers in anger-normally the fire-control officers had to be satisfied with using them to clear and cultivate rough ground for newly established colonies- and for the optimum effect the focus had to be really tight. But even a diffuse beam could be devastating, especially on a small target like a scout ship. Instead of tearing off large sections of hull plating and making metallic mincemeat of the underlying structure, it shook the whole ship until the men inside rattled.

On this operation, however, the focus was very tight and the range known to the last inch.

Visually it was not at all spectacular. Each cruiser had three rattler batteries which could be brought to bear, but they pushed and pulled so rapidly that the surface seemed hardly to be disturbed. Only the relatively gentle tractor beams positioned between the rattlers seemed to be doing anything-they pulled up the narrow wedge of material and shredded vegetation so that the next rattler in line could deepen the incision. It would not be until the incision had penetrated to the subsurface and extended for several miles that the other squadrons still hanging in orbit would come in to widen the cut into what they all hoped would be a trench wide enough to check the spread of vegetable infection from the excised and decomposing dead material.

As a background to the pictures Conway could hear the clipped voices of the ordnance officers reporting in. There seemed to be hundreds of them, all saying the same things in the fewest possible words. At irregular intervals a quiet, unhurried voice would break in, directing, approving, coordinating the overall effort-the voice of God, sometimes known as Fleet Commander Dermot, the ranking Monitor Corps officer of Galactic Sector Twelve and as such the tactical director of more than three thousand major fleet units, supply and communications vessels, support bases, ship production lines and the vast number of

beings, Earth-human and otherwise, who manned them.

If the operation came unstuck, Conway certainly would not be able to complain about the quality of the help. He began to feel quietly pleased with the way things were going.

The feeling lasted for all of ten minutes, during which time the incision line passed through the tunnel-Number Forty-three-which they had just entered. Conway could actually see the inward end of the seal, a thick, corrugated sausage of tough plastic inflated to fifty pounds per square inch which pressed against the tunnel walls. Special arrangements had been needed to guard against loss of working fluid because the strata creature's healing processes were woefully slow. Its blood was quite literally water and one important quality which water did not have was the ability to coagulate.

Two corpsmen and a Melfan medic were on guard beside the seal. They seemed to be agitated, but there were so many leucocytes moving about the tunnel that he could not see the reason for it. His screens showed the incision line crossing the throat tunnel. A few hundreds of gallons of water between the seal and the incision poured away-considering the size of the patient, it was scarcely a drop. The rattlers and tractors moved on, extending and deepening the cut while the great immaterial presser beams, the invisible stilts which supported the enormous weight of the cruisers, pushed the edges apart until the incision became a widening and deepening ravine. A small charge of chemical explosive brought down the roof of the emptied section of tunnel, reinforcing the plastic seal. Everything seemed to be working exactly as planned, until the immediate attention signal began flashing on his board and Major Edwards' face filled the screen.

"Conway," said the Major urgently. "The seal in Tunnel Forty-three is under attack by tools."

"But that's impossible," said Murchison, in the scandalized tones of one who has caught a friend cheating at cards. "The patient has never interfered with our internal operations. There are no eye plants down here to give away our positions, no light to speak of, and the seal isn't even metal. They never attack plastic material on the surface, just men and machines."

"And they attack men because we betray our presence by trying to take mental control of them," Conway said quickly. Then to Edwards, "Major, get those people away from the seal and into the supply shaft. Quickly. I can't talk to them directly. While they're doing that tell them to try not to think-"

He broke off as the seal ahead disappeared in a soft white explosion of bubbles which roared toward them along the tunnel roof. He could not see anything outside the digger and inside only Edwards' face and pictures of ships in line astern formation.

"Doctor, the seal's gone," shouted the Major, his eyes sliding to one side. "The debris behind the seal is being washed away. Harrison, dig in!"

But the Lieutenant could not dig in because the bubbles roaring past made it impossible to see. He threw the tracks into reverse, but the current sweeping them along was so strong that the digger was just barely in contact with the floor. He killed the floodlights because reflection from the froth outside the canopy was dazzling them. But there was still a patch of light ahead, growing steadily larger...

"Edwards, cut the rattlers. . .

A few seconds later they were swept out of the tunnel as part of a cataract which tumbled down an organic cliff into a ravine which seemed to have no bottom. The vehicle did not explode into its component parts nor themselves into strawberry jam, so they knew that Major Edwards had been able to kill the rattler batteries in time. When they crashed to a halt a subjective eternity later, two of the repeater screens died in spectacular implosions and the cataract which had cushioned their fall on the way down began battering at their side, pushing and rolling them along the floor of the incision.

"Anyone hurt?" said Conway.

Murchison eased her safety webbing and winced. "I'm black and blue and... and embossed all over."

"That," said Harrison in an obviously uninjured tone, "I would like to see.

Both relieved and irritated, Conway said, "First we should look at the patient."

The only operable view screen was transmitting a picture taken from one of the copters stationed above the incision. The heavy cruisers had drawn off a short distance to leave the operative field clear for rescue and observation copters, which buzzed and dipped above the wound like great metal flies. Thousands of gallons of water were pouring from the severed throat tunnel every minute, carrying the bodies of leucocytes, farmer fish, incompletely digested food and clumps of vital internal vegetation into and along the ravine. Conway signaled for Edwards.

"We're safe," he said before the other could speak, "but this is a mess. Unless we can stop this loss of fluid, the stomach system will collapse and we will have killed instead of cured our patient. Dammit, why doesn't it have some method of protecting itself against gross physical injury, a nonreturn valve arrangement or some such? I certainly did not expect this to happen..

Conway checked himself, realizing that he was beginning to whine and make excuses instead of issuing instructions. Briskly, he said, "I need expert advice. Have you a specialist in short-range, low-power explosive weapons?"

"Right," said Edwards. A few seconds later a new voice said, "Ordnance control, Vespasian, Major Holroyd. Can I help you, Doctor?"

I sincerely hope so, thought Conway, while aloud he went onto outline his problem.

They were faced with the emergency situation of a patient bleeding to death on the table. Whether the being concerned was large or small, whether its body fluid was Earth-human blood, the superheated liquid metal used by the TLTUs of Threcald Five or the somewhat impure water which carried food and specialized internal organisms to the far flung extremities of this Drambon strata creature's body, the result would be the same—steadily reducing blood pressure, increasingly deep shock, spreading muscular paralysis and death.

Normal procedure in these circumstances would be to control the bleeding by tying off the damaged blood vessel and suturing the wound. But this particular vessel was a tunnel with walls no more strong or elastic than the surrounding body material, so they could not be tied or even clamped. As Conway saw it the only method remaining was to plug the ruptured vessel by bringing down the tunnel roof.

"Close-range TR-7s," said the ordnance officer quickly. "They are aerodynamically clean, so there will be no problem shooting into the flow, and provided there are no sharp bends near the mouth of the tunnel any desired penetration can be achieved by—"

"No," said Conway firmly. "I'm concerned about the compression effects of a large explosion in the tunnel itself. The shock wave would be transmitted deep into the interior, and a great many farmer fish and leucocytes would die, not to mention large quantities of the fragile internal vegetation. We must seal the tunnel as close to the incision as possible, Major, and confine the damage to that area.

"Armor-piercing B-22s, then," said Holroyd promptly. "In this material we could get penetrations of fifty yards without any trouble. I suggest a simultaneous launch of three missiles, spaced vertically above the tunnel mouth so that they will bring down enough loose material to block the tunnel even against the pressure of water trying to push it away as it subsides."

"Now," said Conway, "you're talking."

But Vespasian's ordnance officer could do more than talk. Within a very few minutes the screen showed the cruiser hovering low over the incision. Conway did not see the missiles launched because he had suddenly remembered to check if their digger had been swept far enough to avoid being buried in the debris, which fortunately it had. His first indication that anything at all had happened was when the flow of water turned suddenly muddy, slowed to a trickle and stopped. A few minutes later great gobs of thick, viscous mud began to ooze over the lip of the tunnel and suddenly a wide area around the mouth

began to sag, fall apart and slip like a mass of brown porridge into the ravine.

The tunnel mouth was now six times larger than it had been and the patient continued to bleed with undiminished force.

"Sorry, Doctor," said Holroyd. "Shall I repeat the dose and try for greater penetration?"

"No, wait."

Conway tried desperately to think. I knew that he was conducting a surgical operation, but he did not really believe it-both the problem and the patient were too big. If an Earth-human was in the same condition, even if no instruments or medication were available, he would know what to do-check the flow at a pressure point, apply a tourniquet.. . That was it.

"Holroyd, plant three more in the same position and depth as last time," he said quickly. "But before you launch them can you arrange your vessel's presser beams so that as many of them as possible will be focused just above the tunnel opening? Angle them against the face of the incision instead of having them acting vertically, if possible. The idea is to use the weight of your ship to compress and support the material brought down by the missiles."

"Can do, Doctor."

It took less than fifteen minutes for Vespasian to rearrange and refocus her invisible feet and launch the missiles, but almost at once the cataract ceased and this time it did not resume. The tunnel opening was gone and in its place there was a great, saucer-shaped depression in the wall of the incision where Vespasian's starboard pressers were focused. Water still oozed through the compacted seal, but it would hold so long as the cruiser maintained position and leaned her not inconsiderable weight on it. As extra insurance another inflatable seal was already being moved into the supply tunnel.

Suddenly the picture was replaced by that of a lined, young-old face above green-clad shoulders on which there rested a quietly impressive weight of insignia. It was the Fleet Commander himself.

"Doctor Conway. My flagship has engaged in some odd exercises in her time, but never before have we been asked to hold a tourniquet."

"I'm sorry, sir-it seemed the only way of handling the situation. But right now, if you don't mind, I'd like you to have this digger lifted to map reference numbers..

He broke off because Harrison was waving at him. The Lieutenant said softly, "Not this digger. Ask him to have the other one checked out and waiting when they get around to pulling us out."

Three hours later they were in the second modified and strengthened digger, suspended under a transport copter and approaching the area which, they hoped, contained the strata creature's brain and/or tool producing facilities. The trip gave them a chance to do some constructive theorizing about their patient.

They were now convinced that it had evolved originally from a mobile vegetable form. It had always been large and omnivorous, and when these life-forms began to live off each other they grew in size and complexity and shrank in numbers. There did not seem to be any way that the strata creature could reproduce itself. It simply continued to live and grow until one of its own kind who was bigger than it was killed it. Their patient was the biggest, oldest, toughest and wisest of its kind. As the sole occupant of its land mass for many thousands of years, there had no longer been the necessity for it to move itself bodily and so it had taken root again.

But this had not been a process of devolution. With no chance of cannibalizing others of its own kind, it devised methods of controlling its growth and of rendering its metabolism more efficient by evolving tools to do the jobs like mining, investigating the subsurface, processing necessary minerals for its nerve network. The original farmer fish were probably a strain which were able to survive, like the legendary Jonah, in its stomach and later grow plant teeth for both the parent creature and the farmer fish to defend themselves against sea

predators sucked in by the mouths. How the leucocytes got there was still not clear, but the rollers occasionally ran across a smaller, less highly evolved variety which were probably the leeches' wild cousins.

"But one point which we must keep in mind when we try to talk to it," Conway ended seriously, "is that the patient is not only blind, deaf and dumb, it has never had another of its own kind to talk to. Our problem isn't simply learning a peculiar and difficult e-t language, we have to communicate with something which does not even know the meaning of the word communicate."

"If you're trying to raise my morale," said Murchison dryly, "you aren't."

Conway had been staring ahead through the forward canopy, mostly to avoid having to look at the carnage depicted on his repeater screens where the tool attacks were taking an increasingly heavy toll at the feeding and transfusion sites. He said suddenly, "The suspected brain area is far too extensive to be searched quickly but, correct me if I'm wrong, isn't this also the locality where Descartes made her first touchdown? If that is so then the tools sent to investigate her had a relatively short distance to come, and if it is possible to trace the path of a tool by the scar tissue it leaves in the body material. .

"It is," said Murchison, looking excited. Harrison gave new instructions to the transport copter's pilot without having to be told and a few minutes later they were down, cutting blades spinning and nosing into their patient's spongy quasi flesh.

But instead of the large, cylindrical plug cut from the body material they found a flat, reversed conical section which tapered sharply to a narrow, almost hair-thin wound which angled almost at once toward the suspected brain area.

"The ship would have been drawn only a short distance below the surface, obviously," said Murchison. "Enough to let tools make contact with its total surface while supported by body material, instead of making a fleeting contact after bouncing themselves into the air. But do you notice how the tools, even though they must have been cutting through at top speed, still managed to avoid severing the root network which relays their mental instructions . . .

"At the present angle of descent," Harrison cut in, "we are about twenty minutes from the subsurface. Sonar readings indicate the presence of caverns or deep pits."

Before Conway could reply to either of them, Edwards' face flicked onto the main screen. "Doctor, seals Thirty-eight through Forty-one have gone. We're already holding tourniquets at Eighteen, Twenty-six and Forty-three, but-"

"Same procedure," snapped Conway.

There was a dull clang followed by metallic scraping sounds running the length of the digger. The sounds were repeated with rapidly increasing frequency. Without looking up, Harrison said, "Tools, Doctor. Dozens of them. They can't build up much impetus coming at us through this spongy stuff and our extra armor should cope. But I'm worried about the antenna housing."

Before Conway could ask why, Murchison turned from the view port. She said, "I've lost the original trail, Doctor-this area is practically solid with tool scar tissue. Traffic must be very heavy around here."

The secondary screens were showing logistic displays on the deployment of ships, earth-moving machinery, decontamination equipment and movements into and out of the feeding and transfusion areas, and the main screen showed Vespasian no longer in position above Tunnel Forty-three. It was losing height and wheeling around in a ponderous, lateral spin while its pilot was obviously fighting hard to keep it from flipping over onto its back.

One of its four presser installations, Conway saw during the next swing, had been smashed in as if by a gigantic hammer and he knew without being told that this was the one which had been holding closed the ruptured Forty-three. As the ship whirled closer to the ground he wanted to close his eyes, but then he saw that the spin was being checked and that the surface vegetation was being flattened by the three remaining pressers, fanned out

at maximum power to support the ship's weight.

Vespasian landed hard but not catastrophically. Another cruiser moved into position above Forty-three while surface transport and copters raced toward the crash-landed ship to give assistance. They arrived at the same time as a large group of tools which were doing nothing at all to help.

Suddenly Dermod's head filled the screen.

"Doctor Conway," said the Fleet Commander in a coldly furious voice, "this is not the first time that I have had a ship converted to scrap around me, but I have never learned to enjoy the experience. The accident was caused by trying to balance virtually the whole of the ship's weight on one narrowly focused presser beam, with the result that its supporting structure buckled and damn near wrecked the ship."

His tone warmed a little, but only temporarily, as he went on, "If we are to hold tourniquets over every tunnel, and with tools attacking every seal it looks as if we will have to do just that, I shall either have to withdraw my ships for major structural modifications or use them for an hour or so at a time and check for incipient structural failure after each spell of duty. But this will tie up a much larger number of ships in unproductive activity, and the farther we extend the incision the more tunnels we will have to sit on and the slower the work will go. The operation is fast becoming a logistical impossibility, the casualty figures and material losses are making it indistinguishable from a full-scale battle, and if I thought that the only result would be the satisfaction of your medical curiosity, Doctor, and that of our cultural contact people, I would throw a permanent 'Hold' on it right now. I have the mind of a policeman, not a soldier-the Federation prefers it that way. I don't glory in this sort of thing..."

The digger lurched and for an instant Conway felt a sensation impossible in these surroundings, that of free fall. Then there was a crash as the vehicle struck rocky ground. It landed on its side, rolled over twice and moved forward again, but skidding and slewing to one side. The sound of tools striking the hull was deafening.

Two vertical creases appeared on the Fleet Commander's forehead. He said, "Having trouble, Doctor?"

The constant banging of tools made it hard to think. Conway nodded and said, "I didn't expect the seals to be attacked, but now I realize that the patient is simply trying to defend itself where it thinks it is under the heaviest attack. I also realize now that its sense of touch is not restricted to its top surface. You see, it is blind, deaf and dumb but it seems to be able to feel in three dimensions. The eye plants and subsurface root networks allow it to feel areas of local pressure, but vaguely, without detail. To feel the fine details it sends tools, which are extremely sensitive- sensitive enough to feel the airflow over their wings in the glider configuration and reproduce the shape themselves at will. Our patient learns very quickly and that glider I thought at it has cost a lot of lives. I wish-"

"Doctor Conway," the Fleet Commander broke in harshly. "You are either trying to make excuses or giving me a very basic lecture with which I am already familiar. I have time to listen to neither. We are faced with a surgical and tactical emergency. I require guidance."

Conway shook his head violently. He had the feeling that he had just said or thought of something important but he did not know what it was. He had to stay with his present train of thought if he expected to drag it out into the light again.

He went on, "The patient sees, experiences everything, by touch. So far our only area of common contact are the tools. They are thought controlled extensions of its sense of touch throughout and for a short distance above the patient's body. Our own mental radiation and control are more concentrated and of strictly limited range. The situation has been that of two fencers trying to communicate only through the tips of their foils-"

He stopped abruptly because he was talking to an empty screen. All three repeaters glowed with power, but there was neither sound nor vision.

Harrison shouted, "I was afraid of this, Doctor. We strengthened the hull armor but had to cover the antenna housing with a plastic radome to allow two-way communications.

The tools have found our weak spot. Now we are deaf, dumb and blind, too-and missing one leg because our port caterpillar tread won't work."

The digger had come to rest on a flat shelf of rock in a large cavern which angled steeply into the subsurface. Above and behind them hung a great mass of the creature's body material from which there was suspended thousands of rootlets which joined and rejoined until they became thick, silvery cables writhing motionlessly across the cavern floor, walls and roof before disappearing into the depths. Each cable had at least one bud sprouting from it, like a leaf of wrinkled tinfoil. The more well developed buds quivered and were trying to take the shapes of the tools which were attacking the digger.

"This is one of the places where it makes the tools," she said, using a spotlight as pointer, "or should I say grows them-I still can't decide whether this is an animal or vegetable life-form basically. The nervous system seems to be centered in this area, so it is almost certainly part of the brain as well. And it is sensitive-do you see how carefully the tools avoid those silver cables while they are attacking?"

"We'll do the same," said Conway, then to Harrison, "That is, if you can move the digger on one track to that overhanging wall with the cables running along it, without crushing those two on the floor?"

Damage in this sensitive area could have serious effects on their patient.

The Lieutenant nodded and began rocking the digger forward and backward along the shelf until they were tight against the indicated wall. Protected by the sensitive cables above, the cavern floor below and the rocky wall on their starboard side, the tool attack was confined to their unprotected port side. They could once again hear themselves think, but Harrison pointed out firmly but apologetically that they could not climb the slope or dig their way out on one track, that they could not call for help and that they had air for only fourteen hours and then only if they sealed their suits to use their remaining tanked air.

"Let's do that now," said Conway briskly, "and move outside. Station yourselves at each end of the digger, under the cables and with your backs to the cavern wall. That way you will have to think off attacks from the front only-any tool trying to cut through the rock behind you will make too much noise to take you by surprise. I also want you far enough from my position amidstships so that your mental radiation will not affect the tools which I will be trying to control..

"I know that smug, self-satisfied look," said Murchison to the Lieutenant as she began sealing her helmet. "Our Doctor has had a sudden rush of brains to the head. I think he intends talking to the patient."

"What language?" asked Harrison dryly.

"I suppose," said Conway, smiling to show the confidence which he did not feel, "you could call it three-dimensional Braille."

Quickly he explained what he hoped to do and a few minutes later they were in position outside the digger. Conway sat with his back to the port track housing a few feet from a water-filled depression in the cavern floor. There was a hole of unknown depth in the center of the depression where a cable or similar ore-extracting plant had eaten its way into the rock. To one side of him a group of seven or eight tools had merged together to encircle and squeeze the vehicle's hull, and some of the armor was beginning to gape at the seams. Conway thought a break in the metal band and then he rolled it into the depression like a great lump of animated, silvery dough. Then he got down to work.

Conway made no attempt to protect himself against attacking tools. He intended concentrating so hard on one particular shape that anything which came within mental range would, he hoped, lose its dangerous edges or points.

Thought-shaping the creature's outward aspect was easy. Within a few minutes there was a large, silvery pancake-a small-scale replica of the patient-lying in the center of the pool. But thinking three dimensionally of the mouths and their connecting tunnels and stomachs was not so easy. Even harder was the stage when he began thinking the tiny stomachs into expanding and contracting, sucking the gritty, algae-filled water into his scale

model and expelling it again.

It was a crude, oversimplified model. The best he could manage at one time was eight mouths and connecting stomachs, and he was very much afraid that it bore the same relation to the patient that a doll did to a living baby. But then he began to add the creeping motions he had observed in smaller, younger strata creatures, keeping the area around the central depression motionless, however, and hoping that with the pumping motions of the stomachs he was giving the impression of a living organism. The sweat poured off his forehead and into his eyes, but by then it did not matter that he could not see properly, because the sections he was shaping were out of sight anyway. Then he began to think certain areas solid, motionless, dead. He extended these dead, motionless and detail-less areas until gradually the whole model was a solid, lifeless lump.

Then he blinked the sweat out of his eyes and started all over again, and then again, and suddenly the others were standing beside him.

"They aren't attacking us anymore," said Harrison quietly, "and before they change their minds I am going to try fixing that damaged track. At least, there is no shortage of tools."

Murchison said, "Can I help-apart from keeping my mind blank to avoid warping your model?"

Without looking up Conway said, "Yes, please. I'm going to take it through the same sequence once again, but halt it at the point where the dead areas extend to at the present time. When I do that I would like you to think the positions of our incisions and extend and widen them while I seal the severed throat tunnels and think the feeding and transfusion shafts. You withdraw the excised material a short distance and think it solid-dead, that is-while I try to get across the idea that the remainder is alive and twitching and likely to stay that way."

She caught on very quickly but Conway had no way of knowing if their patient had, or could, catch on. Behind them Harrison was at work on the damaged tread while before them their model of the patient and the effects of their present surgery became more and more detailed- right down to the miniature corrugated seals and what happened to the creature when one of them was collapsed. But still there was no indication from the patient that it understood what they were trying to tell it.

Suddenly Conway stood up and began climbing the sloping floor. He said, "I'm sorry, I have to move out of range for a minute to catch my mental breath."

"Me, too," she said a few minutes later. "I'll join you..., look!"

Conway had been staring at the darkness of the cavern roof to rest both his mind and his eyes. He looked down quickly, thinking they were him into the digger and, while Conway made contact with the surface, Murchison instinctively raised her hand in farewell to the cavern and the shapes of the tool models scattered across the shelf. She must have been thinking very hard about her good-bye because her last model raised its hand also and kept it there while the digger crawled slowly out of mental range.

Suddenly all three repeaters were alive and Dermod was staring at him, his face reflecting concern, relief and excitement in sequence and then altogether. He said, "Doctor, I thought we'd lost you-you blanked out four hours ago. But I can report progress. The incision is proceeding and all tool attacks ceased half an hour ago. There is no tool trouble reported from the tunnel seals, the decontamination teams, the transfusion shafts anywhere. Doctor, is this a temporary condition?"

Conway let his breath go in a long, loud sigh of relief. Their patient was a very bright lad despite its physically slow reaction times. He shook his head and said, "You will have no more trouble from the tools. In fact, you will find them of assistance in helping maintain equipment and for use in awkward sections of the incision once we make it understand our needs. You can also forget about digging that isolation trench-our patient retains enough mobility to withdraw itself from the newly excised material-which means that ships which would have been tied up in digging that trench will now be free to extend the incision more

rapidly, so that our operation will be completed in a fraction of the time originally thought necessary.

"You see, sir," Conway ended, "we now have the active cooperation of our patient."

Major surgery was completed in just under four months and Conway was ordered back to Sector General. Postoperative treatment would take a great many years and would proceed in conjunction with the exploration of Drambo and the closer investigation of its life-forms and cultures. Before leaving, while he was still seriously troubled by the thought of the casualty figures, Conway had once questioned the value of what they had done. A rather supercilious cultural contact specialist had tried to make it very simple for him by saying that difference, whether it was cultural, physiological or technological, was immensely valuable. They would learn much from the strata creature and the rollers while they were teaching them. Conway, with some difficulty, accepted that. He could also accept the fact that, as a surgeon, his work on Drambo was done. It was much harder to accept the fact that the pathology team, particularly one member of it, still had a lot of work to do.

While O'Mara did not openly enjoy his anguish, neither did he display sympathy.

"Stop suffering so loudly in silence, Conway," said the Chief Psychologist on his return, "and sublimate yourself-preferably in quicklime. But failing that there is always work, and an odd case has just come in which you might like to look at. I'm being polite, of course. It is your case as of now. Observe."

The large visi screen behind O'Mara's desk came to life and he went on. "This beastie was found in one of the hitherto unexplored regions, the victim of an accident which virtually cut its ship and itself in two. Airtight bulkheads sealed off the undamaged section and your patient was able to withdraw itself, or some of itself, before they closed. It was a large ship, filled with some kind of nutrient earth, and the victim is still alive- or should I say half alive. You see, we don't know which half of it we rescued. Well?"

Conway stared at the screen, already devising methods of immobilizing a section of the patient for examination and treatment, of synthesizing supplies of that nutrient soil which now must be virtually sucked dry, and for studying the wreck's controls to gain data on its sensory equipment. If the accident which had wrecked its ship had been due to an explosion in the power plant, which was likely, then this might well be the front half containing the brain.

His new patient was not quite the Midgard Serpent but it did not fall far short of it. Twisting and coiling it practically filled the enormous hangar deck which had been emptied to accommodate it.

"Well?" said O'Mara again.

Conway stood up. Before turning to go he grinned and said, "Small, isn't it?"